

**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- ~~approval withdrawn~~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 UN Regulation number 117.

**Approval number <sup>(2)</sup>: E4\*117R02/12\*10767\*03****Suffix(es) <sup>(3)</sup>: 02S2WR2**

1. Manufacturer's name and address : ZODO TIRE Co., LIMITED  
The South of Yalujiang Road, Wenzhuang  
Village Qinghe Agency of Cao County Heze  
City, Shandong Province 274400 China(PRC)
2. If applicable, name and address of  
manufacturer's representative : N/A
3. "Tyre class" of the type of tyre : Class C1 / ~~Class C2~~ / ~~Class C3~~ <sup>(1)</sup>
4. "Category of use" of the type of tyre : ~~normal~~ / snow / ~~special~~ <sup>(1)</sup>
- 4.1. Snow tyre for use in severe snow  
conditions : yes/~~no~~ <sup>(1)</sup>
- 4.2. Traction tyre : yes/no <sup>(1)</sup>
5. Tyre structure : ~~Diagonal~~ / ~~Bias belted~~ / Radial / ~~Run-flat tyre~~ <sup>(1)</sup>
6. Tyre type designation :



- 6.1. Brand name(s)/trademark(s) of the type of tyre : GRENLANDER; CONSTANCY; ILINK; FRONWAY; SAILWIN; ARIVO; XBRI; LUXXAN; RHINO; TTYRE; CRYSTAL; ROCKBLADE; ROADMARCH; KANGS; ZMAX; XCENTWAY; ADERENZA; CONCEPTA
- 6.2. Trade description(s)/Commercial name(s) of the type of tyre : GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorlorf A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; X-SPIDER A/S
7. Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity tests : IDIADA Automotive Technology, S.A.  
L'Albornar, P.O. Box 20  
43710 Santa Oliva (Tarragona), SPAIN
8. Performance(s) approved : sound level at (~~stage 1~~/stage 2)<sup>(1)</sup>, wet adhesion level, rolling resistance level (~~stage 1~~/stage 2)<sup>(1)</sup>
- 8.1. 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: 72 dB(A) at reference speed of ~~70~~/80 km/h<sup>(1)</sup>.
- 8.2. 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: 1.32 (G) using the vehicle ~~or trailer~~ method<sup>(1)</sup>.
- 8.3. 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 10.01 N/kN
- 8.4. Snow grip 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<sup>(4)</sup> to Annex 7: 1.27 (Snow grip index) using the brake on snow method<sup>(1)</sup>, ~~spin traction method~~<sup>(1)</sup> or ~~acceleration method~~<sup>(1)</sup>.
9. Number of report issued by that service : CN20070827;  
CN20090189;  
CN21040947
10. Date of report issued by that service : 23/07/2020;  
09/09/2020;  
26/04/2021
11. Reason(s) of extension (if applicable) : Upgrade of regulation supplement number (the upgrade will not influence the previous test results);  
Addition of tyre size designation;  
Addition of brand name;  
Addition of trade description;
12. Any remarks :



**Approval number: E4\*117R02/12\*10767\*03**

13. Place : Zoetermeer
14. Date : 06 May 2021
15. Signature :



T. H. K. Spatz

16. Annexed to this communication are:
- 16.1. 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. 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.

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

<sup>(2)</sup> According to Schedule 4 to Revision 3 of the 1958 Agreement.

<sup>(3)</sup> According to paragraphs 5.2.2. and 5.3.1.2. of this Regulation.

<sup>(4)</sup> Appendix 2 for C1 and C2 tyres.

Appendix 3 for C3 tyres.

<sup>(5)</sup> In the case of 'snow tyre for use in severe snow conditions' a test report according to Appendix 2 of Annex 7 shall be submitted.

TECHNICAL DOCUMENTATION

**RELATING TO ECE TYPE-APPROVAL FOR A TYPE OF TYRE WITH REGARD TO ROLLING SOUND EMISSIONS AND TO ADHESION PERFORMANCE ON WET SURFACES AND/OR TO ROLLING RESISTANCE (ECE Regulation No. 117. 02, Supplement 12)**

1. GENERAL
- 1.1. The performance characteristics to be assessed for the tyre type : Rolling sound emission level and adhesion performance level on wet surfaces and rolling resistance
- 1.2. Manufacturer's name : ZODO TIRE CO., LIMITED
- 1.3. Name and address of applicant : The South of Yalujiang Road, Wenzhuang Village Qinghe Agency of Cao County Heze City, Shandong Province 274400 China(PRC)
- 1.4. Address(es) of manufacturing plant(s) : same with the applicant
- 1.5. Brand name(s), Trade description(s) or Trade mark(s) to be used for particular tyre type-approval requested : Brand names: GRENLANDER; CONSTANCY; ILINK; FRONWAY; SAILWIN; ARIVO; XBRI; LUXXAN; RHINO; TTYRE; CRYSTAL; ROCKBLADE; ROADMARCH; KANGS; ZMAX; XCENTWAY; ADERENZA; CONCEPTA  
Tread patterns: GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; X-SPIDER A/S
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
- 2.4. For Class C1 tyres, state weather :
- 2.4.1. Reinforced (or extra load) in case of approval with regarding to rolling sound emission level : see attached "list of tyre size"
- 2.4.2. 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
- 2.5. For Class C2 or C3 tyres, state weather "Traction tyre" : ~~Yes~~ / ~~No~~
- 2.6. Category of use (normal, snow, special) : ~~normal~~ / snow (snow tyre for use in severe snow conditions) / ~~special~~
- 2.7. A list of tyre designations covered by this application : see attached "list of tyre size"
- 2.8. 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 pattern(s) to be used on the designated range of tyre sizes. : see attached "drawing of tread pattern"
- 2.9. In the case of "special use tyre", drawing of the tread pattern supplied in order to verify the void-to-fill ratio. : not applicable
- 2.10. Submitted for approval on (date) : April 6, 2021

MANUFACTURER'S STAMP



Signature :

*Ren Hailong*

Name: Ren Hailong

THIS APPLICATION IS ACCOMPANIED BY:

- List of tyre size

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- Drawing of tread pattern
- The test report

List of tyre size

Brand name(s) or Trade mark(s) : GRENLANDER; CONSTANCY; ILINK; FRONWAY; SAILWIN; ARIVO; XBRI; LUXXAN; RHINO; TTYRE; CRYSTAL; ROCKBLADE; ROADMARCH; KANGS; ZMAX; XCENTWAY; ADERENZA; CONCEPTA

Tread pattern : GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; X-SPIDER A/S

Tyre size	Approval No.	Limit for rolling sound dB(A) of Stage II	Limit for wet grip index	Limit for rolling resistance coefficient N/KN of Stage II
155/70R13 75T	E4-02114330	71dB(A)	1.1	11.5
165/65R14 79T	E4-02114022	71dB(A)	1.1	11.5
165/70R13 79T	E4-02114169	71dB(A)	1.1	11.5
165/70R14 81T	E4-02114334	71dB(A)	1.1	11.5
175/65R14 82T	E4-0298343	71dB(A)	1.1	11.5
175/65R15 84H	E4-0298344	71dB(A)	1.1	11.5
175/70R13 82T	E4-02114170	71dB(A)	1.1	11.5
175/70R14 84T	E4-02114171	71dB(A)	1.1	11.5
175/70R14 88T XL	E4-02115914	71dB(A)	1.1	11.5
185/55R15 82H	E4-0298323	72dB(A)	1.1	11.5
185/60R14 82H	E4-0299159	72dB(A)	1.1	11.5
185/60R15 84H	E4-02115915	72dB(A)	1.1	11.5
185/60R15 88H XL	E4-0297218	72dB(A)	1.1	11.5
185/65R14 86H	E4-0297201	72dB(A)	1.1	11.5
185/65R15 92T XL	E4-02115916	72dB(A)	1.1	11.5
195/45R16 84V XL	E4-0290152	72dB(A)	1.1	11.5
195/50R15 82V	E4-0297205	72dB(A)	1.1	11.5
195/55R15 85H	E4-0298326	72dB(A)	1.1	11.5
195/55R16 91V XL	E4-02115917	72dB(A)	1.1	11.5
195/60R15 88H	E4-0297207	72dB(A)	1.1	11.5
195/65R15 91H	E4-0297208	72dB(A)	1.1	11.5
195/65R15 95V XL	E4-02115918	72dB(A)	1.1	11.5
205/50ZR17 93W XL	E4-0278380	72dB(A)	1.1	11.5
205/55R16 91H	E4-0297210	72dB(A)	1.1	11.5
205/55R16 91V	E4-0297209	72dB(A)	1.1	11.5
205/55R16 94V XL	E4-02115919	72dB(A)	1.1	11.5
205/55ZR17 95W XL	E4-02114320	72dB(A)	1.1	11.5
205/60R16 96V XL	E4-02115920	72dB(A)	1.1	11.5
205/65R15 94V	E4-0298330	72dB(A)	1.1	11.5
215/50ZR17 95W XL	E4-0285994	72dB(A)	1.1	11.5
215/55R16 97V XL	E4-02115921	72dB(A)	1.1	11.5
215/55ZR17 98W XL	E4-0297234	72dB(A)	1.1	11.5
215/60R16 99H XL	E4-0297212	72dB(A)	1.1	11.5
215/60R17 96H	E4-02115922	72dB(A)	1.1	11.5
225/40ZR18 92W XL	E4-0278388	72dB(A)	1.1	11.5
225/45ZR17 94W XL	E4-0278379	72dB(A)	1.1	11.5
225/50ZR17 98W XL	E4-0285995	72dB(A)	1.1	11.5

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225/55R18 98V	E4-02115923	72dB(A)	1.1	11.5
225/65R17 106H XL	E4-02115924	72dB(A)	1.1	11.5
235/45ZR17 97W XL	E4-0278384	72dB(A)	1.1	11.5
235/50ZR18 101W XL	E4-02115925	72dB(A)	1.1	11.5
235/55R19 105V XL	E4-0297667	72dB(A)	1.1	11.5
235/60R18 107V XL	E4-02115926	72dB(A)	1.1	11.5
245/45ZR18 100W XL	E4-0278387	72dB(A)	1.1	11.5
155/65R13 73T	E4-02114167	71dB(A)	1.1	11.5
155/80R13 79T	E4-02114168	71dB(A)	1.1	11.5
175/65R13 80T	E4-02114332	71dB(A)	1.1	11.5
165/60R14 75H	E4-02114021	71dB(A)	1.1	11.5
155/65R14 75T	E4-02114333	71dB(A)	1.1	11.5
185/55R14 80H	E4-02114284	72dB(A)	1.1	11.5
185/70R14 88H	E4-0297204	72dB(A)	1.1	11.5
175/55R15 77H	E4-02121693	71dB(A)	1.1	11.5
175/60R15 81H	E4-02114288	71dB(A)	1.1	11.5
215/65R15 96H	E4-0298352	72dB(A)	1.1	11.5
195/50R16 88VXL	E4-02121696	72dB(A)	1.1	11.5
205/45ZR16 87WXL	E4-0290153	72dB(A)	1.1	11.5
215/45R16 90VXL	E4-02114307	72dB(A)	1.1	11.5
215/65R16 102HXL	E4-02109483	72dB(A)	1.1	11.5
225/55ZR16 99WXL	E4-0288764	72dB(A)	1.1	11.5
205/45ZR17 88WXL	E4-0296293	72dB(A)	1.1	11.5
215/45ZR17 91WXL	E4-0278377	72dB(A)	1.1	11.5
225/55ZR17 101WXL	E4-0295087	72dB(A)	1.1	11.5
225/60R17 99H	E4-0299161	72dB(A)	1.1	11.5
235/55ZR17 103W XL	E4-0295088	72dB(A)	1.1	11.5
235/65R17 108HXL	E4-02104178	72dB(A)	1.1	11.5
225/45ZR18 95W XL	E4-0278385	72dB(A)	1.1	11.5
175/55R15 77V	E4-02114285	71dB(A)	1.1	11.5
195/50R16 84V	E4-0290154	72dB(A)	1.1	11.5
215/65R16 98H	E4-0298353	72dB(A)	1.1	11.5
225/55R16 95V	E4-0298334	72dB(A)	1.1	11.5
225/55R17 97V	E4-0278383	72dB(A)	1.1	11.5
235/55R17 99V	E4-0278381	72dB(A)	1.1	11.5
235/65R17 104H	E4-02114293	72dB(A)	1.1	11.5
245/40ZR18 97W XL	E4-0278390	72dB(A)	1.1	11.5
145/70R13 71T	E4-02114294	71dB(A)	1.1	11.5
145/80R13 75T	E4-02114296	71dB(A)	1.1	11.5
175/80R14 88T	E4-02126884	71dB(A)	1.1	11.5
195/70R14 91H	E4-0298332	72dB(A)	1.1	11.5
165/60R15 81H XL	E4-02114287	71dB(A)	1.1	11.5
165/65R15 81T	E4-02114290	71dB(A)	1.1	11.5
195/60R16 89H	E4-0299160	72dB(A)	1.1	11.5
205/50ZR16 91W XL	E4-0284573	72dB(A)	1.1	11.5
215/70R16 100H	E4-02104183	72dB(A)	1.1	11.5
225/60R16 98H	E4-0297216	72dB(A)	1.1	11.5
235/60R16 100H	E4-0298357	72dB(A)	1.1	11.5
205/40ZR17 84W XL	E4-0288760	72dB(A)	1.1	11.5
215/40ZR17 87W XL	E4-02114298	72dB(A)	1.1	11.5
215/65R17 99T	E4-02109490	72dB(A)	1.1	11.5
245/45ZR17 99W XL	E4-0297656	72dB(A)	1.1	11.5
215/55R18 99V XL	E4-02114009	72dB(A)	1.1	11.5
225/50ZR18 99W XL	E4-02125244	72dB(A)	1.1	11.5
235/40ZR18 95W XL	E4-0278389	72dB(A)	1.1	11.5
235/45ZR18 98W XL	E4-0297658	72dB(A)	1.1	11.5
235/55R18 104V XL	E4-02114011	72dB(A)	1.1	11.5
255/55R18 105V	E4-0278386	73dB(A)	1.1	11.5
205/55R19 97V XL	E4-02126873	72dB(A)	1.1	11.5
225/35ZR19 88W XL	E4-02114316	72dB(A)	1.1	11.5
225/40ZR19 93W XL	E4-02125248	72dB(A)	1.1	11.5

225/45ZR19 96WXL	E4-02114308	72dB(A)	1.1	11.5
225/55R19 99V	E4-0297666	72dB(A)	1.1	11.5
235/35ZR19 91WXL	E4-0278391	72dB(A)	1.1	11.5
235/45ZR19 99WXL	E4-02114309	72dB(A)	1.1	11.5
245/40ZR19 98WXL	E4-02114300	72dB(A)	1.1	11.5
245/45ZR19 102WXL	E4-0297230	72dB(A)	1.1	11.5
255/35ZR19 96WXL	E4-0290156	73dB(A)	1.1	11.5
255/40ZR19 100WXL	E4-02114302	73dB(A)	1.1	11.5
195/55R20 91V	E4-02126874	72dB(A)	1.1	11.5
245/40ZR20 99WXL	E4-0297672	72dB(A)	1.1	11.5
255/35ZR20 97WXL	E4-0297647	73dB(A)	1.1	11.5
255/40ZR20 101WXL	E4-02126887	73dB(A)	1.1	11.5
315/35ZR20 110WXL	E4-02125222	75dB(A)	1.1	11.5
255/60R17 110HXL	E4-02122438	73dB(A)	1.1	11.5
255/60R18 112HXL	E4-02109500	73dB(A)	1.1	11.5
155/70R19 84T	E4-02126888	71dB(A)	1.1	11.5
285/45R19 111VXL	E4-02114314	75dB(A)	1.1	11.5
245/35ZR20 95WXL	E4-0278393	72dB(A)	1.1	11.5
255/45ZR20 105WXL	E4-02125220	73dB(A)	1.1	11.5
265/45R20 108VXL	E4-02126889	73dB(A)	1.1	11.5
165/65R15 81H	E4-02121692	71dB(A)	1.1	11.5
215/70R16 100T	E4-02115900	72dB(A)	1.1	11.5
225/60R16 98V	E4-02109484	72dB(A)	1.1	11.5
225/60R16 102VXL	E4-02121697	72dB(A)	1.1	11.5
215/65R17 99V	E4-02104185	72dB(A)	1.1	11.5
255/55R18 109V	E4-02114014	73dB(A)	1.1	11.5
315/35R20 110VXL	E4-02125232	75dB(A)	1.1	11.5
265/45ZR20 108WXL	E4-02126860	73dB(A)	1.1	11.5

The worst case of test tires for tyre noise:

TEST SIZE : 315/35ZR20 110W XL

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

The testing tire designation for wet grip:

TEST SIZE : 245/45ZR18 100W XL

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.

For any tyre size the limited value for the test tire is: 1.1

The worst case of test tires for rolling resistance:

TEST SIZE : 155/70R13 75T


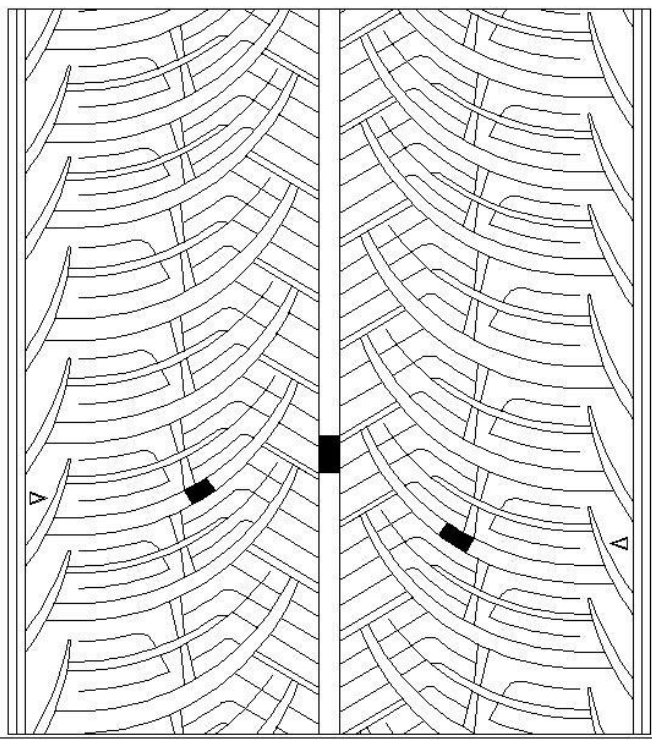
Because of : Calculated limit value=(RRC-limit value R117-0.3N/KN)-0.06×(LI-candidate-LI-lowest)≧  
10.96 N/KN ≧ test result 10.01 N/KN


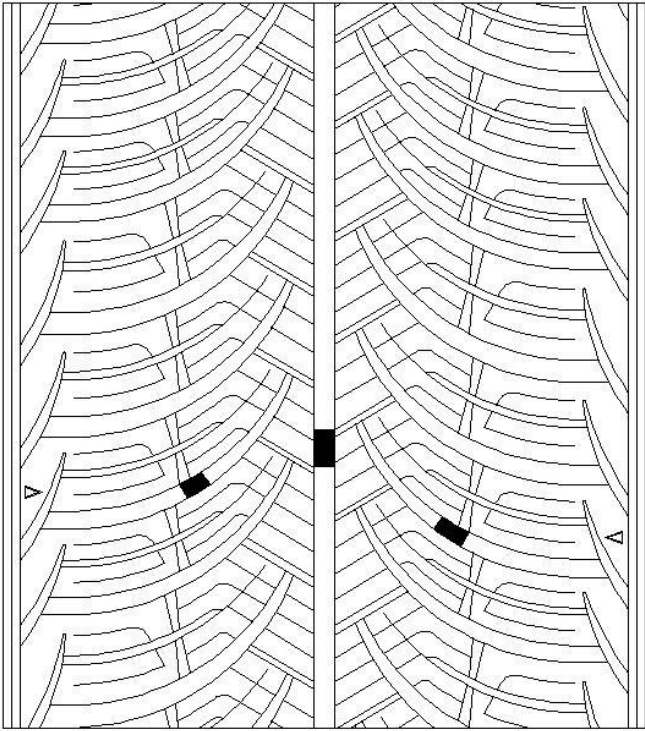
The worst case for snow performance test:


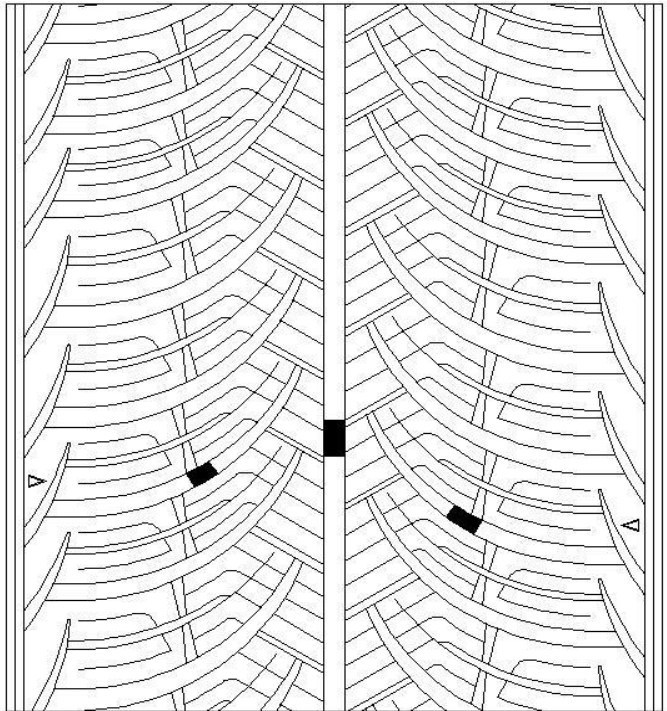
TEST SIZE : 245/45ZR18 100W XL

Because of : Any tyre size that meets the required value of the regulation plus the extra safety margin (or more) can represent the whole tyre size range.



Drawing of the tread pattern (for measured tyre using for tyre noise)	
Manufacturer name  Pattern name  Tyre Size  Market  Marking	: ZODO TIRE Co., LIMITED  GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; <u>X-SPIDER A/S</u>  : 315/35ZR20 110WXL  : EU/US  : M+S 
Pitch number  Pitch ratio	: 66  : 0.9/1.0/1.1/1.2
Void volume [ % ]  Width: main grooves [mm]  Depth: center groove [mm]  Depth: shoulder groove [mm]	: 30  : 11.2  : 7.5  : 4.2
Tyre tread pattern	

Drawing of the tread pattern (for measured tyre using for wet grip and snow grip)	
Manufacturer name  Pattern name  Tyre Size  Market  Marking	: ZODO TIRE Co., LIMITED  GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; <u>X-SPIDER A/S</u>  : 245/45ZR18 100WXL  : EU/US  : M+S 
Pitch number  Pitch ratio	: 68  : 0.9/1.0/1.1/1.19
Void volume [ % ]  Width: main grooves [mm]  Depth: center groove [mm]  Depth: shoulder groove [mm]	: 30  : 8.8  : 7.2  : 6.2
Tyre tread pattern	

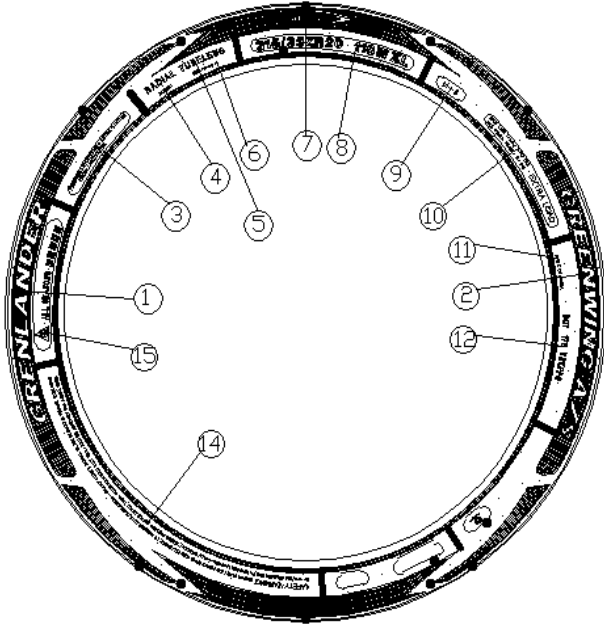
Drawing of the tread pattern (for measured tyre using for tyre rolling resistance test)	
Manufacturer name	: ZODO TIRE Co., LIMITED
Pattern name	: GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlorful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; <u>X-SPIDER A/S</u>
Tyre Size	: 155/70R13 75T
Market	: EU/US
Marking	: M+S 
Pitch number	: 60
Pitch ratio	: 0.92/1.0/1.11/1.22
Void volume [ % ]	: 30
Width: main grooves [mm]	: 4.8
Depth: center groove [mm]	: 6.8
Depth: shoulder groove [mm]	: 5.8
Tyre mass [kg]	: 5.552
Tread depth [mm]	: 6.8
Tread width [mm]	: 110
Curvature radius of tread crown [mm]	: 320
Tyre outer diameter [mm]	: 545
Tread plies	: 1 POLYESTER+2 STEEL+1 NYLON
Tyre tread pattern	: 

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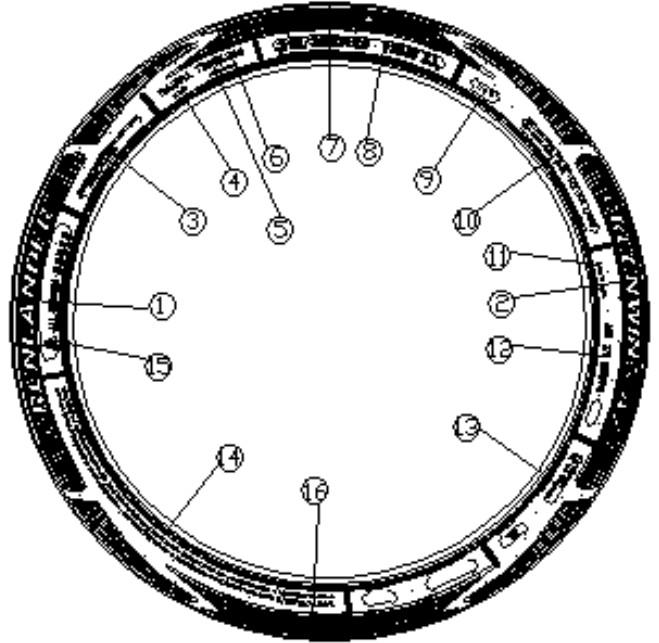
Drawing of the tyre sidewall

Tyre Size

: 315/35ZR20 110WXL



Upper mold



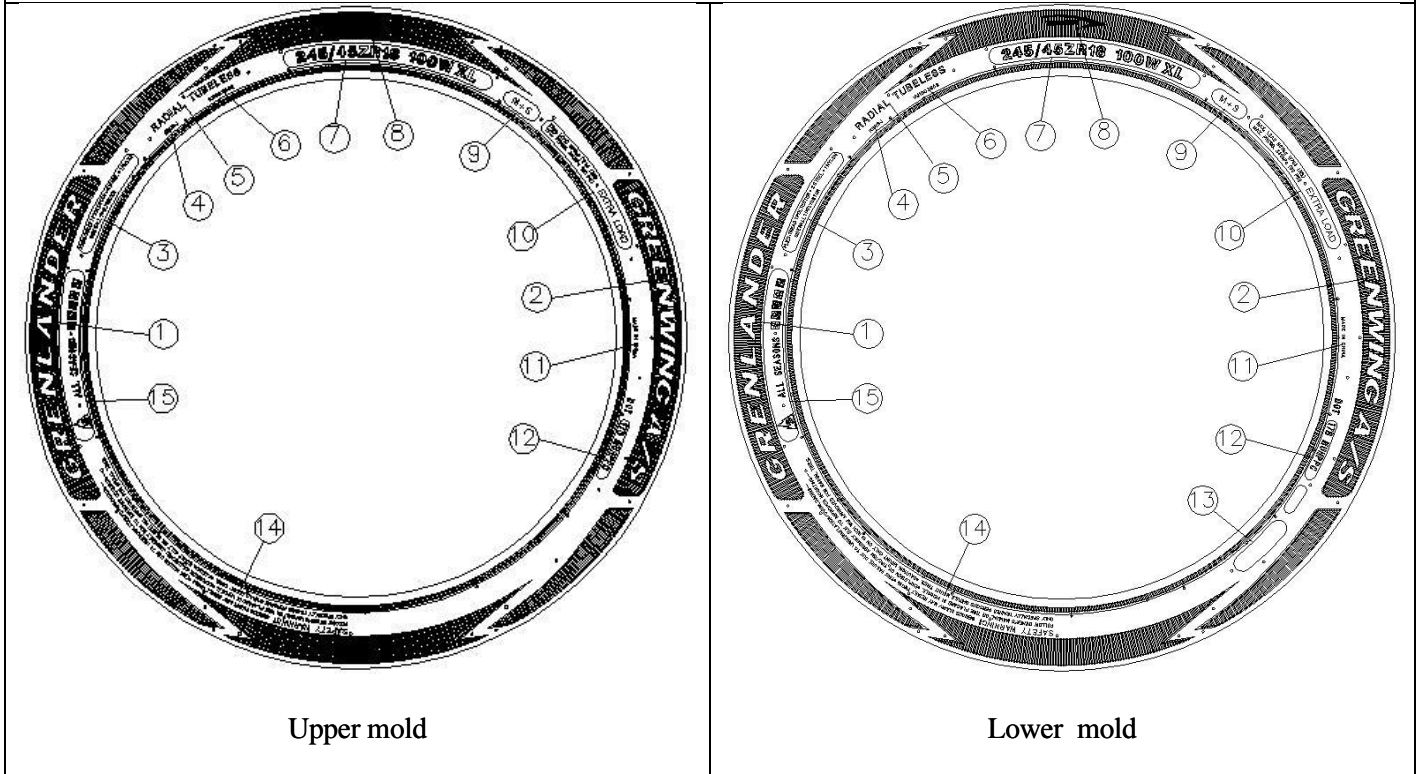
Lower mold



1. GRENLANDER	1. GRENLANDER
2. GREENWING A/S	2. GREENWING A/S
3. PLIES:TREAD 2POLYESTER+2STEEL+1NYLON SIDEWALL 2POLYESTER	3. PLIES:TREAD 2POLYESTER+2STEEL+1NYLON SIDEWALL 2POLYESTER
4. RIM:11J	4. RIM:11J
5. RADIAL TUBELESS	5. RADIAL TUBELESS
6. MOLD NO.	6. MOLD NO.
7.ROTATION	7.ROTATION
8. 315/35ZR20 110WXL	8. 315/35ZR20 110WXL
9.M+S	9.M+S
10.MAX. LOAD 1060kg (2337LBS) MAX. PRESS. 340 kPa (50 PSI) EXTRA LOAD	10.MAX. LOAD 1060kg (2337LBS) MAX. PRESS. 340 kPa (50 PSI) EXTRA LOAD
11. MADE IN CHINA	11. MADE IN CHINA
12. DOT 17B WWKPPC	12. DOT 17B WWKPPC XXXX(DATE CODE)
	13. (E4)XXXXXXX
14. SAFETY WARNING	14. SAFETY WARNING
15.  ALL SEASONS	15.  ALL SEASONS
	16. TREADWERA 420 TRACTION A TEMPERATURE A



Drawing of the tyre sidewall

Tyre Size : 245/45ZR18 100WXL



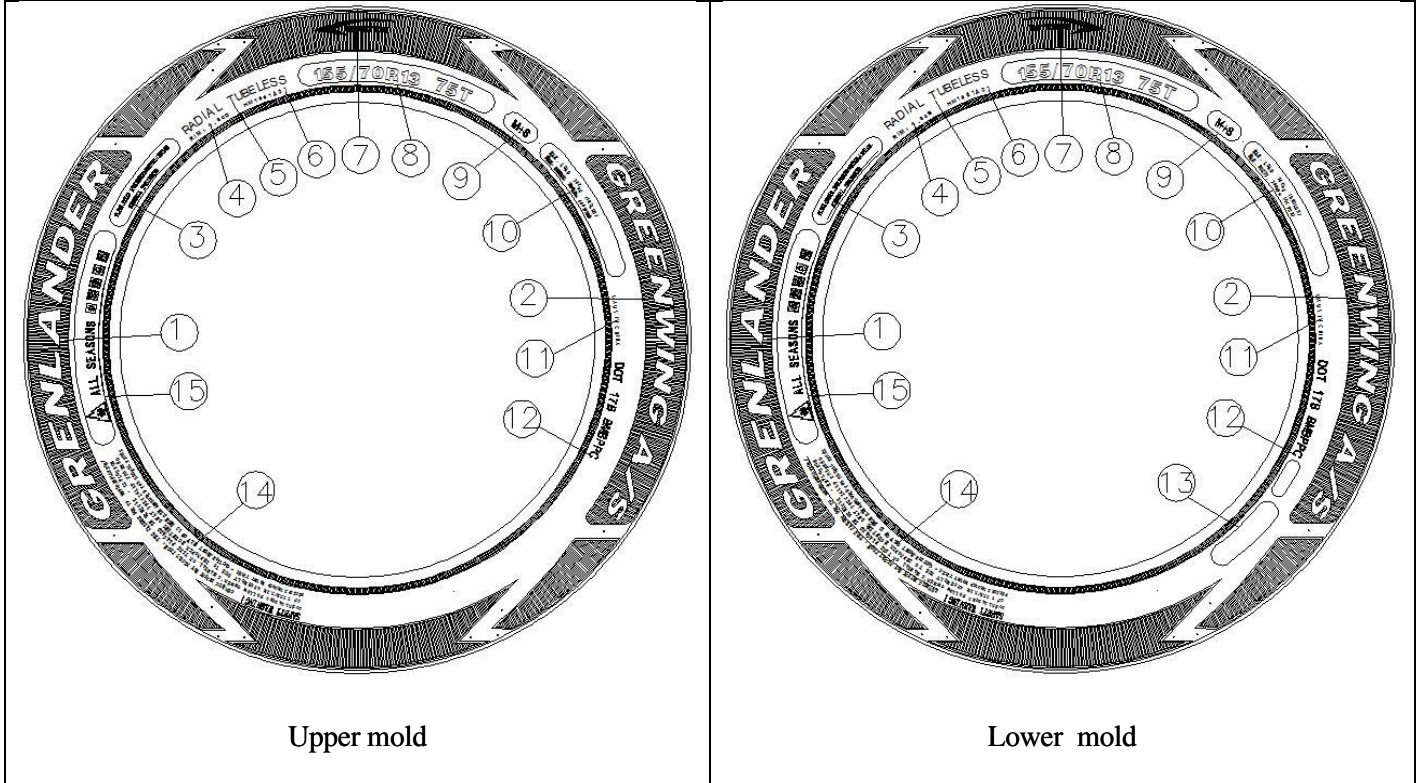
1. GRENLANDER	1. GRENLANDER
2. GREENWING A/S	2. GREENWING A/S
3. PLYS:TREAD 2POLYESTER+2STEEL+1NYLON SIDEWALL 2POLYESTER	3. PLYS:TREAD 2POLYESTER+2STEEL+1NYLON SIDEWALL 2POLYESTER
4. RIM:8J	4. RIM:8J
5. RADIAL TUBELESS	5. RADIAL TUBELESS
6. MOLD NO.	6. MOLD NO.
7.ROTATION	7.ROTATION
8. 245/45ZR18 100WXL	8. 245/45ZR18 100WXL
9.M+S	9.M+S
10.MAX. LOAD 800kg (1764 LBS) MAX. PRESS. 340 kPa (50 PSI) EXTRA LOAD	10.MAX. LOAD 800kg (1764 LBS) MAX. PRESS. 340 kPa (50 PSI) EXTRA LOAD
11. MADE IN CHINA	11. MADE IN CHINA
12. DOT 17B MUHPPC	12. DOT 17B MUHPPC XXXX(DATE CODE)
	13. E4 XXXXXXXX
14. SAFETY WARNING	14. SAFETY WARNING
15.  ALL SEASONS	15.  ALL SEASONS



IDIADA CN21040947

Drawing of the tyre sidewall

Tyre Size

: 155/70R13 75T



1. GRENLANDER	1. GRENLANDER
2. GREENWING A/S	2. GREENWING A/S
3. PLYS:TREAD 1POLYESTER+2STEEL+1NYLON SIDEWALL 1POLYESTER	3. PLYS:TREAD 1POLYESTER+2STEEL+1NYLON SIDEWALL 1POLYESTER
4. RIM:4.50B	4. RIM:4.50B
5. RADIAL TUBELESS	5. RADIAL TUBELESS
6. MOLD NO.	6. MOLD NO.
7.ROTATION	7.ROTATION
8. 155/70R13 75T	8. 155/70R13 75T
9.M+S	9.M+S
10.MAX. LOAD 387kg (853 LBS) MAX. PRESS. 300 kPa (44 PSI)	10.MAX. LOAD 387kg (853 LBS) MAX. PRESS. 300 kPa (44 PSI)
11. MADE IN CHINA	11. MADE IN CHINA
12. DOT 17B BMBPPC	12. DOT 17B BMBPPC XXXX(DATE CODE)
	13. <b>E4</b> XXXXXXX
14. SAFETY WARNING	14. SAFETY WARNING
15.  ALL SEASONS	15.  ALL SEASONS

**REPORT N° CN21040947****UN/ECE REGULATION 117R02 RELATED TO ROLLING SOUND EMISSIONS, ADHESION ON WET SURFACES AND ROLLING RESISTANCE**

Approval number : E4\*117R02/12\*10767\*03  
Approved performances : 02S2WR2

Applicant : ZODO TIRE Co., LIMITED  
The South of Yalujiang Road, Wenzhuang Village Qinghe  
Agency of Cao County Heze City, Shandong Province  
274400 China(PRC)

Manufacturer : ZODO TIRE Co., LIMITED  
The South of Yalujiang Road, Wenzhuang Village Qinghe  
Agency of Cao County Heze City, Shandong Province  
274400 China(PRC)

Tyre class : C1

Category of use : Snow (for use in severe snow conditions)

Traction tyre : N/A

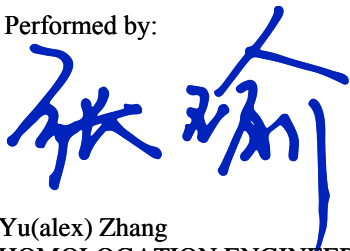
Brand name / Trade mark : GRENLANDER; CONSTANCY; ILINK; FRONWAY;  
SAILWIN; ARIVO; XBRI; LUXXAN; RHINO; TTYRE;  
CRYSTAL; ROCKBLADE; ROADMARCH; KANGS;  
ZMAX; XCENTWAY; ADERENZA; CONCEPTA

Trade description/ Commercial name : GREENWING A/S; MULTIMATCH A/S; FRONWING A/S; FREIMATCH A/S; Carlloful A/S; INSPIRER A/S 1; FORTY ONE; ROCK A/S ONE; PRIME A/S; X-SPIDER A/S

Place and date of issue : L'Albomar, Santa Oliva (Tarragona), 26/04/2021

CONCLUSIONS: The tested samples of the family FULFIL the technical prescriptions with regard to “rolling sound emissions level” and/or “adhesion performance on wet surfaces” and/or “rolling resistance” pursuant to UN/ECE REGULATION No. 117 supplement 12 to the 02 series of amendments.  
The characteristics of the tested samples are detailed in the annexes to the test report.

Performed by:

Yu(alex) Zhang  
HOMOLOGATION ENGINEER

Revised by:

Josep Masip Gomez  
DEPARTMENT MANAGER

## REPORT N° CN21040947

### SUMMARY

1. Dimensions included in the type of tyre : See Manufacturer's technical documentation attached
2. Tyre sizes selected for testing
  - 2.1. Tyre size tested for rolling sound emissions : 315/35ZR20 110W XL (largest section width and lowest aspect ratio)  
See Annex 1, Test report CN21031090, IDIADA, 29/03/2021
  - 2.2. Tyre size tested for adhesion on wet surfaces: 245/45ZR18 100W XL (meets extra 10%)  
See type approval E4\*117R02/09\*10767\*00, Test report CS117-A0-2019-00773, TÜV NORD Mobilita GmbH&Co.KG, 21/03/2019
  - 2.3. Tyre size tested for rolling resistance : 155/70R13 75T (new calculated limit value, see point 4)  
See type approval E4\*117R02/09\*10767\*00, Test report CS117-A0-2019-00773, TÜV NORD Mobilita GmbH&Co.KG, 10/06/2019
  - 2.4. Tyre size tested for snow performance : 245/45ZR18 100W XL (meet safety margin 1.10)  
See type approval E4\*117R02/09\*10767\*00, Test report CS117-A0-2019-00773, TÜV NORD Mobilita GmbH&Co.KG, 15-16/01/2019

3. Reason(s) of extension (if applicable) :
  - Addition of tyre size designation
  - Addition of brand name
  - Addition of trade description
  - Upgrade of supplement number(the upgrade will not influence the previous test results)

4. New limit value according to Announcement for the technical service 2018-01

To verify if a lower load index (Lllowest) meets the requirements of the regulation, the limit value for the tested tyre ( Llcandidate ) is calculated by the formula:

$$\text{Calculated limit value} = (\text{RRC-limit value R117} - 0.3\# \text{ N/kN}) - 0.06^* \times (\text{Llcandidate} - \text{Lllowest})$$

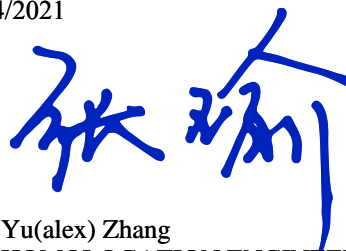
# the limit value of the regulation will be increased by a safety margin of 0.3 N/kN

\* the slope of rolling resistance coefficient versus load index is fixed on 0.06.

$$\text{Calculated limit value} = (11.5 - 0.3\# \text{ N/kN}) - 0.06^* \times (75 - 71) = 10.96 \text{ N/kN}$$

5. List of Annexes to this report
  - 5.1. Annex 1: Test report according to rolling sound emission level.
  - 5.2. Annex: Manufacturer's technical documentation.

Place and date of issue: L'Albornar, Santa Oliva (Tarragona), 26/04/2021



Yu(alex) Zhang  
HOMOLOGATION ENGINEER



**ANNEX TO THE TEST REPORT**  
**ROLLING SOUND EMISSIONS, REPORT N° CN21031090**

**1. TEST DATA**

**1.1. Test tyre details**

- 1.1.1 Applicant : ZODO TIRE Co., LIMITED  
The South of Yalujiang Road, Wenzhuang Village Qinghe Agency of Cao County Heze City, Shandong Province 274400 China(PRC)
- 1.1.2 Manufacturer : ZODO TIRE CO., LIMITED  
The South of Yalujiang Road, Wenzhuang Village Qinghe Agency of Cao County Heze City, Shandong Province 274400 China(PRC)
- 1.1.3 Tyre class : C1
- 1.1.4 Category of use : Snow (for use in severe snow conditions)
- 1.1.5 Traction tyre : N/A
- 1.1.6 Brand name / Trade mark : GREENLANDER
- 1.1.7 Trade description / Commercial name : GREENWING A/S
- 1.1.8 Tyre size : 315/35ZR20 110W XL
- 1.1.9 Load index / Corresponding mass  $Q_r$  [kg] : 110 / 1,060
- 1.1.10 Tyre structure : Radial
- 1.1.11 Date code, other manufacturer markings : 1221, 17BWWKPPC
- 1.1.12 Reference inflation pressure  $P_r$  [kPa] : 290
- 1.1.13 Test inflation pressure  $P_t$  [kPa] :

	<b><math>P_t</math> [kPa] admissible values</b>
Front axle left wheel	$192.59 \leq 200.00 \leq 211.85$
Front axle right wheel	$186.31 \leq 190.00 \leq 204.94$
Rear axle left wheel	$188.19 \leq 190.00 \leq 207.01$
Rear axle right wheel	$198.28 \leq 200.00 \leq 218.11$

$P_t \geq 150$  kPa

FULFILS / NOT FULFILS

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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.

1.1.14 Test tyre internal reference :

Front left	Front right
CN-2103/02422-01	CN-2103/02422-02
Rear left	Rear right
CN-2103/02422-03	CN-2103/02422-04

1.1.15 Test rim : 10.5 x 20

1.1.16 Test rim internal reference :

Front left	Front right
CN-2006/01265-01	CN-2006/01265-02
Rear left	Rear right
CN-2006/01265-03	CN-2006/01265-04

1.1.17 Test tyre load [kg] :

	kg	$Q_t$ [N] / % $\frac{Q_t}{Q_r}$
Front axle left wheel	764	50 < 72.08 < 90
Front axle right wheel	744	50 < 70.19 < 90
Rear axle left wheel	750	50 < 70.75 < 90
Rear axle right wheel	782	50 < 73.77 < 90

FULFILS / NOT FULFILS

$Q_{t,avr}$ [N] / % $\frac{Q_{t,avr}}{Q_r}$
70 ≤ 71.70 ≤ 80

FULFILS / NOT FULFILS

**1.2. Test vehicle**

1.2.1	Trade name	: VOLKSWAGEN
1.2.2	Model	: TOUAREG
1.2.3	Year	: 2014
1.2.4	Transmission	: Automatic
1.2.5	Wheelbase [mm]	: 2,904

For Class C1 less than 3,500 mm.

FULFILS / NOT FULFILS

1.2.6	Vehicle internal reference	: CN-2001/02096
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**1.3. Test equipment**

1.3.1	Sound level meter 1	: 3024593
1.3.2	Sound level meter 2	: 3024412
1.3.3	Manometer	: 27230
1.3.4	Weight scale	: SCS-5 / SCS-10
1.3.5	Track temperature measurement device	: 182329
1.3.6	Wind speed measurement device	: MM-0316
1.3.7	Speed measurement device	: VBOX sport 07013178
1.3.8	Ambient temperature measurement device	: 182330

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**2. TEST TRACK**

**2.1. Environment**

2.1.1 Air temperature  $T_a$  [°C] : 16.7

$5.0 < T_a < 40.0$

FULFILS / ~~NOT FULFILS~~

2.1.2. Test surface temperature  $T_s$  [°C] : 21.9

$5.0 \leq T_s \leq 50.0$

FULFILS / ~~NOT FULFILS~~

2.1.3 Wind speed [m/s] : 2.2

Less than 5 m/s

FULFILS / ~~NOT FULFILS~~

2.1.4 Ambient noise [dB(A)] : 38.4

Test result – Ambient noise  $\geq 10$  dB(A)

FULFILS / ~~NOT FULFILS~~

2.1.5 Wind direction [°] : 49.0

**2.2. Date and method of check on compliance of the test surface with ISO 10844:2014:**

- March 8<sup>th</sup> 2021
- Mean profile depth
- Issued by : IDIADA

**3. TEST RESULTS**

Reference Speed:  $v_{ref}$  [km/h] : 80  
 Range Speed [km/h] : 70.0 - 90.0

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	72.7	N → S	72.6	72.0	17.3	21.2	72.6	72.0
2	74.5	N → S	73.0	72.1	17.0	21.1	73.0	72.1
3	76.6	N → S	73.3	72.6	16.7	21.8	73.4	72.7
4	78.6	N → S	73.9	72.9	17.0	21.9	74.0	73.0
5	82.4	N → S	74.4	73.9	16.4	22.1	74.5	74.0
6	84.3	N → S	74.5	74.0	16.2	22.2	74.6	74.1
7	86.1	N → S	74.6	74.0	16.5	22.4	74.7	74.1
8	88.6	N → S	74.4	74.7	16.6	22.5	74.5	74.8

3.1. Regression line slope : 27.75

3.2. Sound level after temperature correction according to paragraph 4.3 of Annex 3 [dB(A)] : 73.6

3.3. Sound level according to paragraph 4.4. and 4.5. of Annex 3 [dB(A)] : 72

3.4. Limit value [dB(A)] :

C1	
Stage 2	
Nominal Section width	Limit dB (A)
185 and lower	70
Over 185 up to 245	71
Over 245 up to 275	72
Over 275	74

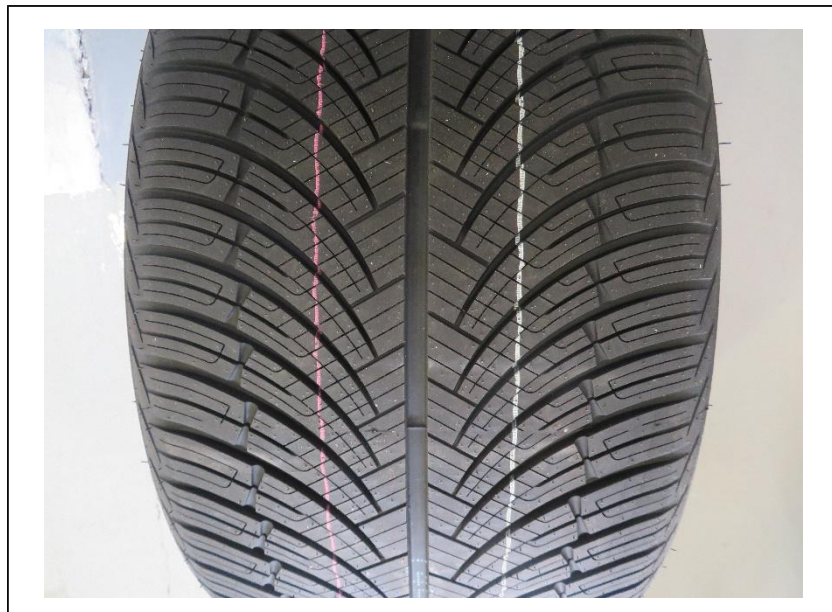
The above limits shall be increased by 1 dB(A) for "snow tyre for use in severe snow conditions", extra load tyres or reinforced tyres, or any combination of these classifications.

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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: ICPG, China

Date of test: 29/03/2021

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