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

E4

COMMUNICATION

Concerning [1]:

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- ~~approval withdrawn~~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

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

Approval number: E4*54R00/25*51710*01

1.	Manufacturer's name and adress	:	Wanli Tire Corporation Limited 3 Wanli Road Aotou Town, Conghua 510940 Guangzhou City, Guangdong Province China (PRC)
2.	Tyre type designation [2]	:	
2.1.	Brand name(s)/trademark(s)	:	AUFINE; MAXELL; FLYBULL
2.2.	Trade description (s)/Commercial name(s)/	:	SMART ADR8; MASTER MAS600; SUPER LD2; APEX ADR9; ECOMAX LD6; ENDURO FDR2; EDEMUN FDR2
3.	If applicable, name and address of the manufacturer's representative	:	Not applicable
4.	Summarized description:		
4.1.	Tyre-size designation	:	315/70R22.5
4.2.	Category of use	:	~~normal~~/snow/~~special~~ [1]
4.3.	Structure	:	~~diagonal (bias-ply)~~/radial [1]
4.4.	Tyre class	:	~~C2~~/C3 [1]

P.O. Box 777
2700 AT Zoetermeer
The Netherlands

Tel. + 31 79 345 83 02
E-mail typeapproval@rdw.nl
www.rdw.nl

Type-approval Department

4.5.	Speed category symbol:	
4.5.1.	nominal	: L
4.5.2.	additional (if applicable)	: M
4.6.	Load-capacity indices:	
4.6.1.	Corresponding to nominal speed:	
	– single	: 156
	– twinned (dual)	: 150
4.6.2.	Corresponding to additional speed:	
	– single	: 154
	– twinned (dual)	: 150
5.	Technical service and, where applicable, test laboratory approved for purposes of approval or of verification of conformity	: IDIADA Automotive Technology, S.A. L'Albornar, P.O. Box 20 43710 Santa Oliva (Tarragona) Spain
6.	Date of report issued by that service	: November 08, 2022 April 28, 2023
7.	Number of report issued by that service	: CN22101015 CN23041313
8.	Reason(s) for extension (if applicable)	: Addition of brand name and trade descriptions; Upgrade of regulation supplement number; Upgrade of sidewall drawings.
9.	Any remarks	---
10.	Place	: Zoetermeer
11.	Date	: 10 May 2023
12.	Signature	:

T. H. K. Spatz

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.

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(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.

TECHNICAL DOCUMENTATION

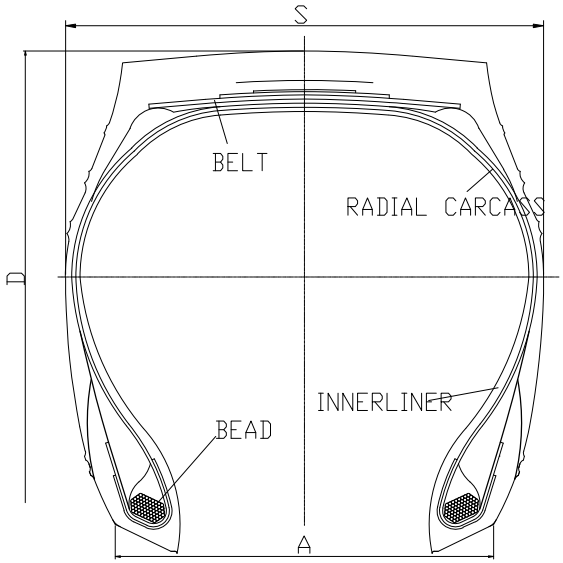
APPLICATION FOR APPROVAL OF A TYPE OF PNEUMATIC TYPE FOR PRIVATE CARS

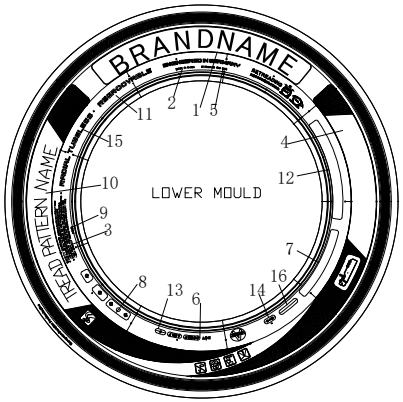
ACCORDING TO ECE REGULATION NO. 54, 00 SERIES OF AMENDMENTS

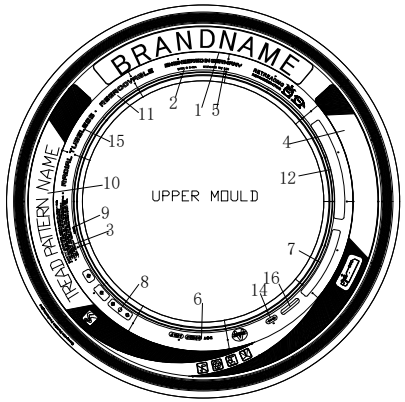
~~APPROVAL Grant~~ / Extension / ~~Correction~~

1. Trade name or trade mark on the tyre	:	AUFINE; MAXELL;FLYBULL	
2. Tyre type designation by the manufacturer	:	SMART ADR8; MASTER MAS600;SUPER LD2; APEX ADR9;ECOMAX LD6;ENDURO FDR2; EDEMUN FDR2;	
3. Manufacturer's name and address	:	Wanli Tire Corporation Limited 3 Wanli Road, Aotou Town, Conghua 510940 Guangzhou City, Guangdong Province China (PRC)	
4. Name and address of manufacturer's representative	:	not applicable	
5. Summarized description			
5.1 Size designation	:	315/70R22.5	
5.2 Category of use	:	~~normal /~~ snow/~~ special use~~	
5.3 Structure	:	~~diagonal (bias ply)~~ / radial	
5.4 Tyre Class	:	~~C2/~~C3	
5.5 Speed category symbol			
5.5.1 nominal	:	L	
5.5.2 additional(if applicable)	:	M	
5.6 Load capacity indices			
5.6.1 corresponding to nominal speed	:	single: 156	twined(dual): 150
5.6.2 corresponding to additional speed	:	single: 154	twined(dual): 150
6. Overall dimensions	:	~~Annex 5/~~ calculated	
-Section width/ Measured max overall SW	:	314.1;310.3	
-Outer diameter/ Measured max outer diameter	:	1021.5;1022.7	
7. Factor "X"	:	0.75	
8. Ply-rating number for diagonal (bias ply) tyres	:	not applicable	
9. Rims on which the tyre can be mounted	:	9.00; 9.75	
10. Measuring rim and test rim	:	9.00	
11. State whether the tyre is	:	tubeless/~~tube type~~	
12. inflation pressure and index for measuring and testing	:	see attached test report	
13. Submitted for approval on (date)	:	Apr.20.2022	

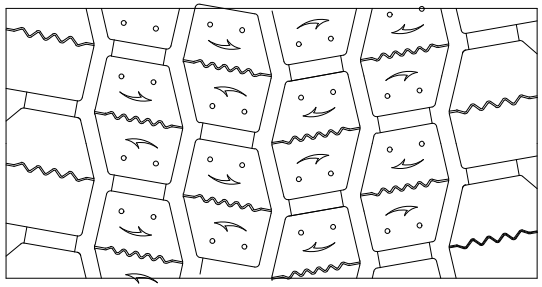
Signature:







TREAD PATTERNS



(46 BLOCKS)

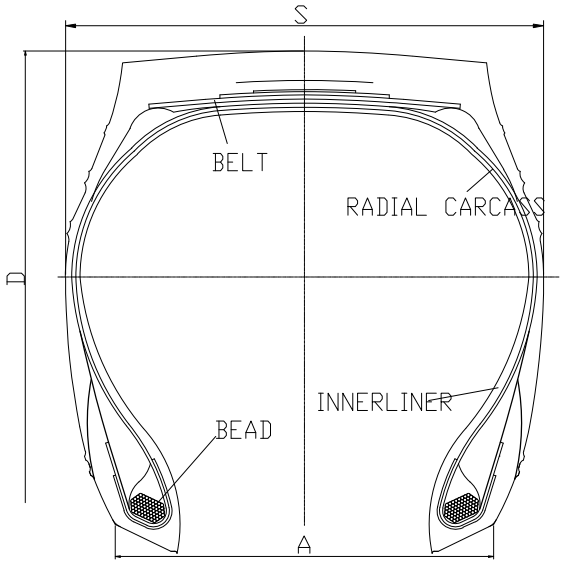
TABLE 1

BRAND NAME	TREAD PATTERN NAME
AUFINE	SMART ADR8;MASTER MAS600
MAXELL	SUPER LD2

16	TRACTION		
15	RADIAL TUBELESS		
14	M+S		
13	****(DATE CODE)		
12	L.R.L 20PR	PLIES:TREAD STEEL 5 SIDEWALL STEEL 1 MAX.LOAD SINGLE 4000kg(8820lbs) AT 900kPa(130psi) COLD MAX.LOAD DUAL 3350kg(7390lbs) AT 900kPa(130psi) COLD	
11	REGROOVABLE		
10	TREAD PATTERN NAME (SEE THE TABLE 1 ON THE LEFT)		
9	****(MOLD NUMBER)		
8	(E4) XXXXXX S2WR2 XXXXXXX		
7	315/70R22.5 156/150L AT 900kPa (154/150)M 20PR		
6	DOT 026BM ****		
5	STANDARD RIM 9.00		
4	315/70R22.5		
3	SAFETY WARNING		
2	MADE IN CHINA		
1	BRAND NAME (SEE THE TABLE 1 ON THE LEFT)		
	LOWER MOULD	UPPER MOULD	

315/70R22.5	156/150 (154/150)	L(M)	TL	1014	312	228.6
TYRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	D(mm)	S(mm)	A(mm)

Approve by:	孙宗涛	Check by:	顾伟	Draft by:	鉴继超	Page 1 of 2



TREAD PATTERNS

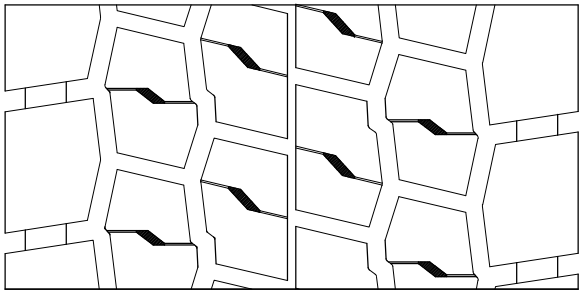
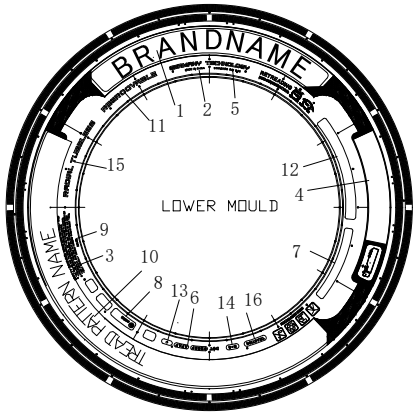
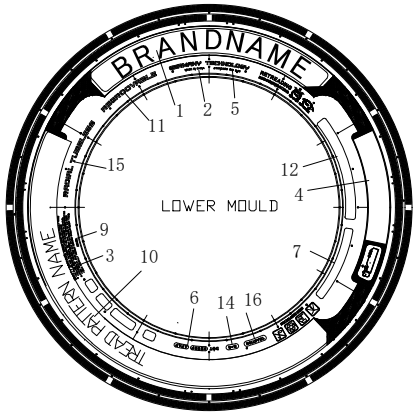


TABLE 1 (46 BLOCKS)

BRAND NAME	TREAD PATTERN NAME
AUFINE	APEX ADR9
MAXELL	ECOMAX LD6
FLYBULL	ENDURO FDR2;EDEMUN FDR2





16	TRACTION	
15	RADIAL TUBELESS	
14	M+S	
13	****(DATE CODE)	
12	L.R.L 20PR	PLIES:TREAD STEEL 5 SIDEWALL STEEL 1 MAX.LOAD SINGLE 4000kg(8820lbs) AT 900kPa(130psi) COLD MAX.LOAD DUAL 3350kg(7390lbs) AT 900kPa(130psi) COLD
11	REGROOVABLE	
10	TREAD PATTERN NAME (SEE THE TABLE 1 ON THE LEFT)	
9	****(MOLD NUMBER)	
8	(E4) XXXXXX S2WR2 XXXXXXX	
7	315/70R22.5 156/150L AT 900kPa (154/150 M) 20PR	
6	DOT 026BM ****	
5	STANDARD RIM 9.00	
4	315/70R22.5	
3	SAFETY WARNING	
2	MADE IN CHINA	
1	BRAND NAME (SEE THE TABLE 1 ON THE LEFT)	
	LOWER MOULD	UPPER MOULD

315/70R22.5	156/150 (154/150)	L(M)	TL	1014	312	228.6
TYRE SIZE	LOAD INDEX	SPEED SYMBOL	TYPE	D(mm)	S(mm)	A(mm)

Approve by:	孙宗涛	Check by:	顾伟	Draft by:	鉴继超	Page 2 of 2

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e-mail: idiada@idiada.com

REPORT No. CN23041313

APPROVAL OF PNEUMATIC TYRES FOR COMMERCIAL VEHICLES
AND THEIR TRAILERS REFERRING TO UN REGULATION NO. 54R00/25

Approval number	:	E4*54R00/25*51710*01
Applicant	:	Wanli Tire Corporation Limited 3 Wanli Road Aotou Town, Conghua 510940 Guangzhou City, Guangdong Province China (PRC)
Manufacturer	:	Wanli Tire Corporation Limited 3 Wanli Road Aotou Town, Conghua 510940 Guangzhou City, Guangdong Province China (PRC)
Brand-name(s)/trademark(s)	:	AUFINE; MAXELL; FLYBULL
Trade description(s)/Commercial name(s)	:	SMART ADR8; MASTER MAS600; SUPER LD2; APEX ADR9; ECOMAX LD6; ENDURO FDR2; EDEMUN FDR2
Tyre size designation	:	315/70R22.5
Place and date of test report issue	:	L'Albornar, Santa Oliva (Tarragona) 28/04/2023

CONCLUSIONS: Modification introduced to the tyre, as detailed in the annex to this report, grant grounds for approval extension with respect to formerly certified tyre-type, and FULFILS the specifications relating to the approval of pneumatic tyres for motor vehicles according to Supplement 25 to the original version of the Regulation 54.00.

Performed by: Revised by:

Zhu Yuan
HOMOLOGATION ENGINEER

Josep Masip Gomez
DEPARTMENT MANAGER

ANNEX TO THE REPORT

Reason(s) for extension:

- Addition of brand name and trade descriptions;
- Upgrade of regulation supplement number;
- Upgrade of sidewall drawings;
- The test report No. CN22101015 issued on the date of November 08, 2022 by IDIADA Automotive Technology S.A. is valid and unnecessary to perform re-testing.

Test results are as follows:

1. TECHNICAL DESCRIPTION OF THE PNEUMATIC TYRE:

Brand-name(s)/trademark(s)	:	AUFINE			
Trade description(s)/Commercial name(s)	:	SMART ADR8			
Tyre-size designation	:	315/70R22.5			
Category of use	:	~~normal~~ / snow /~~ special~~			
Structure	:	~~diagonal / bias-belted~~ / radial			
Speed category index	:	nominal		:	L
		additional		:	M
Load-capacity index	:	nominal:	single	:	156
			twinned	:	150
		additional:	single	:	154
			twinned	:	150
X of the manufacturer /	:	0.75			
Tyre cross-section	:	See technical documentation			

➢ **Attachment 1: Test result of Nominal Load/Speed Combination (156/150L)**

2. TYRE MARKING

2.1. Compulsory Marking

Approval mark		
Approval mark Height > 12 mm	:	Yes
Tyre definition marking height		
Tyre size > 6 mm	:	Yes
Load and speed index > 6 mm	:	Yes

2.2. Additional Marking

"M+S" / "M.S" / "M&S"	:	Yes
"TUBELESS"	:	Yes
Index of inflation pressure	:	900 kPa
Ply rating	:	20PR
"ET" / "ML" / "MPT"	:	N.A.
"REGROOVABLE"	:	Yes
Date of manufacture	:	4122
Height of these marking > 4 mm	:	Yes

3. TEST RESULTS.

Sample Reception date	:	21/10/2022
Place and test dates	:	22/10/2022-24/10/2022 Wanli Testing Center (Hefei, China)
Sample Id.	:	CN22101015-1
Measure rim code	:	9.00 ×22.5"
Test rim Code	:	9.00 ×22.5"

3.1. <u>Pneumatic tyre measurement</u>

Mounting pressure in **measuring rim**	:	**P(1m) = 9.0 bar**
Conditioning temperature	:	**Temp. = 26 □**
Adjusted pressure before conditioning	:	**P(2m) = 9.0 bar**
Readjusted pressure after **24** hour	:	**P(3m) = 9.0 bar**

3.1.1. Tyre width measurement:

Measures of **overall width** at six equally-spaced points:

Point	Overall width (mm)
1	310.6
2	310.8
3	311.2
4	312.0
5	314.1
6	312.6
Point	**Maximum width (mm)**
5	**314.1**

3.1.2. Tyre section width calculation:

S = 312 (mm) given by ~~Annex 5~~/Calculation

Or

$S = S_1 + K(A-A1)$

Nominal section width (mm)	315
K coefficient	0.4
Measuring rim Width (mm)	228.6
X of the manufacturer	0.75
Theoretical rim Width (mm)	236.25

Maximum measured width (mm)	**Section width (mm)**	***Difference* (%)**
S_M = 314.1	**S = 312**	**0.67**

The overall width of a tyre may be less than the section or exceed the value by the following percentages: 8% structure diagonal; 4 % structure radial. For section width exceed 305mm shall not exceed the value by the following percentages: 4% structure diagonal; 2 % structure radial of nominal aspect higher than 60.

FULFILS / ~~DOES NOT FULFIL~~

3.1.3. Outer diameter measurement

Maximum circumference (mm)	Outer diameter (mm) $Di\ ext = \frac{L}{\pi}$
3209	1021.5

3.1.4. Tyre outer diameter calculation:

$$D = d + 2H$$

Conventional number of the nominal rim(mm)	**d = 572 mm**
Nominal section width (mm)	315
Nominal aspect ratio	70
Factor a	0.97
Factor b	Radial:1.04 (Normal), ~~1.06(Special)~~ ~~Diagonal:1.07 (Normal), 1.09(Special)~~
Nominal section height (mm)	**H = 221 mm**

Dmin $D_{min} = d + 2(H \times a)$	Outer diameter D (measured)	Dmax $D_{max} = d + 2(H \times b)$
1000 mm	**1021.5 mm**	**1042 mm**
Dmin < D < Dmax		

FULFILS / ~~DOES NOT FULFIL~~

3.2 Load/speed performance test

3.2.1 For tyres with speed category symbol Q and above:

Test Conditions

Speed category	N.A.
Load capacity index	N.A.
Maximum velocity (km/h)	N.A.
Test axle load (kg)	N.A.
Maximum speed during the test (km/h)	N.A.
Load of axle during the test (kg)	N.A.
Inflation tyre pressure before conditioning(kpa)	N.A.
Conditioning time wheel-tyre assembly(hour)	N.A.
Readjusted tyre pressure after conditioning (kpa)	N.A.
Test wheel diameter (m)	N.A.
Temperature (ºC)	N.A.

Test cycle

Step	Duration (min)	Speed (km/h)
1	N.A.	N.A.
2	N.A.	N.A.
3	N.A.	N.A.
4	N.A.	N.A.
TOTAL	N.A.	

3.2.2 Tyres with speed category symbol P and below:

Test Conditions

Speed category	L
Load capacity index	156
Maximum velocity (km/h)	120
Test drum speed during the test (km/h)	64
Load of axle during the test (kg) (100%)	4000
Inflation tyre pressure before conditioning(kpa)	900
Conditioning time wheel-tyre assembly(hour)	3
Readjusted tyre pressure after conditioning (kpa)	900
Test wheel diameter (m)	1.7
Temperature (ºC)	20-30

Test cycle

Step	Duration (h)	Load (kg)	
1	7	66%	2640.0
2	16	84%	3360.0
3	24	101%	4040.0
TOTAL	47		

3.2.3 Tyre measurement

Outer diameter measurement at the start of test	N.A.
Outer diameter measurement at the end of test	N.A.
Percentage of the change in outer diameter measurement (%)	N.A.

3.3. Test results

3.3.1. The outer diameter of the tyre, measured six hours after the load/speed endurance test, must not differ by more than ± 3.5% from the outer diameter as measured before the test.

~~FULFILS / DOES NOT FULFIL~~

3.3.2. Once passed the load/speed endurance test, the tyre must not exhibit any tread separation, ply separation, cord separation, chunking or broken cords.

FULFILS / ~~DOES NOT FULFIL~~

Test Place : Wanli Testing Center (Hefei, China)
Test Date : 22/10/2022-24/10/2022

- **Attachment 2: Test result of Additional Load/Speed Combination (154/150M)**

4. TYRE MARKING

4.1. Compulsory Marking

Approval mark

Approval mark Height > 12 mm	:	Yes
Tyre definition marking height		
Tyre size > 6 mm	:	Yes
Load and speed index > 6 mm	:	Yes

4.2. Additional Marking

"M+S" / "M.S" / "M&S"	:	Yes
"TUBELESS"	:	Yes
Index of inflation pressure	:	900 kPa
Ply rating	:	20PR
"ET" / "ML" / "MPT"	:	N.A.
"REGROOVABLE"	:	Yes
Date of manufacture	:	4122
Height of these marking > 4 mm	:	Yes

5. TEST RESULTS.

Sample Reception date	:	29/10/2022
Place and test dates	:	30/10/2022-04/11/2022 Wanli Testing Center (Hefei, China)
Sample Id.	:	CN22101015-2
Measure rim code	:	9.00 ×22.5”
Test rim Code	:	9.00 ×22.5”

5.1. Pneumatic tyre measurement

Mounting pressure in **measuring rim**	:	**P(1m) = 9.0 bar**
Conditioning temperature	:	**Temp. = 24 □**
Adjusted pressure before conditioning	:	**P(2m) = 9.0 bar**
Readjusted pressure after **24** hour	:	**P(3m) = 9.0 bar**

5.1.1. Tyre width measurement:

Measures of **overall width** at six equally-spaced points:

Point	Overall width (mm)
1	310.0
2	309.5
3	310.0
4	309.7
5	310.2
6	310.3
Point	**Maximum width (mm)**
6	**310.3**

5.1.2. Tyre section width calculation:

S = 312 (mm) given by ~~Annex 5~~/Calculation

Or

$S = S_1 + K(A-A1)$

Nominal section width (mm)	315
K coefficient	0.4
Measuring rim Width (mm)	228.6
X of the manufacturer	0.75
Theoretical rim Width (mm)	236.25

Maximum measured width (mm)	**Section width (mm)**	***Difference* (%)**
S_M = 310.3	**S = 312**	**-0.54**

The overall width of a tyre may be less than the section or exceed the value by the following percentages: 8% structure diagonal; 4 % structure radial. For section width exceed 305mm shall not exceed the value by the following percentages: 4% structure diagonal; 2 % structure radial of nominal aspect higher than 60.

FULFILS / ~~DOES NOT FULFIL~~

5.1.3. Outer diameter measurement

Maximum circumference (mm)	Outer diameter (mm) $Di\ ext = \frac{L}{\pi}$
3213	1022.7

5.1.4. Tyre outer diameter calculation:

$$D = d + 2H$$

Conventional number of the nominal rim(mm)	**d = 572 mm**
Nominal section width (mm)	315
Nominal aspect ratio	70
Factor a	0.97
Factor b	Radial:1.04 (Normal), ~~1.06(Special)~~ ~~Diagonal:1.07 (Normal), 1.09(Special)~~
Nominal section height (mm)	**H = 221 mm**

Dmin $D_{min} = d + 2(H \times a)$	Outer diameter D (measured)	Dmax $D_{max} = d + 2(H \times b)$
1000 mm	**1022.7 mm**	**1042 mm**
Dmin < D < Dmax		

FULFILS / ~~DOES NOT FULFIL~~

5.2 Load/speed performance test

5.2.1 For tyres with speed category symbol Q and above:

Test Conditions

Speed category	N.A.
Load capacity index	N.A.
Maximum velocity (km/h)	N.A.
Test axle load (kg)	N.A.
Maximum speed during the test (km/h)	N.A.
Load of axle during the test (kg)	N.A.
Inflation tyre pressure before conditioning(kpa)	N.A.
Conditioning time wheel-tyre assembly(hour)	N.A.
Readjusted tyre pressure after conditioning (kpa)	N.A.
Test wheel diameter (m)	N.A.
Temperature (ºC)	N.A.

Test cycle

Step	Duration (min)	Speed (km/h)
1	N.A.	N.A.
2	N.A.	N.A.
3	N.A.	N.A.
4	N.A.	N.A.
TOTAL	N.A.	

5.2.2 Tyres with speed category symbol P and below:

Test Conditions

Speed category	M
Load capacity index	154
Maximum velocity (km/h)	130
Test drum speed during the test (km/h)	72
Load of axle during the test (kg) (100%)	3750
Inflation tyre pressure before conditioning(kpa)	900
Conditioning time wheel-tyre assembly(hour)	3
Readjusted tyre pressure after conditioning (kpa)	900
Test wheel diameter (m)	1.7
Temperature (ºC)	20-30

Test cycle

Step	Duration (h)	Load (kg)	
1	7	66%	2475.0
2	16	84%	3150.0
3	24	101%	3788.0
TOTAL	47		

5.2.3 Tyre measurement

Outer diameter measurement at the start of test	N.A.
Outer diameter measurement at the end of test	N.A.
Percentage of the change in outer diameter measurement (%)	N.A.

5.3. Test results

5.3.1. The outer diameter of the tyre, measured six hours after the load/speed endurance test, must not differ by more than ± 3.5% from the outer diameter as measured before the test.

~~FULFILS / DOES NOT FULFIL~~

5.3.2. Once passed the load/speed endurance test, the tyre must not exhibit any tread separation, ply separation, cord separation, chunking or broken cords.

FULFILS / ~~DOES NOT FULFIL~~

Test Place : Wanli Testing Center (Hefei, China)
Test Date : 30/10/2022-04/11/2022

Zhu Yuan
HOMOLOGATION ENGINEER