

**THE NETHERLANDS**  
(N E D E R L A N D)**COMMUNICATION**Concerning <sup>(1)</sup>:

- ~~approval granted~~
- approval extended
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

of a type of pneumatic tyre for motor vehicles pursuant to Regulation number 54.

**Approval number: E4\*54R00/24\*20253\*09**

1. Manufacturer's name and address : Shandong Changfeng Tyres Co., Ltd.  
High-tech Development Zone, Guangrao County,  
Dongying City, 257335 Shandong Province,  
China(PRC)
2. Tyre type designation<sup>(2)</sup>
  - 2.1. Brand-name(s) or trade mark(s) : See annex 1 of communication form
  - 2.2. Trade description(s)/ Commercial name(s) : See annex 1 of communication form
3. If applicable, name and address of the manufacturer's representative : not applicable
4. Summarized description
  - 4.1. Size of tyre : 9.00R20
  - 4.2. Category of use : ~~normal~~/snow/~~special~~ <sup>(1)</sup>
  - 4.3. Structure : ~~diagonal(bias ply)~~/radial <sup>(1)</sup>
  - 4.4. Tyre class : ~~E2~~/C3 <sup>(1)</sup>

**Approval number: E4\*54R00/24\*20253\*09**

- 4.5. Speed category symbol:
- 4.5.1. Nominal : K
- 4.5.2. additional (if applicable) : ---
- 4.6. Load-capacity indices:
- 4.6.1. Corresponding to nominal speed:
- single : 144
  - twinned (dual) : 142
- 4.6.2. Corresponding to additional speed:
- single : ---
  - twinned (dual) : ---
5. Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity : TÜV Rheinland Kraftfahrt GmbH  
Typprüfstelle Fahrzeuge/Fahrzeugteile  
Am Grauen Stein  
51105 Köln
6. Date of report issued by that service : May 16, 2022
7. Number of report issued by that service : 86-R54-1139/22-00
8. Reason(s) of extension (if applicable) : Addition of trade description.
9. Any remarks : ---
10. Place : Zoetermeer
11. Date : 27 May 2022
12. Signature :



**R. R. van der Spek**

13. Annexed to this communication is a list of documents in the approval file deposited at the administrative service having delivered the approval and which can be obtained upon request.
- Application form relating to ECE approval for a pneumatic tyre pursuant to Regulation number 54.
  - The drawing of the tyre's sidewalls, tread and dimensioned cross-section.
  - The test report as mentioned in item 7.

Annex 1

2. Tyre type designation<sup>(2)</sup>

2.1. Brand-name(s) or trade mark(s) :

ZEETEX; CHANGFENG; SUNFULL; RUIFULAI; FESITE; Green dragon; Agate; CRYSTAL;  
TORQUE; HIFLY; OVATION; ECOVISION; MIRAGE; MIGEER; GALLANT; TOWNHALL;  
ONYX; FULLWAY; DAEWOO; SINOTYRE; NISON; SATOYA; PETROMAX; CACHLAND;  
DERUIBO; XBRI; WOSEN; ROADWING; Satoya; nison; PRIMEWAY; SUNTRAC; CRISTONE;  
NORMAKS; TEXXAN; NORTEC

2.2. Trade description(s)/ Commercial name(s) :

LZ-01+; LZ-02+; HT-03+; HF606; HF702; HF706; HF708; CS716; TQ702; HH301; VI-702; MG702;  
HM301; GT702; TH702; HO301; TB901; DWA02; ST011; NS501; CS706; TQ706; HH306; VI-706;  
MG706; HM306; GT706; TH706; HO306; TQ708; HH105; VI-708; MG708; HM105; GT708; TH708;  
HO105; CS368; CS720; HH104; VI-606; MG606; HM104; GT606; TH606; HO104; TQ606; NS702;  
HF307; TQ307; HH307; VI-307; MG307; HM307; GT307; TH307; HO307; HF303; TQ303; HH303;  
VI-303; MG303; HM303; GT303; TH303; HO303; HF313; TQ313; HH313; VI-313; MG313; HM313;  
GT313; TH313; HO313; HF168; TQ168; HH168; VI-168; MG168; HM168; GT168; TH168; HO168;  
HF701; TQ701; HH311; VI-701; MG701; HM311; GT701; TH701; HO311; HF599; TQ599; HH599+;  
VI-599; MG599; HM599+; GT599; TH599; HO599+; SU-022; PT501; CS504; HF638; GD638;  
TQ638; HH308~~Ⓢ~~; HM308~~Ⓢ~~; HO308~~Ⓢ~~; MG638; GT638; TH638; CS520; VI-638; 767CAR;  
768CDM; GDM768; GDM252; HDM768; EDM768; SDM768; NDM768; FDM768; HAM517;  
EAM517; SAM517; NAM517; FAM517; GAM517; CH8606; CH8807; CH8861; CH8207; CH8303;  
CH8607; CH8107; CH8313; GSC606; GAM807; GAO861; GAM207; GDM303; GDM607; GDM107;  
GDM313; DRB862; DRB892; DRB588; MG158; ECOMIX B1; WS118; WS648; HF666; MG666; VI-  
666; HH666; HO666; TQ666; CH8666; DRB666; WS666; HF616; MG616; VI-616; HH616; HO616;  
TQ616; CH8616; DRB616; WS616; PW01; ST102; CT716; HF399; MG399; VI-399; HH399; HO399;  
TQ399; CH8993; CH8836; DRB399; WS399; SD-062; NU702; TX222; CT504; SU-142B; HF617;  
MG617; VI-617; HH617; HO617; TQ617; CH8716; DRB617; WS617; ND617; TR All Steel 142;  
SU-142BM

(1) Strike out what does not apply.

(2) A list of Brand name(s)/trademark(s) or Trade description(s)/ Commercial name(s) may be annexed to this communication





MINISTERIO  
DE INDUSTRIA, COMERCIO Y  
TURISMO

DIRECCIÓN GENERAL DE INDUSTRIA Y  
DE LA PEQUEÑA Y MEDIANA EMPRESA

SUBDIRECCIÓN GENERAL DE  
CALIDAD Y SEGURIDAD INDUSTRIAL



E9-117R-02.1145-S2WR2 Ext. 01

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Relativa a / Concerning:

- ~~-homologación de tipo / APPROVAL GRANTED<sup>(4)</sup>~~
- ~~-extensión de homologación de tipo / APPROVAL EXTENDED<sup>(1)</sup>~~
- ~~-denegación de homologación de tipo / APPROVAL REFUSED<sup>(4)</sup>~~
- ~~-retirada de homologación de tipo / APPROVAL WITHDRAWN<sup>(4)</sup>~~
- ~~-producción definitivamente abandonada / production definitively discontinued<sup>(4)</sup>~~

de un tipo de neumático en lo que se refiere al “nivel de emisión de ruido de rodadura” y/o a la “adherencia en superficie mojada” y/o a la “resistencia a la rodadura”, en virtud al Reglamento No 117. / of a type of tyre with regard to “rolling sound emission level” and/or adhesion performance on wet surfaces” and/or “rolling resistance” pursuant to Regulation No. 117.

Número de homologación de tipo / Approval No : **E9-117R-02.1145-S2WR2**

Número de extensión / Extension No. : **01**

1. Nombre y dirección del fabricante/  
*Manufacturer's name and address* : **WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD**  
**(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)**
2. Nombre y dirección del representante del fabricante/  
*Manufacturer's representative name and address* : N/A
3. Clase de neumático/  
*Tyre Class* : C3  
Categoría de uso del tipo de neumático/  
*Category of use of the type of tyre* : Normal / Normal
- 3.1. Neumático de nieve para uso en condiciones severas / *Snow tyre for use in severe snow conditions* : No / No (2)
- 3.2. Neumático de tracción / *Traction tyre* : Si / Yes
4. Designación de tipo de neumático / *Tyre type designation*
  - 4.1 Marca(s) / *Brand name(s)/Trademark(s)* : JILUTONG; SAFECES; FIREMAX; KPATOS; TRANKING; FIRELION; ODYKING; RUNTEK; CROWN; PANJI; YUWANG; GAOLICHENG; **HUNTERROAD**
  - 4.2 Denominación(es) comercial(es)/ *Trade description(s)/Commercial name(s) of the type of tyre* : LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

<sup>(1)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(2)</sup> Nota; Ver “Lista de medidas de neumático” en caso de que el límite cumplido no sea de la misma fase. La fase de cada medida se especifica en la lista de medidas de neumático. / *Note; See ‘Tyre size list’ in case the tyre performances are not all of the same stage level (Multi-stage tyre line). Stage level per tyre size is to be specified on the tyre size list.*

<sup>(3)</sup> En el caso de la categoría de utilización “nieve”, se presentará un informe de ensayo conforme al apéndice 2 del anexo 7 del Reglamento / *In the case of category of use “Snow” a test report according to appendix of Annex 7 shall be submitted.*



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5. Servicio técnico autorizado a efectos de homologación o comprobación de los ensayos de conformidad/  
*Technical service approved for purposes of approval or of verification of conformity tests* : IDIADA
6. Prestaciones homologadas: nivel de ruido en (fase 1/fase 2), nivel de adherencia en superficie mojada, nivel de resistencia a la rodadura (fase 1/fase 2) (1)/  
*Performances approved: sound level at (stage 1/stage 2), wet adhesion level, rolling resistance level (stage 1/stage 2)(1)*
- 6.1. Nivel de emisión de ruido del tamaño representativo del neumático, a la velocidad de referencia de 70/80 km/h (1)/  
*Sound level of the representative tyre size at reference speed of 70/80 km/h (1)* : 74 dB(A)
- 6.2. Nivel de adherencia en superficie mojada del tamaño representativo del neumático mediante el método del vehículo ~~o del remolque~~ (1)/  
*Wet adhesion level of the representative tyre size using the vehicle ~~or trailer~~ method (1)* : 1,01 (G)
- 6.3. Nivel de resistencia a la rodadura del tamaño representativo del neumático /  
*Rolling Resistance level of the representative tyre size* : 5,64 N/kN
7. Número de informe de ensayo emitido por este servicio/  
*Number of report issued by that service* : CN17110405; **CN18070375**
8. Fecha del informe de ensayo emitido por este servicio/  
*Date of report issued by that service* : 28/11/2017; **19/07/2018**
9. Razón o razones de la extensión (en su caso)/  
*Reason(s) of extension (if applicable)* : **Modificación del nombre y dirección del fabricante / Modification of manufacturer's name and address;**  
**Adición de marca y descripción comercial / Addition of brand name and trade description**
10. Observaciones/  
*Any remarks* : N/A
11. Lugar /  
*Place* : Madrid
12. Fecha/  
*Date* : Ver firma electrónica /  
*See electronic signature*
13. Firma / Signature:

EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL  
Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012

<sup>(1)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(2)</sup> Nota; Ver "Lista de medidas de neumático" en caso de que el límite cumplido no sea de la misma fase. La fase de cada medida se especifica en la lista de medidas de neumático. / *Note; See 'Tyre size list' in case the tyre performances are not all of the same stage level (Multi-stage tyre line). Stage level per tyre size is to be specified on the tyre size list.*

<sup>(3)</sup> En el caso de la categoría de utilización "nieve", se presentará un informe de ensayo conforme al apéndice 2 del anexo 7 del Reglamento / *In the case of category of use "Snow" a test report according to appendix of Annex 7 shall be submitted.*



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14. Se adjunta a la presente notificación: *Annexed to this communication are:*
- La lista de documentos que figuran en el expediente de homologación depositado en el servicio administrativo y que podrá obtenerse previa petición (3) / *A list of documents in the approval file deposited at the Administration services and which can be obtained upon request (3)*
  - Una lista de designaciones de las medidas de neumático: se especifica para cada marca y/o cada descripción comercial la lista de medidas de neumático, añadiendo para los neumáticos de clase C1, el marcado "Reinforced" o "Extra Load" o el símbolo de velocidad de los neumáticos de nieve o, para los neumáticos de clase C2 y C3, el marcado "Traction", en el caso de ser necesario. / *A list of tyre size designations: Specify for each brand name/trademark and/or each trade description/Commercial name the list of tyre size designations, adding in case of Class C1 tyres the mark "reinforced" (or "extra load") or the speed symbol of snow tyres or in the case of tyres of Classes C2 and C3, the mark "traction", if so required.*

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<sup>(2)</sup> Nota; Ver "Lista de medidas de neumático" en caso de que el límite cumplido no sea de la misma fase. La fase de cada medida se especifica en la lista de medidas de neumático. / *Note; See 'Tyre size list' in case the tyre performances are not all of the same stage level (Multi-stage tyre line). Stage level per tyre size is to be specified on the tyre size list.*

<sup>(3)</sup> En el caso de la categoría de utilización "nieve", se presentará un informe de ensayo conforme al apéndice 2 del anexo 7 del Reglamento / *In the case of category of use "Snow" a test report according to appendix of Annex 7 shall be submitted.*



**INFORME/REPORT N° CN18070375**

**REGLAMENTO CEPE/ONU 117R02 REFERENTE A EMISIÓN DE RUIDO A LA RODADURA,  
ADHERENCIA EN MOJADO Y RESISTENCIA A LA RODADURA  
EXTENSIÓN I  
UN/ECE REGULATION 117R02 RELATED TO ROLLING SOUND EMISSIONS, ADHESION ON WET  
SURFACES AND ROLLING RESISTANCE  
EXTENSION I**

Solicitante / Applicant : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD

Fabricante / Manufacturer : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)

Clase del neumático / Tyre Class : C3

Categoría de uso / Category of use : Normal / Normal

Neumático de tracción / Traction tyre : Si / Yes

Marca / Brand name : JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; PANJI; YUWANG; GAOLICHENG; **HUNTERROAD**

Nombre comercial / Commercial name : LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

Lugar y fecha de emisión del informe / Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 19/07/2018

CONCLUSIONES: La muestra ensayada de la familia CUMPLE con las prescripciones referentes a “emisión de ruido a la rodadura” y/o “adherencia en superficie mojada” y/o “resistencia a la rodadura” según el REGLAMENTO CEPE/ONU 117R02. Las características de las muestras ensayadas están detalladas en los anexos de este informe.  
CONCLUSIONS: The tested samples of the family FULFIL the technical prescriptions with regard to “rolling sound emissions level” and/or “adhesion on wet surfaces” and/or “rolling resistance” pursuant to UN/ECE REGULATION 117R02. The characteristics of the tested samples are detailed in the annexes to the test report.

Realizado por / Performed by:

V.B° / Revised by:




Zhaocai (Frank) Yu  
INGENIERO DE ENSAYOS

Lluís Sans Gomis  
JEFE DE DEPARTAMENTO

\* LOS ENSAYOS HAN SIDO REALIZADOS POR IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORIO ACREDITADO POR ENAC CON ACREDITACIÓN N° 35/LE159. / THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE159.

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA. / THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCION PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA. / THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.

\* EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS. / MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.



INFORME/REPORT N° CN18070375

RESUMEN/ SUMMARY

1. Dimensiones incluidas en el tipo del neumático / *Dimensions included in the type of tyre* : Ver anexo Documentación técnica  
: *See annex Technical documentation*
2. Medidas de neumático seleccionadas para ensayo / *Tyre sizes selected for testing*
  - 2.1. Emisión de ruido a la rodadura / *Rolling sound emissions* : 315/80R22.5 156/153L (mayor ancho de sección / *widest section width*).  
Ver Anexo 1, Informe CV17080406, IDIADA, 18/09/2017  
*See Annex 1, Test report CV17080406, IDIADA, 18/09/2017*
  - 2.2. Adherencia en superficie mojada / *Adhesion on wet surfaces*: 295/80R22.5 152/149L (cumple extra 10% / *meets extra 10%*).  
Ver Anexo 2, Informe CN16120066, IDIADA, 08/11/2016  
*See Annex 2, Test report CN16120066, IDIADA, 08/11/2016*
  - 2.3. Resistencia a la rodadura / *Rolling resistance* : 295/80R22.5 152/149L (nuevo valor límite calculado / *new calculated limit value*)  
Ver Anexo 3, Informe CN16110065, IDIADA, 27/10/2016  
*See Annex 3, Test report CN16110065, IDIADA, 27/10/2016*
3. Razones para la extension (si aplica) / *Reason(s) of extension (if applicable)*
  - Modificación del nombre y dirección del fabricante / *Modification of manufacturer's name and address*
  - Adición de marca y descripción comercial / *Addition of brand name and trade description*
4. Lista de Anexos a este informe / *List of Annexes to this report*:
  - 4.1. Anexo 1/ *Annex 1*: Informe referente a emisión de ruido a la rodadura / *Test report according to rolling sound emission level*.
  - 4.2. Anexo 2/ *Annex 2*: Informe referente a adherencia en superficie mojada / *Test report according to adhesion on wet surfaces*.
  - 4.3. Anexo 3 /*Annex 3*: Informe referente a resistencia a la rodadura / *Test report according to rolling resistance*.
  - 4.4. Anexo: Documentación técnica del fabricante / *Manufacturer's technical documentation*.

Lugar y fecha de emisión del informe /  
*Place and date of issue*

L'Albornar, Santa Oliva (Tarragona), 19/07/2018



Zhaocai (Frank) Yu  
INGENIERO DE ENSAYOS

\* LOS ENSAYOS HAN SIDO REALIZADOS POR IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORIO ACCREDITADO POR ENAC CON ACREDITACIÓN N° 35/LE159. / THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE159.

\* LOS RESULTADOS PRESENTADOS SE REFIEREN UNICAMENTE A LA MUESTRA ENSAYADA. / THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCION PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA. / THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.

\* EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS. / MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.





**ANEXO 1 AL INFORME / ANNEX 1 TO THE TEST REPORT**  
**EMISIÓN DE RUIDO EN LA RODADURA CV17080406 / ROLLING SOUND EMISSIONS CV17080406**

**1. DATOS DE ENSAYO / TEST DATA**

**1.1. Características del neumático de ensayo / Test tyre details**

- 1.1.1 Solicitante / Applicant : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.1.2 Fabricante / Manufacturer : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.1.3 Marca / Trade name : JILUTONG
- 1.1.4 Denominación comercial / Commercial description : LH688
- 1.1.5 Categoría de uso / Category of use : Normal / Normal
- 1.1.6 Clase del neumático / Tyre class : C3
- 1.1.7 Medida del neumático / Tyre size : 315/80R22.5 156/153L
- 1.1.8 Estructura del neumático / Tyre structure : Radial / Radial
- 1.1.9 Índice de carga / Masa correspondiente  $Q_r$ [kg] / Load index / Corresponding mass  $Q_r$ [kg] : 156 / 4.000
- 1.1.10 Presión de referencia  $P_r$  [kPa] / Reference inflation pressure  $P_r$  [kPa] : 850
- 1.1.11 Presión de inflado  $P_t$  [kPa] / Test inflation pressure  $P_t$  [kPa] :

	<b><math>P_t</math> [kPa] valor admisible / <math>P_t</math> [kPa] admissible values</b>
Rueda izquierda del eje delantero / Front axle left wheel	576,01 ≤ 580,00 ≤ 633,61
Rueda derecha del eje delantero / Front axle right wheel	558,86 ≤ 560,00 ≤ 614,74
Rueda izquierda del eje trasero / Rear axle left wheel	590,79 ≤ 595,00 ≤ 649,87
Rueda derecha del eje trasero / Rear axle right wheel	571,10 ≤ 575,00 ≤ 628,21

\* LOS ENSAYOS HAN SIDO REALIZADOS POR IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORIO ACREDITADO POR ENAC CON ACREDITACIÓN N° 35/LE159.  
 THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE159.

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA.  
 THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCION PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA.  
 THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.

\* EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS.  
 MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY



CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

1.1.12 Referencia interna del neumático / :  
*Test tyre internal reference*

Delantero izquierda / <i>Front left</i>	Delantero derecha / <i>Front right</i>
HVI-1708/244-1	HVI-1708/244-2

Trasero izquierda / <i>Rear left</i>	Trasero derecha / <i>Rear right</i>
HVI-1708/244-3	HVI-1708/244-4

1.1.13 Llanta de ensayo / *Test rim* : 9,00 x 22,5

1.1.14 Referencia interna de la llanta de ensayo / :  
*Test rim internal reference*

Delantero izquierda / <i>Front left</i>	Delantero derecha / <i>Front right</i>
HVI-1205/675	HVI-1205/676

Trasero izquierda / <i>Rear left</i>	Trasero derecha / <i>Rear right</i>
HVI-1205/677	HVI-1205/678

1.1.15 Carga neumáticos de ensayo [kg] / :  
*Test tyre load [kg]*

	kg	$Q_t [N] / \% \frac{Q_t}{Q_r}$
Eje delantero rueda izquierda / <i>Front axle left wheel</i>	2.930	50 < 73,25 < 90
Eje delantero rueda derecha / <i>Front axle right wheel</i>	2.860	50 < 71,50 < 90
Eje trasero rueda izquierda / <i>Rear axle left wheel</i>	2.990	50 < 74,75 < 90
Eje trasero rueda derecha / <i>Rear axle right wheel</i>	2.910	50 < 72,75 < 90

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

$Q_{t,avr} [N] / \% \frac{Q_{t,avr}}{Q_r}$
70 < 73,06 < 80

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

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**1.2. Vehículo de ensayo / Test vehicle**

- 1.2.1 Marca / Trade name : RENAULT
- 1.2.2 Modelo / Model : PREMIUM
- 1.2.3 Año / Year : 2005
- 1.2.4 Transmisión / Transmission : Manual / Manual
- 1.2.5 Batalla [mm] / Wheelbase [mm] : 3.650

Para Clase C3 menor a 5.000 mm. / For Class C3 less than 5.000 mm.

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

- 1.2.6 Referencia interna del vehículo / Vehicle internal reference : HVI-1205/350

**1.3. Equipo de ensayo / Test equipment**

- 1.3.1 Sonómetro 1 / Sound level meter 1 : 170815
- 1.3.2 Sonómetro 2 / Sound level meter 2 : 170817
- 1.3.3 Manómetro / Manometer : 141419
- 1.3.4 Báscula / Weight scale : 01199
- 1.3.5 Termómetro de la temperatura del asfalto / Track temperature measurement device : 141537, 141537-5
- 1.3.6 Anemómetro / Wind speed measurement device : 163105
- 1.3.7 Velocímetro / Speed measurement device : 12626
- 1.3.8 Termómetro de la temperatura ambiente / Ambient temperature measurement device : 10004, 141537-4

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**2. PISTA DE ENSAYO / TEST TRACK**

**2.1. Ambiente / Environment**

2.1.1 Temperatura del aire  $T_a$  [°C] / : 26,0  
*Air temperature  $T_a$  [°C]*

$5,0 < T_a < 40,0$

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

2.1.2. Temperatura de la superficie de ensayo [°C] / : 28,9  
*Test surface temperature  $T_s$  [°C]*

$5,0 \leq T_s \leq 50,0$

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

2.1.3 Velocidad del viento [m/s] / : < 1,5  
*Wind speed [m/s]*

Menor a 5 m/s. / *Less than 5 m/s.*

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

2.1.4 Ruido ambiente [dB(A)] / : 45,1  
*Ambient noise [dB(A)]*

Resultado de Ensayo – Ruido ambiente  $\geq 10$  dB(A)  
*Test result – Ambient noise  $\geq 10$  dB(A)*

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

2.1.5 Dirección de viento [°] / : 160,7  
*Wind direction [°]*

**2.2. Fecha de ensayo y método de verificación según ISO 10844:1994 /**  
***Date and method of check on compliance of the test surface with ISO 10844:1994:***

- 25 de Mayo de 2015 / *May 25<sup>th</sup> 2016*
- 3.0 m de borde recto / *3.0 m straight edge*
- Coeficiente de absorción acústica / *Sound absorption coefficient*
- Parche de arena / *Sand patch*
- Emitido por / *Issued by* : IDIADA

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### 3. RESULTADOS DE ENSAYO / TEST RESULTS

Velocidad de referencia [km/h] / : 70  
*Reference Speed:  $v_{ref}$  [km/h]*  
 Rango de velocidades [km/h] / : 60,0 - 80,0  
*Range Speed [km/h]*

Pasada Núm. / Run No.	Velocidad de ensayo / Test speed [km/h]	Sentido de pasada / Direction of run	Medida de sonido lado izquierdo / Sound level left measured [dB(A)]	Medida de sonido lado derecho / Sound level right measured [dB(A)]	Temp. aire / Air temp. [°C]	Temp. superficie / Surface temp. [°C]	Medida de sonido lado izquierdo corrección temp. / Sound level left temp. corrected [dB(A)]	Medida de sonido lado derecho corrección temp. / Sound level right temp. corrected [dB(A)]
1	62,5	E → W	73,0	74,0	25,3	28,0	73,0	74,0
2	64,5	E → W	74,2	74,4	25,1	28,2	74,2	74,4
3	66,6	E → W	73,5	74,5	26,3	28,3	73,5	74,5
4	68,7	E → W	74,7	75,3	26,1	28,8	74,7	75,3
5	72,4	E → W	75,3	75,3	26,1	28,6	75,3	75,3
6	74,6	E → W	75,4	75,9	26,1	28,9	75,4	75,9
7	76,8	E → W	76,6	76,4	26,4	29,6	76,6	76,4
8	78,2	E → W	77,2	77,2	26,9	30,6	77,2	77,2

- 3.1. Pendiente de la recta de regresión / : 33,62  
*Regression line slope*
- 3.2. Nivel de ruido después de la corrección de temperatura de acuerdo con el párrafo 4.3 del Anexo 3 [dB(A)] /  
*Sound level after temperature correction according to paragraph 4.3 of Annex 3 [dB(A)]* : 75,1
- 3.3. Nivel de ruido según párrafo 4.4 y 4.5 del Anexo 3 [dB(A)] / *Sound level according to paragraph 4.4. and 4.5. of Annex 3 [dB(A)]* : 74
- 3.4. Valor límite para la clase C3 de neumático y Stage 2: 75 dB(A) /  
*Limit value for the Class C3 tyre Stage 2: 75 dB (A)*

CUMPLE / NO CUMPLE  
 FULFILS / NOT FULFILS

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 Verifique el informe con código de seguridad «XIVFJ6J7» en: <https://extranet.idiada.com/hom-cve>

IDIADA CN18070375



4. FOTOS DEL NEUMÁTICO DE ENSAYO / TEST TYRE PICTURES



Foto 1 / Picture 1. Flanco / Sidewall

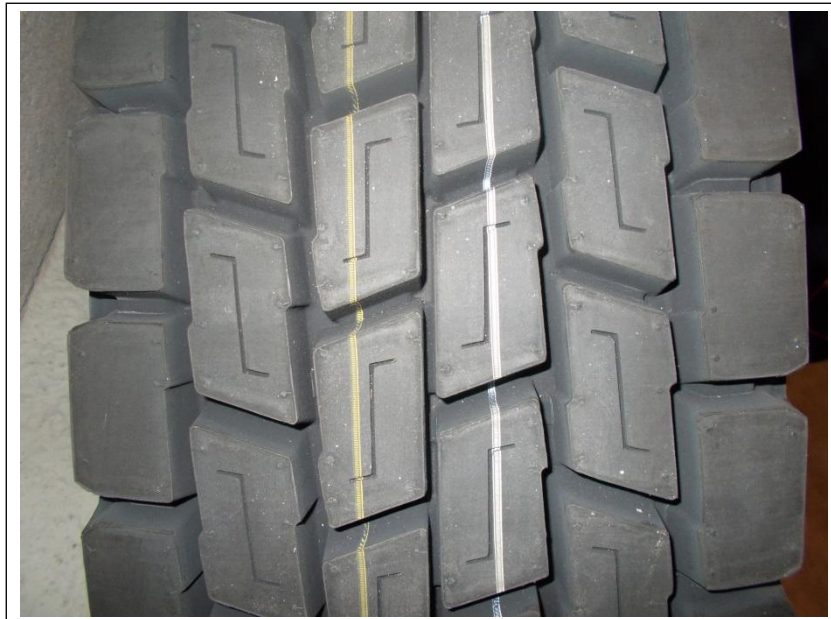


Foto 2 / Picture 2. Banda de rodadura / Tread pattern

Lugar de ensayo / Place of test: L'Albornar (Santa Oliva)

Fecha de ensayo / Date of test: 14/09/2017

*Zhaocai (Frank) Yu*

**Zhaocai (Frank) Yu**  
INGENIERO DE ENSAYOS  
TEST ENGINEER

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**ANEXO 2 AL INFORME / ANNEX 2 TO THE TEST REPORT**  
**ADHERENCIA EN SUPERFICIE MOJADA CN16120066 / ADHESION ON WET SURFACES CN16120066**

**1. DATOS DE ENSAYO / TEST DATA**

**1.1. Características del neumático de ensayo / Test tyre details**

- 1.1.1 Solicitante / Applicant : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.1.2 Fabricante / Manufacturer : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.1.3 Marca / Trade name : SAFECESS
- 1.1.4 Denominación comercial / Commercial description : SFC08
- 1.1.5 Categoría de uso / Category of use : Normal / Normal
- 1.1.6 Clase del neumático / Tyre Class : C3
- 1.1.7 Medida del neumático / Tyre size : 295/80R22.5 152/149L
- 1.1.8 Estructura del neumático / Tyre structure : Radial / Radial
- 1.1.9 Índice de carga / Masa correspondiente  $Q_r$ [kg] / Load index / Corresponding mass  $Q_r$ [kg] : 152 / 3.550
- 1.1.10 Presión de inflado / Inflation pressure [kPa] : 900
- 1.1.11 Referencia interna del neumático / Test tyre internal reference :

Delantera izquierda / Front left	Delantera derecha / Front right
CN16120066-1	CN16120066-2
Trasera izquierda / Rear left	Trasera derecha / Rear right
CN16120066-3	CN16120066-4

- 1.1.12 Llanta de ensayo / Test rim : 9,00 x 22,5

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1.1.13 Referencia interna de la llanta de ensayo :  
*Test rim internal reference*

Delantera izquierda / <i>Front left</i>	Delantera derecha / <i>Front right</i>
G-B227	G-B225
Trasera izquierda / <i>Rear left</i>	Trasera derecha / <i>Rear right</i>
G-B226	G-B228

1.1.14 Identificación del SRTT / *SRTT identification* : MICHELIN 315/70 R22.5 - ASTM F 2870

1.1.15 Referencia interna del SRTT / :  
*SRTT internal reference*

Delantera izquierda / <i>Front left</i>	Delantera derecha / <i>Front right</i>
BW-FG-031	BW-FG-032
Trasera izquierda / <i>Rear left</i>	Trasera derecha / <i>Rear right</i>
BW-FG-030	BW-FG-033

1.1.16 Llanta de ensayo del SRTT / *Test SRTT rim* : 9.00 x 22.5

1.1.17 Referencia interna de la llanta del SRTT :  
*Test SRTT rim internal reference*

Delantera izquierda / <i>Front left</i>	Delantera derecha / <i>Front right</i>
G-B229	G-B230
Trasera izquierda / <i>Rear left</i>	Trasera derecha / <i>Rear right</i>
G-B231	G-B232

1.1.18 Carga neumáticos de ensayo [kg] / *Test tyre load* [kg] :

SRTT1			Candidato / <i>Candidate</i>			SRTT2		
DI / <i>FL</i>	2.994	79,8% Qr	DI / <i>FL</i>	2.988	84,2% Qr	DI / <i>FL</i>	3.002	80,1% Qr
DD / <i>FR</i>	2.824	75,3% Qr	DD / <i>FR</i>	2.858	80,5% Qr	DD / <i>FR</i>	2.840	75,7% Qr
TI / <i>RL</i>	2.818	75,1% Qr	TI / <i>RL</i>	2.828	79,7% Qr	TI / <i>RL</i>	2.818	75,1% Qr
TD / <i>RR</i>	2.876	76,7% Qr	TD / <i>RR</i>	2.878	81,1% Qr	TD / <i>RR</i>	2.878	76,7% Qr

Entre el 60 y el 100 por ciento de la carga correspondiente al índice de carga del neumático.  
*Between 60 per cent and 100 per cent of the load value corresponding to the load index of the tyre.*

CUMPLE / NO-CUMPLE  
 FULFILS / NOT-FULFILS

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**1.2. Vehículo de ensayo / Test vehicle**

1.2.1	Marca / Trade name	: SITRAK
1.2.2	Modelo / Model	: C7H400
1.2.3	Año / Year	: 2015
1.2.4	Transmisión / Transmission	: Manual / Manual
1.2.5	Batalla / Wheelbase [mm]	: 3.600
1.2.6	Referencia interna del vehículo Vehicle internal reference	: SB-G-110
1.2.7	Configuración del vehículo (ISO 15222) / Vehicle configuration (ISO 15222)	: Configuración 1 (4 neumáticos candidatos en el vehículo de ensayo / Configuration 1 (4 candidate tyres in test vehicle

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### 1.3. Presión de inflado de la prueba /

#### 1.3.1 Presión de inflado de SRTT y neumático candidato / *SRTT and candidate tyre inflation pressure* [kPa]:

	DI / FL	DD / FR	TI / RL	TD / RR
SRTT 1	679	631	630	646
SRTT 2	682	636	630	646

Candidato / Candidate	Q <sub>t</sub> [kg]	Q <sub>r</sub> [kg]	Condiciones / Conditions	Condición usada / Condition Used	Presión de inflado / Inflation pressure P <sub>t</sub> [kPa]
DI / FL	2.988	3.550	1- Si / If Q <sub>t</sub> < 75% Q <sub>r</sub> entonces / then: <b>P<sub>t</sub> = (0,7) x P<sub>r</sub></b>	2	726
DD / FR	2.858	3.550		2	686
TI / RL	2.828	3.550	2- Si / If Q <sub>t</sub> ≥ 75% Q <sub>r</sub> entonces / then: <b>P<sub>t</sub> = P<sub>r</sub> x (Q<sub>t</sub> / Q<sub>r</sub>)<sup>1,25</sup></b>	2	677
TD / RR	2.878	3.550		2	692

### 1.4. Equipo de ensayo / Test equipment

- 1.4.1 Manómetro / *Manometer* : PCL DAC1C08C
- 1.5.2 Báscula / *Weight scale* : SB-G-070
- 1.4.3 Termómetro / *Thermometer* : G-B029
- 1.4.4 Dispositivo para medir la temperatura de pista : G-B030  
*Track temperature measurement device*
- 1.4.5 Dispositivo para medir la velocidad / : SB-G-109  
*Speed measurement device*
- 1.4.6 Pedal de fuerza / *Force pedal* : SB-G-11

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**2. PISTA DE ENSAYO / TEST TRACK**

- 2.1. Ubicación / Location : Pista ABS / ABS Surface, CATARC Yancheng
- 2.2. Fecha de verificación de la pista de ensayo / Date of check on compliance of the test surface: 3 de julio de 2015 / July 3<sup>rd</sup> 2015
- 2.3. Características de la pista de ensayo / Test track characteristics
  - 2.3.1 Profundidad grano de arena / Sand depth [mm] : 0,98
  - 2.3.2 BPN : 58,0
  - 2.3.3 Profundidad del agua / Water depth [mm] : Entre 0,50 a 1,50 / Between 0.50 and 1.50
- 2.4. Método de ensayo / Test method : Vehículo / Vehicle
- 2.5. Temperatura del aire T<sub>a</sub> [°C] / Air temperature T<sub>a</sub> [°C] : 19,7
- 2.6. Temperatura de la pista de ensayo T<sub>w</sub> [°C] / Wet surface temperature T<sub>w</sub> [°C] :
 

5,0 ≤ T<sub>w</sub> ≤ 35,0

SRTT 1	Candidato / Candidate	SRTT 2
19,5	18,8	18,4

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

Variación durante los ensayos inferior a 10°C /  
Variation during the test less than 10 °C

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

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**3. RESULTADOS DE ENSAYO / TEST RESULTS**

Pasada / Test run	SRTT 1		Neumático candidato / Candidate Tyre		SRTT 2	
	Distancia de frenado / Braking distance [m]	Deceleración media / Average deceleration [m/s <sup>2</sup> ]	Distancia de frenado / Braking distance [m]	Deceleración media / Average deceleration [m/s <sup>2</sup> ]	Distancia de frenado / Braking distance [m]	Deceleración media / Average deceleration [m/s <sup>2</sup> ]
1	23,02	5,36	22,70	5,44	22,57	5,47
2	23,02	5,36	23,10	5,34	22,87	5,40
3	22,55	5,47	22,54	5,48	22,44	5,50
4	-	-	21,72	5,68	-	-
5	-	-	22,39	5,51	-	-
6	-	-	22,80	5,41	-	-

Coeficiente de variación / Coefficient of variation:

SRTT 1	Candidato / Candidate	SRTT 2
1,20	2,11	0,97
< 3%	< 3%	< 3%

 CUMPLE / ~~NO CUMPLE~~  
 FULFILS / ~~NOT FULFILS~~

Pasada / Test run	Velocidad de ensayo / Test Speed [km/h]	Dirección ensayo / Direction of run	SRTT	Neumático candidato / Candidate tyre	Mean fully developed deceleration (mfdd)	Índice de adherencia en mojado / Wet Grip Index G	Fuerza pedal / Pedal force [N]
1	60 - 20	W - E	315/70R22.5	---	5,40 m/s <sup>2</sup>	---	> 600
3	60 - 20	W - E	---	295/80R22.5	5,48 m/s <sup>2</sup>	1,01	> 600
4	60 - 20	W - E	315/70R22.5	---	5,46 m/s <sup>2</sup>	---	> 600

Índice de adherencia en mojado del neumático candidato / Wet grip index of the candidate tyre

$$G = 1,01$$

Índice de adherencia en mojado (caso más desfavorable)

$$\text{Wet grip index (Worst case)} \geq 0,65$$

Índice de adherencia en mojado (cualquier medida)

$$\text{Wet grip index (Any size)} \geq 0,715$$

 CUMPLE / ~~NO CUMPLE~~  
 FULFILS / ~~NOT FULFILS~~

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4. FOTOS DEL NEUMÁTICO DE ENSAYO / TEST TYRE PICTURES



Foto 1 / Picture 1. Flanco / Sidewall

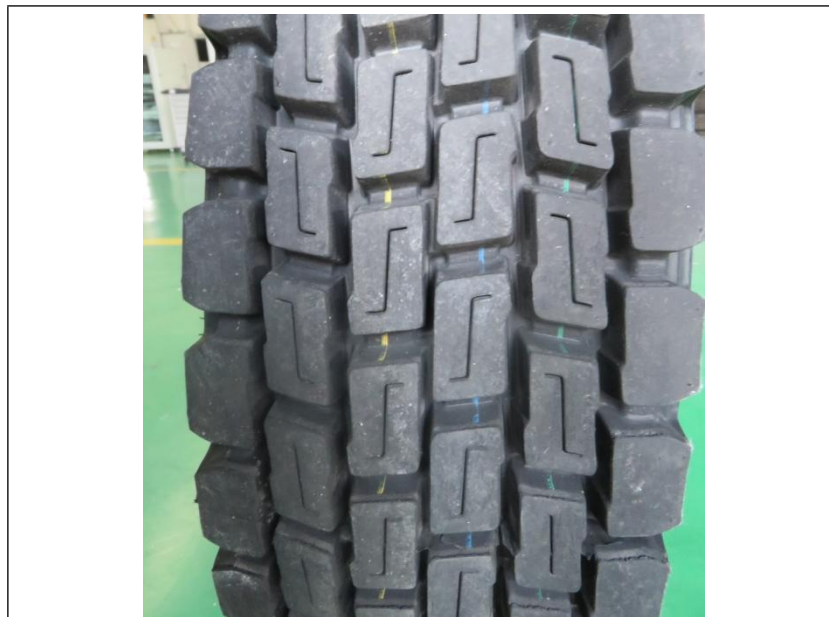


Foto 2 / Picture 2. Banda de rodadura / Tread pattern

Lugar de ensayo / Place of test: Yancheng, China

Fecha de ensayo / Date of test: 08/11/2016

*Zhaocai (Frank) Yu*

**Zhaocai (Frank) Yu**  
INGENIERO DE ENSAYOS  
TEST ENGINEER

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**ANEXO 3 AL INFORME / ANNEX 3 TO THE TEST REPORT**  
**RESISTENCIA A LA RODADURA CN16110065 / ROLLING RESISTANCE CN16110065**

**1. DATOS DE ENSAYO / TEST DATA**

**1.1. Detalles del neumático de ensayo / Test tyre details:**

1.1.1	Solicitante / <i>Applicant</i>	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD (Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
1.1.2	Fabricante / <i>Manufacturer</i>	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD (Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
1.1.3	Marca / <i>Trade Name</i>	: SAFECES
1.1.4	Denominación comercial / <i>Commercial description</i>	: SFC08
1.1.5	Categoría de uso / <i>Category of use</i>	: Normal / <i>Normal</i>
1.1.6	Clase del neumático / <i>Tyre Class</i>	: C3
1.1.7	Medida del neumático / <i>Tyre size</i>	: 295/80R22.5 152/149L
1.1.8	Estructura del neumático / <i>Tyre structure</i>	: Radial
1.1.9	Índice de carga/Masa correspondiente / <i>Load index / Corresponding mass <math>Q_r</math> [kg]</i>	: 152 / 3.550
1.1.10	Presión de inflado / <i>Inflation pressure [kPa]</i>	: 900
1.1.11	Referencia interna de neumático de ensayo / <i>Test tyre internal reference</i>	: 16-499
1.1.12	Llanta de ensayo / <i>Test rim</i>	: 9,00 x 22,5
1.1.13	Referencia interna de la llanta de ensayo / <i>Test rim internal reference</i>	: CTQI-01
1.1.14	Material de la llanta de ensayo / <i>Test rim material</i>	: Acero / <i>Steel</i>

Validate this report with the security code «XMFJ8J7T» at: <https://extranet.idiada.com/hom-cve>  
 Verifique el informe con código de seguridad «XMFJ8J7T» en: <https://extranet.idiada.com/hom-cve>

**IDIADA** CN18070375

**IDIADA**

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**1.2. Datos de la máquina de ensayo / Test machine data:**

1.2.1 Identificación / *Identification* : B1037

1.2.2 Diámetro de tambor / *Drum diameter* [mm] : 1.707,6

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

1.2.3 Superficie / *Surface* : Acero pulido / *Smooth steel*

1.2.4 Rugosidad / *Roughness* [µm] : ≤ 6,3

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

**1.3. Datos del ensayo / Test data**

1.3.1 Método de medida / *Measurement method* : Fuerza / *Force*

1.3.2 Velocidad de ensayo / *Test speed* [km/h] : 80

C3: 80 km/h (K:110 km/h and higher and load symbol > to 121);  
C3: 80 km/h (K:110 km/h y mayor e índices de carga > o igual a 121)

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

1.3.3 Índice de carga /  
Masa correspondiente  $Q_r$ [kg] : 152 / 3.550  
*Load index /*  
*Corresponding mass  $Q_r$ [kg]*

1.3.4 Carga de ensayo / *Test load* [kg / N] : 3.017,5 / 29.591,6

C2/C3 (% of single load): 85 (\*)

(\*) as a percentage of single load per cent of maximum load capacity for single application specified in applicable tyre standards manuals if not marked on tyre

*C2/C3 (% de carga simple)*

(\*) como porcentaje de la carga simple de la capacidad máxima de carga para utilización simple especificada en los manuales de normas para neumáticos aplicables si no figura en el neumático.

~~CUMPLE / NO-CUMPLE~~  
~~FULFILS / NOT-FULFILS~~

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**IDIADA** CN18070375

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1.3.5 Presión de inflado en el ensayo / : 900  
*Test inflation pressure, initial [kPa]*

C2/C3: corresponding to maximum load capacity for single application (\*)

(\*): inflation pressure marked on sidewall, or if not market on sidewall, as specified in applicable tyre standards manuals.

*C2/C3 : que corresponde a la capacidad máxima de carga para utilización simple*

*(\*): presión de inflado marcada en el flanco, o si no se marca en el flanco, como se especifica en los manuales de normas para neumáticos aplicables.*

~~CUMPLE / NO CUMPLE~~  
~~FULFILS / NOT FULFILS~~

1.3.6 Distancia del eje del neumático  
 a la superficie exterior del tambor  
 bajo condiciones de estado estacionario  
 durante ensayo( $r_L$ ) / : 0,498  
*Distance from the tyre axis to the  
 drum outer surface under  
 steady state conditions during test( $r_L$ )*

1.3.7 Distancia del eje del neumático  
 a la superficie exterior del tambor  
 bajo condiciones de estado estacionario  
 durante parásitas ( $r_L$ ) / : 0,528  
*Distance from the tyre axis to the  
 drum outer surface under  
 steady state conditions during skim test( $r_L$ )*

1.3.8 Temperatura ambiente / : 23,44  
*Ambient temperature  $T_{am}$  [°C]*  
 $20.0 \leq T_{am} \leq 30.0$

~~CUMPLE / NO CUMPLE~~  
~~FULFILS / NOT FULFILS~~

1.3.9 Carga en el ensayo de parásitas / : 397,51  
*Skim test load [N]*  
 $C3 \leq 500 \text{ N}$

~~CUMPLE / NO CUMPLE~~  
~~FULFILS / NOT FULFILS~~

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1.3.10	Fuerza en el eje / <i>Spindle force (Ft) [N]</i>	: 117,71
1.3.11	Fuerza en el eje durante parásitas / <i>Spindle force during skim test (Ft) [N]</i>	: 7,86
1.3.12	Pérdida de parásitas / <i>Parasitic loss (Fpl) [N]</i>	: 12,72
1.3.13	Fuerza de resistencia a rodadura / <i>Rolling resistance forcé (Fr) [N]</i>	: 173,69

## 2. RESULTADOS DE ENSAYO / TEST RESULTS

2.1.	Coefficiente de resistencia a la rodadura / <i>Rolling resistance coefficient</i>	
2.1.1	Valor inicial / <i>Initial value</i> [N/kN]	: 5,87
2.1.2	Valor corregido por temperatura / <i>Temperature corrected value</i> [N/kN]	: 5,81
2.1.3	Valor corregido por diámetro de tambor y temperatura / <i>Temperature and drum diameter corrected value</i> [N/kN]	: 5,64

**Coefficiente de resistencia a la rodadura / *Rolling resistance coefficient* Cr [N/kN] = 5,64**

### 2.2. Valor límite calculado / *Calculated limit value*

LI-más bajo (peor caso) / LI-lowest (worst case) : 146

RRC = (RRC-limit value R117 - 0,3 N/KN) - 0,06 x (LI-candidate – LI-lowest) = 5.84 N/kN

### 2.3. Valor límite para neumático de clase C3 (Etapa 2) / Limit value for the Class C3 tyre (Stage 2): 5,84 N/kN

CUMPLE / NO-CUMPLE  
FULFILS / NOT-FULFILS

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#### 4. FOTOS DEL NEUMÁTICO DE ENSAYO / TEST TYRE PICTURES



Foto 1 / Picture 1. Flanco / Sidewall

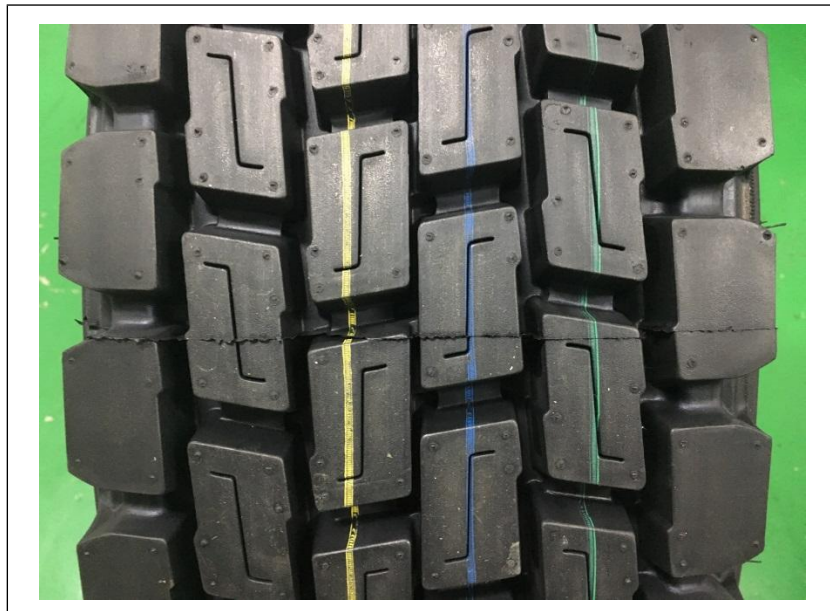


Foto 2 / Picture 2. Banda de rodadura / Tread pattern

Lugar de ensayo / Place of test: Beijing, China

Fecha de ensayo / Date of test: 19/10/2016

俞照才

Zhaocai(frak) Yu  
INGENIERO DE ENSAYOS  
**TEST ENGINEER**

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DOCUMENTACIÓN TÉCNICA /  
*TECHNICAL DOCUMENTATION*

**INFORMATION DOCUMENT NO. E9-117R-02.1145-S2WR2-01**

According to ECE-Regulation

**UNIFORM PROVISIONS CONCERNING THE APPROVAL OF TYRES WITH REGARD TO  
ROLLING SOUND EMISSIONS AND/OR TO ADHENSION ON WET SURFACES AND/OR TO  
ROLLING RESISTANCE ACCORDING TO ECE-R117.02 SERIES OF ADMENDMENTS**

**ECE Regulation 117**

Tread pattern:

LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

This model information document consists of page 1~8

Date: 07/07/2018  
Extension: 01

**GENERAL INFORMATION**

## 1 GENERAL

- 1.1 Manufacturer's name and address : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.2 Name and address of manufacturing plant(s) : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province (CHINA)
- 1.3 Brand name(s), Trade description(s) or Trade mark(s) to be used for particular tyre type-approval requested : Brand name: JILUTONG; SAFCESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; PANJI; YUWANG; GAOLICHENG; **HUNTERROAD**  
Trade description: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**
- 1.4 Type of tyre : LH688
- 2 TYRE
- 2.1 Tyre classification (class C1, C2, C3) : ~~Class C1 / Class C2 /~~ Class C3
- 2.2 Tyre structure : ~~diagonal / bias belted /~~ radial
- 2.3 For class C1 tyre, state whether
- 2.3.1.1 Reinforced (or extra load) in case of approval with regarding to rolling sound mission level : see the attached list of Tyre sizes
- 2.3.1.2 Speed category symbol "Q" or below (not including "H") or "R" and above (including "H") in case of snow tyres for approval with regarding to adhesion on wet surfaces : see the attached list of Tyre sizes
- 2.4 For class C2, C3 tyre, state whether
- 2.4.1 Traction tyre : Yes / ~~No~~
- 2.5. Category of use (normal, snow, special) : normal / ~~snow / special~~
- 2.5.1 Snow tyre for use in severe snow conditions : ~~Yes /~~ No
- 2.6. Details of the major features, with respect to the effects on the performance (i.e. rolling sound emission level, adhesion on wet surfaces, rolling resistance and snow grip) of the tyres, including the tread pattern, included in the designated range of tyre sizes. This may be by means of descriptions supplemented by technical data, drawings, photographs and Computer Tomography (CT), and must be sufficient to allow the Type Approval Authority or technical service to determine whether any subsequent changes to the major features will adversely affect the tyre performance : Refer to drawing of the tread pattern

Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

- 2.7. Drawings or photographs of the tyre sidewall, showing the information given in paragraph 3.1.8. above and the approval marking referred to in paragraph 4. : See attachment drawings of the tyre sidewall

**List of attachment:**

List of Tyre designation sizes	page 3
Drawing of the tread pattern (for test representative tyres)	page 4-5
The drawings of the tyre sidewall	page 6-7

**List of Tyre designation sizes**

Brand name or Trade mark: JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; PANJI; YUWANG; GAOLICHENG; **HUNTERROAD**

Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

No.	Tyre size	Load	Speed	Traction or not	With or without "M+S" mark	Approval Number
1	11R22.5	146/143	L	Traction	Without	E9-00.1005
2	12R22.5	152/149	L	Traction	Without	E9-00.1006
3	295/80R22.5	152/149	L	Traction	Without	E9-00.1008
4	315/80R22.5	154/151	L	Traction	Without	E9-00.1009
5	315/80R22.5	156/153	L	Traction	Without	E9-00.1067

The worst case for Rolling sound emission test:

TEST SIZE : 315/80R22.5 156/153L

Because of : Largest section width (if the same section width: lowest aspect ratio; largest rim size)

The testing tire designation for Wet adhesion level test:

TEST SIZE : 295/80R22.5 152/149L

Because of : Any tyre size that meets ten percent(10%) or more above the minimum required wet grip value can represent the whole tyre size range of the tread pattern type  
The limited value of wet grip index for the test tire is : 0.715

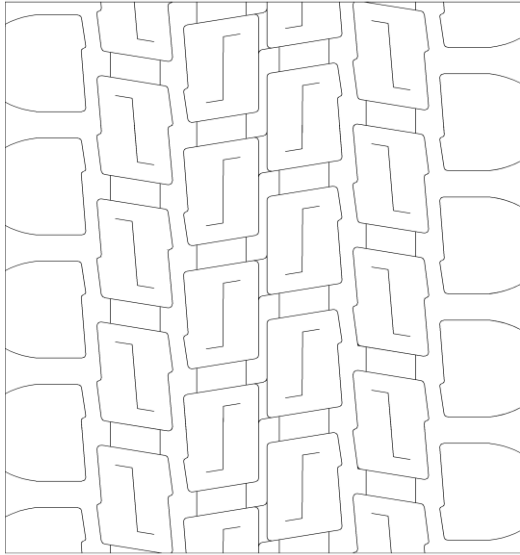
The worst case for Rolling resistance test:

TEST SIZE : 295/80R22.5 152/149L

Because of : The RRC value of tested candidate tyre other than the worst case tyre shall be equal or less than new calculated limit value. New limit value for the tested tyre is: 5.84 N/kN

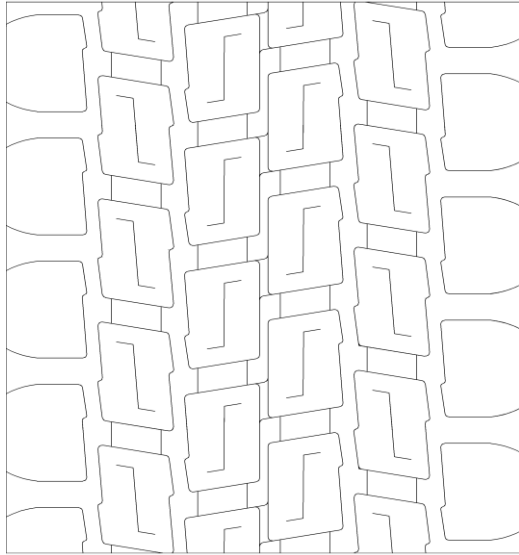
Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

Drawing of the tread pattern (for measured tyre)

Manufacturer name	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD
Pattern name	LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; <b>H801</b>
Tyre Size	315/80R22.5 156/153L
Market	EU
Pitch number	52
Pitch ratio(Max/Min)	1.0000
Groove area ratio [%]	68%
Width: main grooves [mm]	7.5
Depth: center groove [mm]	22.0
Depth: shoulder groove [mm]	22.0
Detail drawing of tread pattern	

Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

Drawing of the tread pattern (for measured tyre)

Manufacturer name	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO..LTD
Pattern name	LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; <b>H801</b>
Tyre Size	295/80R22.5 152/149L
Market	EU
Pitch number	51
Pitch ratio(Max/Min)	1.0000
Groove area ratio [%]	68.5%
Width: main grooves [mm]	4.0
Depth: center groove [mm]	21.0
Depth: shoulder groove [mm]	21.0
Detail drawing of tread pattern	



Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

The sample of drawings or photographs of the tyre sidewall:

15	TRACTION
14	PLIES: SIDEWALL 1 STEEL; TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 4000kg (8820 LBS) AT 850 kpa (123 PSD) COLD MAX LOAD DUAL 3650kg (8050 LBS) AT 850 kpa (123 PSD) COLD
13	STANDARD RIM 9.00
12	3C F0003B1
11	DATE CODE XXXX
10	Ⓢ xxxxxx
9	315/80R22.5 156/153L
8	DOT XXXX XXXX
7	TUBE LESS
6	ALL STEEL RADIAL TIRE
5	TREAD PATTERNS
4	SAFETY WARNING:
3	REGROOVABLE
2	MADE IN CHINA
1	BRAND NAME

LH688 , SFC08 , FM08 , KTR67  
TG108 , FL08 , OD626 , AK97  
CL688 , PJ688 , YW688 , **H801**

315/80R22.5 20PR	JILUTONG, SAFECESS, FIREMAX KPATOS, TRANSKING, FIRELION DDYKING, RUNTEK, CROWN, PANJI YUWANG, GADLICHENG, HUNTERROAD	LH688, SFC08, FM08 KTR67, TG108, FL08 OD626, AK97, CL688, PJ688 YW688, LH688, <b>H801</b>	156/153	L	T/L	1076	312	229.0	23.0
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD						

Tread pattern: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; PJ688; YW688; **H801**

The sample of drawings or photographs of the tyre sidewall:

15	TRACTION
14	PLIES: SIDEWALL 1 STEEL; TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 3550kg (7830 LBS) AT 900 kpa (130 PSD) COLD MAX LOAD DUAL 3250 kg (7165 LBS) AT 900 kpa (130 PSD) COLD
13	STANDARD RIM 9.00
12	3C F000381
11	DATE CODE XXXX
10	Ⓢ XXXXXX
9	295/80R22.5 152/149L
8	DOT XXXX XXXX
7	TUBE LESS
6	ALL STEEL RADIAL TIRE
5	TREAD PATTERNS
4	SAFETY WARNING:
3	REGROOVABLE
2	MADE IN CHINA
1	BRAND NAME

295/80R22.5 18PR	JILUTONG, SAFECESS, FIREMAX KPATOS, TRANSKING, FIRELION DDYKING, RUNTEK, CROWN, PANJI YUWANG, GAOLICHENG, HUNTERROAD	LH688, SFC08, FM08 KTR67, TG108, FL08 DD626, AK97, CL688, PJ688 YW688, LH688, H801	152/149	L	T/L	1044	298	220	22
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD						

**THE NETHERLANDS  
(N E D E R L A N D)****COMMUNICATION**Concerning <sup>(1)</sup>:

- ~~approval granted~~
- approval extended
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~



of a type of pneumatic tyre for motor vehicles pursuant to Regulation number 54.

**Approval number: E4\*54R00/23\*31681\*05**

1. Manufacturer's name and address : SHANDONG HAOHUA TIRE CO.,LTD  
Dadi Road West, Xinhai Road North, Houzhen  
Industry Zone, 262700 Shouguang City,  
Shandong Province, China(PRC)
2. Tyre type designation<sup>(2)</sup>
  - 2.1. Brand-name(s) or trade mark(s) : LANVIGATOR; APLUS; HAOHUA;  
COMPASAL; WINDFORCE; POWERTRAC;  
ROYALBLACK; TRANSTONE;  
GRANDSTONE; ORNET; XCEED;  
GOLDSHIELD; FRONWAY; MATRAX;  
CRATOS; JUMBO; MAGNA
  - 2.2. Trade description(s)/ Commercial  
name(s) : S201; CPS21; WH1020; POWER CONTACT;  
RBK11; TT201; GT178; OR201; XD201;  
HD201; MTS21; CRS600+; SS618; T705;  
CPT75; WT3020; CROSS STAR; RBK75;  
TT619; GT758; OR618eco; XD618eco; HD758;  
SS310; T706; CPT76; WT3000; CROSS TRAC;  
RBK76; TT613; GT768; OR815eco; XD815eco;  
HD768; MTT76; CRT888; SS300; RS201;  
RT705; RT706; T605; CPT65; RT605; WT3030;  
MHSL-2; MTC-2; MTR-2
3. If applicable, name and address of the  
manufacturer's representative : not applicable
4. Summarized description



**Approval number: E4\*54R00/23\*31681\*05**

- 4.1. Size of tyre : 385/65R22.5
- 4.2. Category of use : ~~normal~~/snow/~~special~~ <sup>(1)</sup>
- 4.3. Structure : ~~diagonal(bias-ply)~~/radial <sup>(1)</sup>
- 4.4. Tyre class : ~~E2~~/C3 <sup>(1)</sup>
- 4.5. Speed category symbol:
- 4.5.1. Nominal : L
- 4.5.2. additional (if applicable) : ---
- 4.6. Load-capacity indices:
- 4.6.1. Corresponding to nominal speed:  
- single : 160  
- twinned (dual) : ---
- 4.6.2. Corresponding to additional speed:  
- single : ---  
- twinned (dual) : ---
5. Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity : TÜV Rheinland Kraftfahrt GmbH  
Technologiezentrum Verkehrssicherheit  
Typprüfstelle Fahrzeuge/Fahrzeugteile  
Am Grauen Stein  
D-51105 Köln (Poll)
6. Date of report issued by that service : September 29, 2019
7. Number of report issued by that service : 86-R54-4155/19-00
8. Reason(s) of extension (if applicable) : Addition of trade mark and trade descriptions;  
Change of technical service
9. Any remarks : ---
10. Place : Zoetermeer
11. Date : 15 October 2019
12. Signature :   

13. Annexed to this communication is a list of documents in the approval file deposited at the administrative service having delivered the approval and which can be obtained upon request.  
- Application form relating to ECE approval for a pneumatic tyre pursuant to Regulation number 54.  
- The drawing of the tyre's sidewalls, tread and dimensioned cross-section.  
- The test report as mentioned in item 7.

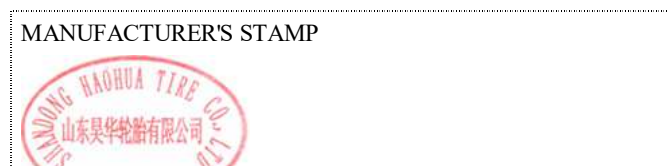
(1) Strike out what does not apply.

(2) A list of Brand name(s)/trademark(s) or Trade description(s)/ Commercial name(s) may be annexed to this communication

**APPLICATION FOR APPROVAL OF EXTENSION A TYPE OF PNEUMATIC TYRE ACCORDING TO ECE  
REGULATION No. 54, 00 SERIES OF AMENDMENTS**

- |        |  |   |  |
|--------|--|---|--|
| 1.     | The Brand name(s) or trademark(s) <sup>(2)</sup>   | : | LANVIGATOR; APLUS; HAOHUA; COMPASAL;<br>WINDFORCE; POWERTRAC; ROYALBLACK;<br>TRANSTONE; GRANDSTONE; ORNET; XCEED;<br>GOLDSHIELD; FRONWAY; MATRAX; CRATOS; JUMBO;<br><u>MAGNA</u>   |
| 2.     | Trade description(s) or Commercial name(s) <sup>(2)</sup>  | : | S201; CPS21; WH1020; POWER CONTACT; RBK11; TT201;<br>GT178; OR201; XD201; HD201; MTS21; CRS600+; SS618;<br>T705; WT3020; CROSS STAR; RBK75; TT619;<br>GT758; OR618eco; XD618eco; HD758; SS310; T706; CPT76;<br>WT3000; CROSS TRAC; RBK76; TT613; GT768; OR815eco;<br>XD815eco; HD768; MTT76; CRT888; SS300; RS201; RT705;<br>RT706; T605; CPT65; RT605; WT3030; <u>MHSL-2</u> ; <u>MTC-2</u> ;<br><u>MTR-2</u> |
| 3.     | Manufacturer's name and address  | : | SHANDONG HAOHUA TIRE CO., LTD<br>Dadi West Road, Xinhai Road North, Houzhen Industry<br>Zone 262700, Shouguang City, Shandong Province, China<br>(PRC)   |
| 4.     | If applicable, name and address of<br>manufacturer's representative                                    | : | not applicable   |
| 5.     | Summarised description,  |   |  |
| 5.1.   | Tyre size designation  | : | 385/65R22.5  |
| 5.2.   | Category of use  | : | <del>normal</del> /special/snow <sup>(1)</sup>   |
| 5.3.   | Structure  | : | <del>diagonal (bias ply)</del> /radial <sup>(1)</sup>  |
| 5.4.   | Speed category symbol  |   |  |
| 5.4.1. | Nominal  | : | L  |
| 5.4.2. | Additional (if applicable)   | : | not applicable   |
| 5.5.   | Load capacity indices  |   |  |
| 5.5.1. | corresponding to nominal speed   | : | single: 160, twinned (dual): ---   |
| 5.5.2. | corresponding to additional speed  | : | not applicable   |
| 6.     | Overall dimensions   | : | Calculated / <del>Annex 5</del>  |
|        | overall section width  | : | 378  |
|        | outer diameter   | : | 1067   |
| 7.     | Factor 'x'   | : | 0.75   |
| 8.     | Ply-rating number for diagonal (bias ply) tyres  | : | 20   |
| 9.     | Rims on which the tyre can be mounted  | : | 11.75  |
| 10.    | Measuring rim and test rim   | : | see attached test report   |
| 11.    | Tyre class   | : | <del>C2</del> /C3 <sup>(1)</sup>   |
| 12.    | State whether the tyre is  | : | tube less / <del>tube type</del> <sup>(1)</sup>  |
| 13.    | Traction tyre  | : | <del>Yes</del> / no (see the tread pattern detail in drawing) <sup>(1)</sup>   |
| 14.    | State if special use tyre  | : | <del>Yes</del> / no <sup>(1)</sup> (with M+S inscription)  |
|        | Professional Off-Road  | : | <del>Yes</del> / no <sup>(1)</sup>   |
|        | Tread depth / Void to fill ratio   | : | n.a.   |
| 15.    | The inflation pressure for the dimension measurement and<br>for the load/speed endurance test pressure | : | See attached test report   |
| 16.    | Submitted for approval on (date)   | : | Sep.24, 2019   |

We herewith declare that we have not applied and will not apply for approval with another Contracting Party of the ECE for the same type of product.



Signature :

*[Handwritten signature]*

Name:

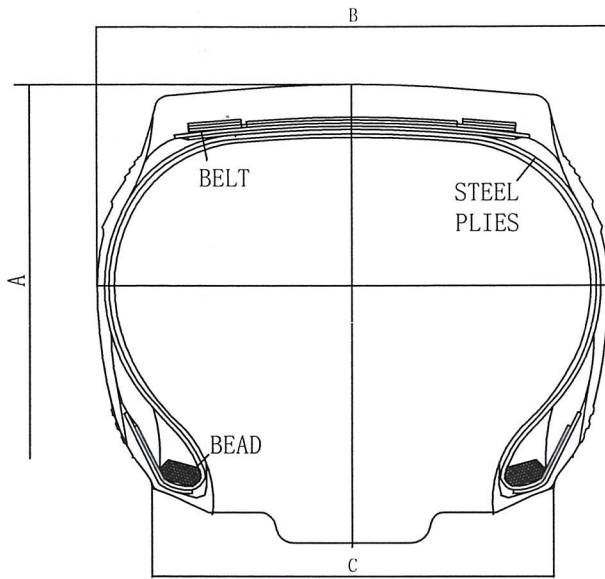


THIS APPLICATION IS ACCOMPANIED BY:

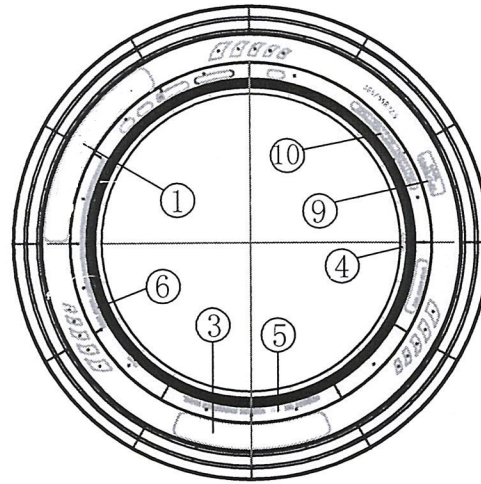
- A drawing of the tyre's side wall, tread and dimensioned cross section.
- The test report.

(1) Strike out what does not apply.

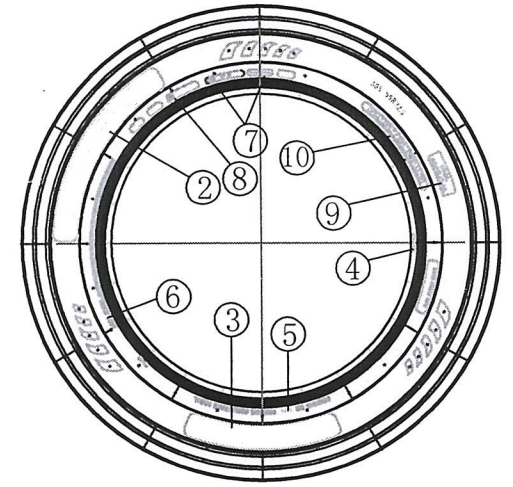
(2) Modified points are underlined for extension.



PROJECTION



TOP SIDEWALL

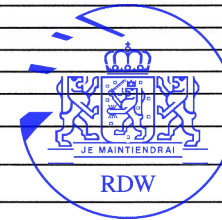


BOTTOM SIDEWALL


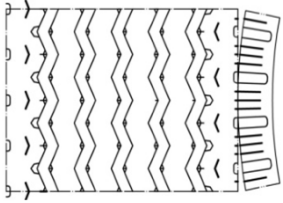
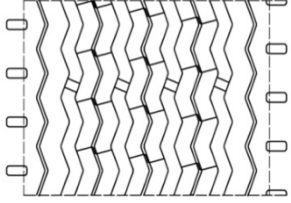

TREAD PATTERN  
REFER TO ATTACHMENT NO. 1

Draft Date  
2015-04-10

10	TREAD: 1 STEEL + 3 STEEL SIDEWALL:1 STEEL							
	MAX. LOAD SINGLE 4500 kg (9920 LBS) AT 900 kPa (131 PSI) COLD							
9	160 L 20PR/LR L M+S							
8	ECE APPROVAL MARK AND No.							
7	DOT 1P** **** (**** -date code)							
6	SAFETY WARNING							
5	STANDARD RIM 11.75 TUBELESS REGROOVABLE RADIAL							
4	MADE IN CHINA							
3	TREAD PATTERN							
2	REFER TO ATTACHMENT NO. 1							
1	REFER TO ATTACHMENT NO. 1							
	385/65R22.5-20PR	160	L	TUBELESS	1072	389	298	15.5
	TYRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	A (mm)	B (mm)	C (mm)	SKID DEPTH (mm)
DRAWN BY	[Signature]		CHECKED BY	SHANDONG HAOHUA TIRE Co. LTD				
	[Signature]		APPROVED BY	[Signature]				



Attachment No. 1

Tyre Size: 385/65R22.5 160L		
Approval No: E4- 54R-0031681		
Trade Mark		Tread Pattern
LANVIGATOR; APLUS; HAOHUA; COMPASAL; WINDFORCE; POWERTRAC; ROYALBLACK; TRANSTONE; GRANDSTONE; ORNET; XCEED; GOLDSHIELD; FRONWAY; MATRAX; CRATOS; JUMBO; <u>MAGNA</u>	S201; CPS21; WH1020; POWER CONTACT; RBK11; TT201; GT178; OR201; XD201; HD201; MTS21; CRS600+; SS618; RS201; <u>MHSL-2</u>	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; WINDFORCE; POWERTRAC; ROYALBLACK; TRANSTONE; GRANDSTONE; ORNET; XCEED; GOLDSHIELD; FRONWAY; JUMBO; <u>MAGNA</u>	T705; CPT75; WT3020; CROSS STAR; RBK75; TT619; GT758; OR618eco; XD618eco; HD758; SS310; RT705; <u>MTR-2</u>	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; WINDFORCE; POWERTRAC; ROYALBLACK; TRANSTONE; GRANDSTONE; ORNET; XCEED; GOLDSHIELD; FRONWAY; MATRAX; CRATOS; JUMBO; <u>MAGNA</u>	T706; CPT76; WT3000; CROSS TRAC; RBK76; TT613; GT768; OR815eco; XD815eco; HD768; MTT76; CRT888; SS300; RT706; <u>MTC-2</u>	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; ROYALBLACK; WINDFORCE	T605; CPT65; RT605; WT3030	



Type : 385/65R22.5  
Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

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## TEST REPORT

according to UN Regulation

Uniform provisions concerning the approval of pneumatic tyres  
for commercial vehicles and their trailers

UN Regulation No. 54

including all amendments until  
Amend.00, Suppl. 23

---

Approval Status

UN approval : E4-54R-0031681 Ext.04

---

Structure of the Test Report

Item No.

0. General information
1. Tested vehicle(s) / object(s)
2. Test record
3. List of appendices
4. Statement of conformity



---

The Test Report shall be reproduced and published in full by the client only. It shall however be reproduced partially with the written permission of the Testing Laboratory only.



Type : 385/65R22.5  
 Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

**0. General Information**

- 0.1. Make (trade name of the manufacturer) : SHANDONG HAOHUA TIRE CO.,LTD
- 0.2. Type : 385/65R22.5
- 0.3. Category of vehicle : Not applicable
- 0.4. Name and address of the manufacturer : SHANDONG HAOHUA TIRE CO.,LTD  
 Dadi Road West, Xinhai Road North, Houzhen Industry Zone, 262700 Shouguang City, Shandong Province, China(PRC)
- 0.5. No. of the information folder : Not applicable  
 -Date of issue : ---  
 -Date of last change : Sep. 24, 2019

**1. Tested vehicle(s)/ object(s)**

- 1.1. Description
  - 1.1.1. ~~Vehicle/~~ object
    - Commercial description : Not applicable
    - Type(s) ~~variant(s)/version(s)~~ : 385/65R22.5
    - Identification number : See Appendix 1
  - 1.1.2. Condition of ~~vehicle(s)/~~Object(s) : New ~~used/~~pretested
- 1.2. Worst case selection : The determination of the worst case was done according to internal procedures of the Technical Service (QMA 1.301.005, section 6.2.2.2.).
- 1.3. Remarks : Not applicable



Type : 385/65R22.5  
 Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

## 2. Test record

- 2.1. Equipment for measuring and testing : The test facilities / measurement equipment used were in compliance with the test requirements
- 2.1.1. Specifications for the test site : Not applicable
- 2.1.2. Subcontracting : Not applicable
- 2.2. Test results : See Appendix 1  
 Numbering according to Paragraph 6. and 7. of the UN Regulation No. 54
- 2.2.1. Test results referring to measurements : Pass / ~~Fail~~
- 2.2.2. Attributive tests : Not applicable
- 2.2.3. Alternative test provisions : Not applicable
- Remarks concerning extension : ~~The type has been tested according to the modification(s) mentioned in appendix 0.~~  
~~The new parts meet the requirements of the regulation.~~  
 An actual practical test of the type was not necessary. The results of the previous test(s) are still valid.
- 2.3. Additional information : The results of the test refer exclusively to the object(s) mentioned under point 1. of this report.
- Test site : SHANDONG HAOHUA TIRE CO.,LTD  
 Dadi Road West, Xinhai Road North, Houzhen Industry Zone, 262700 Shouguang City, Shandong Province, China(PRC)
- Test date : Feb. 09, 2015
- 2.4. Remarks : Not applicable



Type : 385/65R22.5  
Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

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**3. List of Appendices**

Appendix 0 : List of modifications  
Appendix 1 : Test minutes

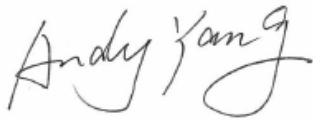
**4. Statement of conformity**

The in point 0.5. mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

With regard to the required level of performance to be achieved, the tested items were representative for the type to be approved (see point 1.2).

The mentioned test results refer to the ~~vehicle(s)~~ object(s) described under point 1.1 of this report.

Engineering centre Shanghai / September 29, 2019  
AY



Andy Yang  
Expert Technical Service



Type : 385/65R22.5  
Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

---

List of modifications

Appendix 0

Correction of : ---

Modification of : ---

Addition of : trade mark and trade descriptions  
change of technical service

Deletion of : ---



Type : 385/65R22.5  
 Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

## Test minutes

## Appendix 1

- 1. Test data**
- 1.1 Object markings**
- 1.1.1 Trade name or mark : LANVIGATOR
- 1.1.2 Tyre type designation : S201
- 1.1.3 Plies of Tread / Sidewall : 1 STEEL + 3 STEEL / 1 STEEL
- 1.1.4 Tyre size designation : 385/65R22.5
- 1.1.5 Category of use : Snow  
 Indication of category of use : word“M+S”
- 1.1.6 Structure : Radial  
 Indication / symbol of structure : Word "RADIAL", letter "R" in front of rim diameter marking
- 1.1.7 Speed category : Nominal: L Supplementary: ---
- 1.1.8 Load-Capacity Indices(L.I.)  
 corresponding to nominal speed : Single: 160 Twinned: ---  
 corresponding to supplementary speed : Single: --- Twinned: ---
- 1.1.9 Index of inflation pressure for testing : 900 kPa
- 1.1.10 Ply-rating number : 20 PR
- 1.1.11 Word in case of without inner tube : Word "TUBELESS"
- 1.1.12 Word in case of tyre can be regrooved : Yes
- 1.1.13 Inscription in case of Free Rolling Tyre or Traction Tyre : n.a.
- 1.1.14 Date of manufacture : 0215
- 1.2. Dimension measurement according to Annex 6** : Refer to report No. CS054-A0-2014-03649 corresponding to type approval number E4-54R-0031681 Ext.04
- 1.3. Load/speed performance test according to Annex 7** : Refer to report No. CS054-A0-2014-03649 corresponding to type approval number E4-54R-0031681 Ext.04
- 2. Remarks** : ---



THE NETHERLANDS  
(N E D E R L A N D)

## COMMUNICATION

Concerning <sup>(1)</sup>:

- ~~approval granted~~
- approval extended
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

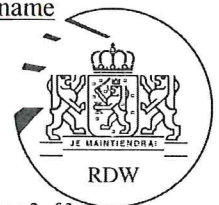
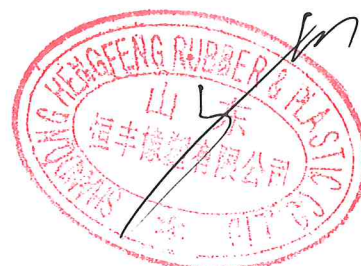
of a type of tyre with regard to 'rolling sound emission level' and/or 'adhesion performance on wet surfaces' and/or 'rolling resistance' pursuant to Regulation number 117.

**Approval number: E4-117R-021728-S2WR2****Extension number: 09**

1. Manufacturer's name and address : Shandong Hengfeng Rubber & Plastic Co.,Ltd  
Economic Development Zone, Dawang Town,  
Guangrao County, Dongying City, Shandong  
Province, 257335, P.R.China
2. If applicable, name and address of  
manufacturer's representative : not applicable
3. 'Tyre class' and 'category of use' of  
the type of tyre : ~~Class C1/ Class C2/ Class C3~~  
: ~~normal/snow/special~~
- 3.1. Snow tyre for use in severe snow  
conditions : ~~yes/no~~ <sup>(2)</sup>
- 3.2. Traction tyre : ~~yes/no~~ <sup>(2)</sup>
4. Tyre type designation :



- 4.1 Brand name(s)/trademark(s) of the type of tyre : ZEETEX; CHANGFENG; SUNFULL; RUIFULAI; FESITE; Green Dragon; UNIX; FULLWAY; DAEWOO; OTANI; HIFLY; MIGEER; ONYX; Agate; MIRAGE; SINOTYRE; OVATION; TORQUE; GALLANT; TEMPO; CONVOY; BRIC; LEXANI; FUJITIRE; CRYSTAL TUFFSTONE; BRISTOL; NISON; SINGA; ECOVISION; TOWNHALL; CACHLAND; PETROMAX; SATOYA; NORMAKS; Satoya; ETERNITY (brand names)
- 4.2 Trade description(s)/Commercial name(s) of the type of tyre : LZ-01+; HF702; X-F01+; TB901; DWA02; OL700+; HH301; HM301; HO301; MG702; ST011; VI-702; TQ702; GT702; TM702; CV702; JA-702; LX702; FJ01; CS716; TT801; BT08; NS501; TF801; TH702; PT501; SU-022; CH-702; GAM702; NU702; CH8207; GAM207; ETY351 (Tread pattern names)
5. Technical service and, where appropriate, test laboratory approved for purposes of approval or of verification of conformity tests : TÜV NORD Mobilität GmbH & Co. KG  
Institut für Fahrzeugtechnik und Mobilität  
Adlerstr. 7  
; D-45307 Essen
6. Performance(s) approved : sound level at (~~stage 1~~/stage 2)<sup>(1)(2)</sup>, wet adhesion level, rolling resistance level (~~stage 1~~/stage 2)<sup>(1)(2)</sup>
- 6.1. Sound level of the representative tyre size, see Paragraph 2.5. of Regulation number 117, as per item 1.6. of the test report in the appendix 1 to Annex 3: 73 dB(A) at reference speed of ~~70/80~~ km/h<sup>(1)</sup>.
- 6.2. Wet adhesion level of the representative tyre size, see Paragraph 2.5. of Regulation number 117, as per item 1.7. of the test report in the appendix to Annex 5: 0.97 (G) using the vehicle ~~or trailer~~ method<sup>(1)</sup>.
- 6.3. Rolling resistance level of the representative tyre size, see paragraph 2.5. of Regulation number 117, as per item 1.8. of the test report in the appendix to Annex 6: 6.47 N/kN<sup>(2)</sup>.
- 6.4. Snow grip level of the representative tyre size, see paragraph 2.5. of Regulation No. 117, as per item 1.10. of the test report in the appendix<sup>(2)</sup> to Annex 7: --- (Snow grip index) using the ~~brake on snow method~~<sup>(2)</sup>, ~~spin traction method~~<sup>(2)</sup> or acceleration method<sup>(2)</sup>.
7. Number of report issued by that service : CS117-J0-2017-01619
8. Date of report issued by that service : August 01, 2017
9. Reason(s) of extension (if applicable) : Addition of brand names and tread pattern name
10. Any remarks : ---



Approval number: E4-117R-021728-S2WR2

Extension number: 09

11. Place : Zoetermeer  
12. Date : 16-AUG-2017  
13. Signature :



R.F.R. Clement

14. Annexed to this communication are:

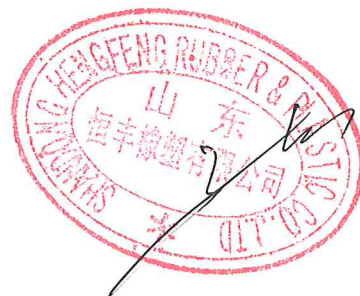
- 14.1. A list of documents in the approval file deposited at the Administration services having delivered the approval and which can be obtained upon request <sup>(3)</sup>.
- 14.2. A list of tread-pattern designations: Specify for each trademark or brand name and trade description the list of tyre size designations, adding in case of Class C1 tyres the mark 'reinforced' (or 'extra load') or the speed symbol of snow tyres or in the case of tyres of Classes C2 and C3, the mark 'traction', if so required by paragraph 3.1. of this Regulation.

---

<sup>(1)</sup> Strike out what does not apply.

<sup>(2)</sup> Appendix 2 for C1 and C2 tyres  
Appendix 3 for C3 tyres.

<sup>(3)</sup> In the case of category of use 'snow' a test report according to appendix of Annex 7 shall be submitted.





**RELATING TO ECE TYPE-APPROVAL FOR A TYPE OF TYRE WITH REGARD TO ROLLING SOUND EMISSIONS AND TO ADHESION ON WET SURFACES AND ROLLING RESISTANCE (ECE Regulation No. 117. 02)**

**1. GENERAL**

- 1.1 The performance characteristics to be assed for the tyre type : rolling sound level / adhesion performance level on wet surfaces / rolling resistance
- 1.2 Manufacturer's name : Shandong Hengfeng Rubber & Plastic Co., Ltd.
- 1.3 Name and address of applicant : Shandong Hengfeng Rubber & Plast Co., Ltd.  
Dawang Town, Guangrao County, Shandong Provice, 257335, P.R.China
- 1.4 Address(es) of manufacturing plant(s) : the same as the applicant  
Brand name(s), Trade description(s) or Trade mark(s) to be used for particular tyre type-approval requested  
ZEETEX;CHANGFENG;SUNFULL;RUIFULAI;FESITE; Green Dragon;UNIX;FULLWAY;DAEWOO;OTANI; HIFLY;MIGEER;ONYX;Agate;MIRAGE;SINOTYRE; OVATION;TORQUE;GALLANT;TEMPO;CONVOY; BRIC;LEXANI;FUJITIRE;CRYSTAL TUFFSTONE; BRISTOL;NISON;SINGA ;ECOVISION; TOWNHALL; CACHLAND; PETROMAX; SATOYA;NORMAKS; Satoya; ETERNITY (Brade names)  
LZ-01+;HF702;X-F01+;TB901;DWA02;OL700+; HH301; HM301;HO301; MG702;ST011;VI-702;TQ702;GT702; TM702;CV702;JA-702;LX702;FJ01;CS716; TT801;BT08; NS501;TF801;TH702;PT501;SU-022;CH-702;GAM702; NU702 ;CH8207;GAM207;ETY351(tread pattern names);

**2 TYRE**

- 2.1 Tyre classification (class C1, C2, C3) : Class C1 / Class C2 / Class C3
- 2.2 Section width range for class C1 tyres : see attached list of tyre size
- 2.3 Tyre structure : ~~diagonal / bias-belted~~ / radial
- 2.3.1 For Class C1 tyres, state weather :
- 2.3.1.1 Reinforced (or extra load) in case of approval with regarding to rolling sound mission level : not applicable
- 2.3.1.2 Speed category symbol “Q” or below (not including “H”) or “R” and above (including “H”)in case of snow tyres for approval with regarding to adhesion on wet surfaces : not applicable
- 2.3.2 For Class C2 and C3 tyres, state whether:
- 2.3.2.1 M+S marked in case of approval with regard to rolling sound emission level at stage 1 : M+S
- 2.3.2.2 Traction in case of approval with regard to rolling sound emission level at stage 2. : not applicable
- 2.4 Category of use (normal, snow, special) : ~~normal~~ / snow / special
- 2.5 A list of tyre designations covered by this application : see attached list of tyre size
- 2.6 Details of major features, with respect to the effects on tyre performance (i.e. rolling emission level or adhesion on wet surfaces, respectively) of the tread pat-tern(s) to be used on the designated range of tyre sizes. This may be by drawing, photograph or description but must be sufficient to allow the type approval authority or technical service to determine whether any subsequent changes to the major features will adversely affect the tyre performance : see attached drawing of tread pattern



# Shandong Hengfeng Rubber & Plastic Co., Ltd.

Information folder No.: HH301-09

Page 2 of 8

MANUFACTURER'S STAMP



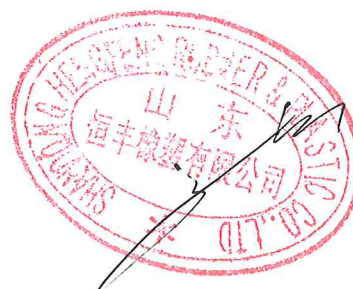
THIS APPLICATION IS ACCOMPANIED BY:

- List of tyre size
- Drawing of tread pattern
- The test report

Signature:

朱立新

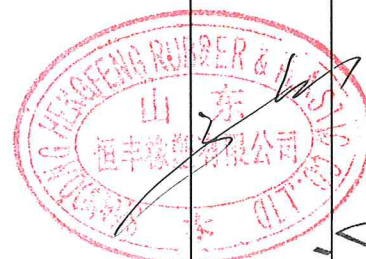
Name: ...Zhu lixin.....



## List of tyre size

- Brand name(s) or Trade mark(s)** : ZEETEX;CHANGFENG;SUNFULL;RUIFULAI; FESITE;Green Dragon;UNIX;FULLWAY; DAEWOO;OTANI;HIFLY;MIGEER;ONYX;Agate; MIRAGE;SINOTYRE;OVATION;TORQUE;GAL LANT;TEMPO;CONVOY;BRIC;LEXANI;FUJITI RE;CRYSTAL TUFFSTONE;BRISTOL;NISON; SINGA ;ECOVISION;TOWNHALL; CACHLAND; PETROMAX; SATOYA ; NORMAKS; Satoya; ETERNITY
- Tread pattern** : LZ-01+;HF702;X-F01+;TB901;DWA02;OL700+; HH301;HM301;HO301; MG702;ST011;VI-702; TQ702;GT702;TM702;CV702;JA-702;LX702; FJ01;CS716; TT801;BT08;NS501; TF801;TH702; PT501;SU-022; CH-702;GAM702;NU702; CH8207;GAM207;ETY351

Tyre size	Approval No.	Limit value for stage2 dB(A)	Wet grip index(G)	Rolling resistance maximum values for stage2 (N/kN)	Indication	Marking
9.00R20 144/142K	E4-54R-0020253	73	0.65	6.5	Reinforced / standard	M+S
10.00R20 149/146J	E4-54R-0020254					
11.00R20 152/149J	E4-54R-0019463					
12.00R20 154/149K	E4-54R-0019464					
12.00R24 158/155K	E4-54R-0020256					
8.25R16 128/124M	E4-54R-0020258					
12.00R24 160/157K	E4-54R-0023970					
10.00R20 149/146K	E4-54R-0024105					
11.00R20 152/149K	E4-54R-0024106					
11R22.5 148/145M	E4-54R-0021557					
12R22.5 152/149M	E4-54R-0021558					
13R22.5 156/152L(154/151M)	E4-54R-0022865					
6.50R16 113/110 K	E4-54R-0032388					
7.00R16 118/114 M	E4-54R-0025515					
7.50R16 122/118 M	E4-54R-0025516					
8.25R20 139/137 L	E4-54R-0025517					
12.00R20 154/151K	E4-54R-0033424					
12.00R20 156/153K	E4-54R-0033425					
11R24.5 149/146L	E4-54R-0026421					



Test size for tyre noise:

**Test Size** : 13R22.5 156/152L(154/151M)  
**Because of** : Largest section width  
Smallest aspect ratio  
~~Largest rim diameter~~

Test size for wet grip:

**Test Size** : 13R22.5 156/152L(154/151M)  
**Because of** : ~~Smallest width~~  
Largest aspect ratio  
~~Smallest rim diameter~~  
**Calculated limit value** :  $0.65 \times 1.1 = 0.715$

Test size for rolling resistance:


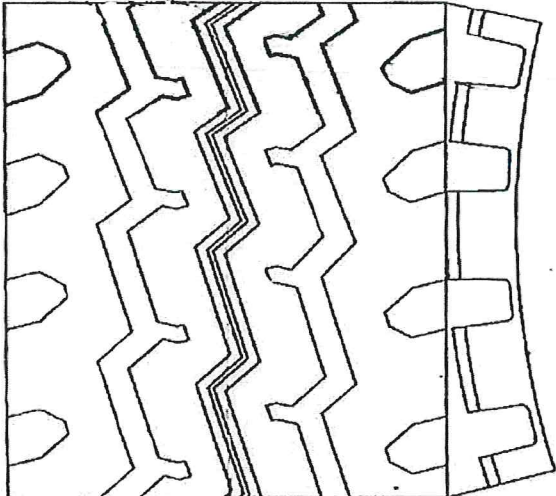
**Test Size** : 6.50R16LT 113/110K  
**Because of** : Smallest Load Index  
**Calculated limit value** : 6.5

Test size for snow performance:

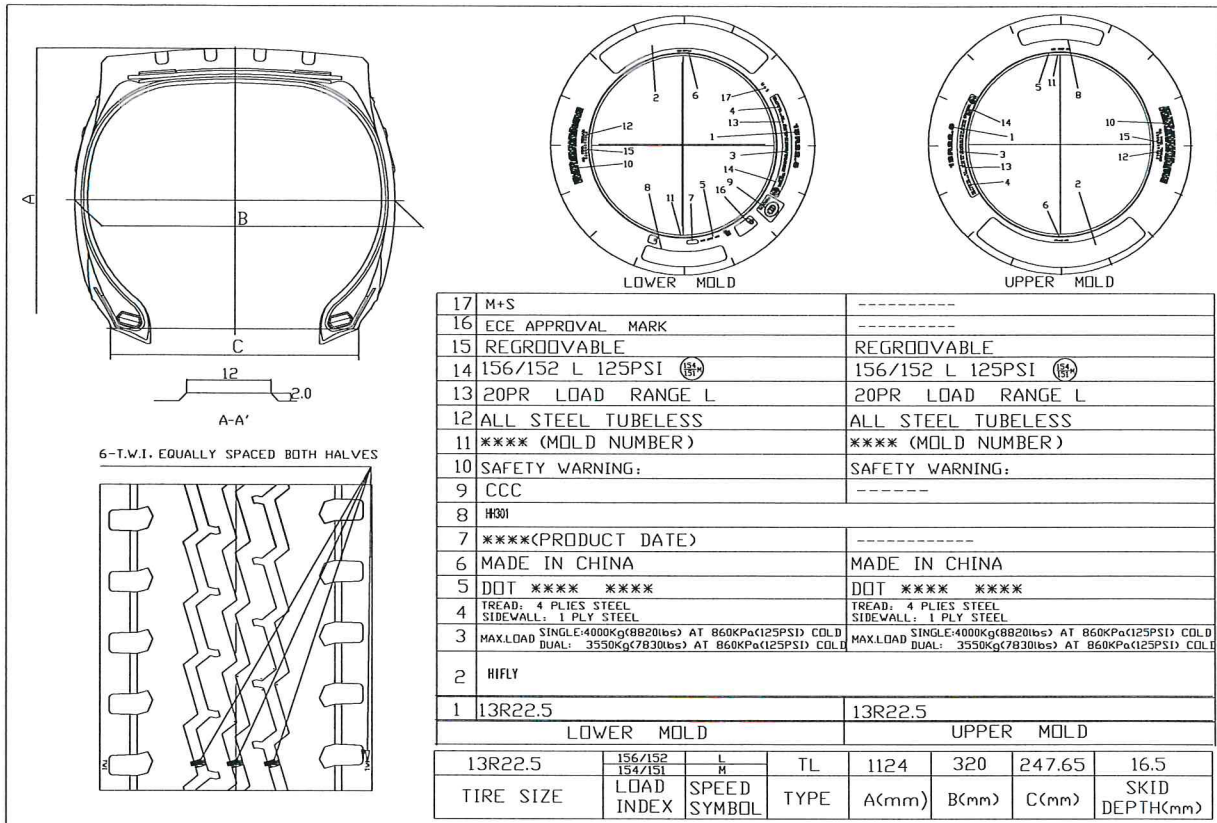
**Test Size** : ----  
**Because of** : smallest section width  
**Calculated limit value** :



## Drawing of the tread pattern (for measured tyre)

Manufacturer name Pattern name Tyre Size Market	Shandong Hengfeng Rubber & Plastic Co., Ltd. HH301 13R22.5 156/152 L(154/151 M) EU/US M+S/M+S  /TRACTION
Pitch number Pitch ratio	47 1.00/1.00
Void volume [ % ] Width:main grooves [mm] Depth:center groove [mm] Depth:shoulder groove [mm]	34 14/14 16.5 16.5
Pattern	





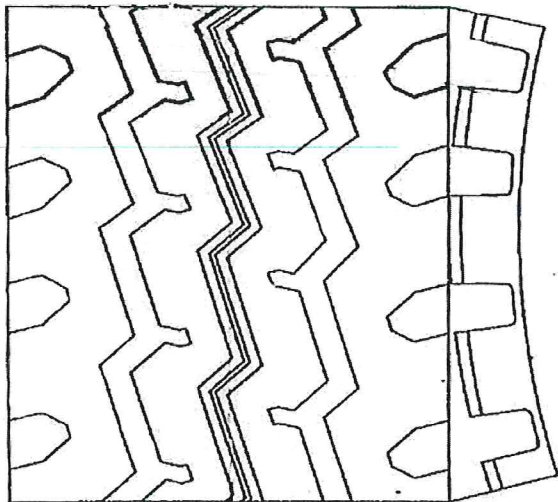
Approve by: Zhulixin

Check by: Limin

Draft by: Libo



## Drawing of the tread pattern (for measured tyre)

Manufacturer name Pattern name Tyre Size Market	Shandong Hengfeng Rubber & Plastic Co., Ltd. HF702 6.50R16LT 113/110K EU/US M+S/M+S  /TRACTION
Pitch number Pitch ratio	52 1.00/1.00
Void volume [ % ] Width:main grooves [mm] Depth:center groove [mm] Depth:shoulder groove [mm]	35 8.9/8.9 10.5 11.0
Pattern	



6-T. W.I. EQUALLY SPACED BOTH HALVES

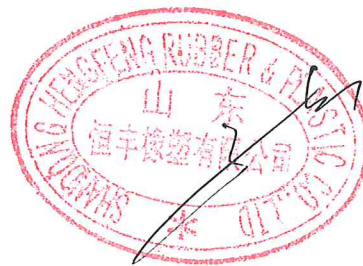
LOWER MOLD

UPPER MOLD

17	M+S	
16	ECE APPROVAL MARK	
15	REGROOVABLE , RADIAL	
14	113/110 K	
13	14PR LOAD RANGE G	
12	ALL STEEL TUBE TYPE	
11	**** (MOLD NUMBER)	
10	SAFETY WARNING:	
9	CCC	
8	#F02	
7	**** (DATE CODE)	
6	MADE IN CHINA	
5	DOT **** *	
4	TREAD: 4 PLYS STEEL SIDEWALL: 1 PLY STEEL	
3	MAX LOAD SINGLE: 1150kg ( 2535 LBS ) AT 770 kpa ( 110PSI ) COLD MAX LOAD DUAL: 1020kg ( 2270 LBS ) AT 770 kpa ( 110PSI ) COLD	
2	Agate	
1	6.50R16LT	

LOWER MOLD				UPPER MOLD			
6.50R16LT	113/110	K	TT	742	176	114.3	10.5
TIRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH (mm)

Approve by	Zhulixin	Check by	Limin	Draft by	Libo
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Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
 Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

## Test Report

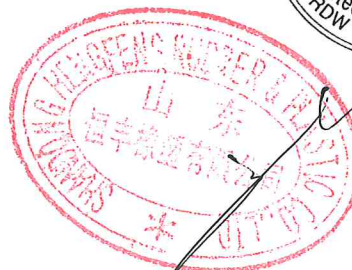
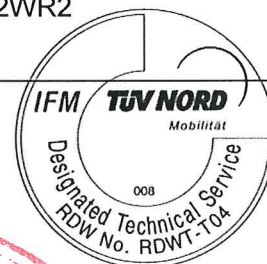
Agreement concerning the adoption of uniform technical prescriptions for the wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions

### Uniform Provisions Concerning The Approval Of Types With Regard To Rolling Sound Emissions And To Adhesion On Wet Surfaces And Rolling Resistance And Snow Performance

**ECE-R 117**  
 as last amended

Revision 4  
 Supplement 9 to the 02 series of amendments

Approval status	
ECE	Number of approval
	E4-117R-021728-S2WR2



Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

## 0. Tire noise, wet grip test and rolling resistance test description

**0.1. Test facilities** : The test facilities are in compliance with the requirements of the regulation

### 0.2. Noise Measurement

**0.2.1.measurement** : The test course satisfies the requirements of ISO 10844:1994 and the test surface is dry and clean for all measurement.

Measurement equipment corresponds to class 1 of IEC 60651.

The microphones are arranged at a distance of  $7.5m \pm 0.05m$  to the centreline at a height of  $1.20m \pm 0.02m$  above the measurement surface. A suitable windscreen may be fitted to the microphone provided that account is taken of its effect on the sensitivity and directional characteristics of the microphone.

The microphones were calibrated prior to commencement.

Wind speed at the microphone height  $\leq 5m/s$ .

Ambient noise is at least 10 dB (A) less than the measured tyre-road sound emission.

Prior to actual measurement, the tyres were run in for about 100 Km on public roads, to remove mold-release agents, mold discharges etc. from the tyres.

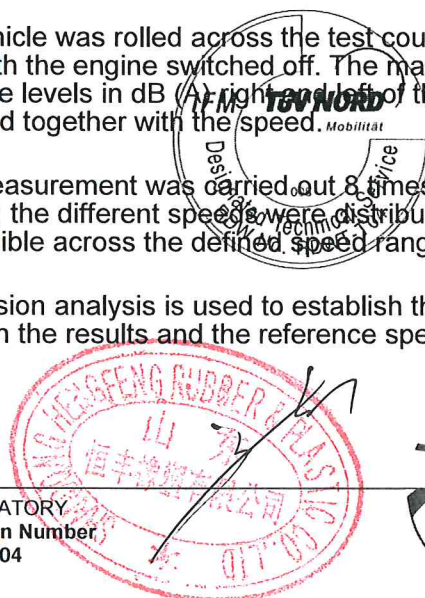
The tyres fitted to the test rotate in the same direction as when they were run-in. Prior to testing tyres are warmed up by running under test conditions.

### 0.2.2.Test results

: The vehicle was rolled across the test course in neutral gear with the engine switched off. The maximum sound pressure levels in dB (A) right and left of the vehicle were recorded together with the speed.

This measurement was carried out 8 times at different speeds; the different speeds were distributed as evenly as possible across the defined speed range.

Regression analysis is used to establish the relationship between the results and the reference speed.



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

### 0.3. Wet grip test Measurement

#### 0.3.1.Measurement

The test track are in compliance with the requirements of the regulation paragraph 1.1 annex 5

Standard reference test tyre (SRTT) in accordance with the American Society for Testing and Materials (ASTM) standard E 1136 - 93 (re-approved 1998).

Wetting conditions according paragraph 1.2 annex 5

The water depth shall be between 0.5 and 1.5 mm.

The wetted surface temperature shall be between 5 °C and 35 °C and shall not vary during the test by more than 10 °C.

Trailer or special purpose tyre evaluation vehicle method according the regulation paragraph 2.1 annex 5.

Standard vehicle method

according the regulation paragraph 2.2 annex 5.

#### 0.3.2.Test results

The type of tyre complies with the requirements of the regulation paragraph 6.2.1.

### 0.4. Rolling resistance test Measurement

#### 0.4.1.Measurement

Test equipment tolerances in compliance with the requirements of Appendix 1, Annex 6, Regulation 117 and EC/1235/2011.

Test rim,

For passenger car tyre rims (C1 tyres), the test rim width shall be the same as the measuring rim determined in ISO 4000-1: 2010 clause 6.2.2.

For truck and bus tyres (C2 and C3), the rim width shall be the same as the measuring rim determined ISO 4209-1:2001 clause 5.1.3.

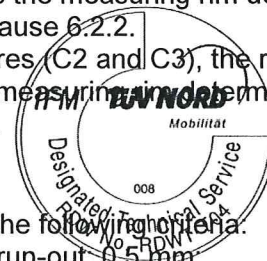
Run-out,

Run-out shall meet the following criteria.

- (a) Maximum radial run-out: 0.5 mm,
- (b) Maximum lateral run-out: 0.5 mm.

Load application

The direction of tyre loading application shall be kept normal to the test.



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
 Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

surface and shall pass through the wheel centre within  
 (a) 1 mrad for the force and deceleration methods;  
 (b) 5 mrad for the torque and power methods.

**Tyre alignment**

**Camber angle**

The plane of the wheel shall be perpendicular to the test surface within 2 mrad for all methods.

**Slip angle**

The plane of the tyre shall be parallel to the direction of the test surface motion within 1 mrad for all methods.

**Control accuracy**

**(a) Tyre loading:**

(i) For  $LI \leq 121 \pm 20$  N or  $\pm 0.5$  per cent, whichever is greater;

(ii) For  $LI > 121 \pm 45$  N or  $\pm 0.5$  per cent whichever is greater;

**(b) Cold inflation pressure:  $\pm 3$  kPa;**

**(c) Surface speed:**

(i)  $\pm 0.2$  km/h for the power, torque and deceleration methods;

(ii)  $\pm 0.5$  km/h for the force method;

**(d) Time:  $\pm 0.02$  s.**

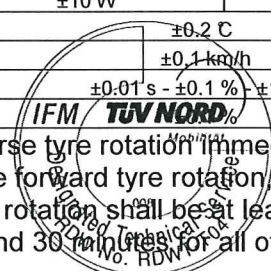
**Instrumentation accuracy**

Parameter	Load Index $\leq 121$	Load Index $> 121$
Tyre load	$\pm 10$ N or $\pm 0.5$ % <sup>(a)</sup>	$\pm 30$ N or $\pm 0.5$ % <sup>(a)</sup>
Inflation pressure	$\pm 1$ kPa	$\pm 1.5$ kPa
Spindle force	$\pm 0.5$ N or $\pm 0.5$ % <sup>(a)</sup>	$\pm 1.0$ N or $\pm 0.5$ % <sup>(a)</sup>
Torque input	$\pm 0.5$ Nm or $\pm 0.5$ % <sup>(a)</sup>	$\pm 1.0$ Nm or $\pm 0.5$ %
Distance	$\pm 1$ mm	$\pm 1$ mm
Electrical power	$\pm 10$ W	$\pm 20$ W
Temperature	$\pm 0.2$ °C	
Surface speed	$\pm 0.1$ km/h	
Time	$\pm 0.01$ s - $\pm 0.1$ % - $\pm 10$ s <sup>(b)</sup>	
Angular velocity	IFM TUV NORD	

In cases where reverse tyre rotation immediately follows the completion of the forward tyre rotation, a warm-up time for reverse tyre rotation shall be at least 10 minutes for Class C1 tyres and 30 minutes for all other tyre types.

**Test surface roughness**

The roughness, measured laterally, of the smooth steel drum surface shall have a maximum centreline average height value of 6.3 mm.



Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

## 1. General information

- 1.1. Name and address of applicant : Shandong Hengfeng Rubber & Plastic Co.,Ltd  
Economic Development Zone, Dawang Town,  
Guangrao County, Dongying City, Shandong  
Province, 257335, P.R.China
- 1.2. Manufacturer and Brand Name(s) or Trade(s) description : ZEETEX; CHANGFENG; SUNFULL; RUIFULAI;  
FESITE; Green Dragon; UNIX; FULLWAY;  
DAEWOO; OTANI; HIFLY; MIGEER; ONYX;  
Agate; MIRAGE; SINOTYRE; OVATION;  
TORQUE; GALLANT; TEMPO; CONVOY; BRIC;  
LEXANI; FUJITIRE; CRYSTAL TUFFSTONE;  
BRISTOL; NISON; SINGA; ECOVISION;  
TOWNHALL; CACHLAND; PETROMAX;  
SATOYA; NORMAKS; Satoya; ETERNITY  
(Brand names)  
LZ-01+; HF702; X-F01+; TB901; DWA02;  
OL700+; HH301; HM301; HO301; MG702;  
ST011; VI-702; TQ702; GT702; TM702; CV702;  
JA-702; LX702; FJ01; CS716; TT801; BT08;  
NS501; TF801; TH702; PT501; SU-022; CH-702;  
GAM702; NU702; CH8207; GAM207; ETY351  
(Tread pattern names)
- 1.3. Tyre Class : ~~Class C1/Class C2~~ / Class C3
- 1.4. Category of use : ~~normal~~/snow/special
- 1.4.1. Snow tyre for use in severe snow conditions : ~~yes~~/no
- 1.4.2. Traction tyre : ~~yes~~/no
- 1.5. Worst case : refer to RDW announcement 2017-1
- 1.6. Sound level according to paras. 4.4. and 4.5. of Annex 3 at reference speed of 70/80 km/h : 13R22.5 156/152L(154/151M) 73 dB(A)  
limit value for list of tyre size : 73 dB(A) (stage 1/stage 2)
- 1.7. Wet adhesion level of the representative tyre size, see paragraph 2.5. of Regulation : 13R22.5 156/152L(154/151M) 0.97(G)

**Test Report**  
**No. : CS117-J0-2017-01619**  
ECE Regulation No.117



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

No. 117, as per item 7. of the test report in the Appendix to Annex 5: using vehicle-~~or~~ trailer method

limit value for list of tyre size : 0.65 x 1.1 (G)

1.8. Rolling resistance coefficient of the representative tyre size, see paragraph 2.5. of Regulation No. 117, according to paragraph 6.2 and 6.3 of Annex 6 using force /torque / deceleration / power method : 6.50R16LT 113/110K 6.47 N/kN

limit value for list of tyre size : 6.5 N/kN (stage 1/stage 2)

1.9. Test date  
rolling sound emission : July 27, 2015  
wet grip : July 27, 2015  
rolling resistance : July 02, 2015

1.10. Snow grip index of the representative tyre size, see paragraph 2.5. of Regulation No. 117, according to paragraph 6.4 of Annex 7 using ~~brake on snow method~~<sup>(2)</sup>, spin traction method<sup>(2)</sup> or acceleration method<sup>(2)</sup> : not applicable

limit value : not applicable  
test date : not applicable

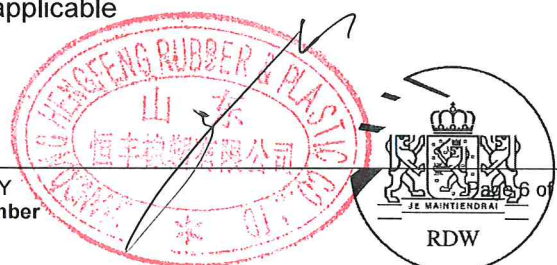
1.11. Final conclusion for all testing : Pass /Fail

Sound level : Refer to CS117-F0-2015-02884 corresponding to Type approval No: E4-117R-021728-S2WR2 Ext 05

Wet adhesion level : Refer to CS117-F0-2015-02884 corresponding to Type approval No: E4-117R-021728-S2WR2 Ext 05

Rolling resistance coefficient : Refer to CS117-F0-2015-02884 corresponding to Type approval No: E4-117R-021728-S2WR2 Ext 05

Snow grip level : not applicable



**Test Report**  
**No. : CS117-J0-2017-01619**  
ECE Regulation No.117



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

1.12. Comments (if any) : Addition of brand names and tread pattern name unnecessary for repetition test. The previous test data of other test sizes are still valid.

**2. Remark concerning tested object(s)**

All versions of the type as stated in the information document are covered with the tested version(s) and test object(s) respectively.

**3. Appendices**

0 List of modifications

Information document no. : HH301-09

**4. Statement of conformity**

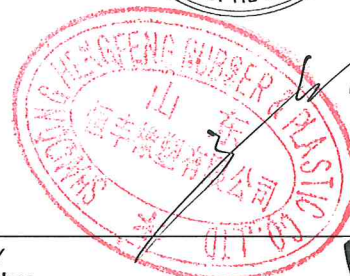
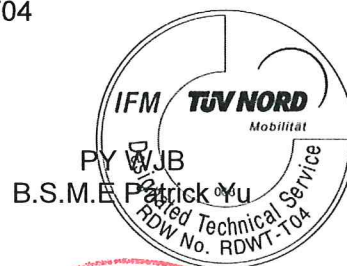
The type described in this test report and the appendices attached are in compliance with the Test Specification mentioned above.  
The samples /test vehicles used, were representative in terms of the type to be approved.  
The Test Report comprises pages 1 to 8.  
The Test Report shall be reproduced and published in full only and by the client only. It shall be reproduced partially with the written permission of the Test Laboratory only.

**TEST LABORATORY**

TÜV NORD Mobilität GmbH & Co. KG  
IFM - Institut für Fahrzeugtechnik und Mobilität,  
Adlerstr. 7, D-45307 Essen

Designated Technical Service  
RDW No. RDWT-T04

Shanghai, August 01, 2017



**Test Report**  
**No. : CS117-J0-2017-01619**  
ECE Regulation No.117



Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

List of modifications

Appendix 0

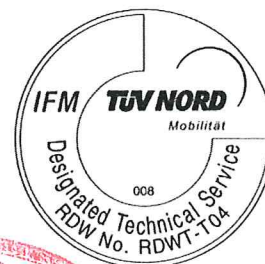
More details for application of : Date : August 01, 2017

Correction of : -

Modification of : -

Addition of : brand names and tread pattern name unnecessary for repetition test.

Deletion of : -





Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
 Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

## Test Report

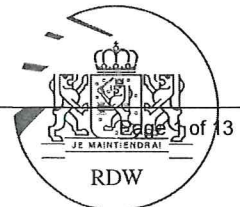
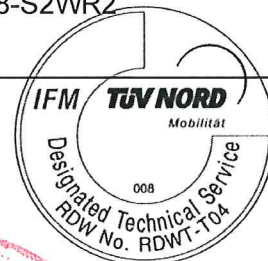
Agreement concerning the adoption of uniform technical prescriptions for the wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions

### Uniform Provisions Concerning The Approval Of Types With Regard To Rolling Sound Emissions And To Adhesion On Wet Surfaces And Rolling Resistance And Snow Performance

**ECE-R 117**  
 as last amended

Revision 3-Amendment 2  
 Supplement 6 to the 02 series of amendments

Approval status	
ECE	Number of approval
	E4-117R-021728-S2WR2



Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

**0. Tire noise, wet grip test and rolling resistance test description**

**0.1. Test facilities** : The test facilities are in compliance with the requirements of the regulation

**0.2. Noise Measurement**

**0.2.1.measurement** : The test course satisfies the requirements of ISO 10844:1994 and the test surface is dry and clean for all measurement.

Measurement equipment corresponds to class 1 of IEC 60651.

The microphones are arranged at a distance of  $7.5m \pm 0.05m$  to the centreline at a height of  $1.20m \pm 0.02m$  above the measurement surface. A suitable windscreen may be fitted to the microphone provided that account is taken of its effect on the sensitivity and directional characteristics of the microphone.

The microphones were calibrated prior to commencement.

Wind speed at the microphone height  $\leq 5m/s$ .

Ambient noise is at least 10 dB (A) less than the measured tyre-road sound emission.

Prior to actual measurement, the tyres were run in for about 100 Km on public roads, to remove mold-release agents, mold discharges etc. from the tyres.

The tyres fitted to the test rotate in the same direction as when they were run-in. Prior to testing tyres are warmed up by running under test conditions.

**0.2.2. Test results**

: The vehicle was rolled across the test course in neutral gear with the engine switched off. The maximum sound pressure levels in dB (A) right and left of the vehicle were recorded together with the speed.

This measurement was carried out 8 times at different speeds; the different speeds were distributed as evenly as possible across the defined speed range.

Regression analysis is used to establish the relationship between the results and the reference speed.



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

### 0.3. Wet grip test Measurement

#### 0.3.1. Measurement

The test track are in compliance with the requirements of the regulation paragraph 1.1 annex 5

Standard reference test tyre (SRTT) in accordance with the American Society for Testing and Materials (ASTM) standard E 1136 - 93 (re-approved 1998).

Wetting conditions according paragraph 1.2 annex 5

The water depth shall be between 0.5 and 1.5 mm.

The wetted surface temperature shall be between 5 °C and 35 °C and shall not vary during the test by more than 10 °C.

Trailer or special purpose tyre evaluation vehicle method according the regulation paragraph 2.1 annex 5.

Standard vehicle method

according the regulation paragraph 2.2 annex 5.

#### 0.3.2. Test results

The type of tyre complies with the requirements of the regulation paragraph 6.2.1.

### 0.4. Rolling resistance test Measurement

#### 0.4.1. Measurement

Test equipment tolerances in compliance with the requirements of Appendix 1, Annex 6, Regulation 117 and EC/1235/2011.

Test rim,

For passenger car tyre rims (C1 tyres), the test rim width shall be the same as the measuring rim determined in ISO 4000-1: 2010 clause 6.2.2.

For truck and bus tyres (C2 and C3), the rim width shall be the same as the measuring rim determined ISO 4209-1:2001 clause 5.1.3.

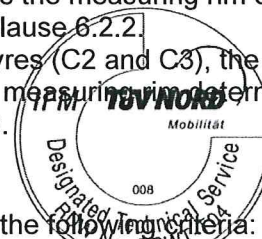
Run-out,

Run-out shall meet the following criteria:

- (a) Maximum radial run-out: 0.5 mm,
- (b) Maximum lateral run-out: 0.5 mm.

Load application

The direction of tyre loading application shall be kept normal to the test.



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
 Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

surface and shall pass through the wheel centre within  
 (a) 1 mrad for the force and deceleration methods;  
 (b) 5 mrad for the torque and power methods.

**Tyre alignment**

**Camber angle**

The plane of the wheel shall be perpendicular to the test surface within 2 mrad for all methods.

**Slip angle**

The plane of the tyre shall be parallel to the direction of the test surface motion within 1 mrad for all methods.

**Control accuracy**

**(a) Tyre loading:**

(i) For LI ≤ 121 ±20 N or ±0.5 per cent, whichever is greater;

(ii) For LI > 121 ±45 N or ±0.5 per cent whichever is greater;

(b) Cold inflation pressure: ±3 kPa;

**(c) Surface speed:**

(i) ±0.2 km/h for the power, torque and deceleration methods;

(ii) ±0.5 km/h for the force method;

(d) Time: ±0.02 s.

**Instrumentation accuracy**

Parameter	Load Index ≤ 121	Load Index > 121
Tyre load	±10 N or ±0.5 % <sup>(1)</sup>	±30 N or ±0.5 % <sup>(1)</sup>
Inflation pressure	±1 kPa	±1.5 kPa
Spindle force	±0.5 N or ±0.5 % <sup>(1)</sup>	±1.0 N or ±0.5 % <sup>(1)</sup>
Torque input	±0.5 Nm or ±0.5 % <sup>(1)</sup>	±1.0 Nm or ±0.5 % <sup>(1)</sup>
Distance	±1 mm	±1 mm
Electrical power	±10 W	±20 W
Temperature	±0.2 °C	
Surface speed	±0.1 km/h	
Time	±0.01 s	
Angular velocity	±0.1 %	



In cases where reverse tyre rotation immediately follows the completion of the forward tyre rotation, a warm-up time for reverse tyre rotation shall be at least 10 minutes for Class C1 tyres and 30 minutes for all other tyre types.

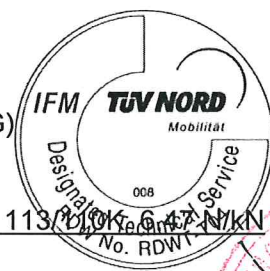
**Test surface roughness**

The roughness, measured laterally, of the smooth steel drum surface shall have a maximum centreline average height value of 6.3 mm.

Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
 Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

**1. General information**

- 1.1. Name and address of applicant : Shandong Hengfeng Rubber & Plastic Co.,Ltd  
 Economic Development Zone, Dawang Town,  
 Guangrao County, Dongying City, Shandong  
 Province, 257335, P.R.China
  
- 1.2. Manufacturer and Brand Name(s) or Trade(s) description : ZEETEX; CHANGFENG; SUNFULL; RUIFULAI;  
 FESITE; Green Dragon; UNIX; FULLWAY;  
 DAEWOO; OTANI; HIFLY; MIGEER; ONYX;  
 Agate; MIRAGE; SINOTYRE; OVATION;  
 TORQUE; GALLANT; TEMPO; CONVOY; BRIC;  
 LEXANI; FUJITIRE; CRYSTAL; TUFFSTONE;  
 BRISTOL; NISON; SINGA; ECOVISION;  
TOWNHALL; CACHLAND; PETROMAX  
 (Trademarks)  
 LZ-01+; HF702; X-F01+; TB901; DWA02;  
 OL700+; HH301; HM301; H0301; MG702;  
 ST011; VI-702; TQ702; GT702; TM702; CV702;  
 JA-702; LX702; FJ01; CS716; TT801; BT08;  
 NS501; TF801; TH702; PT501 (Tread patterns)
  
- 1.3. Tyre Class : ~~Class C1/Class C2/~~ Class C3
  
- 1.4. Category of use : normal/snow/special
  
- 1.5. Worst case : refer to RDW announcement 2015-1
  
- 1.6. Sound level according to paras. 4.4. and 4.5. of Annex 3 at reference speed of 70/80 km/h : 13R22.5 156/152L(154/151M) 73 dB(A)  
 limit value for list of tyre size : 73 dB(A)(~~stage 1/stage 2~~)
  
- 1.7. Wet adhesion level of the representative tyre size, see paragraph 2.5. of Regulation No. 117, as per item 7. of the test report in the Appendix to Annex 5: using vehicle/trailer method : 13R22.5 156/152L(154/151M) 0.97(G)  
 limit value for list of tyre size : 0.65×1.1 (G)
  
- 1.8. Rolling resistance coefficient of the representative tyre size, see paragraph 2.5. of Regulation No. 117, according to paragraph 6.2 and 6.3 of Annex 6 using force / torque / deceleration / power method : 6.50R16LT 113/101/6.47 N/kN  
 limit value for list of tyre size : 6.5 N/kN (stage 1/stage 2)



**Test Report**  
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ECE Regulation No.117



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

- 1.9. Test date  
rolling sound emission : July 27, 2015  
wet grip : July 27, 2015  
rolling resistance : July 02, 2015
- 1.10. Final conclusion for all testing : **Pass /-Fail**
- 1.11. Comments (if any) : The the previous type approval number E4-117R-011728-S upgrade to amendment 02 of this regulation (addition of rolling resistance test and wet grip test, retest the tyre noise and change category of use from normal to snow) Details in item 5-7

**2. Remark concerning tested object(s)**

All versions of the type as stated in the information document are covered with the tested version(s) and test object(s) respectively.

**3. Appendices**

0 List of modifications

Information document no. : HH301-05

**4. Statement of conformity**

The type described in this test report and the appendices attached are in compliance with the Test Specification mentioned above.

The samples /~~test vehicles~~ used, were representative in terms of the type to be approved.

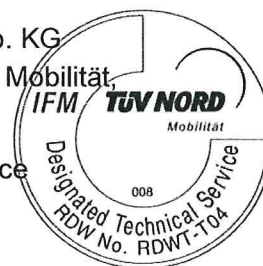
The Test Report comprises pages 1 to 13.

The Test Report shall be reproduced and published in full only and by the client only. It shall be reproduced partially with the written permission of the Test Laboratory only.

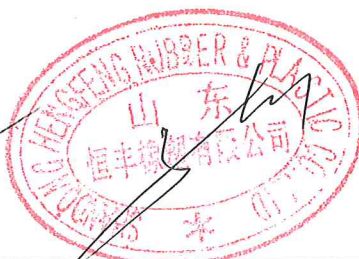
**TEST LABORATORY**

TÜV NORD Mobilität GmbH & Co. KG  
IFM - Institut für Fahrzeugtechnik und Mobilität  
Adlerstr. 7, 45307 Essen

Designated Technical Service  
RDW No. RDWT-T04



Shanghai, September 06, 2015



RZ PY  
B.S.M.E.R. Zhu



**Test Report**  
**No. : CS117-F0-2015-02884**  
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Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

List of modifications

Appendix 0

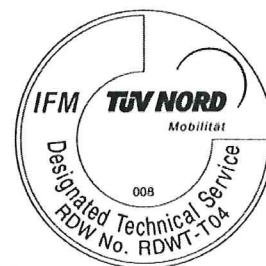
More details for application of : Date : September 06, 2015

Correction of : -

Modification of : -

Addition of : rolling resistance test and wet grip test, retest the tyre noise and change category of use from normal to snow

Deletion of : -



Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

## 5. Regard to rolling sound emission level

### 5.1. Test data Test tyre type 1

5.1.1. Date of test : July 27, 2015

#### 5.1.2. Test vehicle

Manufacturer : DFM  
Vehicle name : Tianlong  
VIN or Year : LGAG3DV28D2809664  
Transmission : ---  
ENG displacement : 11120 cc  
Test vehicle wheelbase : 3750 mm(<3500mm for C1)

5.1.3. Location of test track : Dingyuan Gound for Highway and Traffic  
Fangang Town, Dingyuan District ,  
233210, Anhui,  
P.R. China

5.1.3.1. Date of track certification to ISO : March 08, 2006  
10844:1994

5.1.3.2. Issued by : China Department of Transportation Highway Inspection  
Center

5.1.3.3. Method of certification : Residual void content, Sound absorption coefficient,  
Texture depth

#### 5.1.4. Tyre test details

5.1.4.1. Tyre size designation : 13R22.5 156/152L(154/151M)  
Manufactures date code : 2415  
Category of use : snow  
Indication : ---  
ECE Approval No. : E4-0022865

5.1.4.2. Tyre service description : not applicable

5.1.4.3. Reference inflation pressure : 860 kPa





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Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
 Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

5.1.5. Test data

Reference load : 4000 kg

	Front left	Front right	Rear left	Rear right	Average
Test mass (kg)	2750	2750	2975	2975	2862.5
Tyre load index (%)	68.75	68.75	74.38	74.38	71.56
Inflation pressure (cold) (kPa)	590	590	650	650	---

5.1.5.3. Test rim width code : 9.75

5.1.5.4. Temperature measurement : Not applicable  
 sensor type

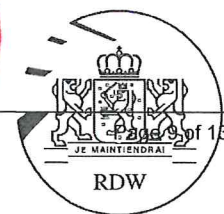
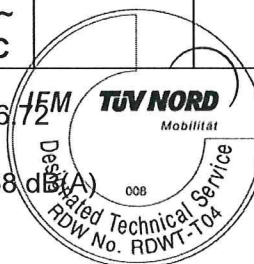
5.1.6. Valid Test results :

Runnin g No.	Speed Km/h	Direction of run	Sound Level Measured dB(A)		Air Temp. °C	Track Temp. °C	Sound Level Measured dB(A)		Comment s
			Left	Right			Left Temp. correction	Right Temp. correction	
1	61.9	One direction	73.5	73.2	31.2	38.8	—	—	—
2	64.4	One direction	73.6	73.8	32.5	38.9	—	—	—
3	66.3	One direction	74.1	73.9	31.7	38.8	—	—	—
4	67.7	One direction	74.4	74.6	33.1	38.9	—	—	—
5	71.8	One direction	74.7	74.3	32.1	39.1	—	—	—
6	73.6	One direction	75.1	75.3	31.8	39.2	—	—	—
7	76.1	One direction	75.5	75.7	32.5	38.9	—	—	—
8	78.4	One direction	76.2	76.4	32.1	39.0	—	—	—
Limit value	<b>60~80</b>	---			<b>5°C ~ 40°C</b>	<b>5°C ~ 50°C</b>			

5.1.6.1. Regression line slope : a=26.75

5.1.6.2. Sound level according to paraphrase 4.3. of annex3 : 74.68 dB(A)

5.1.6.3. Sound level according to paras. 4.4. and 4.5. of Annex 3 at reference speed of 70/80 km/h : 73 dB(A)



**Test Report**  
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Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

---

6. Adhesion on wet surface

6.1. Test data : **Test tyre type 1**

6.1.1. Date of test : July 27, 2015

6.1.2. Test vehicle(make, model, year, : DFM TIANLONG, VIN LGAG3DV28D2809664  
modifications, etc or trailer  
identification)

6.1.3. Location of test track : Dingyuan Gound for Highway and Traffic  
Fangang Town, Dingyuan District,  
233210, Anhui,  
P.R.China

6.1.4. Test track characteristics

Texture depth (mm) : 0.654

BPN : 57.49

6.1.5. Issued by : TUV NORD

6.1.6. Method of certification : BPN / ASTM E 965

6.1.7. Water depth (mm) : 0.50-2.00

6.1.8. Identification of SRTT : FV KP OOTX 3911

6.1.9. Initial speed (km/h) : 60

6.1.10. Final speed (km/h) : 20



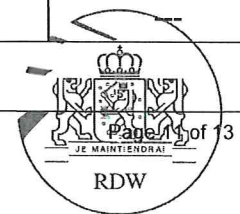
**Test Report**  
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Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
 Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

6.1.11. Valid test results

No.	SRTT1		Candidate1	Candidate2	Candidate3		SRTT2	
Tread pattern	F 2870-11				HH301		F 2870-11	
SIZE	315/70R22.5				13R22.5		315/70R22.5	
Service description	154/150M				156/152L		154/150M	
Category of use	M+S				M+S		M+S	
Tyre identification	3911				2415		3911	
Reference load (kg)	3750				4000		3750	
Reference pressure(kPa)	900				860		900	
Rim	9.00				9.00		9.00	
Tyre loads FA (kg)	2750	2750			2750	2750	2750	2750
Tyre loads RA (kg)	2975	2975			2975	2975	2975	2975
Load index FA (%)	73.3	73.3			68.8	68.8	73.3	73.3
Load index RA (%)	79.3	79.3%			74.4	74.4	79.3	79.3
FA pressure (kPa)	630	630			602	602	630	630
RA pressure (kPa)	674	674			602	602	674	674
Wet surface temp (°C)	28.6				28.5		28.4	
Ambient temp (°C)	29.2				28.7		28.3	
	BD (m)	WA (m/s <sup>2</sup> )			BD (m)	WA (m/s <sup>2</sup> )	BD (m)	WA (m/s <sup>2</sup> )
Measurement	1	25.46	4.849		26.03	4.743	25.28	4.884
	2	25.13	4.913		25.87	4.772	25.33	4.874
	3	24.75	4.988		25.64	4.815	25.49	4.843
	4	---	---		26.23	4.707	---	---
	5	---	---		26.36	4.683	---	---
	6	---	---		25.97	4.754	---	---
Average AD (m/s <sup>2</sup> )	25.11	4.917		26.02	4.746	25.37	4.867	
Standard deviation(m/s <sup>2</sup> )	0.29	0.06		0.22	0.04	0.09	0.02	
Validation of results Coeff. of variation ≤ 3% total SRTT ≤ 3%	1.156				0.901		0.352	
BFC (R) reference tyre	---				0.498		---	
BFC (T) candidate tyre	---				0.484		---	
Wet grip index (%)	---				0.97		---	



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Type : **Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance**  
Manufacturer : **Shandong Hengfeng Rubber & Plastic Co.,Ltd**

7. Rolling resistance

7.1. Test data **Test tyre type 1**

7.1.1 Date of test July 02, 2015

7.1.2 Test machine identification : MTS2W860

drum diameter : 1.707 m

surface : smooth steel

7.1.3 Test Location : Qingdao, P.R.China

7.1.4 Test tyre details :

7.1.4.1. tyre size designation and service description : 6.50R16LT 113/110K

tyre brand and trade description : HIFLY HF702

Reference inflation pressure : 770 kPa

Indication : 2515

ECE Approval No. : E4-0032388

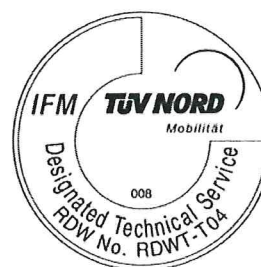
7.1.5 Measurement method : force / torque / deceleration / power method

7.1.6 Test speed : 80 km/h

7.1.7 Test inflation pressure, initial : 770 kPa

7.1.8 Test rim width material : 5.50F  
: Wrought Aluminium

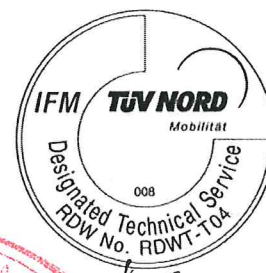
7.1.9 Measurement



Type : Tyre / Road Noise Emission and adhesion performance on wet surfaces and Rolling Resistance  
 Manufacturer : Shandong Hengfeng Rubber & Plastic Co.,Ltd

procedure	Forward Rotation		Reverse Rotation	
Warm up Time (min)	150		40	
Temp.(°C)	24.95		24.54	
Item	Load	skim test	Load	skim test
L <sub>m</sub> (kN)	9.5860	0.4000	9.5862	0.3999
r <sub>L</sub> (m)	0.364941	0.380072	0.365048	0.380150
T <sub>t</sub> (N m)	48.227	4.729	50.903	5.256
F <sub>r25</sub>	61.986		64.892	
F <sub>r02</sub>	60.5981		63.4388	
C <sub>r</sub>	6.468		6.788	

- 7.2. Rolling resistance coefficient
- 7.2.1 Initial value (or average in the case of more than 1) : 6.628 N/kN
- 7.2.2 Temperature corrected N/kN : 0.010 N/kN
- 7.2.3 Temperature and drum diameter corrected for un-aligned measurement : 6.470 N/kN





(1)

E9\*117R02/14\*1145\*04

Página / Page 1 / 3

Relativa a / Concerning:

- homologación de tipo / ~~APPROVAL GRANTED~~ <sup>(2)</sup>
- extensión de homologación de tipo / ~~APPROVAL EXTENDED~~ <sup>(2)</sup>
- denegación de homologación de tipo / ~~APPROVAL REFUSED~~ <sup>(2)</sup>
- retirada de homologación de tipo / ~~APPROVAL WITHDRAWN~~ <sup>(2)</sup>
- producción definitivamente abandonada / ~~production definitively discontinued~~ <sup>(2)</sup>

de un tipo de neumático en lo que se refiere al “nivel de emisión de ruido de rodadura” y/o a la “adherencia en superficie mojada” y/o a la “resistencia a la rodadura”, en virtud al Reglamento No 117. / *of a type of tyre with regard to “rolling sound emission level” and/or adhesion on wet surfaces” and/or “rolling resistance” pursuant to Regulation No. 117.*

Número de homologación de tipo / Approval No <sup>(3)</sup>: **E9\*117R02/14\*1145\*04**

Nº de extensión / Extension No.: **04**

Sufijos / Suffixes <sup>(4)</sup>: **02S2WR2**

Motivos de la extensión / Reason for extension: Ver informe N° / See test report No. : CN23071167

- |       |  |   |
|-------|--|---|
| 1.    | Nombre y dirección del fabricante /<br><i>Manufacturer's name and address</i>                                  | : WEIFANG SHUNFUCHANG RUBBER AND<br>PLASTIC PRODUCTS CO., LTD.<br>(Northeast Corner, Crossing of Xihuan Road and<br>Jinguang Street), Chenming Industrial District,<br>Shouguang 262719, Weifang, SHANDONG<br>(CHINA) |
| 2.    | Nombre y dirección del representante del fabricante /<br><i>Manufacturer's representative name and address</i> | : N/A   |
| 3.    | Clase de neumático /<br><i>Tyre Class</i>  | : C3  |
| 4.    | Categoría de uso del tipo de neumático /<br><i>Category of use of the type of tyre</i>                         | : normal / <del>nieve</del> / <del>especial</del> <sup>(2)</sup><br><i>normal / snow / special</i> <sup>(2)</sup>   |
| 4.1.  | Neumático de nieve para uso en condiciones severas /<br><i>Snow tyre for use in severe snow conditions</i>     | : No / No   |
| 4.1.1 | Ice grip tyre  | : No / No   |
| 4.2.  | Neumático de tracción / <i>Traction tyre</i>   | : Si / Yes  |
| 5.    | Estructura del neumático / <i>Tyre structure</i>   | : Radial  |
| 6.    | Designación de tipo de neumático / <i>Type of tyre designation</i>   | : LH688   |

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / *Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).*

<sup>(2)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / *According to Schedule 4 to Revision 3 of the 1958 Agreement.*

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / *According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.*

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / *Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.*

<sup>(6)</sup> En el caso de “neumático de nieve para uso en condiciones severas” se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / *In the case of “snow tyre for use in severe snow conditions” a test report according to Appendix 2 to Annex 7 shall be submitted*





(1)

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- 6.1. Marca(s) /Brand name(s)/Trademark(s) : JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; HUNTERROAD; ECOSTAR; SUNWIDE; XCENT; AVENTUS
- 6.2. Denominación(es) comercial(es)/ Trade description(s)/commercial name(s) of the type of tyre : LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; **EL969; VDR530**
7. Servicio técnico autorizado a efectos de homologación o comprobación de los ensayos de conformidad/ Technical service approved for purposes of approval or of verification of conformity tests : IDIADA
8. Prestaciones homologadas: nivel de ruido en (fase 1/fase 2), nivel de adherencia en superficie mojada, nivel de resistencia a la rodadura (fase 1/fase 2) <sup>(2)</sup> / Performances approved: sound level at (stage 1/stage 2), wet adhesion level, rolling resistance level (stage 1/stage 2) <sup>(2)</sup>
- 8.1. Nivel de emisión de ruido de la medida representativa de neumático, de acuerdo al punto 7. del informe de ensayo en el Apéndice 1 del Anexo 3: 75 dB(A) a la velocidad de referencia de 70/80 km/h <sup>(2)</sup> / Sound level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in Appendix 1 to Annex 3: 75 dB(A) at reference speed of 70/80 km/h <sup>(2)</sup>
- 8.2. Nivel de adherencia en superficie mojada de la medida representativa de neumático, ver párrafo 2.7. de este Reglamento, de acuerdo al punto 7. del informe de ensayo del apéndice al Anexo 5: 1.01 (G) mediante el método de vehículo ~~o de remolque~~ <sup>(2)</sup> / Wet adhesion level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in the appendix to Annex 5:1.01 (G) using the vehicle ~~or trailer~~ <sup>(2)</sup> method
- 8.3. Nivel de resistencia a la rodadura de la medida representativa de neumático, ver párrafo 2.7. de este Reglamento, de acuerdo al punto 7. del informe de ensayo en el Apéndice 1 del Anexo 6: 5.64 N/kN / Rolling resistance level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in Appendix 1 to Annex 6: 5.64 N/kN
- 8.4. Nivel de desempeño sobre nieve de la medida representativa de neumático, ver párrafo 2.7. del Reglamento Num. 117, de acuerdo al punto 7. del informe de ensayo en el apéndice 3 del Anexo 7: N/A (índice de adherencia en nieve) usando el ~~método de frenado sobre nieve, método de tracción giratoria o método de aceleración~~ <sup>(2)</sup> / Snow performance level of the representative tyre size, see paragraph 2.7. of Regulation No. 117, as per item 7. of the test report in the appendix 3 to Annex 7: N/A (snow grip index) using ~~the brake on snow method, spin traction method or acceleration method~~ <sup>(2)</sup>

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

<sup>(2)</sup> Táchese lo que no proceda / Strike out what does not apply

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / According to Schedule 4 to Revision 3 of the 1958 Agreement.

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.

<sup>(6)</sup> En el caso de "neumático de nieve para uso en condiciones severas" se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / In the case of "snow tyre for use in severe snow conditions" a test report according to Appendix 2 to Annex 7 shall be submitted





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- 8.4.1. Nivel de desempeño sobre hielo de la medida representativa de neumático, ver párrafo 2.7. del Reglamento Num. 117, de acuerdo al punto 7. del informe de ensayo en el apéndice 2 del Anexo 8: N/A (índice de adherencia en hielo) usando el método de frenado sobre nieve / *Ice performance level of the representative tyre size, see paragraph 2.7. of Regulation No. 117, as per item 7. of the test report in the appendix 2 to Annex 8: N/A (ice grip index) using the brake on ice method.* <sup>(2)</sup>
9. Número de informe emitido por el Servicio Técnico / *Number of report issued by the Technical Service* : CN17110405; CN18070375; CN19070754; CN21090767; **CN23071167**
10. Fecha del informe emitido por este Servicio / *Date of report issued by that service* : 28/11/2017; 19/07/2018; 29/07/2019; 28/09/2021; **21/08/2023**
11. Motivo(s) de la extensión (en su caso) / *Reason(s) of extension (if applicable)* : Ver informe de ensayo número CN23071167 / *See Test Report Number CN23071167*
12. Observaciones / *Any remarks* : N/A
13. Lugar / *Place* : Madrid
14. Fecha / *Date* : Ver firma electrónica / *See electronic signature*
15. Firma / *Signature*: EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012
16. Se adjunta a la presente notificación / *Annexed to this communication are*:
- 16.1 La lista de documentos que figuran en el expediente de homologación depositado en la Autoridad de homologación de Tipo y que podrá obtenerse previa petición <sup>(5)</sup> / *A list of documents in the approval file deposited at the Type Approval Authorities having delivered the approval and which can be obtained upon request* <sup>(5)</sup>
- 16.2 Una lista de designaciones de las medidas de neumático: se especifica para cada marca y/o cada descripción comercial la lista de medidas de neumático, añadiendo para los neumáticos de clase C1 si son "Reinforced" o "Extra Load" o no. / *A list of tyre size designations: Specify for each brand name/trademark and/or each trade description/commercial name the list of tyre size designations and Service descriptions, adding in case of class C1 tyres whether "reinforced" (or "extra load") or not.*

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / *Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).*

<sup>(2)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / *According to Schedule 4 to Revision 3 of the 1958 Agreement.*

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / *According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.*

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / *Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.*

<sup>(6)</sup> En el caso de "neumático de nieve para uso en condiciones severas" se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / *In the case of "snow tyre for use in severe snow conditions" a test report according to Appendix 2 to Annex 7 shall be submitted*







## Anexo - Información adicional sobre esta Homologación de tipo

### Condiciones de la autorización y pie de recurso

Los vehículos, sistemas, componentes o unidades técnicas independientes fabricados en virtud de esta homologación de tipo deben estar identificados y portar las marcas correspondientes según la reglamentación aplicable.

La producción en serie de vehículos, sistemas, componentes y unidades técnicas independientes debe realizarse de acuerdo con la documentación de homologación. Todo cambio en la producción individualizada requerirá autorización expresa previa por parte de la Autoridad de Homologación Española.

Cualquier modificación en los datos incluidos en el certificado de homologación, como el nombre de la empresa, representante en la UE, dirección y las plantas de fabricación deben ser comunicados inmediatamente a la Autoridad de Homologación Española.

La homologación perderá su validez cuando la misma haya sido retirada o el tipo ya no cumpla con los requisitos legales. La retirada tendrá lugar siempre que hayan dejado de cumplirse los requisitos necesarios para la concesión y mantenimiento de la misma, cuando el fabricante no pueda demostrar a la Autoridad de Homologación el cumplimiento con los requisitos y procedimientos para garantizar la conformidad de la producción, en caso de que el titular no cumpla con sus obligaciones inherentes a la homologación o cuando se determine que el tipo homologado no cumple con los requisitos de seguridad y medio ambiente.

La Autoridad de Homologación de Tipo española podrá verificar el cumplimiento de las obligaciones del fabricante en cualquier momento. En particular, se podrá comprobar la correspondencia del producto con el tipo homologado, así como las medidas establecidas para garantizar la conformidad de la producción. A tal efecto se podrán tomar o solicitar las muestras necesarias. Se permitirá el acceso sin trabas a las instalaciones de producción y almacenamiento a los empleados o representantes de la Autoridad de Homologación Española.

La autorización objeto de esta resolución de homologación de tipo no es transferible. Los derechos de marca de terceros no se encuentran afectados por esta homologación.

Contra la presente Resolución, que no pone fin a la vía administrativa, podrá interponerse recurso de alzada <sup>1</sup> ante la Dirección General de Industria y de la Pequeña y Mediana empresa, o ante la Secretaría General de Industria y de la Pequeña y Mediana empresa, en el plazo de un mes a partir del día siguiente a su notificación, de conformidad con los artículos 121 y 122 de la Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas.

<sup>1</sup> Nota: Para interponer recurso de alzada deberá acceder al siguiente enlace:  
<https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157>





### *Annex - Additional Information on this Type Approval*

#### *Collateral clauses and right to appeal (Courtesy translation)*

*All vehicles, systems, components or separate technical units which correspond to the approved type are to be identified and marked according to the applied regulation.*

*The serial fabrication of vehicles, systems, components or separate technical must be in exact accordance with the approval documents. Changes in the individual production are only allowed with express consent of the Spanish Type Approval Authority.*

*Changes in the data included in the approval certificate, such as the name of the company, EU representative, address and the manufacturing plant are to be immediately disclosed to the Spanish Type Approval Authority.*

*The approval expires if it is withdrawn or if the type approved no longer complies with the legal requirements. The revocation can be made if the demanded requirements for issuance and the continuance of the approval no longer exist, if the manufacturer cannot demonstrate to the Type Approval Authority that it comply with the requirements and procedures to guarantee the conformity of production, if the holder of the approval violates the duties involved in the approval or if it is determined that the approved type does not comply with the requirements of traffic safety or environmental protection.*

*The Spanish Type Approval Authority may check the proper exercise of the conferred authority taken from this approval at any time. In particular, this means the compliant production as well as the measures for conformity of production. For this purpose, samples can be taken or have taken. The employees or the representatives of the Spanish Type Approval Authority may get unhindered access to the production and storage facilities.*

*The authorization contained with issuance of this approval is not transferable. Trade mark rights of third parties are not affected with this approval.*

*This approval does not conclude the administrative channel and can be appealed<sup>2</sup> within one month after notification, according to articles 121 and 122 of Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas. The appeal is to be addressed to Dirección General de Industria y de la Pequeña y Mediana empresa, or Secretaría General de Industria y de la Pequeña y Mediana empresa.*

<sup>2</sup> Note: Appeal on the following link:

<https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157>



**INFORME/REPORT N° CN23071167****REGLAMENTO CEPE/ONU 117R02/14 REFERENTE A EMISIÓN DE RUIDO A LA RODADURA,  
ADHERENCIA EN MOJADO Y RESISTENCIA A LA RODADURA  
EXTENSIÓN IV  
UN/ECE REGULATION 117R02/14 RELATED TO ROLLING SOUND EMISSIONS, ADHESION ON WET  
SURFACES AND ROLLING RESISTANCE  
EXTENSION IV**

Solicitante / Applicant : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD.  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)

Fabricante / Manufacturer : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD.  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)

Clase del neumático / Tyre Class : C3

Categoría de uso / Category of use : Normal / Normal

Neumático de tracción / Traction tyre : Sí / Yes

Designación de tipo de neumático / Tyre type designation : LH688

Marca / Brand name : JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; HUNTERROAD; ECOSTAR; SUNWIDE; XCENT; AVENTUS

Nombre comercial / Commercial name : LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; **EL969; VDR530**

Lugar y fecha de emisión del informe / Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 21/08/2023

CONCLUSIONES: La muestra ensayada de la familia CUMPLE con las prescripciones referentes a “emisión de ruido a la rodadura” y/o “adherencia en superficie mojada” y/o “resistencia a la rodadura” y/o “prestaciones en nieve” según el REGLAMENTO CEPE/ONU 117R02/14. De acuerdo con el punto 12.12 de las Disposiciones Transitorias, el procedimiento de prueba para medir el agarre en mojado no tiene en cuenta las disposiciones del Suplemento 13. Las características de las muestras ensayadas están detalladas en los anexos de este informe.

CONCLUSIONS: The tested samples of the family FULFIL the technical prescriptions with regard to “rolling sound emissions level” and/or “adhesion on wet surfaces” and/or “rolling resistance” and/or “snow performance” pursuant to UN/ECE REGULATION 117R02/14. According to point 12.12 of the Transitional Provisions, the test procedure for measuring wet grip does not take into account the provisions of Supplement 13. The characteristics of the tested samples are detailed in the annexes to the test report.

Realizado por / Performed by:

Zhu Yuan  
HOMOLOGATION ENGINEER

V.B° / Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER



INFORME/REPORT N° CN23071167

RESUMEN/ SUMMARY

1. Dimensiones incluidas en el tipo del neumático / *Dimensions included in the type of tyre* : Ver anexo Documentación técnica / *See annex Technical documentation*
2. Medidas de neumático seleccionadas para ensayo / *Tyre sizes selected for testing*
  - 2.1. Emisión de ruido a la rodadura / *Rolling sound emissions* : 315/70R22.5 154/151L (mayor ancho de sección, relación de aspecto más baja / *widest section width, lowest aspect ratio*).  
Ver Anexo 1, Informe CN23070659, IDIADA, 17/08/2023  
*See Annex 1, Test report CN23070659, IDIADA, 17/08/2023*
  - 2.2. Adherencia en superficie mojada / *Adhesion on wet surfaces*: 295/80R22.5 152/149L (cumple extra 10% / *meets extra 10%*).  
Ver Anexo 2, Informe CN16120066, IDIADA, 08/11/2016  
*See Annex 2, Test report CN16120066, IDIADA, 08/11/2016*
  - 2.3. Resistencia a la rodadura / *Rolling resistance* : 295/80R22.5 152/149L (cumple el nuevo valor límite calculado / *meets new calculated limit value*)  
Ver Anexo 3, Informe CN16110065, IDIADA, 27/10/2016  
*See Annex 3, Test report CN16110065, IDIADA, 27/10/2016*
  - 2.4. Adherencia en nieve / *Snow performance* : N/A
3. Razones para la extensión (si aplica) / *Reason(s) of extension (if applicable)*
  - Inclusión de nuevas marcas / *Addition of new brand names*
  - Inclusión de nuevos nombres comerciales / *Addition of new trade descriptions*
  - Exclusión de marcas / *Deletion of brand names*
  - Exclusión de nombres comerciales / *Deletion of trade descriptions*
  - Actualización del número de suplemento reglamentario / *Upgrade of the regulation supplement number*
4. Lista de Anexos a este informe / *List of Annexes to this report*:
  - 4.1. Anexo 1/ *Annex 1*: Informe referente a emisión de ruido a la rodadura / *Test report according to rolling sound emission level*.
  - 4.2. Anexo 2/ *Annex 2*: Informe referente a adherencia en superficie mojada / *Test report according to adhesion on wet surfaces*.
  - 4.3. Anexo 3 / *Annex 3*: Informe referente a resistencia a la rodadura / *Test report according to rolling resistance*.
  - 4.4. Anexo: Documentación técnica del fabricante / *Manufacturer's technical documentation*.

Lugar y fecha de emisión del informe /  
*Place and date of issue*

L'Albornar, Santa Oliva (Tarragona), 21/08/2023



Zhu Yuan  
HOMOLOGATION ENGINEER

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA. / *THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.*  
 \* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA. / *THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.*  
 \* EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS. / *MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.*



ANNEX 1

Validate this report with the security code «3OX4Y3NM» at: <https://extranet.idiada.com/hom-cve>

CN23071167

**IDIADA**



## REPORT No. CN23070659

### UN REGULATION No. 117R02/14 RELATED TO ROLLING SOUND EMISSIONS

Applicant	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiujuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
Manufacturer	: WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD. Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
Tyre class	: C3
Category of use	: Normal
Tyre for use in severe snow conditions	: No
Traction tyre	: Yes
Brand name / Trade mark	: FIREMAX
Trade description/ Commercial name	: FM08
Tyre size	: 315/70R22.5 154/151L
Sound level according to paragraph 4.4. of Annex 3 [dB(A)]	: 75
Place and date of issue	: L'Albornar, Santa Oliva (Tarragona), 17/08/2023

CONCLUSIONS: The samples of the family have been tested according to the technical prescriptions with regard to "rolling sound emissions level" pursuant to UN Regulation No. 117R02/14. The characteristics of the tested samples are detailed in the annex to the test report.

Performed by:

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER

Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER



**ANNEX TO THE TEST REPORT**  
**ROLLING SOUND EMISSIONS, REPORT No. CN23070659**

**1. TEST DATA**

**1.1. Test tyre details**

1.1.1	Applicant <sup>(1)</sup>	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiujuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
1.1.2	Manufacturer	: WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD. Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
1.1.3	Tyre class	: C3
1.1.4	Category of use	: Normal
1.1.5	Tyre for use in severe snow conditions	: No
1.1.6	Traction tyre	: Yes
1.1.7	Brand name / Trade mark	: FIREMAX
1.1.8	Trade description / Commercial name	: FM08
1.1.9	Tyre size	: 315/70R22.5 154/151L
1.1.10	Load index / Corresponding mass Q <sub>r</sub> [kg]	: 154 / 3,750
1.1.11	Tyre structure	: Radial
1.1.12	Date code, other manufacturer markings	: 2723, 2TWLJLA31
1.1.13	Reference inflation pressure P <sub>r</sub> [kPa]	: 930

<sup>(1)</sup>Information provided by the client. The laboratory is not responsible for such information

THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE2694

Validate this report with the security code «30X4Y3NM» at: <https://extranet.idiada.com/hom-cve>

CN23070659




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\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

IDIADA Automotive Technology, S.A.    N.I.F. A43581610    Servicio Técnico Designado de Homologación (TS)



1.1.14 Test inflation pressure  $P_t$  [kPa] :

	$P_t$ [kPa] admissible values
Front axle left wheel	$633.41 \leq 640.00 \leq 696.75$
Front axle right wheel	$599.72 \leq 600.00 \leq 659.69$
Rear axle left wheel	$639.73 \leq 640.00 \leq 703.71$
Rear axle right wheel	$651.84 \leq 660.00 \leq 717.02$

Elija un elemento.

FULFILS / NOT FULFILS

1.1.15 Test tyre internal reference :

Front left	Front right
CN-2308/02276-01	CN-2308/02276-02

Rear left	Rear right
CN-2308/02276-03	CN-2308/02276-04

1.1.16 Test rim : 9.00 x 22.5

1.1.17 Test rim internal reference :

Front left	Front right
CN-1912/02745-01	CN-1912/02745-02

Rear left	Rear right
CN-1912/02745-03	CN-1912/02745-04

1.1.18 Test tyre load [kg] :

	Load	$Q_t$ [N] / % $\frac{Q_t}{Q_r}$
Front axle left wheel	2,758	$50 < 73.55 < 90$
Front axle right wheel	2,640	$50 < 70.40 < 90$
Rear axle left wheel	2,780	$50 < 74.13 < 90$
Rear axle right wheel	2,822	$50 < 75.25 < 90$

FULFILS / NOT FULFILS

$Q_{t,avr}$ [N] / % $\frac{Q_{t,avr}}{Q_r}$
$70 \leq 73.33 \leq 80$

FULFILS / NOT FULFILS

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

IDIADA Automotive Technology, S.A. N.I.F. A43581610 Servicio Técnico Designado de Homologación (TS)



**1.2. Test vehicle**

1.2.1	Trade name	: HYUNDAI
1.2.2	Model	: XCIENT
1.2.3	Year	: 2019
1.2.4	Transmission	: Manual
1.2.5	Wheelbase [mm]	: 3,560

For Class C3 less than 5,000 mm.

FULFILS / NOT FULFILS

1.2.6	Vehicle internal reference	: CN-2001/01800
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**1.3. Test equipment**

1.3.1	Sound level meter 1	: 193663
1.3.2	Sound level meter 2	: 193664
1.3.3	Manometer	: 193661
1.3.4	Weight scale	: 184618
1.3.5	Track temperature measurement device	: 182330
1.3.6	Wind speed measurement device	: 193666
1.3.7	Speed measurement device	: 035816
1.3.8	Ambient temperature measurement device	: 193659



**2. TEST TRACK**

**2.1. Environment**

2.1.1 Air temperature  $T_a$  [°C] : 30.4  
 $5.0 < T_a < 40.0$

FULFILS / NOT FULFILS

2.1.2. Test surface temperature  $T_s$  [°C] : 37.0  
 $5.0 \leq T_s \leq 50.0$

FULFILS / NOT FULFILS

2.1.3 Wind speed [m/s] : 3.9  
 Less than 5 m/s

FULFILS / NOT FULFILS

2.1.4 Ambient noise [dB(A)] : 35.5  
 Test result – Ambient noise  $\geq 10$  dB(A)

FULFILS / NOT FULFILS

2.1.5 Wind direction [°] : 125.0

**2.2. Method of certification: compliance with ISO 10844:2014:**

- Report number : FM / 002 / 21
- Date of check : March 6<sup>th</sup> 2023
- Issued by : IDIADA



### 3. TEST RESULTS

Reference Speed:  $v_{ref}$  [km/h] : 70  
 Range Speed [km/h] : 60.0 - 80.0

Run No.	Test speed [km/h]	Direction of run	Sound level left measured [dB(A)]	Sound level right measured [dB(A)]	Air temp. [°C]	Surface temp. [°C]	Sound level left temp. corrected [dB(A)]	Sound level right temp. corrected [dB(A)]
1	62.2	S → N	75.3	76.3	30.2	34.8	75.3	76.3
2	64.9	S → N	76.2	77.0	30.2	34.9	76.2	77.0
3	66.9	N → S	76.6	76.9	30.3	36.8	76.6	76.9
4	68.3	S → N	76.6	77.2	30.4	36.6	76.6	77.2
5	71.8	N → S	76.8	77.4	30.4	37.4	76.8	77.4
6	74.3	S → N	76.8	77.6	30.3	37.8	76.8	77.6
7	75.6	N → S	77.2	77.8	30.4	38.2	77.2	77.8
8	77.8	N → S	77.4	78.3	30.6	39.4	77.4	78.3

- 3.1. Regression line slope : 17.37
- 3.2. Sound level after temperature correction according to paragraph 4.3 of Annex 3 [dB(A)] : 76.95
- 3.3. Sound level according to paragraph 4.4. of Annex 3 [dB(A)] : 75
- 3.4. Limit value [dB(A)] :

Category of use	C3		
	Stage 1	Stage 2	
		Other	Traction
Normal	76	73	75
Snow	78	73	75
Snow (for use in severe Snow conditions)		74	76
Special	79	75	77

THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE2594

Validate this report with the security code «30X4Y3NM» at: <https://extranet.idiada.com/hom-cve>

CN23070467

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

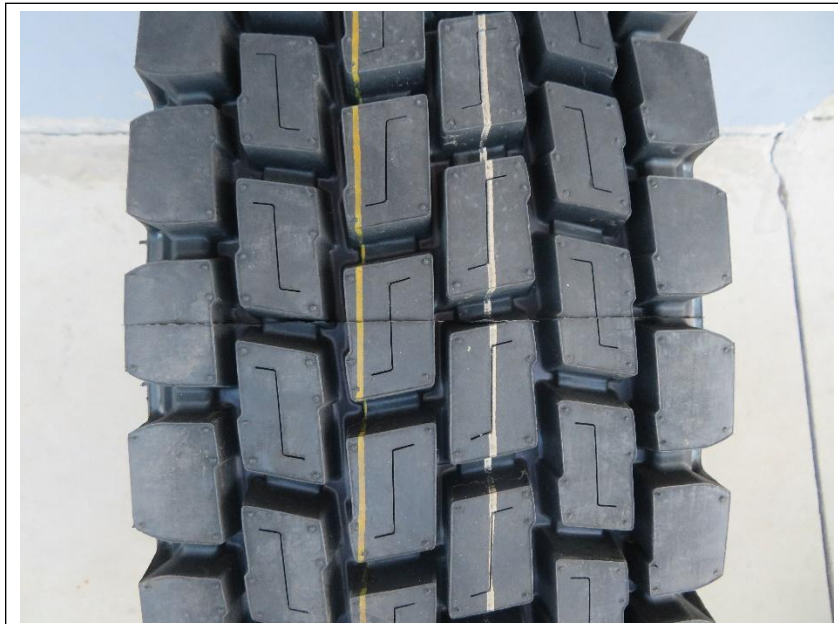
IDIADA Automotive Technology, S.A. N.I.F. A43581610 Servicio Técnico Designado de Homologación (TS)



## 4. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: ICPG, Zhaoyuan, China

Date of test: 16/08/2023

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
\* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
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\* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE



ANNEX 2

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CN23071167

**IDIADA**

**REPORT N° CN16120066**

## UN/ECE REGULATION 117R02 RELATED TO ADHESION ON WET SURFACES

Applicant : HANGZHOU GENERAL STANDARD CO., LTD.  
Building 228, Jianding Road, Jianggan District  
310030 HANGZHOU, Zhejiang (CHINA)

Manufacturer : Weifang Shunfuchang Rubber & Plastic Co., Ltd.  
Government Station, Hualong Town, Shouguang City,  
262700, Shandong Province, China

Trade name : SAFECCESS

Commercial description : SFC08

Category of use : Normal

Tyre class : C3

Tyre size : 295/80R22.5 152/149L

Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 08/11/2016

CONCLUSIONS: The tested samples of the family FULFIL the technical prescriptions with regard to “adhesion performance on wet surfaces” pursuant to UN/ECE REGULATION 117R02.  
The characteristics of the tested samples are detailed in the annex to the test report.  
Test configuration as per ISO 15222: *Configuration 1 (4 candidate tyres in test vehicle)*

Performed by:

Frank Yu  
TEST ENGINEER

Revised by:

Lluís Sans Gomis  
DEPARTMENT MANAGER



**ANNEX TO THE TEST REPORT  
ADHESION ON WET SURFACES**

**1. TEST DATA**

**1.1. Test tyre details**

- 1.1.1 Applicant : HANGZHOU GENERAL STANDARD CO., LTD.  
Building 228, Jianding Road, Jianggan District  
310030 HANGZHOU, Zhejiang (CHINA)
- 1.1.2 Manufacturer : Weifang Shunfuchang Rubber & Plastic Co., Ltd.  
Government Station, Hualong Town, Shouguang City,  
262700, Shandong Province, China
- 1.1.3 Trade name : SAFECCESS
- 1.1.4 Commercial description : SFC08
- 1.1.5 Category of use : Normal
- 1.1.6 Tyre class : C3
- 1.1.7 Tyre size : 295/80R22.5 152/149L
- 1.1.8 Tyre structure : Radial
- 1.1.9 Load index / Corresponding mass  $Q_r$ [kg] : 152 / 3,550
- 1.1.10 Reference pressure [kPa] : 900
- 1.1.11 Test tyre internal reference :

Front left	Front right
CN16120066-1	CN16120066-2

Rear left	Rear right
CN16120066-3	CN16120066-4

- 1.1.12 Test rim : 9.00 x 22.5
- 1.1.13 Test rim internal reference :

Front left	Front right
G-B227	G-B225

Rear left	Rear right
G-B226	G-B228

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.



1.1.14 SRTT identification : MICHELIN 315/70 R22.5 - ASTM F 2870

1.1.15 SRTT internal reference :

Front left	Front right
BW-FG-031	BW-FG-032

Rear left	Rear right
BW-FG-030	BW-FG-033

1.1.16 Test SRTT rim : 9.00 x 22.5

1.1.17 Test SRTT rim internal reference :

Front left	Front right
G-B229	G-B230

Rear left	Rear right
G-B231	G-B232

1.1.18 Test tyre load [kg] :

SRTT1			Candidate			SRTT2		
FL	2,994	79.8% Qr	FL	2,988	84.2% Qr	FL	3,002	80.1% Qr
FR	2,824	75.3% Qr	FR	2,858	80.5% Qr	FR	2,840	75.7% Qr
RL	2,818	75.1% Qr	RL	2,828	79.7% Qr	RL	2,818	75.1% Qr
RR	2,876	76.7% Qr	RR	2,878	81.1% Qr	RR	2,878	76.7% Qr

Between 60 per cent and 100 per cent of the load value corresponding to the load index of the tyre.

FULFILS / NOT FULFILS

**1.2. Test vehicle**

1.2.1 Trade name : SITRAK

1.2.2 Model : C7H400

1.2.3 Year : 2015

1.2.4 Transmission : Manual

1.2.5 Wheelbase [mm] : 3,600

1.2.6 Vehicle internal reference : SB-G-110

1.2.7 Vehicle configuration (ISO 15222) : Configuration 1 (4 candidate tyres in test vehicle)

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 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.





**1.3. Test inflation pressure**

1.3.1 SRTT inflation pressure [kPa] :

	FL	FR	RL	RR
SRTT 1	679	631	630	646
SRTT 2	682	636	630	646

1.3.2 Candidate inflation pressure :

Candidate	Q <sub>t</sub> [kg]	Q <sub>r</sub> [kg]	Conditions	Cond. Used	Inflation pressure P <sub>t</sub> [kPa]
FL	2,988	3,550	1- If Q <sub>t</sub> < 75% Q <sub>r</sub> then: <b>P<sub>t</sub> = (0.7) x P<sub>r</sub></b>	2	726
FR	2,858	3,550		2	686
RL	2,828	3,550	2- If Q <sub>t</sub> ≥ 75% Q <sub>r</sub> then: <b>P<sub>t</sub> = P<sub>r</sub> x (Q<sub>t</sub> / Q<sub>r</sub>)<sup>1.25</sup></b>	2	677
RR	2,878	3,550		2	692

**1.4. Test equipment**

- 1.4.1 Manometer : PCL DAC1C08C
- 1.4.2 Weight scale : SB-G-070
- 1.4.3 Thermometer : G-B029
- 1.4.4 Track temperature measurement device : G-B030
- 1.4.5 Speed measurement device : SB-G-109
- 1.4.6 Force pedal : SB-G-11

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**2. TEST TRACK**

2.1. Location : ABS Surface, CATARC Yancheng

2.2. Date of check on compliance of the test surface: July 3<sup>rd</sup> 2015

2.3. Test track characteristics:

2.3.1 Sand depth [mm] : 0.98

2.3.2 BPN : 58.0

2.3.3 Water depth [mm] : Between 0.50 and 1.50

2.4. Test method : Vehicle

2.5. Air temperature  $T_a$  [°C] : 19.7

2.6. Wet surface temperature  $T_w$  [°C] :

$$5.0 \leq T_w \leq 35.0$$

SRTT1	Candidate	SRTT2
19.5	18.8	18.4

FULFILS / NOT FULFILS

Variation during the test less than 10 °C

FULFILS / NOT FULFILS

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### 3. TEST RESULTS

Test run	SRTT 1		Candidate		SRTT 2	
	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]
1	23.02	5.36	22.70	5.44	22.57	5.47
2	23.02	5.36	23.10	5.34	22.87	5.40
3	22.55	5.47	22.54	5.48	22.44	5.50
4	-	-	21.72	5.68	-	-
5	-	-	22.39	5.51	-	-
6	-	-	22.80	5.41	-	-

#### Coefficient of variation

SRTT 1	Candidate Tyre	SRTT 2
1.20	2.11	0.97
< 3 per cent	< 3 per cent	< 3 per cent

#### FULFILS / NOT FULFILS

Test run	Test Speed [km/h]	Direction of run	SRTT	Candidate tyre	Mean fully developed deceleration (mfdd)	Wet Grip Index	Pedal force [N]
1	60 - 20	N - S	315/70R22.5	---	5.40 m/s <sup>2</sup>	---	> 600
3	60 - 20	N - S	---	295/80R22.5	5.48 m/s <sup>2</sup>	1.01	> 600
4	60 - 20	N - S	315/70R22.5	---	5.46 m/s <sup>2</sup>	---	> 600

#### Wet grip index G = 1.01

Wet grip index (Worst case)  $\geq 0.80$

Wet grip index (Any size)  $\geq 0.88$

#### FULFILS / NOT FULFILS

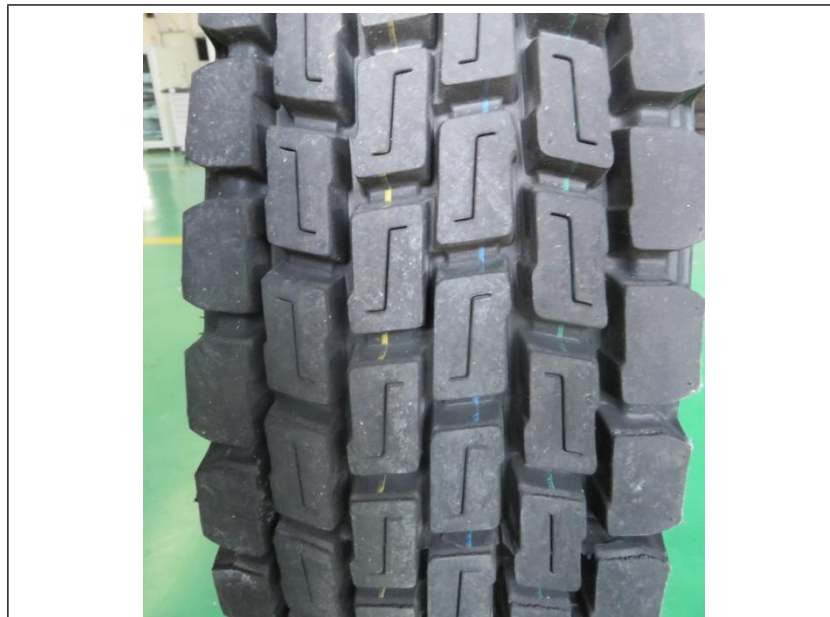
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 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.



## 4. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: Yancheng, China

Date of test: 08/11/2016

Frank Yu  
TEST ENGINEER



ANNEX 3

Validate this report with the security code «3OX4Y3NM» at: <https://extranet.idiada.com/hom-cve>

CN23071167

**IDIADA**

**REPORT N° CN16110065**

## UN/ECE REGULATION 117R02 RELATED TO ROLLING RESISTANCE

Applicant : HANGZHOU GENERAL STANDARD CO., LTD.  
Building 228, Jianding Road, Jianggan District  
310030 HANGZHOU, Zhejiang (CHINA)

Manufacturer : Weifang Shunfuchang Rubber & Plastic Co., Ltd.  
Government Station, Hualong Town, Shouguang City,  
262700, Shandong Province, China

Trade name : SAFECESS

Commercial description : SFC08

Tyre Class : C3

Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 27/10/2016

CONCLUSIONS: The tested sample of the family FULFILS the technical prescriptions with regard to “rolling resistance” pursuant to UN/ECE REGULATION 117R02.  
The characteristics of the tested sample are detailed in the annex to the test report.

Performed by:

Revised by:

Frank Yu  
TEST ENGINEERLluís Sans Gomis  
DEPARTMENT MANAGER

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
\* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.



**ANNEX TO THE TEST REPORT  
UN/ECE REGULATION 117R02**

**1. TEST DATA**

**1.1. Test tyre details**

- 1.1.1 Applicant : HANGZHOU GENERAL STANDARD CO., LTD.  
Building 228, Jianding Road, Jiangnan District  
310030 HANGZHOU, Zhejiang (CHINA)
- 1.1.2 Manufacturer : Weifang Shunfuchang Rubber & Plastic Co., Ltd.  
Government Station, Hualong Town, Shouguang City,  
262700, Shandong Province, China
- 1.1.3 Trade name : SAFCESS
- 1.1.4 Commercial description : SFC08
- 1.1.5 Category of use : Normal
- 1.1.6 Tyre Class : C3
- 1.1.7 Tyre size : 295/80R22.5 152/149L
- 1.1.8 Tyre structure : Radial
- 1.1.9 Load index / Corresponding mass  $Q_r$  [kg] : 152 / 3550
- 1.1.10 Inflation pressure [kPa] : 900
- 1.1.11 Test tyre internal reference : 16-499
- 1.1.12 Test rim : 9.00 x 22.5"
- 1.1.13 Test rim internal reference : CTQI-01
- 1.1.14 Test rim material : Steel

**1.2. Test machine data**

- 1.2.1 Identification : B1037
- 1.2.2 Drum diameter [mm] : 1707.6
- 1.2.3 Surface : Smooth steel FULFILS/NOT FULFILS
- 1.2.4 Roughness [ $\mu\text{m}$ ] :  $\leq 6.3$  FULFILS/NOT FULFILS

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**1.3. Test data**

1.3.1 Measurement method : Force

1.3.2 Test speed [km/h] : 80

C3: 80 km/h (K:110 km/h and higher and load symbol > to 121)

FULFILS/NOT FULFILS

1.3.3 Load Index (LI) / Load [kg] : 152 / 3550

1.3.4 Test load [kg / N] : 3,017.5 / 29,591.6

C2/C3 (% of single load): 85 (\*)

(\*) as a percentage of single load per cent of maximum load capacity for single application specified in applicable tyre standards manuals if not marked on tyre

FULFILS/NOT FULFILS

1.3.5 Test inflation pressure, initial [kPa] : 900

C2/C3: corresponding to maximum load capacity for single application (\*)

(\*): inflation pressure marked on sidewall, or if not market on sidewall, as specified in applicable tyre standards manuals.

FULFILS/NOT FULFILS

1.3.6 Distance from the tyre axis to the drum outer surface under steady state conditions during test ( $r_L$ )[m] : 0.498

1.3.7 Distance from the tyre axis to the drum outer surface under steady state conditions during skim test ( $r_L$ )[m] : 0.528

1.3.8 Ambient temperature  $T_{am}$  [°C] : 23.44

$20.0 \leq T_{am} \leq 30.0$

FULFILS/NOT FULFILS

1.3.9 Skim test load [N] : 397.51

$C3 \leq 500$  N

FULFILS/NOT FULFILS

1.3.10 Spindle force (Ft) [N] : 117.71

1.3.11 Spindle force during skim test (Ft) [N] : 7.86

1.3.12 Parasitic loss (Fpl) [N] : 12.72

1.3.13 Rolling resistance (Fr) [N] : 173.69

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## 2. TEST RESULTS

- 2.1. Rolling resistance coefficient
- 2.1.1 Initial value (or average in the case of more than 1) [N/kN] : 5.87
- 2.1.2 Temperature corrected value [N/kN] : 5.81
- 2.1.3 Temperature and drum diameter corrected value [N/kN] : 5.64

**Rolling resistance coefficient  $C_r$  [N/kN] = 5.64**

- 2.2. Limit value for the Class C3 tyre (Stage 2): 6.5 N/kN

FULFILS / ~~NOT FULFILS~~



### 3. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: Beijing, China

Date of test: 19/10/2016

Frank Yu  
TEST ENGINEER

TECHNICAL DOCUMENTATION

Type of tyre:

LH688



Date : Aug 19, 2023

Ext. : 04

**REGARDING ROLLING SOUND EMISSIONS LEVEL AND/OR TO ADHESION  
PERFORMANCE LEVEL ON WET SURFACES AND/OR ROLLING RESISTANCE  
ACCORDING TO REGULATION 117.02**

1. GENERAL
  - 1.1. The performance characteristics to be assessed for the tyre type : Rolling sound emissions level / adhesion performance level on wet surfaces / rolling resistance level / ~~snow performance level~~
  - 1.2. Manufacturer's name and address : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD.  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
  - 1.3. If applicable, name and address of manufacturer's representative : N.A.
  - 1.4. Brand name(s)/Trademark(s) : JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; HUNTERROAD; ECOSTAR; SUNWIDE; **XCENT; AVENTUS**
  - 1.5. Trade description(s)/Commercial name(s) : LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; **EL969; VDR530**
  - 1.6. Type of tyre : LH688
2. TYRE
  - 2.1. Tyre class : ~~C1/C2/C3~~ <sup>(1)</sup>
  - 2.2. Category of use : Normal/~~snow/special~~ <sup>(1)</sup>
    - 2.2.1. Whether tyre for use in severe snow conditions : ~~Yes/No~~ <sup>(1)</sup>
    - 2.2.2. For Class C2, C3 tyre, whether traction tyre : ~~Yes/No/N.A.~~ <sup>(1)</sup>
  - 2.3. Tyre structure : ~~Diagonal/bias belted~~/radial <sup>(1)</sup>
  - 2.4. A list of tyre size designations covered by this application and specifying for each brand name/trademark and/or each trade description /commercial name the applicable tyre size designations and service descriptions, adding in case of Class C1 tyres whether "reinforced" (or "extra load") or not. : Refer to Attachment 1
3. The application for approval shall be accompanied (in triplicate) by
  - 3.1. Details of the major features, with respect to the effects on the performance (i.e. rolling sound emission level, adhesion on wet surfaces, rolling resistance and snow grip) of the tyres, including the tread pattern, included in the designated range of tyre sizes. : Refer to Attachment 2
  - 3.2. Drawings or photographs of the tyre sidewall, showing the information given in paragraph 3.1.8. above and the approval marking referred : Refer to Attachment 3

<sup>(1)</sup> Strike out what does not apply.  
R117-V.00(2021-09-30)

to in paragraph 4.

- 3.3. In the case of applications relating to special use tyres, a copy of the mould drawing of the tread pattern shall be supplied in order to allow verification of the void-to-fill ratio. : N.A.

### Attachment 1-List of Tyre Size

Brand name(s)/Trademark(s):

JILUTONG; SAFECESS; FIREMAX; KPATOS; TRANSKING; FIRELION; ODYKING; RUNTEK; CROWN; HUNTERROAD; ECOSTAR; SUNWIDE; **XCENT**; **AVENTUS**

Trade description(s)/Commercial name(s):

LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; **EL969**; **VDR530**

	Type Approval Number	Tyre size designations / Load index / Speed symbol	Standard or Extra load (for Class C1 tyres)	Limit for rolling sound Db(A) of Stage II	Limit for wet grip index	Limit for rolling resistance coefficient N/Kn of Stage II	Limit for Snow grip index
1	E9-00.1005	11R22.5 146/143L	N.A.	75	0.65	6.5	N.A.
2	E9-00.6171	11R22.5 149/146L	N.A.	75	0.65	6.5	N.A.
3	<u>E9-00.1102</u>	<u>11R22.5 146/143M</u>	<u>N.A.</u>	<u>75</u>	<u>0.65</u>	<u>6.5</u>	<u>N.A.</u>
4	E9-00.1006	12R22.5 152/149L	N.A.	75	0.65	6.5	N.A.
5	E9-00.1008	295/80R22.5 152/149L	N.A.	75	0.65	6.5	N.A.
6	E9-00.1009	315/80R22.5 154/151L	N.A.	75	0.65	6.5	N.A.
7	E9-00.1067	315/80R22.5 156/153L	N.A.	75	0.65	6.5	N.A.
8	<u>E9-00.6588</u>	<u>315/70R22.5 154/151L</u>	<u>N.A.</u>	<u>75</u>	<u>0.65</u>	<u>6.5</u>	<u>N.A.</u>
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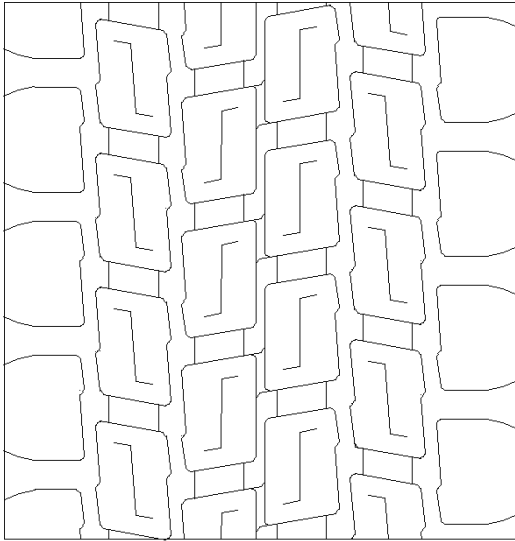
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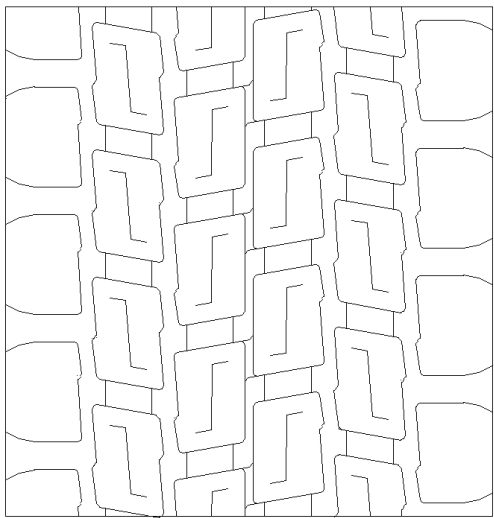
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## Worst Case Selection

Test size for rolling sound	:	<b>315/70R22.5 154/151L</b>
Because of	:	<del>The largest nominal section width; or The largest nominal section width and the lowest aspect ratio; or The largest nominal section width and lowest aspect ratio and the largest rim diameter.</del>
Test size for wet grip	:	295/80R22.5 152/149L
Because of	:	Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is $0.715 < 1.01$ (Wet grip test result)
Test size for rolling resistance	:	295/80R22.5 152/149L
Because of	:	<del>Lowest load index; or</del> Calculated limit value = $(RRC\text{-limit value } R117 - 0.3\#N/kN) - 0.06^* \times (LI\text{-candidate} - LI\text{-lowest})$ The new limit value is $5.84 > 5.64$ (Rolling resistance test result)
Test size for snow grip	:	
Class C1 and C2	÷	<del>The widest nominal section width; or</del> Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is $1.10 < 1.26$ (Snow grip test result)
Class C3	÷	<del>The smallest nominal section width; or</del> Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is $1.45 < 1.55$ (Snow grip test result)

## Attachment-2 Details of the major features

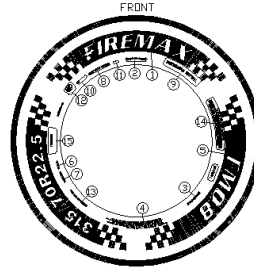
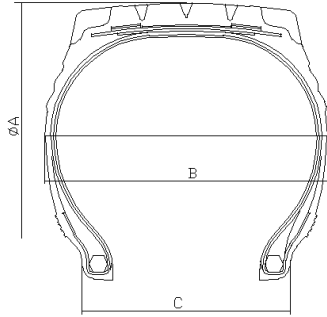
Drawings of the sidewall (for measured tyre using for tyre noise, <del>wet grip</del> and <del>rolling resistance</del> performance)	
Manufacturer name	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD
Pattern name	: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; <b>VDR530; EL969</b>
Tyre Size	: 315/70R22.5 154/151L
Market	: EU
Pitch number	: 49
Pitch ratio (Max/Min)	: 1.0000
Groove area ratio [%]	: 32%
Width: main grooves [mm]	: 6.5
Depth: center groove [mm]	: 19.0
Depth: shoulder groove [mm]	: 19.0
Tyre mass [kg]	53.5
Tread depth [mm]	19.0
Tread width [mm]	248
Curvature radius of tread crown [mm]	965
Tyre outer diameter[mm]	1014
Tread plies	4STEEL
Tyre tread pattern	 <p style="text-align: center;">49 BLOCKS</p>

Drawings of the sidewall (for measured tyre using for tyre noise, wet grip and rolling resistance performance)	
Manufacturer name	: WEIFANG SHUNFUZHANG RUBBER AND PLASTIC PRODUCTS CO., LTD
Pattern name	: LH688; SFC08; FM08; KTR67; TG108; FL08; OD626; AK97; CL688; H801; ECO08; SDR530; <b>VDR530; EL969</b>
Tyre Size	: 295/80R22.5 152/149L
Market	: EU
Pitch number	: 51
Pitch ratio (Max/Min)	: 1.0000
Groove area ratio [%]	: 32%
Width: main grooves [mm]	: 4.0
Depth: center groove [mm]	: 18.0
Depth: shoulder groove [mm]	: 18.0
Tyre mass [kg]	53.0
Tread depth [mm]	18.0
Tread width [mm]	224
Curvature radius of tread crown [mm]	697
Tyre outer diameter[mm]	1044
Tread plies	1STEEL+3STEEL
Tyre tread pattern	 <p>51 BLOCKS</p>

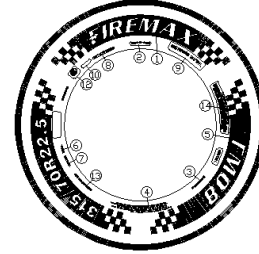


### Attachment 3 Drawings or photographs of the tyre sidewall

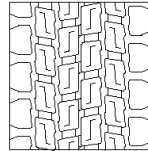
Drawings of the sidewall  
(for measured tyre using for tyre noise, wet grip and rolling resistance performance)



LOWER MOLD



UPPER MOLD



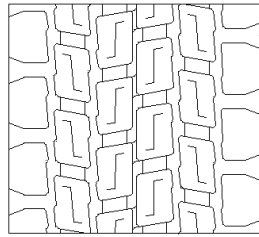
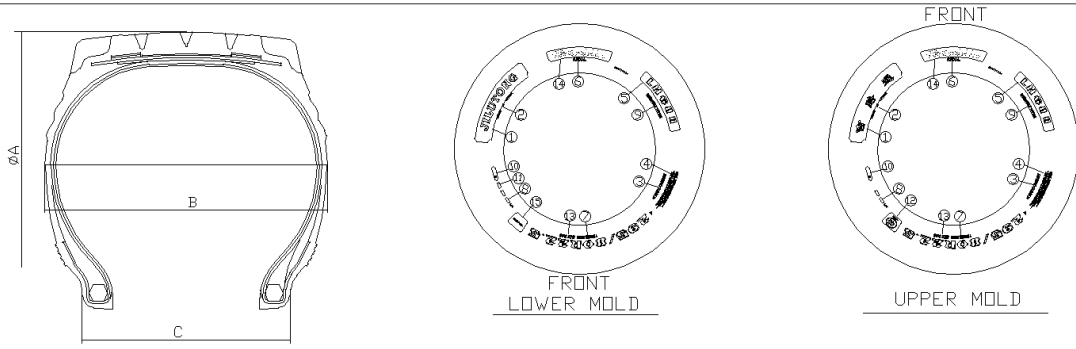
49 BLOCKS

LH688 , SFC08 , FM08  
KTR67 , SDR530 , ECD08  
H801 , VDR530 , EL969

15	TRACTION
14	PLIES SIDEWALL 1 STEEL TREAD 4 STEEL MAX LOAD SINGLE 3750kg (8270 LBS) AT 930 kpa (135 PSD) COLD MAX LOAD DUAL 3450kg (7610 LBS) AT 930 kpa (135 PSD) COLD
13	STANDARD RIM 9.00
12	CCC
11	DATE CODE XXXX
10	Ⓢ XXXXXX
9	315/70R22.5 154/151L
8	DOT XXXXXXXX
7	TUBE LESS
6	ALL STEEL RADIAL
5	TREAD DESCRIPTION
4	SAFETY WARNING
3	REGROOVABLE
2	MADE IN CHINA
1	BRAND NAME

315/70R22.5 20PR	JILUTONG , SAFECESS , FIREMAX KPATOS , SUNWIDE , ECOSTAR HUNTERROAD , AVENTUS , XCENT	LH688 , SFC08 , FM08 KTR67 , SDR530 , ECD08 H801 , VDR530 , EL969	154/151	L	T/L	1014	312	228.6	19.0
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD						

## Drawings of the sidewall (for measured tyre using for tyre noise, wet grip and rolling resistance performance)



LH688, SFC08, FM08, KTR67  
TG108, FL08, DD626, AK97  
H801, ECC08, SDR530

15	TRACTION
14	PLIES: SIDEWALL 1 STEEL; TREAD 1 STEEL+3STEEL
	MAX LOAD SINGLE 2550kg (7830 LBS) AT 900 kpa (130 PSI) COLL
	MAX LOAD DUAL 3250 kg (7265 LBS) AT 900 kpa (130 PSI) COLL
13	STANDARD RIM 9.00
12	3C F000381
11	DATE CODE XXXX
10	Ⓜ XXXXXX
9	295/80R22.5 152/149L
8	DOT XXXX XXXX
7	TUBE LESS
6	ALL STEEL RADIAL TIRE
5	TREAD PATTERNS
4	SAFETY WARNING:
3	REGROOVABLE
2	MADE IN CHINA
1	BRAND NAME

295/80R22.5 18PR	JILUTONG, SAFECESS, FIREMAX KPATOS, TRANSKING, FIRELION DDYKING, RUNTEK, HUNTERROAD ECCSTAR, SUNWIDE	LH688, SFC08, FM08 KTR67, TG108, FL08 DD626, AK97, H801 ECC08, SDR530	152/149	L	T/L	1044	298	228.6	22
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TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
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APPROVED BY		CHECKED BY		DRAWN BY		WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD			
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Relativa a / Concerning:

- homologación de tipo / ~~APPROVAL GRANTED~~<sup>(2)</sup>
- extensión de homologación de tipo / ~~APPROVAL EXTENDED~~<sup>(2)</sup>
- denegación de homologación de tipo / ~~APPROVAL REFUSED~~<sup>(2)</sup>
- retirada de homologación de tipo / ~~APPROVAL WITHDRAWN~~<sup>(2)</sup>
- producción definitivamente abandonada / ~~production definitively discontinued~~<sup>(2)</sup>

de un tipo de neumático en lo que se refiere al “nivel de emisión de ruido de rodadura” y/o a la “adherencia en superficie mojada” y/o a la “resistencia a la rodadura”, en virtud al Reglamento No 117. / *of a type of tyre with regard to “rolling sound emission level” and/or adhesion on wet surfaces” and/or “rolling resistance” pursuant to Regulation No. 117.*

Número de homologación de tipo / *Approval No*<sup>(3)</sup>: **E9\*117R02/14\*1435\*01**

Nº de extensión / *Extension No.*: **01**

Sufijos / *Suffixes*<sup>(4)</sup>: **02S2WR2**

Motivos de la extensión / *Reason for extension*: Ver informe N° / *See test report No.* : CN23070479

- |       |  |   |
|-------|--|---|
| 1.    | Nombre y dirección del fabricante /<br><i>Manufacturer's name and address</i>                                  | : WEIFANG SHUNFUCHANG RUBBER AND<br>PLASTIC PRODUCTS CO., LTD.<br>(Northeast Corner, Crossing of Xihuan Road and<br>Jinguang Street), Chenming Industrial District,<br>Shouguang 262719, Weifang, SHANDONG<br>(CHINA) |
| 2.    | Nombre y dirección del representante del fabricante /<br><i>Manufacturer's representative name and address</i> | : N/A   |
| 3.    | Clase de neumático /<br><i>Tyre Class</i>  | : C3  |
| 4.    | Categoría de uso del tipo de neumático /<br><i>Category of use of the type of tyre</i>                         | : normal / <del>nieve</del> / <del>especial</del> <sup>(2)</sup><br><i>normal / snow / special</i> <sup>(2)</sup>   |
| 4.1.  | Neumático de nieve para uso en condiciones severas /<br><i>Snow tyre for use in severe snow conditions</i>     | : No / No   |
| 4.1.1 | Ice grip tyre  | : No / No   |
| 4.2.  | Neumático de tracción / <i>Traction tyre</i>   | : No / No   |
| 5.    | Estructura del neumático / <i>Tyre structure</i>   | : Radial  |
| 6.    | Designación de tipo de neumático / <i>Type of tyre<br/>designation</i>   | : LH398   |

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / *Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).*

<sup>(2)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / *According to Schedule 4 to Revision 3 of the 1958 Agreement.*

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / *According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.*

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / *Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.*

<sup>(6)</sup> En el caso de “neumático de nieve para uso en condiciones severas” se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / *In the case of “snow tyre for use in severe snow conditions” a test report according to Appendix 2 to Annex 7 shall be submitted*





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- 6.1. Marca(s) /Brand name(s)/Trademark(s) : JILUTONG; SAFECESS; FIREMAX; KPATOS; SUNWIDE; AVENTUS; **ECOSTAR**; **HUNTERROAD**; **XCENT**
- 6.2. Denominación(es) comercial(es)/ Trade description(s)/commercial name(s) of the type of tyre : LH398; SFC77; FM919; KT919; SHW200; VHW200; **ECO36**; **H812**; **EL998**
7. Servicio técnico autorizado a efectos de homologación o comprobación de los ensayos de conformidad/ Technical service approved for purposes of approval or of verification of conformity tests : IDIADA
8. Prestaciones homologadas: nivel de ruido en (~~fase 1~~/fase 2), nivel de adherencia en superficie mojada, nivel de resistencia a la rodadura (~~fase 1~~/fase 2) <sup>(2)</sup> / Performances approved: sound level at (~~stage 1~~/stage 2), wet adhesion level, rolling resistance level (~~stage 1~~/stage 2) <sup>(2)</sup>
- 8.1. Nivel de emisión de ruido de la medida representativa de neumático, de acuerdo al punto 7. del informe de ensayo en el Apéndice 1 del Anexo 3: 70 dB(A) a la velocidad de referencia de 70/~~80~~ km/h <sup>(2)</sup> / Sound level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in Appendix 1 to Annex 3: 70 dB(A) at reference speed of 70/~~80~~ km/h <sup>(2)</sup>
- 8.2. Nivel de adherencia en superficie mojada de la medida representativa de neumático, ver párrafo 2.7. de este Reglamento, de acuerdo al punto 7. del informe de ensayo del apéndice al Anexo 5: 1.06 (G) mediante el método de vehículo ~~o de remolque~~ <sup>(2)</sup> / Wet adhesion level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in the appendix to Annex 5: 1.06 (G) using the vehicle ~~or trailer~~ <sup>(2)</sup>
- 8.3. Nivel de resistencia a la rodadura de la medida representativa de neumático, ver párrafo 2.7. de este Reglamento, de acuerdo al punto 7. del informe de ensayo en el Apéndice 1 del Anexo 6: 5.257 N/kN / Rolling resistance level of the representative tyre size, see paragraph 2.7. of this Regulation, as per item 7. of the test report in Appendix 1 to Annex: 6 5.257 N/kN
- 8.4. Nivel de desempeño sobre nieve de la medida representativa de neumático, ver párrafo 2.7. del Reglamento Num. 117, de acuerdo al punto 7. del informe de ensayo en el apéndice 3 del Anexo 7: N/A (índice de adherencia en nieve) usando el ~~método de frenado sobre nieve, método de tracción giratoria o método de aceleración~~ <sup>(2)</sup> / Snow performance level of the representative tyre size, see paragraph 2.7. of Regulation No. 117, as per item 7. of the test report in the appendix 3 to Annex 7: N/A (snow grip index) using the ~~brake on snow method, spin traction method or acceleration method~~ <sup>(2)</sup>

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

<sup>(2)</sup> Táchese lo que no proceda / Strike out what does not apply

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / According to Schedule 4 to Revision 3 of the 1958 Agreement.

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.

<sup>(6)</sup> En el caso de "neumático de nieve para uso en condiciones severas" se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / In the case of "snow tyre for use in severe snow conditions" a test report according to Appendix 2 to Annex 7 shall be submitted





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- 8.4.1. Nivel de desempeño sobre hielo de la medida representativa de neumático, ver párrafo 2.7. del Reglamento Num. 117, de acuerdo al punto 7. del informe de ensayo en el apéndice 2 del Anexo 8: N/A (índice de adherencia en hielo) usando el método de frenado sobre nieve / *Ice performance level of the representative tyre size, see paragraph 2.7. of Regulation No. 117, as per item 7. of the test report in the appendix 2 to Annex 8: N/A (ice grip index) using the brake-on-ice method.* <sup>(2)</sup>
9. Número de informe emitido por el Servicio Técnico / *Number of report issued by the Technical Service* : CN23030467; **CN23070479**
10. Fecha del informe emitido por este Servicio / *Date of report issued by that service* : 12/05/2023; **14/07/2023**
11. Motivo(s) de la extensión (en su caso) / *Reason(s) of extension (if applicable)* : Ver informe de ensayo número CN23070479 / *See Test Report Number CN23070479*
12. Observaciones / *Any remarks* : N/A
13. Lugar / *Place* : Madrid
14. Fecha / *Date* : Ver firma electrónica / *See electronic signature*
15. Firma / *Signature*: EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL  
Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012
16. Se adjunta a la presente notificación / *Annexed to this communication are:*
- 16.1 La lista de documentos que figuran en el expediente de homologación depositado en la Autoridad de homologación de Tipo y que podrá obtenerse previa petición <sup>(5)</sup> / *A list of documents in the approval file deposited at the Type Approval Authorities having delivered the approval and which can be obtained upon request* <sup>(5)</sup>
- 16.2 Una lista de designaciones de las medidas de neumático: se especifica para cada marca y/o cada descripción comercial la lista de medidas de neumático, añadiendo para los neumáticos de clase C1 si son "Reinforced" o "Extra Load" o no. / *A list of tyre size designations: Specify for each brand name/trademark and/or each trade description/commercial name the list of tyre size designations and Service descriptions, adding in case of class C1 tyres whether "reinforced" (or "extra load") or not.*

<sup>(1)</sup> Distinguiendo el número del país que ha otorgado/extendido/rechazado/retirado la homologación (ver disposiciones de homologación en el Reglamento) / *Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).*

<sup>(2)</sup> Táchese lo que no proceda / *Strike out what does not apply*

<sup>(3)</sup> De acuerdo al Calendario 4 de la Revisión 3 del acuerdo de 1958. / *According to Schedule 4 to Revision 3 of the 1958 Agreement.*

<sup>(4)</sup> De acuerdo a los párrafos 5.2.2. y 5.3.1.2 de este Reglamento / *According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.*

<sup>(5)</sup> Apéndice 2 para neumáticos clase C1 y C2, Apéndice 3 para neumáticos clase C3. / *Appendix 2 for classes C1 and C2 tyres, Appendix 3 for class C3 tyres.*

<sup>(6)</sup> En el caso de "neumático de nieve para uso en condiciones severas" se deberá añadir un informe de ensayo de acuerdo al Apéndice 2 del Anexo 7. / *In the case of "snow tyre for use in severe snow conditions" a test report according to Appendix 2 to Annex 7 shall be submitted*





## Anexo - Información adicional sobre esta Homologación de tipo

### Condiciones de la autorización y pie de recurso

Los vehículos, sistemas, componentes o unidades técnicas independientes fabricados en virtud de esta homologación de tipo deben estar identificados y portar las marcas correspondientes según la reglamentación aplicable.

La producción en serie de vehículos, sistemas, componentes y unidades técnicas independientes debe realizarse de acuerdo con la documentación de homologación. Todo cambio en la producción individualizada requerirá autorización expresa previa por parte de la Autoridad de Homologación Española.

Cualquier modificación en los datos incluidos en el certificado de homologación, como el nombre de la empresa, representante en la UE, dirección y las plantas de fabricación deben ser comunicados inmediatamente a la Autoridad de Homologación Española.

La homologación perderá su validez cuando la misma haya sido retirada o el tipo ya no cumpla con los requisitos legales. La retirada tendrá lugar siempre que hayan dejado de cumplirse los requisitos necesarios para la concesión y mantenimiento de la misma, cuando el fabricante no pueda demostrar a la Autoridad de Homologación el cumplimiento con los requisitos y procedimientos para garantizar la conformidad de la producción, en caso de que el titular no cumpla con sus obligaciones inherentes a la homologación o cuando se determine que el tipo homologado no cumple con los requisitos de seguridad y medio ambiente.

La Autoridad de Homologación de Tipo española podrá verificar el cumplimiento de las obligaciones del fabricante en cualquier momento. En particular, se podrá comprobar la correspondencia del producto con el tipo homologado, así como las medidas establecidas para garantizar la conformidad de la producción. A tal efecto se podrán tomar o solicitar las muestras necesarias. Se permitirá el acceso sin trabas a las instalaciones de producción y almacenamiento a los empleados o representantes de la Autoridad de Homologación Española.

La autorización objeto de esta resolución de homologación de tipo no es transferible. Los derechos de marca de terceros no se encuentran afectados por esta homologación.

Contra la presente Resolución, que no pone fin a la vía administrativa, podrá interponerse recurso de alzada <sup>1</sup> ante la Dirección General de Industria y de la Pequeña y Mediana empresa, o ante la Secretaría General de Industria y de la Pequeña y Mediana empresa, en el plazo de un mes a partir del día siguiente a su notificación, de conformidad con los artículos 121 y 122 de la Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas.

<sup>1</sup> Nota: Para interponer recurso de alzada deberá acceder al siguiente enlace:  
<https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157>





### *Annex - Additional Information on this Type Approval*

#### *Collateral clauses and right to appeal (Courtesy translation)*

*All vehicles, systems, components or separate technical units which correspond to the approved type are to be identified and marked according to the applied regulation.*

*The serial fabrication of vehicles, systems, components or separate technical must be in exact accordance with the approval documents. Changes in the individual production are only allowed with express consent of the Spanish Type Approval Authority.*

*Changes in the data included in the approval certificate, such as the name of the company, EU representative, address and the manufacturing plant are to be immediately disclosed to the Spanish Type Approval Authority.*

*The approval expires if it is withdrawn or if the type approved no longer complies with the legal requirements. The revocation can be made if the demanded requirements for issuance and the continuance of the approval no longer exist, if the manufacturer cannot demonstrate to the Type Approval Authority that it comply with the requirements and procedures to guarantee the conformity of production, if the holder of the approval violates the duties involved in the approval or if it is determined that the approved type does not comply with the requirements of traffic safety or environmental protection.*

*The Spanish Type Approval Authority may check the proper exercise of the conferred authority taken from this approval at any time. In particular, this means the compliant production as well as the measures for conformity of production. For this purpose, samples can be taken or have taken. The employees or the representatives of the Spanish Type Approval Authority may get unhindered access to the production and storage facilities.*

*The authorization contained with issuance of this approval is not transferable. Trade mark rights of third parties are not affected with this approval.*

*This approval does not conclude the administrative channel and can be appealed<sup>2</sup> within one month after notification, according to articles 121 and 122 of Ley 39/2015, de 1 de octubre, del Procedimiento Administrativo Común de las Administraciones Públicas. The appeal is to be addressed to Dirección General de Industria y de la Pequeña y Mediana empresa, or Secretaría General de Industria y de la Pequeña y Mediana empresa.*

<sup>2</sup> Note: Appeal on the following link:

<https://sede.serviciosmin.gob.es/es-es/procedimientoselectronicos/Paginas/detalle-procedimientos.aspx?IdProcedimiento=157>



**INFORME/REPORT N° CN23070479****REGLAMENTO CEPE/ONU 117R02/14 REFERENTE A EMISIÓN DE RUIDO A LA RODADURA,  
ADHERENCIA EN MOJADO Y RESISTENCIA A LA RODADURA  
EXTENSIÓN I  
UN/ECE REGULATION 117R02/14 RELATED TO ROLLING SOUND EMISSIONS, ADHESION ON WET  
SURFACES AND ROLLING RESISTANCE  
EXTENSION I**

Solicitante / Applicant : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD.  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)

Fabricante / Manufacturer : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD.  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)

Clase del neumático / Tyre Class : C3

Categoría de uso / Category of use : Normal / Normal

Neumático de tracción / Traction tyre : No / No

Designación de tipo de neumático / Tyre type designation : LH398

Marca / Brand name : JILUTONG; SAFECESS; FIREMAX; KPATOS; SUNWIDE; AVENTUS; ECOSTAR; HUNTERROAD; XCENT

Nombre comercial / Commercial name : LH398; SFC77; FM919; KT919; SHW200; VHW200; ECO36; H812; EL998

Lugar y fecha de emisión del informe / Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 14/07/2023

**CONCLUSIONES:** La muestra ensayada de la familia CUMPLE con las prescripciones referentes a “emisión de ruido a la rodadura” y/o “adherencia en superficie mojada” y/o “resistencia a la rodadura” y/o “prestaciones en nieve” según el REGLAMENTO CEPE/ONU 117R02/14. De acuerdo con el punto 12.12 de las Disposiciones Transitorias, el procedimiento de prueba para medir el agarre en mojado no tiene en cuenta las disposiciones del Suplemento 13. Las características de las muestras ensayadas están detalladas en los anexos de este informe.

**CONCLUSIONS:** The tested samples of the family FULFIL the technical prescriptions with regard to “rolling sound emissions level” and/or “adhesion on wet surfaces” and/or “rolling resistance” and/or “snow performance” pursuant to UN/ECE REGULATION 117R02/14. According to point 12.12 of the Transitional Provisions, the test procedure for measuring wet grip does not take into account the provisions of Supplement 13. The characteristics of the tested samples are detailed in the annexes to the test report.

Realizado por / Performed by:

Zhu Yuan  
HOMOLOGATION ENGINEER

V.Bº / Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER

\* LOS ENSAYOS HAN SIDO REALIZADOS POR IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORIO ACREDITADO POR ENAC CON ACREDITACIÓN N° 35/LE159. / THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE159.

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA. / THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCION PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA. / THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.

\* EL LABORATORIO HA CALCULADO LA INCERTIDUMBRE DE MEDIDA ASOCIADA A LOS RESULTADOS. / MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.





INFORME/REPORT N° CN23070479

RESUMEN/ SUMMARY

1. Dimensiones incluidas en el tipo del neumático / *Dimensions included in the type of tyre* : Ver anexo Documentación técnica / *See annex Technical documentation*
2. Medidas de neumático seleccionadas para ensayo / *Tyre sizes selected for testing*
  - 2.1. Emisión de ruido a la rodadura / *Rolling sound emissions* : 315/70R22.5 154/151L (mayor ancho de sección, relación de aspecto más baja / *widest section width, lowest aspect ratio*).  
Ver Anexo 1, Informe CN23030068, IDIADA, 02/03/2023  
*See Annex 1, Test report CN23030068, IDIADA, 02/03/2023*
  - 2.2. Adherencia en superficie mojada / *Adhesion on wet surfaces*: 315/70R22.5 154/151L (cumple extra 10% / *meets extra 10%*).  
Ver Anexo 2, Informe CN23030345, IDIADA, 11/03/2023  
*See Annex 2, Test report CN23030345, IDIADA, 11/03/2023*
  - 2.3. Resistencia a la rodadura / *Rolling resistance* : 11R22.5 149/146L (menor índice de carga / *lowest load index*)  
Ver Anexo 3, Informe CN23031598, IDIADA, 25/03/2023  
*See Annex 3, Test report CN23031598, IDIADA, 25/03/2023*
  - 2.4. Adherencia en nieve / *Snow performance* : N/A
3. Razones para la extensión (si aplica) / *Reason(s) of extension (if applicable)*
  - Inclusión de nuevas marcas / *Addition of new brand names*
  - Inclusión de nuevos nombres comerciales / *Addition of new trade descriptions*
4. Lista de Anexos a este informe / *List of Annexes to this report*:
  - 4.1. Anexo 1/ *Annex 1*: Informe referente a emisión de ruido a la rodadura / *Test report according to rolling sound emission level*.
  - 4.2. Anexo 2/ *Annex 2*: Informe referente a adherencia en superficie mojada / *Test report according to adhesion on wet surfaces*.
  - 4.3. Anexo 3 /*Annex 3*: Informe referente a resistencia a la rodadura / *Test report according to rolling resistance*.
  - 4.4. Anexo: Documentación técnica del fabricante / *Manufacturer's technical documentation*.

Lugar y fecha de emisión del informe /  
*Place and date of issue*

L'Albornar, Santa Oliva (Tarragona), 14/07/2023



Zhu Yuan  
HOMOLOGATION ENGINEER

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\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA. / *THE RESULTS PRESENTED REFER TO THE TESTED SAMPLE ONLY.*

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA. / *THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.*

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ANNEX 1

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**REPORT No. CN23030068**

## UN REGULATION No. 117R02/14 RELATED TO ROLLING SOUND EMISSIONS

Applicant	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiujuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
Manufacturer	: WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD. Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
Tyre class	: C3
Category of use	: Normal
Tyre for use in severe snow conditions	: No
Traction tyre	: No
Brand name / Trade mark	: SUNWiDE
Trade description/ Commercial name	: SHW200
Tyre size	: 315/70R22.5 154/151L
Sound level according to paragraph 4.4. of Annex 3 [dB(A)]	: 70
Place and date of issue	: L'Albornar, Santa Oliva (Tarragona), 02/03/2023

CONCLUSIONS: The samples of the family have been tested according to the technical prescriptions with regard to "rolling sound emissions level" pursuant to UN Regulation No. 117R02/14.  
The characteristics of the tested samples are detailed in the annex to the test report.

Performed by:

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER

Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER



**ANNEX TO THE TEST REPORT**  
**ROLLING SOUND EMISSIONS, REPORT No. CN23030068**

**1. TEST DATA**

**1.1. Test tyre details**

1.1.1	Applicant <sup>(1)</sup>	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiujuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
1.1.2	Manufacturer	: WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD. Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
1.1.3	Tyre class	: C3
1.1.4	Category of use	: Normal
1.1.5	Tyre for use in severe snow conditions	: No
1.1.6	Traction tyre	: No
1.1.7	Brand name / Trade mark	: SUNWiDE
1.1.8	Trade description / Commercial name	: SHW200
1.1.9	Tyre size	: 315/70R22.5 154/151L
1.1.10	Load index / Corresponding mass Q <sub>r</sub> [kg]	: 154 / 3,750
1.1.11	Tyre structure	: Radial
1.1.12	Date code, other manufacturer markings	: 0123, 2TWLJLA31
1.1.13	Reference inflation pressure P <sub>r</sub> [kPa]	: 850

<sup>(1)</sup>Information provided by the client. The laboratory is not responsible for such information

THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE2594

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**IDIADA** CN23070479

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 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

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1.1.14 Test inflation pressure  $P_t$  [kPa] :

	$P_t$ [kPa] admissible values
Front axle left wheel	$654.38 \leq 660.00 \leq 719.82$
Front axle right wheel	$621.21 \leq 630.00 \leq 683.33$
Rear axle left wheel	$626.53 \leq 630.00 \leq 689.19$
Rear axle right wheel	$642.57 \leq 650.00 \leq 706.83$

Elija un elemento.

FULFILS / NOT FULFILS

1.1.15 Test tyre internal reference :

Front left	Front right
CN-2302/04581-01	CN-2302/04581-02

Rear left	Rear right
CN-2302/04581-03	CN-2302/04581-04

1.1.16 Test rim : 9.00 x 22.5

1.1.17 Test rim internal reference :

Front left	Front right
CN-1912/02747-01	CN-1912/02747-02

Rear left	Rear right
CN-1912/02747-03	CN-1912/02747-04

1.1.18 Test tyre load [kg] :

	Load	$Q_t$ [N] / % $\frac{Q_t}{Q_r}$
Front axle left wheel	3,042	$50 < 81.12 < 90$
Front axle right wheel	2,918	$50 < 77.81 < 90$
Rear axle left wheel	2,938	$50 < 78.35 < 90$
Rear axle right wheel	2,998	$50 < 79.95 < 90$

FULFILS / NOT FULFILS

$Q_{t,avr}$ [N] / % $\frac{Q_{t,avr}}{Q_r}$
$70 \leq 79.31 \leq 80$

FULFILS / NOT FULFILS

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**1.2. Test vehicle**

1.2.1	Trade name	: HYUNDAI
1.2.2	Model	: XCIENT
1.2.3	Year	: 2019
1.2.4	Transmission	: Manual
1.2.5	Wheelbase [mm]	: 3,560

For Class C3 less than 5,000 mm.

FULFILS / NOT FULFILS

1.2.6	Vehicle internal reference	: CN-2001/01800
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**1.3. Test equipment**

1.3.1	Sound level meter 1	: 193663
1.3.2	Sound level meter 2	: 193664
1.3.3	Manometer	: 27230
1.3.4	Weight scale	: SCS-5 / SCS-10
1.3.5	Track temperature measurement device	: 182330
1.3.6	Wind speed measurement device	: 193666
1.3.7	Speed measurement device	: 170358
1.3.8	Ambient temperature measurement device	: 193659



**2. TEST TRACK**

**2.1. Environment**

2.1.1	Air temperature $T_a$ [°C]  $5.0 < T_a < 40.0$	: 12.8	FULFILS / NOT FULFILS
2.1.2.	Test surface temperature $T_s$ [°C]  $5.0 \leq T_s \leq 50.0$	: 5.5	FULFILS / NOT FULFILS
2.1.3	Wind speed [m/s]  Less than 5 m/s	: 0.9	FULFILS / NOT FULFILS
2.1.4	Ambient noise [dB(A)]  Test result – Ambient noise $\geq 10$ dB(A)	: 41.2	FULFILS / NOT FULFILS
2.1.5	Wind direction [°]	: 235.0	

**2.2. Method of certification: compliance with ISO 10844:2014:**

- Report number : FM / 002 / 21
- Date of check : March 8<sup>th</sup> 2021
- Issued by : IDIADA



### 3. TEST RESULTS

Reference Speed:  $v_{ref}$  [km/h] : 70  
 Range Speed [km/h] : 60.0 - 80.0

Run No.	Test speed [km/h]	Direction of run	Sound level left measured [dB(A)]	Sound level right measured [dB(A)]	Air temp. [°C]	Surface temp. [°C]	Sound level left temp. corrected [dB(A)]	Sound level right temp. corrected [dB(A)]
1	61.7	S → N	68.7	69.1	14.3	5.9	68.7	69.1
2	64.7	N → S	69.2	69.7	14.0	6.0	69.2	69.7
3	65.8	S → N	69.4	70.3	12.1	5.3	69.4	70.3
4	68.8	N → S	70.6	71.0	12.7	5.5	70.6	71.0
5	72.2	N → S	71.8	71.1	12.5	5.4	71.8	71.1
6	73.8	N → S	72.0	71.7	12.3	5.4	72.0	71.7
7	75.7	S → N	72.7	72.6	12.4	5.4	72.7	72.6
8	77.9	N → S	73.5	72.6	12.3	5.2	73.5	72.6

- 3.1. Regression line slope : 42.08
- 3.2. Sound level after temperature correction according to paragraph 4.3 of Annex 3 [dB(A)] : 71.03
- 3.3. Sound level according to paragraph 4.4. of Annex 3 [dB(A)] : 70
- 3.4. Limit value [dB(A)] :

Category of use	C3		
	Stage 1	Stage 2	
		Other	Traction
Normal	76	73	75
Snow	78	73	75
Snow (for use in severe Snow conditions)		74	76
Special	79	75	77

THE TESTS HAVE BEEN CARRIED OUT BY IDIADA AUTOMOTIVE TECHNOLOGY, S.A. (TS) LABORATORY ACCREDITED BY ENAC WITH NUMBER OF ACCREDITATION 35/LE2594

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 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

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## 4. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: ICPG, Zhaoyuan, China

Date of test: 01/03/2023

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER

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ANNEX 2

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**IDIADA** CN23070479

**IDIADA**



## REPORT No. CN23030345

### UN REGULATION No. 117R02/14 RELATED TO ADHESION ON WET SURFACES

Applicant : HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD  
Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiuhuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China

Manufacturer : WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD.  
Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)

Tyre class : C3

Category of use : Normal

Tyre for use in severe snow conditions : No

Traction tyre : No

Brand name / Trade mark : SUNWiDE

Trade description/ Commercial name : SHW200

Tyre size : 315/70R22.5 154/151L

Wet grip index relative to SRTT according to paragraph 2.2.2.7.5. : 1.06

Place and date of issue : L'Albornar, Santa Oliva (Tarragona), 11/03/2023

CONCLUSIONS: The samples of the family have been tested according to the technical prescriptions with regard to “adhesion performance on wet surfaces” pursuant to UN Regulation No. 117R02/14. The characteristics of the tested samples are detailed in the annex to the test report. Test configuration as per paragraph 2.2.2.2.: *Configuration 1 (4 candidate tyres in test vehicle)*

Performed by:

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER

Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER



**ANNEX TO THE TEST REPORT**  
**ADHESION ON WET SURFACES, REPORT No. CN23030345**

**1. TEST DATA**

**1.1. Test tyre details**

1.1.1	Applicant <sup>(1)</sup>	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiuhan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
1.1.2	Manufacturer	: WEIFANG SHUNFUCHANG RUBBER & PLASTIC PRUDUCTS CO., LTD. Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
1.1.3	Tyre class	: C3
1.1.4	Category of use	: Normal
1.1.5	Tyre for use in severe snow conditions	: No
1.1.6	Traction tyre	: No
1.1.7	Brand name / Trade mark	: SUNWiDE
1.1.8	Trade description / Commercial name	: SHW200
1.1.9	Tyre size	: 315/70R22.5 154/151L
1.1.10	Load index / Corresponding mass Q <sub>r</sub> [kg]	: 154 / 3,750
1.1.11	Tyre structure	: Radial
1.1.12	Date code, other manufacturer markings	: 0123, 2TWLJLA31
1.1.13	Reference inflation pressure [kPa]	: 850

<sup>(1)</sup> Information provided by the client. The laboratory is not responsible for such information



1.1.14 Test tyre internal reference :

Front left	Front right
CN-2302/04581-01	CN-2302/04581-02
Rear left	Rear right
CN-2302/04581-03	CN-2302/04581-04

1.1.15 Test rim : 9.00 x 22.5

1.1.16 Test rim internal reference :

Front left	Front right
CN-1912/02747-01	CN-1912/02747-02
Rear left	Rear right
CN-1912/02747-03	CN-1912/02747-04

1.1.17 SRTT identification : MICHELIN 315/70 R22.5 - ASTM F 2870

1.1.18 SRTT internal reference :

Front left	Front right
CN-2204/01872-01	CN-2204/01872-02
Rear left	Rear right
CN-2204/01872-03	CN-2204/01872-04

1.1.19 Test SRTT rim : 9.00 x 22.5

1.1.20 Test SRTT rim internal reference :

Front left	Front right
CN-1912/02743-01	CN-1912/02743-02
Rear left	Rear right
CN-1912/02743-03	CN-1912/02743-04

1.1.21 Test tyre load [kg] :

SRTT 1			Candidate tyre			SRTT 2		
FL	3,250	86.7% Qr	FL	3,270	87.2% Qr	FL	3,248	86.6% Qr
FR	3,198	85.3% Qr	FR	3,156	84.2% Qr	FR	3,190	85.1% Qr
RL	3,250	86.7% Qr	RL	3,226	86.0% Qr	RL	3,254	86.8% Qr
RR	3,288	87.7% Qr	RR	3,298	87.9% Qr	RR	3,270	87.2% Qr

Between 60 per cent and 100 per cent of the load value corresponding to the load index of the tyre.

FULFILS / NOT FULFILS

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**1.2. Test vehicle**

- 1.2.1 Trade name : HYUNDAI
- 1.2.2 Model : XCIENT
- 1.2.3 Year : 2019
- 1.2.4 Transmission : Manual
- 1.2.5 Wheelbase [mm] : 3,560
- 1.2.6 Vehicle internal reference : CN-2001/01800
- 1.2.7 Vehicle configuration (ISO 15222) : Configuration 1 (4 candidate tyres in test vehicle)

**1.3. Test inflation pressure**

1.3.1 SRTT inflation pressure [kPa] :

	FL	FR	RL	RR
SRTT 1	753	738	753	764
SRTT 2	752	735	754	758

1.3.2 Candidate inflation pressure :

Candidate	Q <sub>t</sub> [kg]	Q <sub>r</sub> [kg]	Conditions	Cond. Used	Inflation pressure P <sub>t</sub> [kPa]
FL	3,270	3,750	1- If Q <sub>t</sub> < 75% Q <sub>r</sub> then: <b>P<sub>t</sub> = (0.7) x P<sub>r</sub></b>	2	716
FR	3,156	3,750		2	685
RL	3,226	3,750	2- If Q <sub>t</sub> ≥ 75% Q <sub>r</sub> then: <b>P<sub>t</sub> = P<sub>r</sub> x (Q<sub>t</sub> / Q<sub>r</sub>)<sup>1.25</sup></b>	2	704
RR	3,298	3,750		2	724

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**1.4. Test equipment**

- 1.4.1 Manometer : 27230
- 1.4.2 Weight scale : SCS-5/ SCS-10
- 1.4.3 Thermometer : 182330
- 1.4.4 Track temperature measurement device : 182329
- 1.4.5 Speed measurement device : VBOX Sport 07013178
- 1.5.6 Brake system pressure transducer : 19-2039-07

**2. TEST TRACK**

- 2.1. Location : Straight line braking B, ICPG
- 2.2. Date of check on compliance of the test surface : April 1<sup>st</sup> 2022
- 2.3. Test track characteristics:
  - 2.3.1 Texture depth [mm] : 0.86
  - 2.3.2 PBC : 0.71 and 0.72
  - 2.3.3 Water depth [mm] : Average of 1.18
- 2.4. Test method : Vehicle
- 2.5. Air temperature  $T_a$  [°C] : 15.2
- 2.6. Wet surface temperature  $T_w$  [°C] :

$$5.0 \leq T_w \leq 35.0$$

SRTT 1	Candidate tyre	SRTT 2
6.5	7.7	16.3

FULFILS / NOT FULFILS

Variation during the test less than 10 °C

FULFILS / NOT FULFILS

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### 3. TEST RESULTS

Test run	SRTT 1		Candidate tyre		SRTT 2	
	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]	Braking distance [m]	Average deceleration [m/s <sup>2</sup> ]
1	29.20	4.23	27.73	4.45	29.84	4.14
2	29.64	4.17	27.60	4.47	29.47	4.19
3	29.07	4.25	27.44	4.50	29.75	4.15
4	-	-	27.82	4.44	-	-
5	-	-	27.54	4.48	-	-
6	-	-	28.24	4.37	-	-

#### Coefficient of variation

SRTT 1	Candidate tyre	SRTT 2
1.01	1.02	0.65
< 3 per cent	< 3 per cent	< 3 per cent

#### FULFILS / NOT FULFILS

Test run	Test Speed [km/h]	Direction of run	SRTT	Candidate tyre	Mean fully developed deceleration (mfdd)	Wet Grip Index	Pedal force [N]
1	60 - 20	S - N	315/70R22.5	---	4.21 m/s <sup>2</sup>	---	> 600
2	60 - 20	S - N	---	315/70R22.5	4.45 m/s <sup>2</sup>	1.06	> 600
4	60 - 20	S - N	315/70R22.5	---	4.16 m/s <sup>2</sup>	---	> 600

### Wet grip index G = 1.06

#### 3.1. Limit value

Category of use	Wet Grip Index (+10% Wet Grip Index) (G)			
	C2		C3	
	Other	Traction	Other	Traction
Normal	≥ 0.95 (≥ 1.05)	≥ 0.85 (≥ 0.94)	≥ 0.80 (≥ 0.88)	≥ 0.65 (≥ 0.72)
Snow			≥ 0.65 (≥ 0.72)	
Snow in severe conditions	≥ 0.85 (≥ 0.94)	≥ 0.85 (≥ 0.94)	≥ 0.65 (≥ 0.72)	≥ 0.65 (≥ 0.72)
Special			≥ 0.65 (≥ 0.72)	

\* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE.  
 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY.  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE

IDIADA Automotive Technology, S.A. N.I.F. A43581610 Servicio Técnico Designado de Homologación (TS)





## 4. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: ICPG, Zhaoyuan, China

Date of test: 09/03/2023

Chen(Jacky) Zhu  
HOMOLOGATION ENGINEER



ANNEX 3

Validate this report with the security code « VT3CLULO » at: <https://extranet.idiada.com/hom-cve>

**IDIADA** CN23070479

**IDIADA**

**REPORT Nº CN23031598**

## UN/ECE REGULATION 117R02/14 RELATED TO ROLLING RESISTANCE

Applicant	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiuhuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
Manufacturer	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD. (Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)
Tyre class	: C3
Category of use	: Normal
Tyre for use in severe snow conditions	: N/A
Traction tyre	: N/A
Brand name / Trade mark	: AVENTUS
Trade description/ Commercial name	: VHW200
Tyre size	: 11R22.5 149/146L
Rolling resistance coefficient (temperature and drum diameter corrected)	: 5.257
Place and date of issue	: L'Albornar, Santa Oliva (Tarragona), 25/03/2023

CONCLUSIONS: The sample of the family has been tested according to the technical prescriptions with regard to "rolling resistance" pursuant to UN/ECE REGULATION 117R02/14.  
The characteristics of the tested sample are detailed in the annex to the test report.

Performed by:

Zhu Yuan  
HOMOLOGATION ENGINEER

Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER



**ANNEX TO THE TEST REPORT**  
**ROLLING RESISTANCE, REPORT N° CN23031598**

**1. TEST DATA**

**1.1. Test tyre details**

1.1.1	Applicant <sup>(1)</sup>	: HANGZHOU SHACE AUTOMOTIVE TECHNOLOGY SERVICE CO., LTD Room 303, Unit B Building 1, Zhejiang National University Science Park, No.9 Jiujuan Road, Jianggan District, Hangzhou City, Zhejiang Province, P.R. China
1.1.2	Manufacturer <sup>(1)</sup>	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD. (Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG (CHINA)
1.1.3	Tyre class	: C3
1.1.4	Category of use	: Normal
1.1.5	Tyre for use in severe snow conditions	: N/A
1.1.6	Traction tyre	: N/A
1.1.7	Brand name / Trade mark	: AVENTUS
1.1.8	Trade description / Commercial name	: VHW200
1.1.9	Tyre size	: 11R22.5 149/146L
1.1.10	Load index / Corresponding mass Q <sub>r</sub> [kg]	: 149 / 3,250
1.1.11	Tyre structure	: Radial
1.1.12	Date code, other manufacturer markings	: 0723
1.1.13	Inflation pressure [kPa]	: 930
1.1.14	Test tyre internal reference	: CN23031598
1.1.15	Test rim	: 8.25 x 22.5
1.1.16	Test rim internal reference	: 8.25 x 22.5
1.1.17	Test rim material	: Aluminium

(1) Information provided by the client. The laboratory is not responsible for such information

---

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 \* THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN.  
 \* MEASUREMENT UNCERTAINTY OF THE RESULTS HAS BEEN CALCULATED BY THE LABORATORY  
 \* THE DECISION RULE USED, ACCORDING TO THE ILAC-G8 STANDARD, WAS THE BINARY STATEMENT FOR SIMPLE ACCEPTANCE



**1.2. Test machine data**

1.2.1 Identification : 04-1086, 04-807

1.2.2 Drum diameter [mm] : 1,707.6

FULFILS/NOT FULFILS

1.2.3 Surface : Smooth steel

1.2.4 Roughness [ $\mu\text{m}$ ] :  $\leq 6.3$

FULFILS/NOT FULFILS

**1.3. Test data**

1.3.1 Measurement method : Force

1.3.2 Test speed [km/h] : 80

C3: 80 km/h (K:110 km/h and higher and load symbol > to 121);

FULFILS/NOT FULFILS

1.3.3 Load Index (LI) / Load [kg] : 149 / 3,250

1.3.4 Test load [kg / N] : 2,762.5 / 27,091

C2/C3 (% of single load): 85 (\*)

(\*) as a percentage of single load, or 85 per cent of maximum load capacity for single application specified in applicable tyre standards manuals if not marked on tyre.

FULFILS/NOT FULFILS

1.3.5 Test inflation pressure, initial [kPa] : 930

C2/C3: corresponding to maximum load capacity for single application (\*)

(\*): inflation pressure marked on sidewall, or if not market on sidewall, as specified in applicable tyre standards manuals corresponding to maximum load capacity for single application.

FULFILS/NOT FULFILS

1.3.6 Distance from the tyre axis to the drum outer surface under steady state conditions during test ( $r_L$ )[m] : 0.498

1.3.7 Distance from the tyre axis to the drum outer surface under steady state conditions during skim test ( $r_L$ )[m] : 0.525

1.3.8 Ambient temperature  $T_{am}$  [°C] : 24.87

$20.0 \leq T_{am} \leq 30.0$

FULFILS/NOT FULFILS

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1.3.9 Skim test load [N] : 400.007

C3 ≤ 500 N

FULFILS/NOT FULFILS

1.3.10 Spindle force (Ft) [N] : 98.722

1.3.11 Spindle force during skim test (Ft) [N] : 5.916

1.3.12 Parasitic loss (Fpl) [N] : 9.556

1.3.13 Rolling resistance (Fr) [N] : 146.695

## 2. TEST RESULTS

### 2.1. Rolling resistance coefficient

2.1.1 Initial value (or average in the case of more than 1) [N/kN] : 5.415

2.1.2 Temperature corrected value [N/kN] : 5.410

2.1.3 Temperature and drum diameter corrected value [N/kN] : 5.257

**Rolling resistance coefficient Cr [N/kN] = 5.257**

### 2.2. Limit value [N/kN]

	Stage 1	Stage 2
C1	12.0	10.5
C2	10.5	9.0
C3	8.0	6.5

For "snow tyre for use in severe snow conditions", the limits shall be increased by 1 N/kN.

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### 3. TEST TYRE PICTURES



Picture 1. Sidewall



Picture 2. Tread pattern

Place of test: Qingdao Product Quality Testing Research Institute (Qingdao, China)

Date of test: 08/03/2023

袁柱

Zhu Yuan  
HOMOLOGATION ENGINEER

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TECHNICAL DOCUMENTATION



Type of tyre:

LH398



Date : Jul 08. 2023

Ext. : 01

**REGARDING ROLLING SOUND EMISSIONS LEVEL AND/OR TO ADHESION  
PERFORMANCE LEVEL ON WET SURFACES AND/OR ROLLING RESISTANCE  
ACCORDING TO REGULATION 117.02**

1. GENERAL
  - 1.1. The performance characteristics to be assessed for the tyre type : Rolling sound emissions level / adhesion performance level on wet surfaces / rolling resistance level / ~~snow performance level~~
  - 1.2. Manufacturer's name and address : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD  
(Northeast Corner, Crossing of Xihuan Road and Jinguang Street), Chenming Industrial District, Shouguang 262719, Weifang, SHANDONG(CHINA)
  - 1.3. If applicable, name and address of manufacturer's representative : N.A.
  - 1.4. Brand name(s)/Trademark(s) : JILUTONG; SAFECESS; FIREMAX; KPATOS; SUNWIDE; AVENTUS **ECOSTAR; HUNTERROAD; XCENT**
  - 1.5. Trade description(s)/Commercial name(s) : LH398; SFC77; FM919; KT919; SHW200; VHW200; **ECO36; H812; EL998**
  - 1.6. Type of tyre : LH398
2. TYRE
  - 2.1. Tyre class : ~~C1/C2/C3~~ <sup>(1)</sup>
  - 2.2. Category of use : Normal/~~snow/special~~ <sup>(1)</sup>
    - 2.2.1. Whether tyre for use in severe snow conditions : ~~Yes/No~~ <sup>(1)</sup>
    - 2.2.2. For Class C2, C3 tyre, whether traction tyre : ~~Yes/No/N.A.~~ <sup>(1)</sup>
  - 2.3. Tyre structure : ~~Diagonal/bias belted~~/radial <sup>(1)</sup>
  - 2.4. A list of tyre size designations covered by this application and specifying for each brand name/trademark and/or each trade description /commercial name the applicable tyre size designations and service descriptions, adding in case of Class C1 tyres whether "reinforced" (or "extra load") or not. : Refer to attachment 1
3. The application for approval shall be accompanied (in triplicate) by
  - 3.1. Details of the major features, with respect to the effects on the performance (i.e. rolling sound emission level, adhesion on wet surfaces, rolling resistance and snow grip) of the tyres, including the tread pattern, included in the designated range of tyre sizes. : Refer to Attachment 2
  - 3.2. Drawings or photographs of the tyre sidewall, showing the information given in paragraph 3.1.8. above and the approval marking referred to in paragraph 4. : Refer to Attachment 3

<sup>(1)</sup> Strike out what does not apply.  
R117-V.00(2021-09-30)

- 3.3. In the case of applications relating to special use tyres, a copy of the mould drawing of the tread pattern shall be supplied in order to allow verification of the void-to-fill ratio. : N.A.

### Attachment 1-List of Tyre Size

Brand name(s)/Trademark(s):

JILUTONG; SAFECESS; FIREMAX; KPATOS; SUNWIDE; AVENTUS; **ECOSTAR; HUNTERROAD; XCENT**

Trade description(s)/Commercial name(s):

LH398; SFC77; FM919; KT919; SHW200; VHW200; **ECO36; H812; EL998**

	Type Approval Number	Tyre size designations / Load index / Speed symbol	Standard or Extra load (for Class C1 tyres)	Limit for rolling sound dB(A) of Stage II	Limit for wet grip index	Limit for rolling resistance coefficient N/kN of Stage II	Limit for Snow grip index
1	E9-00.6588	315/70R22.5 154/151L	N.A.	73	0.8	6.5	N.A.
2	E9-00.6171	11R22.5 149/146L	N.A.	73	0.8	6.5	N.A.
3	E9-00.1006	12R22.5 152/149L	N.A.	73	0.8	6.5	N.A.
4	E9-00.1008	295/80R22.5 152/149L	N.A.	73	0.8	6.5	N.A.
5	E9-00.1067	315/80R22.5 156/153L	N.A.	73	0.8	6.5	N.A.
6							
7							
8							
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19							
20							

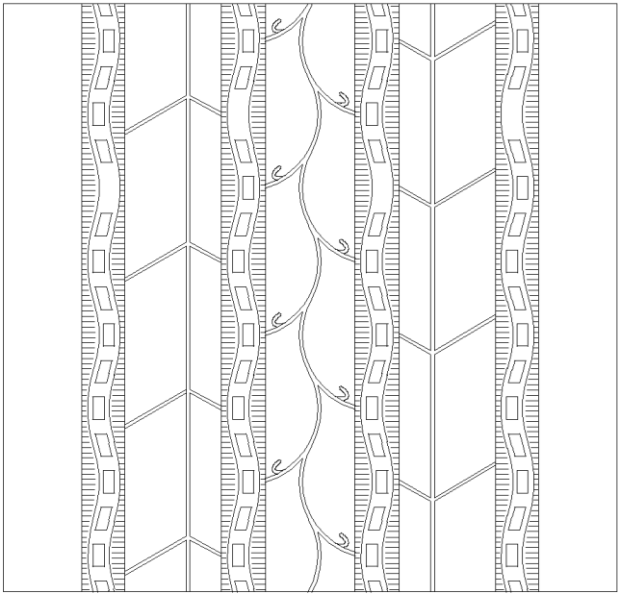
CN23070479

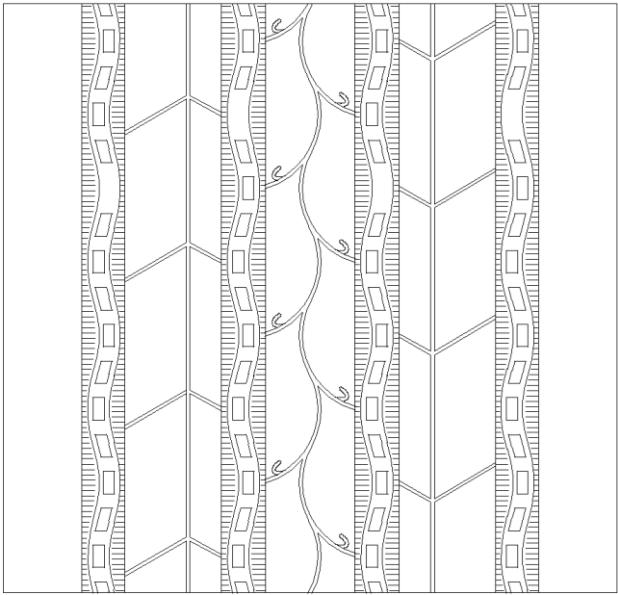
**İDİADA**

## Worst Case Selection

Test size for rolling sound	:	315/70R22.5 154/151L
Because of	:	<del>The largest nominal section width; or The largest nominal section width and the lowest aspect ratio; or The largest nominal section width and lowest aspect ratio and the largest rim diameter.</del>
Test size for wet grip	:	315/70R22.5 154/151L
Because of	:	Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is $0.88 < 1.06$ (Wet grip test result)
Test size for rolling resistance	:	11R22.5 149/146L
Because of	:	Lowest load index; or Calculated limit value = $(RRC \text{ limit value } R117 - 0.3 \cdot N/kN) - 0.06 \cdot x$ (LI-candidate - LI lowest) The new limit value is $10.25 > 9.08$ (Rolling resistance test result)
Test size for snow grip	:	
Class C1 and C2	÷	<del>The widest nominal section width; or Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is <math>1.10 &lt; 1.26</math> (Snow grip test result)</del>
Class C3	÷	<del>The smallest nominal section width; or Any tyre size that meets the required limit value of the regulation plus (at least) the extra safety margin may represent the whole tyre type range. The new limit value is <math>1.45 &lt; 1.55</math> (Snow grip test result)</del>

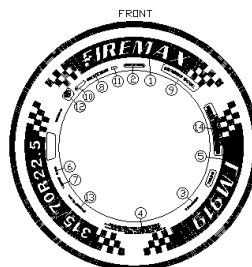
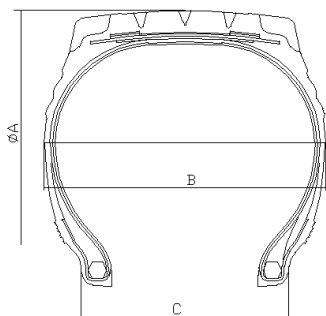
## Attachment-2 Details of the major features

Drawing of the tread pattern (for measured tyre using for tyre noise, wet grip and <del>rolling resistance performance</del> )	
Manufacturer name	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD
Pattern name	: LH398; SFC77; FM919; KT919; SHW200; VHW200; <b>ECO36; H812; EL998</b>
Tyre Size	: 315/70R22.5 154/151L
Market	: EU
Pitch number	: 68
Pitch ratio (Max/Min)	: 1: 1
Groove area ratio [%]	: 26%
Width: main grooves [mm]	: 13.5
Depth: center groove [mm]	: 14.0
Depth: shoulder groove [mm]	: 14.0
Tyre mass [kg]	52.0
Tread depth [mm]	14.0
Tread width [mm]	228
Curvature radius of tread crown [mm]	816
Tyre outer diameter[mm]	1010
Tread plies	4 PLYS STEEL
Tyre tread pattern	

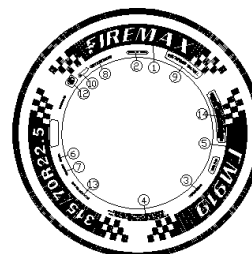
Drawing of the tread pattern (for measured tyre using for tyre noise, wet grip and rolling resistance performance)	
Manufacturer name	: WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD
Pattern name	: LH398; SFC77; FM919; KT919; SHW200; VHW200; <b>ECO36; H812; EL998</b>
Tyre Size	: 11R22.5 149/146L
Market	: EU
Pitch number	: 75
Pitch ratio (Max/Min)	: 1: 1
Groove area ratio [%]	: 26.5%
Width: main grooves [mm]	: 13.0
Depth: center groove [mm]	: 14.5
Depth: shoulder groove [mm]	: 14.5
Tyre mass [kg]	48.5
Tread depth [mm]	14.5
Tread width [mm]	214
Curvature radius of tread crown [mm]	700
Tyre outer diameter[mm]	1050
Tread plies	1 STEEL + 3 STEEL
Tyre tread pattern	

## Attachment 3 Drawings or photographs of the tyre sidewall

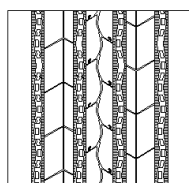
Drawings of the sidewall  
(for measured tyre using for tyre noise, wet grip and rolling resistance performance)



LOWER MOLD



FRONT  
UPPER MOLD

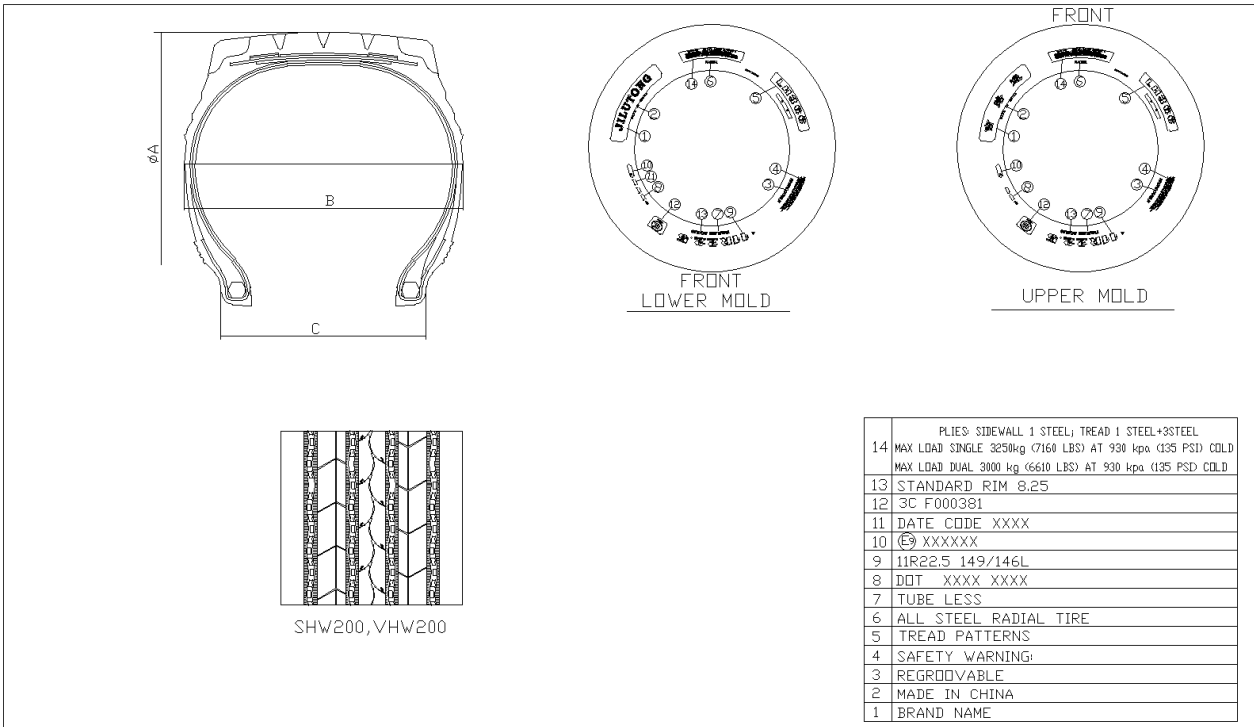


LH398 , SFC77 , FM919  
KT919 , SHW200 , VHW200  
ECC36 , H812 , EL998

14	PLIES SIDEWALL 1 STEEL TREAD 4 STEEL
	MAX LOAD SINGLE 2750kg (6070 LBS) AT 930 kpa (135 PSI) COLD
	MAX LOAD DUAL 3450kg (7600 LBS) AT 930 kpa (135 PSI) COLD
13	STANDARD RIM 9.00
12	CCC
11	DATE CODE XXXX
10	(E) XXXXXX
9	315/70R22.5 154/151L
8	DOT XXXXXXX
7	TUBE LESS
6	ALL STEEL RADIAL
5	TREAD DESCRIPTION
4	SAFETY WARNING
3	REGROOVABLE
2	MADE IN CHINA
1	BRAND NAME

315/70R22.5 20PR	JILUTONG , SAFECESS , FIREMAX KPATOS , SUNWIDE , AVENTUS ECCSTAR , HUNTERROAD , XCENT	LH398 , SFC77 , FM919 KT919 , SHW200 , VHW200 ECC36 , H812 , EL998	154/151	L	T/L	1014	312	228.6	14.0
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
APPROVED BY	CHECKED BY	DRAWN BY WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD							

**Drawings of the sidewall**  
(for measured tyre using for tyre noise, wet grip and rolling resistance performance)



11R22.5 18PR	SUNWIDE , AVENTUS	SHW200, VHW200	149/146	L	T/L	1050	279	209.6	14.5
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD						



E9-00.1067 Ext. 10

Página / Page 1/3

Comunicación relativa a <sup>(1)</sup> / *Communication concerning the* <sup>(1)</sup>:

- ~~la concesión de la homologación / approval granted~~
- ~~la extensión de homologación / approval extended~~
- ~~la denegación de la homologación / approval refused~~
- ~~la retirada de la homologación / approval withdrawn~~
- ~~el cese definitivo de la producción / production definitely discontinued~~

de un tipo de neumático para vehículos de motor de conformidad con el Reglamento nº 54 / *of a type of tyre for motor vehicles pursuant to Regulation No. 54*

Nº de homologación / *Approval No.*: E9-00.1067

Nº de extensión / *Extension No.*: 10

1. Nombre y dirección del fabricante / *Manufacturer's name and address*:  
WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD  
Northeast Corner, Crossing of Xihuan Road and Jinguang Street, Chenming Industrial District,  
Shouguang 262719, Weifang City, Shandong Province, CHINA
2. Designación de tipo de neumático / *Tyre type designation*: 315/80R22.5 156/153L
- 2.1. Marca(s) / *trademark(s)*: JILUTONG; MIYUKI; DITRIP; YANSHUN; RICHWAY; CROWN;  
BERSHESTONE; FERRARA; ECOCARGO; RUNKING; ODYKING; TRANSKING; STUD; LANDER;  
SAFECESS; FIRELION; SUNFULCESS; BENTON; KINGRUN; TRANSTONE; GOUDRUN;  
DRIVEMASTER; FIREMAX; RUNTEK; KPATOS; XCENTWAY; FORCEGRIP; **HUNTERROAD**
- 2.2. Banda de rodadura / *Tread pattern*: LH668; LH199; LH399; LH688; LH369; KB866; KB991; KB993;  
KB886; DT218; DT368; DT118; DT318; YS918; YS688; YS619; YS628; RW300; RW785; RW786;  
RW789; CL101; CL399; BS201; BS216; CL199; CL688; FT199; FT688; EC708; EC706; ST176; KING626;  
ST901; OD901; OD626; OD176; TG866; TG108; TEC444; LS168; LS302; LS214; LS398; SFC18; SFC29;  
SFC66; SFC08; SFC76; FL18; FL29; FL66; FL08; FL76; BT400; BT553; BT651; TT78; TT813; EM102;  
TG118; TG529; TG766; DMLH399; DMLH688; LH870; LH309; TG559; TG857; SFC87; SFC39; FL85;  
FL55; FM66; FM18; FM08; FM76; FM77; FM39; AK77; AK47; AK97; AK81; AK66; KTL02; KTA01;  
KTL05; KTR67; KTR77; KTR39; XT103; XT302; TEC222; TED556; TED555; FG18; FG66; FG76; **H701;**  
**H699; H612; H801; H603; H808; H802**
3. En su caso, nombre y dirección del representante del fabricante / *If applicable, name and address of manufacturer's representative*: ---
4. Descripción sucinta / *Summarised description*:
  - 4.1. Tamaño del neumático / *Size of tyre*: 315/80R22.5
  - 4.2. Categoría de uso: normal / ~~especial~~ / ~~nieve~~  
*Category of use: normal / ~~special~~ / ~~snow~~*

(1) Tachar lo que no proceda/ *Strike out what does not apply*





E9-00.1067 Ext. 10

Página / Page 2/3

- 4.3. Estructura: ~~diagonal~~ / radial  
*Structure: ~~diagonal (bias-ply)~~ / radial*
- 4.4. Clase de neumático / *Tyre class*: E2/C3<sup>(1)</sup>
- 4.5. Símbolo de la categoría de velocidad / *Speed category symbol*:
- 4.5.1 Nominal / *Nominal*: L
- 4.5.2 Adicional (en su caso) / *Additional (if applicable)*: N.A.
- 4.6 Índice de capacidad de carga / *Load-capacity indices*:
- 4.6.1 Correspondiente a la velocidad nominal / *Corresponding to nominal speed*:  
simple / *single* : 156    gemelo (doble) / *twinned (dual)* : 153
- 4.6.2 Correspondiente a la velocidad adicional / *Corresponding to additional speed* :  
simple / *single* : N.A.    gemelo (doble) / *twinned (dual)* : N.A.
5. Servicio técnico o, en su caso, laboratorio de ensayo autorizado para la homologación o la verificación de la conformidad / *Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity*: IDIADA
6. Fecha del informe expedido por este servicio / *Date of report issued by that service*: **02/07/2018**
7. Número del informe expedido por este servicio / *Number of report issued by that service*: CN12070041; CN12120155; CN13040184; CN13060066; CN13110271; CN13120422; CN15010231; CN16040055; CN16090036; CN17100499; **CN18070081**
8. Motivos de la extensión (en su caso) / *Reason(s) of extension (if applicable)*: Ver informe de ensayo número CN18070081 /See Test Report Number CN18070081
9. Observaciones / *Any remarks*: ---
10. Lugar / *Place*: Madrid
11. Fecha / *Date*: Ver firma electrónica / *See digital signature*
12. Firma / *Signature*:

EL SUBDIRECTOR GENERAL DE CALIDAD Y SEGURIDAD INDUSTRIAL  
Resolución P.D. del DIRECTOR GENERAL DE INDUSTRIA Y DE LA PYME de 25-10-2012

(1) Tachar lo que no proceda/ *Strike out what does not apply*



MINISTERIO  
DE INDUSTRIA, COMERCIO Y  
TURISMO

DIRECCIÓN GENERAL DE INDUSTRIA Y  
DE LA PEQUEÑA Y MEDIANA EMPRESA

SUBDIRECCIÓN GENERAL DE  
CALIDAD Y SEGURIDAD INDUSTRIAL



E9-00.1067 Ext. 10

Página / Page 3/3

13. Se adjunta a la presente notificación una lista de los documentos que figuran en el expediente de homologación depositado en los servicios administrativos que han expedido la homologación y que podrán obtenerse previa petición. / *Annexed to this communication is a list of documents in the approval file deposited at the administrative services having delivered the approval and which can be obtained upon request.*

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(1) Tachar lo que no proceda/ *Strike out what does not apply*

FIRMADO

**INFORME N° / REPORT No. CN18070081****HOMOLOGACIÓN DE NEUMÁTICOS PARA VEHÍCULOS INDUSTRIALES  
Y SUS REMOLQUES SEGÚN EL REGLAMENTO 54.00 ECE /  
APPROVAL OF PNEUMATIC TYRES FOR COMMERCIAL VEHICLES  
AND THEIR TRAILERS REFERING TO REGULATION 54.00 ECE****EXTENSION X**

Fabricante / *Manufacturer* : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS  
CO., LTD  
Northeast Corner, Crossing of Xihuan Road and Jinguang Street, Chenming  
Industrial District, Shouguang 262719, Weifang City, Shandong Province,  
CHINA

Marca(s) / *Trade mark(s)* : JILUTONG; MIYUKI; DITRIP; YANSHUN; RICHWAY; CROWN;  
BERSHESTONE; FERRARA; ECOCARGO; RUNKING; ODYKING; TRANSKING; STUD; LANDER;  
SAFECESS; FIRELION; SUNFULCESS; BENTON; KINGRUN; TRANSTONE; GOUDRUN;  
DRIVEMASTER; FIREMAX; RUNTEK; KPATOS; XCENTWAY; FORCEGRIP; **HUNTERROAD**

Banda de rodadura / *Tread pattern*: LH668; LH199; LH399; LH688; LH369; KB866; KB991; KB993; KB886;  
DT218; DT368; DT118; DT318; YS918; YS688; YS619; YS628; RW300; RW785; RW786; RW789; CL101;  
CL399; BS201; BS216; CL199; CL688; FT199; FT688; EC708; EC706; ST176; KING626; ST901; OD901;  
OD626; OD176; TG866; TG108; TEC444; LS168; LS302; LS214; LS398; SFC18; SFC29; SFC66; SFC08;  
SFC76; FL18; FL29; FL66; FL08; FL76; BT400; BT553; BT651; TT78; TT813; EM102; TG118; TG529; TG766;  
DMLH399; DMLH688; LH870; LH309; TG559; TG857; SFC87; SFC39; FL85; FL55; FM66; FM18; FM08;  
FM76; FM77; FM39; AK77; AK47; AK97; AK81; AK66; KTL02; KTA01; KTL05; KTR67; KTR77; KTR39;  
XT103; XT302; TEC222; TED556; TED555; FG18; FG66; FG76; **H701; H699; H612; H801; H603; H808;  
H802**

Designación de tipo de neumático / : 315/80R22.5 156/153L

*Tyre type designation(s)*

Designación dimensional del neumático / : 315/80R22.5

*Tyre size designation*

Lugar y fecha de emisión del informe / : L'Albornar, Santa Oliva (Tarragona)

*Place and date of test report issue* 02/07/2018

CONCLUSIONES / *CONCLUSIONS*: Las modificaciones introducidas en el neumático, como se detallan en el  
Anexo a este Informe, son objeto de extensión de homologación respecto al tipo homologado (Informe CN12070041;  
CN12120155; CN13040184; CN13060066; CN13110271; CN13120422; CN15010231; CN16040055; CN16090036;  
CN17100499) y **CUMPLEN** con las prescripciones relativas a la homologación de neumáticos según el Reglamento  
No. 54.00 ECE / *Modifications introduced to the tyre, as detailed in the Annex to this report, grant-grounds for  
approval extension with respect to formerly certified tyre-type (Test Report No. CN12070041; CN12120155;  
CN13040184; CN13060066; CN13110271; CN13120422; CN15010231; CN16040055; CN16090036;  
CN17100499) and FULFILS the requirements of pneumatic tyres according to Regulation 54.00 ECE.*

Realizado / *Performed by*:



Zhaocai (Frank) Yu  
INGENIERO DE ENSAYOS  
TEST ENGINEER

Vº.Bº. / *Revised by*:



Lluís Sans Gomis  
JEFE DE DEPARTAMENTO  
DEPARTMENT MANAGER

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA.

*THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE*

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA.  
*THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN*


**MOTIVOS DE EXTENSIÓN / EXTENSION REASON**

- Inclusión de marca / *Addition of trade mark* : **HUNTERROAD**
- Inclusión de banda de rodadura / *Addition of tread patterns* : **H701; H699; H612; H801; H603; H808; H802**
- Modificación del nombre y la dirección del fabricante / *Modification of manufacturer name and address*

**1. DESCRIPCIÓN TÉCNICA DEL NEUMÁTICO / TECHNICAL DESCRIPTION OF THE PNEUMATIC TYRE:**

Marca(s) / <i>Trade Mark(s)</i>	:	JILUTONG; MIYUKI; DITRIP; YANSHUN; RICHWAY; CROWN; BERSHESTONE; FERRARA; ECOCARGO; RUNKING; ODYKING; TRANSKING; STUD; LANDER; SAFECESS; FIRELION; SUNFULCESS; BENTON; KINGRUN; TRANSTONE; GOUDRUN; DRIVEMASTER; FIREMAX; RUNTEK; KPATOS; XCENTWAY; FORCEGRIP; <b>HUNTERROAD</b>
Banda de rodamiento / <i>Tread pattern</i>	:	LH668; LH199; LH399; LH688; LH369; KB866; KB991; KB993; KB886; DT218; DT368; DT118; DT318; YS918; YS688; YS619; YS628; RW300; RW785; RW786; RW789; CL101; CL399; BS201; BS216; CL199; CL688; FT199; FT688; EC708; EC706; ST176; KING626; ST901; OD901; OD626; OD176; TG866; TG108; TEC444; LS168; LS302; LS214; LS398; SFC18; SFC29; SFC66; SFC08; SFC76; FL18; FL29; FL66; FL08; FL76; BT400; BT553; BT651; TT78; TT813; EM102; TG118; TG529; TG766; DMLH399; DMLH688; LH870; LH309; TG559; TG857; SFC87; SFC39; FL85; FL55; FM66; FM18; FM08; FM76; FM77; FM39; AK77; AK47; AK97; AK81; AK66; KTL02; KTA01; KTL05; KTR67; KTR77; KTR39; XT103; XT302; TEC222; TED556; TED555; FG18; FG66; FG76; <b>H701; H699; H612; H801; H603; H808; H802</b>
Designación de tipo de neumático / <i>Tyre type designation(s)</i>	:	315/80R22.5 156/153L
Designación dimensional del neumático / <i>Tyre-size designation</i>	:	315/80R22.5
Categoría de utilización / <i>Category of use</i>	:	normal / <del>especial</del> / <del>nieve</del> <i>normal / <del>especial</del> / <del>snow</del></i>
Estructura / <i>Structure</i>	:	<del>diagonal</del> / <del>diagonal</del> <del>cinturado</del> / radial <i><del>diagonal</del> / <del>bias</del> <del>belted</del> / radial</i>
Símbolo de categoría de velocidad / <i>Speed category index</i>	:	nominal / <i>nominal</i> : L adicional / <i>additional</i> : N.A
Índice de capacidad de carga / <i>Load-capacity index</i>	:	nominal / <i>nominal</i> : simple / <i>single</i> : 156 doble / <i>twinned</i> : 153 adicional / <i>additional</i> : simple / <i>single</i> : N.A. doble / <i>twinned</i> : N.A.

\* LOS RESULTADOS PRESENTADOS SE REFIEREN ÚNICAMENTE A LA MUESTRA ENSAYADA.

THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE

 \* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA.  
 THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN



X del fabricante / : 0.70  
*X of the manufacturer*

Sección transversal del neumático / : Ver documentación técnica /  
*Tyre cross-section* *See technical documentation*

Validate this report with the security code «MMJWTEJS» at: <https://extranet.idiada.com/hom-cve>  
Verifique el informe con código de seguridad «MMJWTEJS» en: <https://extranet.idiada.com/hom-cve>

CN18070081

IDIADA

Zhaocai (frank) Yu  
INGENIERO DE ENSAYOS  
TEST ENGINEER

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\* LOS RESULTADOS PRESENTADOS SE REFIEREN UNICAMENTE A LA MUESTRA ENSAYADA.  
*THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE*

\* QUEDA TERMINANTEMENTE PROHIBIDA LA REPRODUCCIÓN PARCIAL DE ESTE INFORME SIN PERMISO EXPRESO DE IDIADA.  
*THE PARTIAL REPRODUCTION OF THIS REPORT WITHOUT THE PERMISSION OF IDIADA IS COMPLETELY FORBIDDEN*

DOCUMENTACIÓN TÉCNICA /  
*TECHNICAL DOCUMENTATION*

**Tyre size:**  
315/80R22.5 156/153L



**Date :** Jun. 2018  
**Ext. :** 10

**REGARDING PNEUMATIC TYRES FOR COMMERCIAL VEHICLES AND THEIR TRAILERS  
ACCORDING TO REGULATION 54.00**

1. Trade mark(s) marked on the tyre type
  - 1.1 Trade Mark declared by the manufacturer : JILUTONG; MIYUKI; DITRIP; YANSHUN; RICHWAY; CROWN; BERSHESTONE; FERRARA; ECOCARGO; RUNKING; ODYKING; TRANSKING; STUD; LANDER; SAFECESS; FIRELION; SUNFULCESS; BENTON; KINGRUN; TRANSTONE; GOUDRUN; DRIVEMASTER; FIREMAX; RUNTEK; KPATOS; XCENTWAY; FORCEGRIP; **HUNTERROAD**
  - 1.2 Tyre tread pattern : LH668; LH199; LH399; LH688; LH369; KB866; KB991; KB993; KB886; DT218; DT368; DT118; DT318; YS918; YS688; YS619; YS628; RW300; RW785; RW786; RW789; CL101; CL399; BS201; BS216; CL199; CL688; FT199; FT688; EC708; EC706; ST176; KING626; ST901; OD901; OD626; OD176; TG866; TG108; TEC444; LS168; LS302; LS214; LS398; SFC18; SFC29; SFC66; SFC08; SFC76; FL18; FL29; FL66; FL08; FL76; BT400; BT553; BT651; TT78; TT813; EM102; TG118; TG529; TG766; DMLH399; DMLH688; LH870; LH309; TG559; TG857; SFC87; SFC39; FL85; FL55; FM66; FM18; FM08; FM76; FM77; FM39; AK77; AK47; AK97; AK81; AK66; KTL02; KTA01; KTL05; KTR67; KTR77; KTR39; XT103; XT302; TEC222; TED556; TED555; FG18; FG66; FG76; **H701; H699; H612; H801; H603; H808; H802**
2. Tyre type designation by the manufacturer : 315/80R22.5 156/153L
3. Manufacturer's name and address : WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO., LTD  
Northeast Corner, Crossing of Xi Huan Road and Jinguang Street, Chenming Industrial District, Shouguang 262719, Weifang City, Shandong Province, CHINA
4. If applicable, name and address of the manufacturer's representative : ---
5. Summarised description
  - 5.1. Tyre size designation : 315/80R22.5

Strike out what does not apply.

(1) Modified points are bolder for extension

**Tyre size:**  
315/80R22.5 156/153L



**Date : Jun. 2018**  
**Ext. : 10**

**REGARDING PNEUMATIC TYRES FOR COMMERCIAL VEHICLES AND THEIR TRAILERS  
ACCORDING TO REGULATION 54.00**

5.2.	Category of use	:	normal/ <del>snow</del> / <del>special</del> <sup>(1)</sup>
5.3.	Structure	:	<del>diagonal(bias ply)</del> /radial/ <sup>(1)</sup>
5.3.1.	Tread	:	4 STEEL
5.3.2.	Side Wall	:	1 STEEL
5.4.	Speed category symbol	:	
5.4.1	Nominal	:	L
5.4.2	Additional (If applicable)	:	Not applicable
5.5.	Load-capacity index	:	
5.5.1	Nominal speed (single and dual)	:	156/153
5.5.2	Additional speed (single and dual)	:	Not applicable
5.6.	Inscription of snow tyre	:	<del>M+S/M.S/M&amp;S</del> /N.A. <sup>(1)</sup>
5.7.	“Tubeless” (without a inner tube)	:	Yes/ <del>No</del> <sup>(1)</sup>
5.8.	Index of inflation pressure for testing	:	850kPa
5.9.	Inscription for “special use tyres”	:	<del>ET/ML/MPT</del> /N.A. <sup>(1)</sup>
5.10.	Ply-rating number	:	20
5.11.	Regroovable	:	Yes/ <del>No</del> <sup>(1)</sup>
5.12.	Factor x	:	0.70
5.13.	Submitted for type approval on (date)	:	June 25, 2018

Strike out what does not apply.

(1) Modified points are bolder for extension



Tyre size:  
315/80R22.5 156/153 L



Date : Jun.2018  
Ext. : 10

REGARDING PNEUMATIC TYRES FOR COMMERCIAL VEHICLES AND THEIR TRAILERS ACCORDING TO REGULATION 54.00

Attachment 1:

			<p>LH668, KB866, DT218 YS918, RV300, CL101 BS201, DD901, ST901 TEC444, LS168, SFC18 FL18, BT400, TT78 TG118, FM18, AK47 KTA01, FG18, HZ01</p>	<p>LH199, KB991, DT368 YS688, RV785, CL199 FL199, EC708, LS302 SFC29, FL29, TG529 H699</p>	<p>LH399, KB993, DT118 YS619, RV786, CL399 BS216, ST176, DD176 TG866, LS214, SFC66 FL66, BT553, TT813 EM102, DMLH399, FM66 AK77, KTL02, XT103 FG66, TEC222, H612</p>	<p>LH369, SFC76, FL76 TG766, FM76, KTL05 FG76, H603</p>	<p>LH870, TG857, FL85 SFC87, FM77, AK81 KTR77, TED555, H808</p>	<p>LH309, TG559, FL55 SFC39, FM39, AK66 KTR39, H802</p>	<table border="1"> <tr> <td>14</td> <td>PLIES: SIDEWALL 1 STEEL, TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 4000kg (8820 LBS) AT 850 kpa (123 PSI) COLD MAX LOAD DUAL 3650kg (8050 LBS) AT 850 kpa (123 PSI) COLD</td> </tr> <tr> <td>13</td> <td>STANDARD RIM 9.00</td> </tr> <tr> <td>12</td> <td>3C F000381</td> </tr> <tr> <td>11</td> <td>DATE CODE XXXX</td> </tr> <tr> <td>10</td> <td>XXXXXX</td> </tr> <tr> <td>9</td> <td>315/80R22.5 156/153L</td> </tr> <tr> <td>8</td> <td>DOT XXXX XXXX</td> </tr> <tr> <td>7</td> <td>TUBE LESS</td> </tr> <tr> <td>6</td> <td>ALL STEEL RADIAL TIRE</td> </tr> <tr> <td>5</td> <td>TREAD PATTERNS</td> </tr> <tr> <td>4</td> <td>SAFETY WARNING:</td> </tr> <tr> <td>3</td> <td>REGROOVABLE</td> </tr> <tr> <td>2</td> <td>MADE IN CHINA</td> </tr> <tr> <td>1</td> <td>BRAND NAME</td> </tr> </table>	14	PLIES: SIDEWALL 1 STEEL, TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 4000kg (8820 LBS) AT 850 kpa (123 PSI) COLD MAX LOAD DUAL 3650kg (8050 LBS) AT 850 kpa (123 PSI) COLD	13	STANDARD RIM 9.00	12	3C F000381	11	DATE CODE XXXX	10	XXXXXX	9	315/80R22.5 156/153L	8	DOT XXXX XXXX	7	TUBE LESS	6	ALL STEEL RADIAL TIRE	5	TREAD PATTERNS	4	SAFETY WARNING:	3	REGROOVABLE	2	MADE IN CHINA	1	BRAND NAME	APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD
14	PLIES: SIDEWALL 1 STEEL, TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 4000kg (8820 LBS) AT 850 kpa (123 PSI) COLD MAX LOAD DUAL 3650kg (8050 LBS) AT 850 kpa (123 PSI) COLD																																								
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7	TUBE LESS																																								
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4	SAFETY WARNING:																																								
3	REGROOVABLE																																								
2	MADE IN CHINA																																								
1	BRAND NAME																																								

(1) Strike out what does not apply.  
(2) Modified points are underlined for extension.

Tyre size:

315/80R22.5 156/153 L



Date : Jun.2018  
Ext. : 10

**REGARDING PNEUMATIC TYRES FOR COMMERCIAL VEHICLES AND THEIR TRAILERS ACCORDING TO REGULATION 54.00**

TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)
315/80R22.5 20PR	JILUTONG,TRANSKING,FIRELION,SAFECESS FIREMAX, RUNTEK, KPATOS, HUNTERROAD	LH309, TG559, FL55, SFC39 FM39, AK66, KTR39, H802	156/153	L	T/L	1076	312	229.0	17.5
315/80R22.5 20PR	JILUTONG, TRANSKING, FIRELION, SAFECESS FIREMAX, RUNTEK, KPATOS, STUD HUNTERROAD	LH870, TG857, FL85, SFC87 FM77, AK81, KTR77, TED555 H808	156/153	L	T/L	1076	312	229.0	18.0
315/80R22.5 20PR	JILUTONG,SAFECESS,FIRELION,SUNFULCESS TRANSKING, FIREMAX, KPATOS, FORCEGRIP HUNTERROAD	LH369, SFC76, FL76, SFC76 TG766, FM76, KTL05, FG76 H603	156/153	L	T/L	1076	312	229.0	14.5
315/80R22.5 20PR	JILUTONG,MIYUKI,DITRIP,YANSHUN RICHWAY,CROWN,BERSHESTONE,RUNKING ODYKING,TRANSKING,LANDER,SAFECESS FIRELION,SUNFULCESS,BENTON,KINGRUN TRANSTONE,GOUDRUN,DRIVEMASTER FIREMAX,RUNTEK,KPATOS,XCENTWAY FORCEGRIP,STUD,HUNTERROAD	LH399,KB993,DT118,YS619 RW786,CL399,BS216,ST176 DD176,TG866,LS214,SFC66 FL66,SFC66,BT553,TT813 TT813,EM102,DMLH399 FM66,AK77,KTL02,XT103 FG66,TEC222,H612	156/153	L	T/L	1076	312	229.0	15.0
315/80R22.5 20PR	JILUTONG,MIYUKI,DITRIP,YANSHUN RICHWAY,CROWN,FERRARA,ECCARGO LANDER,SAFECESS,FIRELION,SUNFULCESS TRANSKING,HUNTERROAD	LH199,KB991,DT368,YS688 RW785,CL199,F199,EC708 LS302,SFC29,FL29,SFC29 TG529,H699	156/153	L	T/L	1076	312	229.0	18.0
315/80R22.5 20PR	JILUTONG,MIYUKI,DITRIP,YANSHUN RICHWAY,CROWN,BERSHESTONE,ODYKING RUNKING,STUD,LANDER,SAFECESS FIRELION,SUNFULCESS,BENTON,KINGRUN TRANSTONE,TRANSKING,FIREMAX,RUNTEK KPATOS,FORCEGRIP,HUNTERROAD	LH668,KB866,DT218,YS918 RW300,CL101,BS201,DD901 ST901,TEC444,LS168,SFC18 FL18,SFC18,BT400,TT78 TT78,TG118,FM18,AK47 KTA01,FG18,H701	156/153	L	T/L	1076	312	229.0	17.5
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)

- (1) Strike out what does not apply.  
(2) Modified points are underlined for extension.

Tyre size:  
315/80R22.5 156/153 L



Date : Jun.2018  
Ext. : 10

REGARDING PNEUMATIC TYRES FOR COMMERCIAL VEHICLES AND THEIR TRAILERS ACCORDING TO REGULATION 54.00

Attachment 2:

UPPER MOLD

LOWER MOLD

15 TRACTION	PLIES: SIDEWALL 1 STEEL; TREAD 1 STEEL+3STEEL MAX LOAD SINGLE 4000kg (8820 LBS) AT 850 kpa (123 PSD) COLD MAX LOAD DUAL 3650kg (8050 LBS) AT 850 kpa (123 PSD) COLD	
14	13 STANDARD RIM 9.00	
13	12 3C F000381	
12	11 DATE CODE XXXX	
11	10  XXXXX	
10	9 315/80R22.5 156/153L	
9	8 DOT XXXX XXXX	
8	7 TUBE LESS	
7	6 ALL STEEL RADIAL TIRE	
6	5 TREAD PATTERNS	
5	4 SAFETY WARNING	
4	3 REGROOVABLE	
3	2 MADE IN CHINA	
2	1 BRAND NAME	

LH688, KB886, DT318  
YS628, RW789, CL688  
FT688, EC706, DJ626  
KING626, TG108, LS398  
SFC08, FL08, BT651  
DMLH688, FM08, AK97  
KTR67, XT302, TED556  
H801

	JILUTONG, MIYUKI, DITRIP, YANSHUN RICHWAY, CROWN, FERRARA, ECOCARGO DDYKING, RUNKING, TRANSKING, LANDER SAFECESS, FIRELION, SUNFULCESS, BENTON DRIVEMASTER, FIREMAX, RUNTEK, KPATOS XCENTWAY, STUD, HUNTERROAD	LH688, KB886, DT318, YS628 RW789, CL688, FT688, EC706 DD626, KING626, TG108, LS398 SFC08, FL08, BT651 DMLH688, FM08, AK97, KTR67 XT302, TED556, H801	TREAD PATTERNS	LH688, KB886, DT318, YS628 RW789, CL688, FT688, EC706 DD626, KING626, TG108, LS398 SFC08, FL08, BT651 DMLH688, FM08, AK97, KTR67 XT302, TED556, H801	L	T/L	1076	312	229.0	23.0
TIRE SIZE	TRADE MARKS	TREAD PATTERNS	LOAD INDEX	SPEED SYMBOL	TYPE	A(mm)	B(mm)	C(mm)	SKID DEPTH(mm)	
APPROVED BY	CHECKED BY	DRAWN BY	WEIFANG SHUNFUCHANG RUBBER AND PLASTIC PRODUCTS CO.,LTD							

(1) Strike out what does not apply.  
(2) Modified points are underlined for extension.

**THE NETHERLANDS  
(N E D E R L A N D)****COMMUNICATION**

Concerning <sup>(1)</sup>:

- ~~approval granted~~
- approval extended
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

of a type of pneumatic tyre for motor vehicles pursuant to Regulation number 54.

**Approval number: E4\*54R00/23\*31686\*05**

1. Manufacturer's name and address : SHANDONG HAOHUA TIRE CO.,LTD  
Dadi Road West, Xinhai Road North, Houzhen  
Industry Zone, 262700 Shouguang City,  
Shandong Province, China (PRC)
2. Tyre type designation<sup>(2)</sup>
  - 2.1. Brand-name(s) or trade mark(s) : LANVIGATOR; APLUS; HAOHUA;  
COMPASAL; WINDFORCE; POWERTRAC;  
ROYALBLACK; TRANSTONE;  
GRANDSTONE; ORNET; XCEED;  
GOLDSHIELD; FRONWAY; MATRAX;  
CRATOS
  - 2.2. Trade description(s)/ Commercial  
name(s) : S201;CPS21; WH1020; POWER CONTACT;  
RBK11; TT201; GT178;OR201;X D201;HD201;  
MTS21; CRS600+; T706; CPT76; WT3000;  
CROSS TRAC;RBK76; TT613; GT768; OR815eco;  
XD815eco; HD768;MTT76 ;CRT888; RS201;  
RT706;T605;CPT65;RT605;WT3030; Titan 989



**Approval number: E4\*54R00/23\*31686\*05**

3. If applicable, name and address of the manufacturer's representative : not applicable
4. Summarized description
- 4.1. Size of tyre : 385/55R22.5
- 4.2. Category of use : ~~normal~~/snow/~~special~~<sup>(1)</sup>
- 4.3. Structure : ~~diagonal(bias ply)~~/radial<sup>(1)</sup>
- 4.4. Tyre class : ~~E2~~/C3<sup>(1)</sup>
- 4.5. Speed category symbol:
- 4.5.1. Nominal : L
- 4.5.2. additional (if applicable) : ---
- 4.6. Load-capacity indices:
- 4.6.1. Corresponding to nominal speed:  
- single : 160  
- twinned (dual) : ---
- 4.6.2. Corresponding to additional speed:  
- single : ---  
- twinned (dual) : ---
5. Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity : TÜV Rheinland Kraftfahrt GmbH  
Typprüfstelle Fahrzeuge/Fahrzeugteile  
Am Grauen Stein  
51105 Köln
6. Date of report issued by that service : May 25, 2021
7. Number of report issued by that service : 86-R54-1953/21-00
8. Reason(s) of extension (if applicable) : Update the type of approval number;  
Upgrade the regulation supplement number;  
Change of the technical service;  
Addition of trade descriptions
9. Any remarks : ---
10. Place : Zoetermeer
11. Date : 23 June 2021
12. Signature :



**Approval number: E4\*54R00/23\*31686\*05**

13. Annexed to this communication is a list of documents in the approval file deposited at the administrative service having delivered the approval and which can be obtained upon request.
- Application form relating to ECE approval for a pneumatic tyre pursuant to Regulation number 54.
  - The drawing of the tyre's sidewalls, tread and dimensioned cross-section.
  - The test report as mentioned in item 7.

- 
- (1) Strike out what does not apply.
- (2) A list of Brand name(s)/trademark(s) or Trade description(s)/ Commercial name(s) may be annexed to this communication



**APPLICATION FOR APPROVAL EXTENSION OF A TYPE OF PNEUMATIC TYRE ACCORDING TO ECE  
REGULATION No. 54, 00 SERIES OF AMENDMENTS**

- |        |  |   |  |
|--------|--|---|--|
| 1.     | The Brand name(s) or trademark(s) <sup>(2)</sup>   | : | LANVIGATOR; APLUS; HAOHUA; COMPASAL;<br>WINDFORCE; POWERTRAC; ROYALBLACK;<br>TRANSTONE; GRANDSTONE; ORNET; XCEED;<br>GOLDSHIELD; FRONWAY; MATRAX; CRATOS   |
| 2.     | Trade description(s) or Commercial name(s) <sup>(2)</sup>  | : | S201; CPS21; WH1020; POWER CONTACT; RBK11; TT201;<br>GT178; OR201; X D201; HD201; MTS21; CRS600+; T706;<br>CPT76; WT3000; CROSS TRAC; RBK76; TT613; GT768;<br>OR815eco; XD815eco; HD768; MTT76 ; CRT888; RS201;<br>RT706; T605; CPT65; RT605; WT3030; <u>Titan 989</u> |
| 3.     | Manufacturer's name and address  | : | SHANDONG HAOHUA TIRE CO., LTD<br>Dadi Road West, Xinhai Road North, Houzhen Industry<br>Zone, 262700 Shouguang City, Shandong Province, China (PRC)  |
| 4.     | If applicable, name and address of<br>manufacturer's representative                                    | : | not applicable   |
| 5.     | Summarised description,  |   |  |
| 5.1.   | Tyre size designation  | : | 385/55R22.5  |
| 5.2.   | Category of use  | : | <del>normal</del> /special/snow <sup>(1)</sup>   |
| 5.3.   | Structure  | : | <del>diagonal (bias ply)</del> /radial <sup>(1)</sup>  |
| 5.4.   | Speed category symbol  |   |  |
| 5.4.1. | Nominal  | : | L  |
| 5.4.2. | Additional (if applicable)   | : | not applicable   |
| 5.5.   | Load capacity indices  |   |  |
| 5.5.1. | corresponding to nominal speed   | : | single: 160, twinned (dual):--   |
| 5.5.2. | corresponding to additional speed  | : | not applicable   |
| 6.     | Overall dimensions   |   |  |
|        | overall section width  | : | 373.9/388  |
|        | outer diameter   | : | 997.9/998  |
| 7.     | Factor 'x'   | : | 0.8  |
| 8.     | Ply-rating number for diagonal (bias ply) tyres  | : | 20   |
| 9.     | Rims on which the tyre can be mounted  | : | 12.25  |
| 10.    | Measuring rim and test rim   | : | see attached test report   |
| 11.    | Tyre class   | : | <del>C2</del> /C3 <sup>(1)</sup>   |
| 12.    | State whether the tyre is  | : | tube less / <del>tube type</del> <sup>(1)</sup>  |
| 13.    | Traction tyre  | : | <del>Yes</del> /no (see the tread pattern detail in drawing) <sup>(1)</sup>  |
| 14.    | State if special use tyre  | : | <del>Yes</del> /no <sup>(1)</sup> (with M+S inscription)   |
|        | Professional Off-Road  | : | <del>Yes</del> /no <sup>(1)</sup>  |
|        | Tread depth / Void to fill ratio   | : | n.a.   |
| 15.    | The inflation pressure for the dimension measurement and<br>for the load/speed endurance test pressure | : | See attached test report   |
| 16.    | Submitted for approval on (date)   | : | 2021.05.11   |

We herewith declare that we have not applied and will not apply for approval with another Contracting Party of the ECE for the same type of product.

(1) Strike out what does not apply.

(2) Modified points are underlined for extension.

MANUFACTURER'S STAMP



Signature :

*[Handwritten signature]*

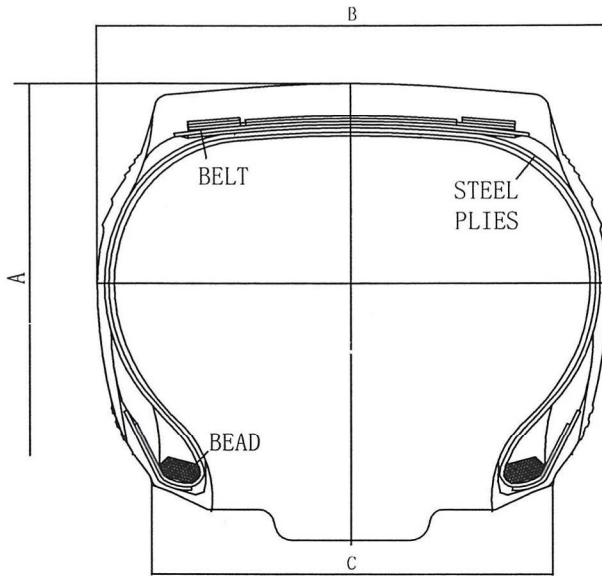
Name:

THIS APPLICATION IS ACCOMPANIED BY:

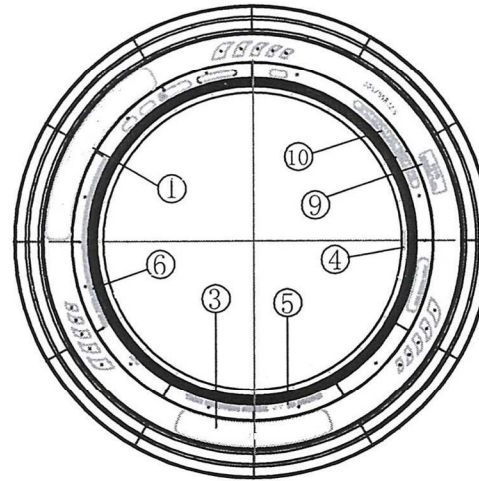
- A drawing of the tyre's side wall, tread and dimensioned cross section.
- The test report.

(1) Strike out what does not apply.  
(2) Modified points are underlined for extension.

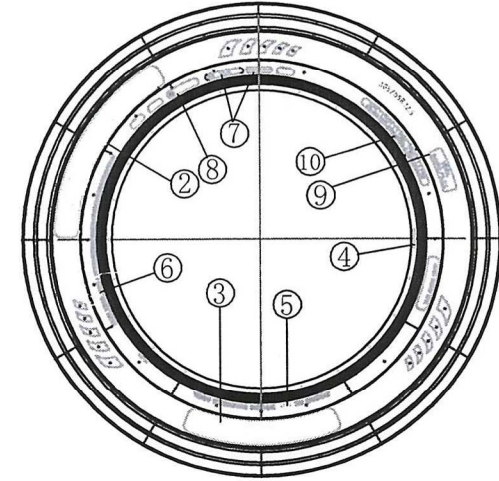




PROJECTION



TOP SIDEWALL



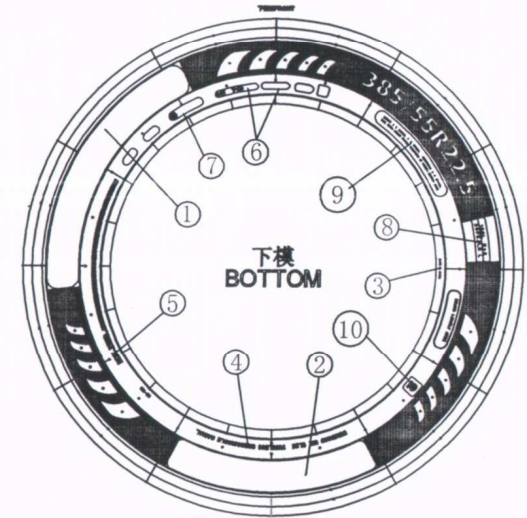
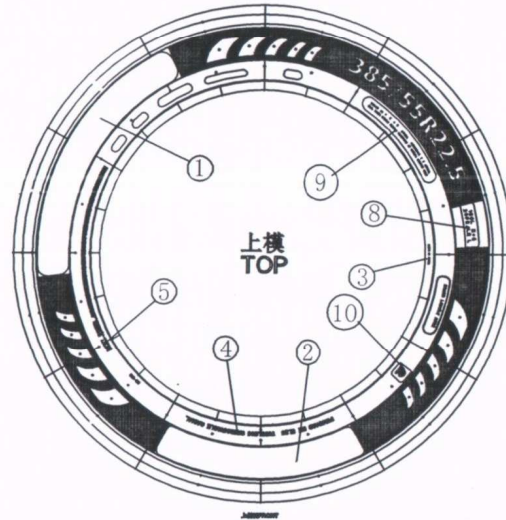
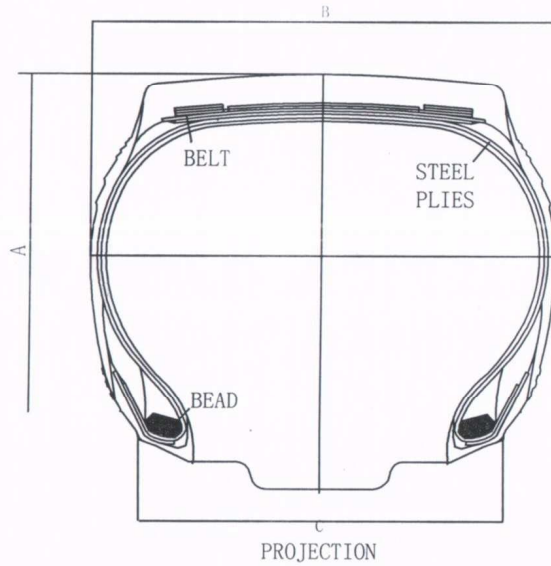
BOTTOM SIDEWALL

TREAD PATTERN  
REFER TO ATTACHMENT NO. 1

Draft Date  
2015-04-10

10	TREAD: 1 STEEL + 3 STEEL SIDEWALL:1 STEEL							
	MAX. LOAD SINGLE 4500 kg (9920 LBS) AT 900 KPa (131 PSI) COLD							
9	160 L 20PR/LR L M+S							
8	ECE APPROVAL MARK AND No.							
7	DOT 1P** **** (**** -date code)							
6	SAFETY WARNING							
5	STANDARD RIM 12.25 TUBELESS REGROOVABLE RADIAL							
4	MADE IN CHINA							
3	TREAD PATTERN							
2	REFER TO ATTACHMENT NO. 1							
1	REFER TO ATTACHMENT NO. 1							
	385/55R22.5-20PR	160	L	TUBELESS	996	386	311	15.5
	TYRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	A (mm)	B (mm)	C (mm)	SKID DEPTH (mm)
DRAWN BY	王丹丹		CHECKED BY	任利		APPROVED BY		
				SHANDONG HAOHUA TIRE Co. LTD				

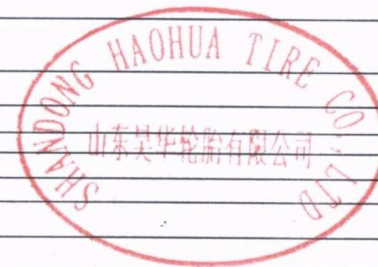





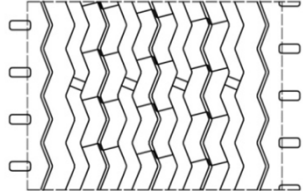

TREAD PATTERN

ATTACHMENT NO. 1

10	CCC NO.							
9	TREAD: 1 + 3 + 2 STEEL SIDEWALL:1 STEEL MAX.LOAD SINGLE 4500 kg (9920 LBS) AT 900 KPa (131 PSI) COLD							
8	160 L M+S 20PR/LR L							
7	ECE APPROVAL MARK AND No.							
6	DOT 1P** *** (*** -date code)							
5	SAFETY WARNING							
4	STANDARD RIM 12.25 TUBELESS REGROOVABLE RADIAL							
3	MADE IN CHINA.							
2	ATTACHMENT NO. 1							
1	ATTACHMENT NO. 1							
	385/55R22.5	160	L	TUBELESS	996	386	311	15.5
	TYRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	A (mm)	B (mm)	C (mm)	SKID DEPTH (mm)
DRAWN BY	王博冉		CHECKED BY	[Signature]		APPROVED BY		[Signature]
SHANDONG HAOHUA TIRE CO., LTD								



Attachment No. 1

Tyre Size: 385/55R22.5-20PR 160L		
Approval No: E4- 54R-0031686		
Trade Mark	Tread Pattern	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; WINDFORCE; POWERTRAC; ROYALBLACK; TRANSTONE; GRANDSTONE; ORNET; XCEED; GOLDSHIELD; FRONWAY; MATRAX; CRATOS	S201; CPS21; WH1020; POWER CONTACT; RBK11; TT201; GT178; OR201; XD201; HD201; MTS21; CRS600+; RS201	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; WINDFORCE; POWERTRAC; ROYALBLACK; TRANSTONE; GRANDSTONE; ORNET; XCEED; GOLDSHIELD; FRONWAY; MATRAX; CRATOS	T706; CPT76; WT3000; CROSS TRAC; RBK76; TT613; GT768; OR815eco; XD815eco; HD768; MTT76; CRT888; RT706	
LANVIGATOR; APLUS; HAOHUA; COMPASAL; ROYALBLACK; WINDFORCE; <u>POWERTRAC;</u>	T605; CPT65; RT605; WT3030; <u>Titan 989</u>	



**Test Report No. 86-R54-1953/21-00**

**Type : 385/55R22.5**  
**Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD**

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## TEST REPORT

according to UN Regulation

**Uniform provisions concerning the approval of pneumatic tyres  
for commercial vehicles and their trailers**

**UN Regulation No. 54**  
including all amendments until  
Amend.00, Suppl. 23

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Approval Status

UN approval : E4-54R-0031686 Ext.04

---

Structure of the Test Report

Item No.

0. General information
  1. Tested vehicle(s) / object(s)
  2. Test record
  3. List of appendices
  4. Statement of conformity
- 

The Test Report shall be reproduced and published in full by the client only. It shall however be reproduced partially with the written permission of the Testing Laboratory only.

**Test Report No. 86-R54-1953/21-00**

**Type** : 385/55R22.5  
**Manufacturer** : SHANDONG HAOHUA TIRE CO.,LTD

**0. General Information**

- 0.1. Make (trade name of the manufacturer) : SHANDONG HAOHUA TIRE CO.,LTD  
 0.2. Type : 385/55R22.5  
 0.3. Category of vehicle : Not applicable  
 0.4. Name and address of the manufacturer : SHANDONG HAOHUA TIRE CO.,LTD  
 Dadi Road West, Xinhai Road North, Houzhen  
 Industry Zone, 262700 Shouguang City, Shandong  
 Province, China (PRC)  
 0.5. No. of the information folder : Not applicable  
 -Date of issue : ---  
 -Date of last change : 2021-05-11

**1. Tested vehicle(s)/ object(s)**

- 1.1. Description  
 1.1.1. ~~Vehicle/ object~~  
 Commercial description : Not applicable  
 Type(s) ~~variant(s)/version(s)~~ : 385/55R22.5  
 Identification number : See Appendix 1  
 1.1.2. Condition of ~~vehicle(s)/Object(s)~~ : New ~~used/ pretested~~  
 1.2. Worst case selection : The determination of the worst case was done  
 according to internal procedures of the Technical  
 Service (MS-0000480 section 5.6).  
~~Only one variant/version, so no worst case  
 assessment required.~~  
~~There is no worst case selection applicable because  
 all variants mentioned in the information folder are  
 tested.~~  
~~Paperwork extension, please see previous test  
 report(s) for worst case information.~~  
 1.3. Remarks : Not applicable

**Test Report No. 86-R54-1953/21-00**

**Type** : 385/55R22.5  
**Manufacturer** : SHANDONG HAOHUA TIRE CO.,LTD

---

**2. Test record**

- 2.1. Equipment for measuring and testing : The test facilities / measurement equipment used were in compliance with the test requirements
- 2.1.1. Specifications for the test site : Not applicable
- 2.1.2. Subcontracting : Not applicable
- 2.2. Test results : See Appendix 1
- Numbering according to Paragraph 6. and 7. of the UN Regulation No. 54
- 2.2.1. Test results referring to measurements : Pass /~~Fail~~
- 2.2.2. Attributive tests : Not applicable
- 2.2.3. Alternative test provisions : Not applicable
- Remarks concerning extension ~~The type has been tested according to the modification(s) mentioned in appendix 0.~~  
~~The new parts meet the requirements of the regulation.~~  
 An actual practical test of the type was not necessary. The results of the previous test(s) are still valid.
- 2.3. Additional information : The results of the test refer exclusively to the object(s) mentioned under point 1. of this report.
- Test site : SHANDONG HAOHUA TIRE CO.,LTD  
 Dadi Road West, Xinhai Road North, Houzhen Industry Zone, 262700 Shouguang City, Shandong Province, China (PRC)
- Test date : 2019-07-10~13 and 2015-05-14
- 2.4. Remarks : ---

Type : 385/55R22.5  
Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

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### 3. List of Appendices

Appendix 0 : List of modifications  
Appendix 1 : Test minutes

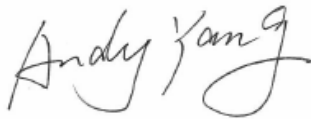
### 4. Statement of conformity

The in point 0.5. mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

With regard to the required level of performance to be achieved, the tested items were representative for the type to be approved (see point 1.2).

The mentioned test results refer to the vehicle(s)/object(s) described under point 1.1 of this report.

Engineering centre Shanghai / May 25, 2021  
AY



Andy Yang  
Expert Technical Service

Type : 385/55R22.5  
Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

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List of modifications

Appendix 0

Correction of : ---

Modification of : update the type of approval number;  
upgrade the regulation supplement number;  
change of the technical service;

Addition of : trade description

Deletion of : ---



Type : 385/55R22.5  
 Manufacturer : SHANDONG HAOHUA TIRE CO.,LTD

## Test minutes

## Appendix 1

**1. Test data 1****1.1 Object markings**

- 1.1.1 Trade name or mark : LANVIGATOR
- 1.1.2 Tyre type designation : S201
- 1.1.3 Plies of Tread / Sidewall : 1 STEEL + 3 STEEL / 1 STEEL
- 1.1.4 Tyre size designation : 385/55R22.5
- 1.1.5 Category of use : Snow  
 Indication of category of use : Word "M+S"
- 1.1.6 Structure : Radial  
 Indication / symbol of structure : Word "RADIAL", letter "R" in front of rim diameter marking
- 1.1.7 Speed category : Nominal: L                      Supplementary: ---
- 1.1.8 Load-Capacity Indices(L.I.)  
 corresponding to nominal speed : Single: 160                      Twinned: ---  
 corresponding to supplementary speed : Single: ---                      Twinned: ---
- 1.1.9 Index of inflation pressure for testing : 900 kPa
- 1.1.10 Ply-rating number : ---
- 1.1.11 Word in case of without inner tube : Word "TUBELESS"
- 1.1.12 Word in case of tyre can be regrooved : REGROOVABLE
- 1.1.13 Inscription in case of Free Rolling Tyre or Traction Tyre : n.a.
- 1.1.14 Date of manufacture : 0115

**1.2. Dimension measurement according to Annex 6**

- 1.2.1 Measuring rim : 12.25 x 22.5
- 1.2.2 Inflation pressure after mounting on measuring rim : 900 kPa
- 1.2.3 Inflation pressure adjusted before conditioning : 900 kPa
- 1.2.4 Conditioning of tyre : More than 24 hours
- 1.2.5 Inflation pressure readjusted after conditioning : 900 kPa
- 1.2.6 Overall width at six equally spaced points  
 1. 373.9 mm    2. 373.8 mm    3. 372.9 mm  
 4. 373.2 mm    5. 372.8 mm    6. 372.3 mm  
 Max.: 373.9 mm

**Test Report No. 86-R54-1953/21-00**

**Type** : 385/55R22.5  
**Manufacturer** : SHANDONG HAOHUA TIRE CO.,LTD

- 1.2.7 Circumference : 3135 mm
- 1.2.8 Outer diameter : 997.9 mm
- 1.2.9 Tread depth / void to fill ratio in case of special use tyre : Not applicable

**1.3. Load/speed performance test according to Annex 7**

- 1.3.1 Test machine : GX-YLN-1212
- 1.3.2 Diameter of test drum : 1.707 m
- 1.3.3 Test rim : 12.25 x 22.5
- 1.3.4 Inflation pressure adjusted before conditioning : 900 kPa
- 1.3.5 Conditioning of tyre : More than 3 hours
- 1.3.6 Test-room temperature : 23 °C
- 1.3.7 Inflation pressure readjusted after conditioning : 900 kPa
- 1.3.8 Circumference after conditioning, before testing : 3135 mm
- 1.3.9 Outer diameter after conditioning, before testing : 997.9 mm
- 1.3.10 100% load corresponding to L.I.(single) : 4500 kg

Step	Step duration [h]	Total duration [h]	Actual speed [km/h]	Test Load [%]	[kg]
1.	7	7	64	66	2970
2.	16	23	64	84	3780
3.	24	47	64	101	4545

- 1.3.11 Conditioning after testing : More than 6 hours
- 1.3.12 Circumference after conditioning, after testing : 3143 mm
- 1.3.13 Outer diameter after conditioning, after testing : 1000.4 mm
- 1.3.14 Difference outer diameter before and after testing (max. 3.5 %) : 2.5 mm  
: 0.25 %
- 1.3.15 Inspection after test : The tyre does not exhibit tread separation, ply separation, cord separation, chunking or broken cords.
- 2. Remarks** : The test results refer to report No. CS054-D0-2018-02259
- 3. Test data 2**

**Type** : 385/55R22.5  
**Manufacturer** : SHANDONG HAOHUA TIRE CO.,LTD

**3.1 Object markings**

3.1.1	Trade name or mark	: APLUS	
3.1.2	Tyre type designation	: T605	
3.1.3	Plies of Tread / Sidewall	: 1 STEEL + 3 STEEL + 2 STEEL / 1 STEEL	
3.1.4	Tyre size designation	: 385/55R22.5	
3.1.5	Category of use	: Snow	
	Indication of category of use	: Word "M+S"	
3.1.6	Structure	: Radial	
	Indication / symbol of structure	: Word "RADIAL", letter "R" in front of rim diameter marking	
3.1.7	Speed category	: Nominal: L	Supplementary: ---
3.1.8	Load-Capacity Indices(L.I.)		
	corresponding to nominal speed	: Single: 160	Twinned: ---
	corresponding to supplementary speed	: Single: ---	Twinned: ---
3.1.9	Index of inflation pressure for testing	: 900 kPa	
3.1.10	Ply-rating number	: ---	
3.1.11	Word in case of without inner tube	: Word "TUBELESS"	
3.1.12	Word in case of tyre can be regrooved	: REGROOVABLE	
3.1.13	Inscription in case of Free Rolling Tyre or Traction Tyre	: ---	
3.1.14	Date of manufacture	: 2619	

**3.2. Dimension measurement according to Annex 6**

3.2.1	Measuring rim	: 12.25 x 22.5	
3.2.2	Inflation pressure after mounting on measuring rim	: 900 kPa	
3.2.3	Inflation pressure adjusted before conditioning	: 900 kPa	
3.2.4	Conditioning of tyre	: More than 24 hours	
3.2.5	Inflation pressure readjusted after conditioning	: 900 kPa	
3.2.6	Overall width at six equally spaced points		
	1. 387.0 mm	2. 387.0 mm	3. 388.0 mm
	4. 387.0 mm	5. 387.0 mm	6. 386.0 mm
	Max.: 388.0 mm		
3.2.7	Circumference	: 3135 mm	
3.2.8	Outer diameter	: 997.9 mm	

**Test Report No. 86-R54-1953/21-00**

**Type** : 385/55R22.5  
**Manufacturer** : SHANDONG HAOHUA TIRE CO.,LTD

3.2.9 Tread depth / void to fill ratio in case of special use tyre : Not applicable

**3.3. Load/speed performance test according to Annex 7**

3.3.1 Test machine : GX-YLSN-1212

3.3.2 Diameter of test drum : 1.707 m

3.3.3 Test rim : 12.25 x 22.5

3.3.4 Inflation pressure adjusted before conditioning : 900 kPa

3.3.5 Conditioning of tyre : More than 3 hours

3.3.6 Test-room temperature : 28 °C

3.3.7 Inflation pressure readjusted after conditioning : 900 kPa

3.3.8 Circumference after conditioning, before testing : 3133 mm

3.3.9 Outer diameter after conditioning, before testing : 990.9 mm

3.3.10 100% load corresponding to L.I.(single) : 4500 kg

Step	Step duration [h]	Total duration [h]	Actual speed [km/h]	Test Load [%]	Test Load [kg]
1.	7	7	64	66	2970
2.	16	23	64	84	3780
3.	24	47	64	101	4545

3.3.11 Conditioning after testing : More than 6 hours

3.3.12 Circumference after conditioning, after testing : 3120 mm

3.3.13 Outer diameter after conditioning, after testing : 993.1 mm

3.3.14 Difference outer diameter before and after testing (max. 3.5 %) : 2.2 mm  
: 0.22 %

3.3.15 Inspection after test : The tyre does not exhibit tread separation, ply separation, cord separation, chunking or broken cords.

**4. Remarks** : The test results refer to report No. 19-01424-CX-SHA-00