

Sound performance



distance no object



off the road too



gripping stuff



Tyre information 2006

Commercial vehicles

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GENERAL HINTS AND SAFETY INSTRUCTIONS

The extensive technical data and other information relating to tyres and accessories on the following pages have been compiled to reflect as accurately and completely as possible the current state of development.

If this "Technical Data Book" is to be used as a basis for particularly important decisions, further data covering relevant standards such as **ETRTO**¹⁾, **DIN**²⁾ and **WdK**³⁾ can also be called upon. Special information can, of course, also be obtained from us at the following address:

Geschäftsbereich Semperit
Reifen-Ersatzgeschäft
Postfach 169
D-30001 Hannover

All types are in compliance with **DOT**⁴⁾ regulations and are marked accordingly. Since 1982 all tyres have been typed in accordance with **ECE**⁵⁾ directive 54 and thus also in accordance with the current **EU**⁶⁾ tyre directives.

The data provided in this guide based on average operating conditions as normally found in central Europe.

Please contact us with respect to operating conditions differing from the above, e.g. for applications outside Central Europe.

This service brochure is of informative character. All liability is excluded, whether for damage or for other legal reasons (see also page 2).

The tyre sizes given in this guide are not always identical to the ones available in the size range.

Lower inflation pressure, greater loads or higher speeds than those recommended by the vehicle or tyre manufacturer shorten the service life of the tyre.

WARNING!



These instructions must be followed if vehicle safety - and that of those mounting tyres - is to be guaranteed.

This applies above all to instructions regarding tyre pressure.

Failure to comply with these instructions could result in tyre damage that may even lead to tyre blow-outs under certain circumstances. This, in turn, could cause traffic accidents involving damage to property and/or personal injury.

(See also page 8)

¹⁾ ETRTO - The European Tyre and Rim Technical Organisation, Brussels

²⁾ DIN - Deutsches Institut für Normung, Berlin (German Institute for Standardization)

³⁾ WdK - Wirtschaftsverband der deutschen Kautschuk-Industrie, Frankfurt/Main

⁴⁾ DOT - U.S. Department of Transportation

⁵⁾ ECE - Economic Commission for Europe (UN institution in Geneva)

⁶⁾ EU - European Union, previously EEC

TYRE SIDEWALL INFORMATION

Speed symbol

Symbol	F	G	J	K	L	M	N	P	Q	R	S
Speed/km/h	80	90	100	110	120	130	140	150	160	170	180
Speed/mph	50	56	62	68	74	81	87	93	99	106	112

Load-Index

Index	145	146	147	148	149	150	151	152	153	154	155	156
kg/tyre	2900	3000	3075	3150	3250	3350	3450	3550	3650	3750	3875	4000

Example of tyre sidewall markings:

315/70 R 22.5

152/148 L



0092542

tbls

M 349

315	Tyre width in mm
70	Aspect ratio (height is 70% of width)
R	Symbol for radial tyre
22.5	Diameter code for 15° drop-centre rim
152	3550 kg load capacity for single fitment (norm-related index)
148	3150 kg load capacity for dual fitment (norm-related index)
L	Speed 120 km/h (norm-related index)
154	3750 kg load capacity (additional index)
150	3350 kg load capacity (additional index)
K	Speed 110 km/h (additional index)
E12 0092542	Approval number
tbls	Tubeless
M 349	Manufacturer's tread designation

Uncoded **maximum** load capacity and tyre pressure values in lbs (pounds – 1 lb = 0.4536 kg) and psi (pounds per square inch – 1 bar = 14.5 psi) may also be moulded into the tyre. These markings form part of the identification code in accordance with **U.S. Safety Regulation FMVSS 119****) which covers all new pneumatic tyres for light trucks, trucks, buses and trailers intended for use on public high-ways, as well as motorcycle tyres. Canada and Israel also use this specification.

**) FMVSS = Federal Motor Vehicle Safety Standard

TYRE SIDEWALL INFORMATION

Units of measurement and definition (DIN 70020)

As a matter of principle the technical data in the tables always complies with the international standards as specified by ISO and the ETRTO. Further details such as other tyre sizes or designs, plus the static radius and the rolling circumference comply with DIN/WdK Guidelines.

Lengths

are given in millimetres (mm).

Tyre pressure

tyre inflation pressure is given in Bar based on cold tyre.

Outer diameter New*)

is a nominal size which refers to the tread centre.

Max. outer diameter in service

is the maximum diameter permitted in the tread centre as a result of permanent growth during tyre use. Dynamic deformations are not included.

Cross-section width New*)

is a nominal size which refers to the smooth tyre wall.

Max. operational width

is the maximum permitted width. This includes scuff ribs, decorative ribs, lettering and permanent growth during use. Dynamic deformations are not included.

Static radius

is the distance from the tyre centre to the ground level. Measurements are checked on fitted-tyres inflated to the tyre pressure specified in DIN 70020 Part 5.

Rolling circumference

is the distance covered by each revolution of the tyre.

Load capacities

are given in kgs (weight in the sense of mass)

Dual-tyre spacing

Maintaining the minimum spacing distance ensures that the two tyres in a dual fitment arrangement function without any infringing the ETRTO standards providing the tyres are not fitted with chains.

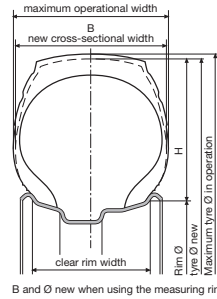
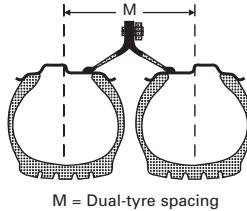
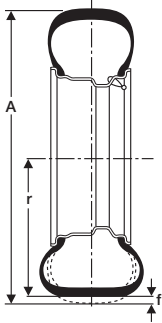
In the course of development, a variety of **designations for tyre dimensions** have been introduced, some of which are used concurrently. The following combination is most frequently used: tyre width in mm, then H : W (height : width) in % and finally the codes for the tyre construction - for example R for "radial" and "-" for "crossply" - and the nominal rim diameter.

When planning vehicle wheel space, automotive designers must proceed on the basis of the maximum values for tyre width and outer diameter, taking into account the tyre's static and dynamic deformation. In this way they ensure that all standardly approved tyres will fit in all cases. If this is not possible in exceptional cases, appropriate measures are to be taken to exclude any possible risk to safety.

*) Construction size

TYRE SIDEWALL INFORMATION

Tyre designations



A = Outer diameter on the tyre
 r = static radius
 f = deflection under load

Vehicle tyre group	Example of designation			Example comprises details of		
	Tyre size ¹⁾	PR ²⁾	Service ³⁾ description	Tyre width W	H:W %	Rim dia d
Light truck	185 R 14 C	8	102/100 N	mm	-	inches
	195/75 R 16 C	-	107/105 N	mm	75	inches
Truck	12 R 22.5	-	152/148 L	inches	-	inches
	315/80 R 22.5	-	156/150 L (154/150 M) ⁴⁾	mm	80	inches
	20-20 Sand-Service	-	164 D	inches	-	inches
Trailer	365/80 R 20	-	160 K	mm	80	inches
	385/65 R 22.5	-	160 K	mm	65	inches
Bus	275/70 R 22.5	-	148/145 J	mm	70	inches
	295/80 R 22.5	-	152/148 M	mm	80	inches

¹⁾ „R” = radial design
 „-” = cross-ply design
 „C” = light truck (van) tyre with LI for single tyres = 121 and below, see page 9

²⁾ PR rating = load capacity index

³⁾ Service description = load index for single/dual tyres plus speed symbol (see also tables on following pages)

⁴⁾ Supplementary service description

OPERATING INSTRUCTIONS

(DIN 7804/7805 AND ECE-R 54)

Load capacity and speed



When determining the minimum tyre size necessary for the axle of a vehicle, the authorised weight and the maximum design speed of the vehicle should always be used as a basis.

Trailers first coming into service on or after January 1, 1990 must be equipped with tyres suited for maximum speeds of at least 100 km/h, unless the trailer is clearly marked for a lower speed. The so-called "tolerance catalogue" must also be taken into consideration here. Nominal load capacity = 100% load, as the load index also indicates *).

Reference speed

This is the speed assigned as per nominal load capacity of the tyre.

The load capacity can be exceeded when the vehicle, due to its construction, has a lower maximum speed and vice versa (see the tables on page 10 and 11).

Inflation pressure

The inflation pressures indicated in the tables are minimum values given for reference purposes.

All inflation pressures apply to the "cold" tyre, i.e. the state in which the tyre is in after having stood outdoors for several hours, not exposed to intense sunlight.

M & S tyres

May be mounted on commercial vehicles whose construction allows for a higher maximum speed than approved for the tyre if the tyre's lower approved speed is clearly posted in the vehicle in the driver's field of vision (e.g. sticker on the instrument panel).

Mixed fitment

(radial/crossply) While it is allowed for a vehicle weighing more than 2.8 t to be fitted axlewise with tyres of different construction, it is recommended that tyres of the same construction be mounted in all wheel positions.

Rims

Only the specified rims may be mounted on new commercial vehicles series. Tapered bead seat rims with a diameter of 16" or less should be equipped with safety shoulders (e.g. round hump) if tubeless radial tyres are fitted on them. The rim sizes printed in bold type in the tables from on page 26 ff are optimal Semperit sizes with respect to service life, wear pattern and durability.

Wheels

The load capacity must be adequate in all cases.

*) See table on page 5

LOAD CAPACITIES OF TYRES IN SPECIAL CASES (DIN 7804/7805 AND WDK-LL 140)

Case	Type of service	Approved load capacity as % of the nominal load capacity in the tables
1	Special-service vehicles: Fire-brigade vehicles with special superstructures, road flushers, road sweepers, garbage trucks, cherry-pickers, municipal service vehicles of a similar nature and other public utility vehicles.	110
2	Commercial vehicles: With special superstructures (concrete mixers, aircraft refuellers) used in local service with maximum service speeds not in excess of 60 km/h.	
3	Regular-service buses (M 3-Class II): In urban service, with maximum service-related speeds of up to 60 km/h.	
4	Regular-service buses (M 3-Class I): (see also DIN 7805) In urban and suburban service, if average speed does not exceed 40 km/h.	115
5	Tyres on the front axle of trucks with facilities for snow removal (front-end snow plough/rotary snow plough and the like) at service-related speeds of <div style="display: flex; justify-content: space-around;"> 50 km/h 62 km/h </div>	<div style="display: flex; justify-content: space-around;"> 120 115 </div>
6	For internal use on aircraft refuellers at speeds of up to 30 km/h (inflation pressure + 15%, no reduction for dual fitment).	135
7	Caravans and other passenger-car trailers (only for C tyres, see also WdK directive 195, page 3) for speeds of up to 100 km/h.	105

LOAD CAPACITIES

for various maximum design speeds

Tyres for light commercial vehicles

Maximum in km/h (determined by vehicle design)	C-tyres with load index 121 (1450 kg) or less as single fitments							
	Approved load capacity in % of the nominal load capacity ²⁾ equals the load index for reference speed							
	L 120	M*) 130	N*) 140	P*) 150	Q 160	R 170	S 180	T 190
160	-	-	90	95	100	100	100	100
155	-	-	92.5	97.5	100	100	100	100
150	-	90	95	100	100	100	100	100
140	90	95	100	100	100	100	100	100
138	91	96	100	100	100	100	100	100
136	92	97	100	100	100	100	100	100
134	93	98	100	100	100	100	100	100
132	94	99	100	100	100	100	100	100
130	95	100	100	100	100	100	100	100
128	96		100	100	100	100	100	100
126	97		100	100	100	100	100	100
124	98		100	100	100	100	100	100
122	99		100	100	100	100	100	100
120	100		100	100	100	100	100	100
118			100.5					
116			101					
114			101.5					
112			102					
110			102.5					
108			103					
106			103.5					
104			104					
102			104.5					
100			105					
95			106.5					
90		see column N	107.5					
85			108.5					
80			110					
75			111					
70	see column N		112.5					
65			113.5			see column N		
60			115					
55			117.5					
50			120					
45			122					
40 ¹⁾			125					
35 ¹⁾			129					
30 ¹⁾			135					
25 ¹⁾			142					
20 ¹⁾			150					
15 ¹⁾			160					
Application- restricted speed								
10 ¹⁾			175					
5 ¹⁾			190					
Standstill ¹⁾			210					

See general notes on page 8. Tyres with SI ratings P and Q under full load at speeds of over 140 km/h should be inflated an extra 0.1 bar for every excess 10 km/h

LOAD CAPACITIES for various maximum design speeds

Tyres for commercial vehicles

Maximum speed in km/h (determined by vehicle design)	C-tyres with load index 122 (1500 kg) or more as single fitments						
	Approved load capacity in % of the nominal load capacity ²⁾ equals the load index for reference speed						
	D 65	F 80	G 90	J 100	K 110	L 120	M 130
130	-	-	-	-	-	-	100
127.5	-	-	-	-	-	-	100
125	-	-	-	-	-	-	100
122.5	-	-	-	-	-	-	100
120	-	-	-	88	93	100	100
117.5	-	-	-	91	95	↑	100
115	-	-	-	93	97		100
112.5	-	-	-	95	98.5	↑	100
110	-	-	87	96	100		100
107.5	-	-	89.5	97	↑	↑	100
105	-	-	92	98			100
102.5	-	-	93.5	99	↑	↑	100
100	-	85	95	100			100
95	-	90	97.5	↑	↑	↑	101
90	-	94	100				102
85	-	97	↑	↑	↑	↑	103
80	-	100					104
75	-	102.5	↑	↑	↑	↑	105.5
70	-	105					107
65	100	107	↑	↑	↑	↑	108.5
60	100	↑					↑
55	-		↑	↑	↑	↑	
50	102	↑	↑	↑	↑	↑	112
45	-	↑	↑	↑	↑	↑	113
40 ¹⁾	107	↑	↑	↑	↑	↑	115
35 ¹⁾	-	↑	↑	↑	↑	↑	119
30 ¹⁾	116	↑	↑	↑	↑	↑	125
25 ¹⁾	-	↑	↑	↑	↑	↑	135
20 ¹⁾	140	↑	↑	↑	↑	↑	150
15 ¹⁾	150	↑	↑	↑	↑	↑	165
Application- restricted speed		↑	↑	↑	↑	↑	
10 ^{1) 3)}	165	↑	↑	↑	↑	↑	180
5 ^{1) 3)}	190	↑	↑	↑	↑	↑	210
Standstill ^{1) 3)}	225	↑	↑	↑	↑	↑	250

1) Dual-tyres = 2 x single load capacity

2) A sign indicating the max speed must be attached to trailers restricted to speeds below 100 km/h (62 mph).

3) Ask the tyre manufacturer about these applications.

*) On M-, N- and P-tyres can be interpolated in steps of 1.25 mph (2 km/h) from 87 mph (140 km/h) upwards.

No excess loads are applicable over 65 km/h for tyres on heavy trailers (with laden weight > 3.5 t).

AIR PRESSURE MULTIPLIER

for increased load capacity due to maximum design speed

Maximum speed in km/h (determined by vehicle type)	Air pressure multiplier for reference speed (speed index) of tyre	
	G, J, K, L, M 90 km/h - 130 km/h	N, P, Q, R, S 140 km/h - 180 km/h
140		1
135		1
130	1	1
125	1	1
120	1	1
115	1	1.015
110	1	1.03
105	1	1.045
100	1	1.06
95	1.01	1.075
90	1.02	1.09
85	1.03	1.10
80	1.04	1.11
75	1.06	1.125
70	1.07	1.14
65	1.09	1.155
60	1.11	1.17
55	1.13	1.19
50	1.14	1.21
45	1.16	1.23
40	1.18	1.25
35	1.21	1.265
30	1.23	1.28
25	1.26	1.30
20	1.28	1.32
15	1.31	1.34
10	1.34	1.36
5	1.37	1.38
0	1.40	1.40

The multipliers cited are to be used for an operating pressure of up to 10 bar.

Example: In the case of a K-rated tire (110 km/h) and nominal inflated pressure of 7.5 bar, the inflation pressure can be increased to 8.85 bar if the vehicle's maximum design speed is set at 40 km/h (1.18 x 7.5 bar) to exploit an increased load capacity of 115% of nominal load capacity.

NOTES

Sound performance

- distance no object

ROAD

FRONT

FRONT AXLE - HEAVY TRUCKS

M 349
EURO-STEEL



- Front-axle tyre for local and long-distance haulage
- All-around tyre for buses
- Good mileage performance
- Low rolling resistance
- Excellent tracking and precise steering response
- Good wet grip
- Low noise levels

M 350 / M 249
EURO-FRONT



- Tyre for front axle use in long and short haulage, and as an all-wheel fitment on buses
- Extra wide tread area for high mileage performance
- Even wear pattern
- Safe grip in the wet
- Newly-designed tread groove helps eject stones

M 434
EURO-STEEL



- Modern front-axle tyre for local and long-distance haulage
- All-around tyre for buses
- Extended mileage performance thanks to wide shoulder bands
- Uniform wear pattern
- Good wet grip
- Low noise levels

M 234
EURO-STEEL



- Front-axle tyre for local and long-distance haulage
- Good wet grip
- Low noise levels

DIMENSIONS

275/70 R 22.5 148/145 L

M249

245/70 R 19.5 136/134 M
265/70 R 19.5 140/138 M
285/70 R 19.5 144/142 M

M350

295/80 R 22.5 152/148 M
315/80 R 22.5 154/150 M
 (156/150 L)
315/70 R 22.5 ¹⁾ 152/148 M
 (154/150 L)
385/65 R 22.5 ¹⁾ 158/- L
 (160/- K)

11 R 22.5 148/145 L
12 R 22.5 152/148 L
 (150/148 M)
13 R 22.5 154/150 L
 (156/150 K)

10 R 22.5 140/138 L

¹⁾ pattern type differ according to size

ROAD

FRONT

FRONT AXLE - LIGHT TRUCKS

M 480
EURO-WAY



- Economical tyre for local and regional haulage
- For steer or driving axles
- Low noise levels
- Enhanced riding comfort
- Siped to provide optimum wet grip

M 205
STC-STEEL



- Reliable all-round tyre for light-trucks
- Economical tyre for light site supply

M 248
EXPRESS-STEEL



- Special tyre for light trucks and small buses
- Well suited to front axles
- Low loading height (to 75 series)
- Quiet and comfortable

M 434
EURO-STEEL



- Modern front-axle tyre for van-type trucks
- Good mileage performance thanks to flat tread contour and wide shoulder bands
- Good wet grip
- Comfortable, low noise levels

DIMENSIONS

10.00 R 20 146/143 K
11.00 R 20 150/146 K
12.00 R 20 154/150 K

7.50 R 16 121/120 L

7.00 R 16 117/116 L
7.50 R 16 121/120 L
6.00 R 16 C 103/101 N
6.50 R 16 C 108/107 N
8 R 17.5 C 117/116 L
8.5 R 17.5 121/120 L
10 R 17.5 134/132 L

205/75 R 17.5 124/122 M
215/75 R 17.5 126/124 M
225/75 R 17.5 129/127 M
235/75 R 17.5 132/130 L
(130/128 M)

Sound performance

- distance no object

ROAD

DRIVE

DRIVE AXLE - HEAVY TRUCKS

M 470 TRANS-STEEL



- Well suited to low-noise trucks
- Good mileage thanks to widened tread
- Solid tread blocks for optimal traction in the highest powered trucks
- M&S homologated

M 255 EURO-DRIVE



- Tyre for all driven axles
- Outstanding mileage performance due to regular wear and extra wide tread
- Best traction on wet and wintry roads
- M&S homologated

DIMENSIONS

275/70 R 22.5	148/145 L	245/70 R 19.5	136/134 M
315/70 R 22.5	152/148 M	265/70 R 19.5	140/138 M
	(154/150 L)	285/70 R 19.5	144/142 M
295/80 R 22.5	152/148 M		
315/80 R 22.5	154/150 M		
11 R 22.5	148/145 L		
12 R 22.5	152/148 L		

ROAD

DRIVE

LIGHT TRUCKS

M 470 TRANS-STEEL



- Modern drive-axle tyre for van-type trucks
- Good mileage performance thanks to flat contour and widened tread
- Solid tread blocks for optimum traction
- Low noise levels
- Good grip in the wet and on wintry roads
- M&S homologated

DIMENSIONS

205/75 R 17.5	124/122 M
215/75 R 17.5	126/124 M
225/75 R 17.5	129/127 M
235/75 R 17.5	132/130 L
	(130/128 M)

Sound performance

- distance no object

ROAD

TRAILER

TRAILER - HEAVY TRUCKS

M 422
TRAILER-STEEL



- Low-profile tyre for trailed axles
- For local and long-distance haulage
- Uniform wear pattern for longer life

M 423
TRAILER



- Low aspect ratio tyre for trailed axles
- Outstanding mileage thanks to extra wide tread
- Sturdy outer shoulders for safe true running

M 223
TRAILER



- Single tyre fitment for trailers and low loaders in long and short haulage
- Economical tyre thanks to high mileage performance
- Optimised ground pressure distribution for even wear
- Very good track-holding

M 222
TRAILER-STEEL



- Low-profile tyre for trailed axles
- For local and long-distance haulage
- Uniform wear pattern for longer life
- Good mileage performance

DIMENSIONS

7.50 R 15	135/133 G (134/132 J)	215/75 R 17.5	135/133 J	265/70 R 19.5	143/141 J	8.25 R 15	142/141 G
11 R 22.5	148/145 J	235/75 R 17.5	143/141 J	385/65 R 22.5	160/ - K	365/80 R 20	(141/140 J) 160/157 J

Sound performance

- off the road too

ON/OFF



FRONT

FRONT AXLE - HEAVY TRUCKS

M 233
ATHLET-FRONT



- Rugged front axle tyre. Ideal suited for on- and off the road use
- Good mileage thanks to high tread depth
- Angular tread design ejects stones

M 332
CYCLOP-STEEL N



- All-around tyre for offroad and construction-site use
- Uniform wear pattern thanks to solid shoulderband
- Precise steering response even on rough terrain

M 226
SAND-STEEL



- Special tyre for civilian and military SPVs, particularly in desert use
- Enhanced traction
- Good performance also on paved roads
- Designed to run also at low pressures

M 235
GIGANT-STEEL



- Special tyre for rough terrain
- Good grip
- Good self-cleaning properties
- Designed to run also at low pressures

DIMENSIONS

9.00 R 20	140/137 K	295/80 R 22.5	152/148 K	14.00 R 20	160/157 G	14.00 R 20 TT	164/160 G
		315/80 R 22.5	156/150 K			14.00 R 20 TL	164/160 G
		12 R 22.5	152/148 K				
		13 R 22.5	154/150 K				
			(156/150 G)				

ON/OFF

DRIVE DRIVE AXLE - HEAVY TRUCKS

M 232 S ATHLET-STEEL



- Drive-axle tyre for year-round service and light construction-site use
- Good mileage
- Long-distance and local haulage
- Quiet
- M&S homologated

M 247 GRIP-STEEL



- For drive axles in on-and off-road use
- Solid block structure
- Kerb-resistant tread compound
- Outstanding traction
- M&S homologated

DIMENSIONS

11.00 R 20	150/146 K	12.00 R 20	154/149 K
10 R 22.5	140/138 K	315/80 R 22.5	156/150 K
13 R 22.5	154/150 L	12 R 22.5	152/148 K
		13 R 22.5	154/150 K

ON/OFF

TRAILER TRAILER - HEAVY TRUCKS

M 277 TRAILER-STEEL



- Modern dumper and semi-trailer tyre
- Low-profile tyre technology for construction-sites and quarries
- Good resistance to stone damage and belt punctures

DIMENSIONS

385/65 R 22.5	160/ - K
---------------	----------

SNOW

DRIVE DRIVE AXLE - HEAVY TRUCKS

M 431
SNOW-DRIVE



- High safety in snow and ice
- Best traction and braking thanks to numerous lateral edges
- Good self-cleaning characteristics through rows of flexible lugs
- Outstanding mileage performance through deep tread
- M&S homologated

M 470
TRANS-STEEL



- Well suited to low-noise trucks
- Good mileage thanks to widened tread
- Solid tread blocks for optimal traction in the highest powered trucks
- M&S homologated

M 255
EURO-DRIVE



- Tyre for all driven axles
- Outstanding mileage performance due to regular wear and extra wide tread
- Best traction on wet and wintry roads
- M&S homologated

DIMENSIONS

295/80 R 22.5	152/148 M	275/70 R 22.5	148/145 L	245/70 R 19.5	136/134 M
315/80 R 22.5	154/150 M	315/70 R 22.5	152/148 M	265/70 R 19.5	140/138 M
	(156/150 L)		(154/150 L)	285/70 R 19.5	144/142 M
12 R 22.5	152/148 L	295/80 R 22.5	152/148 M		
		315/80 R 22.5	154/150 M		
		11 R 22.5	148/145 L		
		12 R 22.5	152/148 L		

Sound performance

- Transporter-/Van-Tyres

ROAD

TRANSPORTER/VANS

M 833
TRANS-SPEED 2



- Cost-effective thanks to high mileage
- Reliable and safe in the wet
- Excellent handling and steering response
- Comfortable and smooth running

M 733
TRANS-SPEED



- Modern van-type tyre
- Low loading height, 70 and 75 series
- Minimal rolling resistance
- Precise steering response
- Low noise levels

VAN-LIFE



- Good aquaplaning resistance
- Safety through good braking behavior
- Comfortable driving behavior
- Optimised mileage
- Well balanced tyre in all situations

DIMENSIONS

205 R 14 C 109/107 P
215 R 14 C 112/110 P
165/70 R 14 C 89/ 87 R
175/75 R 16 C 101/ 99 R

185 R 15 C 103/102 R
215/70 R 15 C 109/107 R

185 R 14 C 102/100 Q
195 R 14 C 106/104 Q
175/65 R 14 C* 90/ 88 T
195/70 R 15 C 104/102 S
195/70 R 15 RF 97 T
225/70 R 15 C 112/110 R
205/65 R 15 C 102/100 T
205/65 R 15 RF 99 T
195/75 R 16 C 107/105 R
205/75 R 16 C 110/108 R
215/75 R 16 C 113/111 R
* in preparation

SNOW

TRANSPORTER/VANS

M 729
TOP-GRIP-SLG



- Modern van-type tyre
- Low loading height, 70 and 65 series
- Outstanding grip on snow and mud
- Comfortable ride
- M&S homologated

M 529 M&S
HI-GRIP



- All-year round tyre
- Self-cleaning tread pattern
- Good handling characteristics
- Minimal noise levels
- M&S homologated

VAN-GRIP



- Excellent traction on snow and ice
- Excellent protection from aquaplaning and snow slush
- Optimised mileage
- M&S homologated

DIMENSIONS

195 R 14 C 106/104 Q
(195/75 R 14 C)
185 R 15 C 103/102 R
215/70 R 15 C 109/107 R

205 R 16 RF 104/ - R

165/70 R 14 C 89/ 87 R
175/65 R 14 C 90/ 88 T
185 R 14 C 102/100 Q
195/70 R 15 C 104/102 R
195/70 R 15 RF 97 T
225/70 R 15 C 112/110 R
205/65 R 15 RF 99 T
205/65 R 15 C 102/100 T
195/65 R 16 C 104/102 T
205/65 R 16 C 107/105 T
215/65 R 16 C* 109/107 R
195/60 R 16 C 99/ 97 T
* in preparation

SPECIFICATIONS

Size	Operating Code					Tyre dimensions								
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	Rim- ²⁾ width	Tube and valve (TL valve)	Max. standard value in service ³⁾				Actual value		Stat. radius ± 2%	Rolling circumference + 1.5% - 2.5%
							Width	Outer-Ø		Width	Outer-Ø			
205/65 R 15 reinforced	99 T	T 190	VAN-GRIP VAN-LIFE	5 1/2 J	43 GS 16	212				204				
				6 J		217	-	657	-	209	647	294	1973	
				6 1/2 J		222			214					
				7 J		227			219					
				7 1/2 J		232			224					
195/70 R 15 reinforced	97 T	T 190	VAN-GRIP VAN-LIFE	5 J	1540	199			191					
				5 1/2 J	38 G 11.5	204			196					
				6 J	43 GS 16	209	-	665	-	201	655	297	2000	
				6 1/2 J		214			206					
205 R 16 reinforced	104 R	R 170	HI-GRIP M&S M 529	5 J	1540	206			198					
				5 1/2 J	38 G 11.5	211			203					
				6 J	43 GS 16	216	-	749	-	208	736	329	2245	
				6 1/2 J		221			213					
				7 J		226			218					

1) Load index single/dual wheel fitment and speed symbol

2) Rim sizes in bold type: see on page 8

3) Standard = on-road tread pattern/

Special = M+S- or off-road tread pattern

*) in preparation

LOAD CAPACITIES

Load capacity (kg) per axle at tyre pressure (bar) (psi)

Load Index LI	Tyre fitment	Tyre pressure (bar/psi)										
		2,00 (29)	2,10 (30)	2,20 (32)	2,30 (33)	2,40 (35)	2,50 (36)	2,60 (38)	2,70 (39)	2,80 (41)	2,90 (42)	3,00 (44)
99	S	1150	1195	1245	1290	1330	1375	1420	1465	1505	1550	
97	S	1085	1130	1170	1215	1255	1295	1340	1380	1420	1460	
104	S	1300	1355	1405	1455	1505	1555	1605	1655	1705	1750	1800

SPECIFICATIONS

Size	Operating Code						Tyre dimensions							
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	Rim- ²⁾ width	Tube and valve (TL valve)	Max. standard value in service ³⁾				Actual value		Stat. radius ± 2%	Rolling circumference + 1.5% - 2.5%
							Width		Outer-Ø		Width	Outer-Ø		
							Stand-ard	Spe-cial	Stand-ard	Spe-cial				
185 R 14 C (185/75 R 14 C)	102/100 Q	8	Q 160	VAN-GRIP VAN-LIFE	5 J	43 GS 11.5	189	198			183			
					5 1/2 J	(1440)	194	203	659	665	188	650	296	1970
195 R 14 C (195/75 R 14 C)	106/104 Q	8	Q 160	TOP-GRIP SLG M 729 VAN-LIFE	5 J	43 GS 11.5	199	209			193			
					5 1/2 J	(1460)	204	214	675	682	198	666	302	2018
					6 J	38 G 11.5)	209	219			203			
205 R 14 C	109/107 P	8	P 150	TRANS-SPEED 2 M 833	5 1/2 J	43 GS 11.5	209				203			
					6 J	(1460)	214	-	696	-	208	686	310	2080
					6 1/2 J	38 G 11.5)	219				213			
215 R 14 C	112/110 P	8	P 150	TRANS-SPEED 2 M 833	5 1/2 J	43 GS 11.5	220				213			
					6 J	-	225	-	710	-	218	700	316	2121
					6 1/2 J		230				223			
165/70 R14 C	89/87 R	6	R 170	TRANS-SPEED 2 M 833 VAN-GRIP	4 1/2 J		172				165			
					5 J		177	-	598	-	170	588	271	1782
175/65 R14 C	90/88 T	6	T 190	VAN-GRIP VAN-LIFE *	5 J		186		594	598	177	584	267	1780
					5 1/2 J		191				182			
185 R 15 C	103/102 R	8	R 170	TRANS-SPEED M 733 TOP-GRIP SLG M 729	5 J	43 GS 11.5	189	198			183			
					5 1/2 J	(1540)	194	203	683	689	188	674	308	2042
					6 J	38 G 11.5)	199	208			193			
195/70 R 15 C	104/102 S	8	S 180	VAN-LIFE	5 J	-	199				191			
					5 1/2 J	(1540)	204				196			
	104/102 R	R 170	6 J	38 G 11.5)	209	-	665	671	201	655	300	1985		
215/70 R 15 C	109/107 R	8	R 170	TRANS-SPEED M 733 TOP-GRIP SLG M 729	5 1/2 J	43 GS 11.5	220				211			
					6 J	(1560)	225				216			
					6 1/2 J	38 G 11.5)	230	-	695	701	221	683	311	2069
225/70 R 15 C	112/110 R	8	R 170	VAN-GRIP VAN-LIFE	6 J	43 GS 11.5	232				223			
					6 1/2 J	(1560)	237	-	709	715	228	697	317	2112
					7 J	38 G 11.5)	242				233			
205/65 R 15 C	102/100 T	6	T 190	VAN-GRIP VAN-LIFE	5 1/2 J	43 GS 11.5	212				204			
					6 J		217	-	657	663	209	647	297	1960
					6 1/2 J		222				214			

1) Load index single/dual wheel fitment and speed symbol

2) Rim sizes in bold type: see on page 8

3) Standard = on-road tread pattern/

Special = M+S- or off-road tread pattern

*) in preparation

LOAD CAPACITIES

Load capacity (kg) per axle at tyre pressure (bar) (psi)

Load Index LI	Tyre fitment	3,0	3,25	3,50	3,75	4,00	4,25	4,50	4,75
		(44)	(47)	(51)	(54)	(58)	(62)	(65)	(69)
102	S	1230	1310	1390	1470	1545	1625	1700	
100	D	2315	2465	2620	2765	2915	3060	3200	
106	S	1375	1465	1555	1645	1730	1815	1900	
104	D	2605	2775	2945	3110	3275	3440	3600	
109	S	1490	1590	1685	1780	1875	1970	2060	
107	D	2820	3005	3190	3370	3550	3725	3900	
112	S	1620	1725	1830	1935	2040	2140	2240	
110	D	3065	3270	3470	3665	3860	4050	4240	
89	S	970	1035	1100	1160				
87	D	1825	1945	2065	2180				
90	S	1005	1070	1135	1200				
88	D	1875	2000	2120	2240				
103	S	1265	1350	1435	1515	1595	1675	1750	
102	D	2460	2620	2780	2940	3095	3250	3400	
104	S	1300	1385	1470	1555	1640	1720	1800	
102	D	2460	2620	2780	2940	3095	3250	3400	
109	S	1490	1590	1685	1780	1875	1970	2060	
107	D	2820	3005	3190	3370	3550	3725	3900	
112	S	1620	1725	1830	1935	2040	2140	2240	
110	D	3065	3270	3470	3665	3860	4050	4240	
102	S	1420	1515	1605	1700				
100	D	2675	2855	3030	3200				

SPECIFICATIONS

Size	Operating Code						Tyre dimensions							
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	Rim- ²⁾ width	Tube and valve (TL valve)	Max. standard value in service ³⁾				Actual value		Stat. radius ± 2%	Rolling circumference + 1.5% - 2.5%
							Width	Outer-Ø		Width	Outer-Ø			
175/75 R 16 C	101/99 R	8	R 170	TRANS-SPEED 2 M 833	4 1/2 J 5 J 5 1/2 J	43 GS 11.5	179				172		308	2024
							184	-	678	-	177	668		
							189				182			
195/75 R 16 C	107/105 R	8	R 170	VAN-LIFE	5 J 5 1/2 J 6 J	43 GS 11.5	199			191		320	2115	
							204	-	710	716	196			698
							209				201			
195/65 R 16 C	104/102 T	8	T 190	VAN-GRIP	5 J 5 1/2 J 6 J	43 GS 11.5	199			191		305	2000	
							204			196				
							209	-	670	676	201			660
205/65 R 16 C	107/105 T	8	T 190	VAN-GRIP	5 1/2 J 6 J 6 1/2 J	43 GS 11.5	212			204		308	2036	
							217	-	682	686	209			672
							222				214			
215/65 R 16 C	109/107 R	8	R 170	VAN-GRIP	6 J 6 1/2 J 7 J	43 GS 11.5	225			216		313	2077	
							230	-	698	702	221			686
							235				226			
195/60 R 16 C	99/97 T	6	T 190	VAN-GRIP	5 1/2 J 6 J 6 1/2 J	43 GS 11.5	204			196		297	1939	
							209	-	650	654	201			640
							214				206			
205/75 R 16 C	110/108 R	8	R 170	VAN-LIFE	5 1/2 J 6 J 6 1/2 J	43 GS 11.5	211	-	726	732	203	714	328	2170
							216				208			
							221				213			
215/75 R 16 C	113/111 R	8	R 170	VAN-LIFE	5 1/2 J 6 J 6 1/2 J 7 J	43 GS 11.5	220			211		334	2210	
							225	-	740	748	216			728
							230				221			
235				226										

	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	TT/TL	Rim- ²⁾ width	Distance between rim centres	Max. standard value in service		Actual value		Stat. radius ± 1.5%	Rolling circumference ± 2%
								Width	Outer-Ø	Width +1%	Outer-Ø ± 1%		
6.00 R 16 C	103/101 N	10	N 140	EXPRESS-STEEL M 248	TL	4.50	196	175	738	170	728	340	2220
								180		175			
								185		180			
6.50 R 16 C	108/107 N	10	N 140	EXPRESS-STEEL M 248	TL	4.50	202	181	752	176	742	346	2260
								186		181			
								191		187			

1) Load index single/dual wheel fitment and speed symbol

2) Rim sizes in bold type: see on page 8

LOAD CAPACITIES

Load capacity (kg) per axle at tyre pressure (bar) (psi)

Load Index LI	Tyre fitment	3,0	3,25	3,50	3,75	4,00	4,25	4,50	4,75
		(44)	(47)	(51)	(54)	(58)	(62)	(65)	(69)
101	S	1140	1215	1290	1360	1435	1505	1575	1650
99	D	2145	2290	2430	2565	2700	2835	2970	3100
107	S	1350	1440	1525	1615	1700	1785	1865	1950
105	D	2560	2730	2900	3060	3225	3385	3545	3700
104	S	1245	1330	1410	1490	1570	1645	1725	1800
102	D	2355	2510	2665	2815	2965	3110	3255	3400
107	S	1350	1440	1525	1615	1700	1785	1865	1950
105	D	2560	2730	2900	3060	3225	3385	3545	3700
109	E	1425	1520	1615	1705	1795	1885	1975	2060
107	ZW	2700	2880	3055	3230	3400	3570	3735	3900
99	S	1295	1380	1465	1550				
97	D	2445	2605	2765	2920				
110	S	1470	1565	1660	1755	1850	1940	2030	2120
108	D	2770	2955	3135	3310	3485	3660	3830	4000
113	S	1590	1700	1800	1905	2005	2105	2205	2300
111	D	3020	3220	3415	3610	3800	3990	4175	4360

Load Index LI	Tyre fitment	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00
		(47)	(51)	(54)	(58)	(62)	(65)	(69)	(73)
103	S	1235	1315	1390	1460	1535	1605	1675	1750
101	D	2335	2480	2620	2760	2895	3030	3165	3300
108	S	1415	1500	1585	1670	1755	1835	1915	2000
107	D	2760	2930	3095	3260	3420	3580	3740	3900

3) Standard = on-road tread pattern/Special = M+S- or off-road tread pattern

*) in preparation

SPECIFICATIONS

Size	Operating Code					Rim		Tyre dimensions					
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	TT/TL	Rim- ²⁾ width	Distance between rim centres	Max. standard value in service		Actual value		Stat. radius	Rolling circumference
								Width	Outer-Ø	Width	Outer-Ø		
7.50 R 15	135/133 G (134/132 J)	16	G 90 (J 100)	TRAILER-STEEL M 422	TT	6.00	246	218	784	212	772	357	2355
						6.50	252	223	217				
8.25 R 15	142/141 G (141/140 J)	18	G 90 (J 100)	TRAILER-STEEL M 222	TT	6.50	277	241	850	234	836	384	2550
						7.00	283	246	239				
7.00 R 16	117/116 L	12	L 120	EXPRESS-STEEL M 248	TT	6.00	233	209	795	203	784	364	2390
7.50 R 16	121/120 L	12	L 120	EXPRESS-STEEL M 248 STC M 205	TT	6.00	242	216	814	210	802	371	2445
					TT								
9.00 R 20	140/137 K	14	K 110	ATHLET-FRONT M 233	TT	7.00	299	266	1033	258	1018	471	3100
10.00 R 20	146/143 K	16	K 110	EURO-WAY M 480	TT	7.50	316	283	1068	275	1052	485	3205
11.00 R 20	150/146 K	16	K 110	EURO-WAY M 480 ATHLET-STEEL M 232 S	TT	8.00	330	295	1099	286	1082	498	3295
					TT								
12.00 R 20	154/150 K	18	K 110	EURO-WAY M 480	TT	8.50	351	322	1140	313	1122	515	3420
	154/149 K	18	K 110	GRIP-STEEL M 247	TT								
14.00 R 20	164/160 G	22	G 90	GIGANT-STEEL M 235 GIGANT-STEEL M 235	TT	10.00	431	400	1274	370	1238	565	3780
					TL								
	160/157 G	18	G 90	SAND-STEEL M 226	TT								
365/80 R 20	160/157 J	20	J 100	TRAILER-STEEL M 222	TL	10.00	0	382	1116	348	1092	501	3310
12.00 R 24	160/156 K		K 110	EURO-FRONT M 481	TT	8.50	342	322	1244	313	1226	566	3740

Footnotes see page 38

Refer to page 40 for valves, tubes and flaps

LOAD CAPACITIES

**Load capacity (kg) per axle at tyre pressure⁴⁾ (bar)
(psi)**

Load Index LI	Tyre fitment	Load capacity (kg) per axle at tyre pressure ⁴⁾ (bar) (psi)									
		4,5 (65)	5,0 (73)	5,5 (80)	6,0 (87)	6,5 (94)	7,0 (102)	7,5 (109)	8,0 (116)	8,5 (123)	9,0 (131)
135	S		2850	3075	3295	3515	3730	3940	4150	4360	
134	S		2770	2990	3205	3420	3630	3835	4035	4240	
133	D		5385	5815	6235	6645	7050	7450	7845	8240	
132	D		5230	5645	6050	6450	6845	7235	7620	8000	
142	S		3465	3740	4010	4275	4535	4795	5045	5300	
141	S		3365	3635	3895	4155	4405	4655	4905	5150	
141	D		6735	7270	7795	8310	8815	9315	9810	10300	
140	D		6540	7055	7565	8065	8560	9045	9525	10000	
117	S		2220	2395	2570						
116	D		4320	4660	5000						
121	S		2215	2390	2560	2730	2900				
120	D		4275	4615	4950	5275	5600				
140	S		3610	3900	4180	4455	4730	5000			
137	D		6650	7175	7695	8200	8705	9200			
146	S		4115	4445	4765	5080	5390	5695	6000		
143	D		7480	8075	8655	9230	9795	10350	10900		
150	S		4380	4725	5070	5405	5735	6060	6380	6700	
146	D		7845	8470	9080	9680	10270	10855	11430	12000	
154	S		4905	5290	5675	6050	6420	6785	7140	7500	
150	D		8760	9455	10140	10810	11470	12120	12765	13400	
149	D		8500	9175	9835	10485	11125	11760	12380	13000	
164	S		6865	7405	7940	8465	8985	9495	10000		
160	S		6875	7420	7955	8480	9000				
160	D		12355	13335	14295	15245	16175	17090	18000		
157	D		12605	13600	14585	15550	16500				
160	S		5620	6065	6505	6935	7360	7775	8190	8595	9000
157	D		10310	11125	11925	12715	13490	14260	15015	15760	16500
160	S		5885	6350	6810	7260	7705	8140	8570	9000	
156	D		10465	11290	12105	12905	13695	14475	15240	16000	

SPECIFICATIONS

Size	Operating Code				Rim		Tyre dimensions						
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	TT/TL	Rim- ²⁾ width	Distance between rim centres	Max. standard value in service		Actual value		Stat. radius	Rolling circumference
								Width	Outer-Ø	Width	Outer-Ø		
245/70 R 17.5	143/141 J	J 100	TRAILER M 423	TL	6.75	276	252	803	240	789	360	2390	
					7.50	285	258	248					
205/75 R 17.5	124/122 M	M 130	EURO-STEEL M 434 TRANS-STEEL M 470	TL	5.25	222	205		197				
					6.00	230	214	765	204	753	353	2295	
					6.75	238	223		212				
215/75 R 17.5	126/124 M	M 130	EURO-STEEL M 434 TRANS-STEEL M 470	TL	6.00	243	222	779	211	767	359	2340	
					6.75	251	230		219				
	135/133 J	J 100	TRAILER M 423	TL									
225/75 R 17.5	129/127 M	M 130	EURO-STEEL M 434 TRANS-STEEL M 470	TL	6.00	249	229		218				
					6.75	258	237	797	226	783	366	2390	
235/75 R 17.5	132/130 L (130/128 M)	L 120 (M 130)	EURO-STEEL M 434 TRANS-STEEL M 470	TL	6.00	259	237		225				
					6.75	268	245	811	233	797	373	2430	
	143/141 J	J 100	TRAILER M 423	TL	7.50	277	253		241				
					6.75	268	245	811	233	797	373	2430	
					7.50	277	253		241				
8.5 R 17.5	121/120 L	L 120	EXPRESS-STEEL M 248	TL	5.25	233	213		207				
					6.00	242	221	813	215	802	374	2445	
					6.75	251	229		223				
10 R 17.5	134/132 L	L 120	EXPRESS-STEEL M 248	TL	6.75	277	253		246				
					7.50	286	262	870	254	858	398	2615	
8 R 17.5 C	117/116 L	12	L 120	EXPRESS-STEEL M 248	TL	5.25	225	206	794	200	784	367	2390
						6.00	234	214		208			
						6.75	243	222		216			

Footnotes see page 38

Refer to page 40 for valves, tubes and flaps

LOAD CAPACITIES

**Load capacity (kg) per axle at tyre pressure⁴⁾ (bar)
(psi)**

Load Index LI	Tyre fitment	Load capacity (kg) per axle at tyre pressure ⁴⁾ (bar) (psi)									
		4,5 (65)	5,0 (73)	5,5 (80)	6,0 (87)	6,5 (94)	7,0 (102)	7,5 (109)	8,0 (116)	8,5 (123)	9,0 (131)
143	E		3405	3675	3940	4200	4455	4710	4955	5205	5450
141	ZW		6435	6945	7445	7935	8420	8900	9370	9835	10300
124	E	2125	2310	2495	2675	2850	3025	3200			
122	ZW	3985	4335	4680	5015	5350	5675	6000			
135	E		2850	3075	3295	3515	3730	3940	4150	4360	
126	E	2385	2595	2800	3005	3200	3400				
133	ZW		5385	5815	6235	6645	7050	7450	7845	8240	
124	ZW	4490	4885	5275	5655	6030	6400				
129	E	2455	2675	2885	3095	3295	3500	3700			
127	ZW	4650	5060	5460	5855	6240	6620	7000			
143	E		3405	3675	3940	4200	4455	4710	4955	5205	5450
132	E	2520	2745	2960	3175	3385	3590	3795	4000		
130	E	2525	2745	2965	3175	3385	3595	3800			
141	ZW		6435	6945	7445	7935	8420	8900	9370	9835	10300
130	ZW	4795	5215	5630	6035	6435	6825	7215	7600		
128	ZW	4780	5205	5615	6020	6420	6810	7200			
121	E	2160	2350	2535	2720	2900					
120	ZW	4170	4535	4895	5250	5600					
134	E	2675	2910	3140	3365	3590	3810	4025	4240		
132	ZW	5045	5490	5925	6355	6775	7185	7595	8000		
117	E	2040	2220	2395	2570						
116	ZW	3970	4320	4660	5000						

SPECIFICATIONS

Size	Operating Code					Rim		Tyre dimensions					
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	TT/TL	Rim- ²⁾ width	Distance between rim centres	Max. standard value in service		Actual value		Stat. radius	Rolling circumference
								Width	Outer-Ø	Width	Outer-Ø		
245/70 R 19.5	136/134 M	M 130	EURO-FRONT M 249 EURO-DRIVE M 255	TL	6.75	270	252	853	240	839	389	2560	
					7.50	279	260	248					
265/70 R 19.5	140/138 M	M 130	EURO-FRONT M 249 EURO-DRIVE M 255	TL	6.75	286	267	881	254	867	401	2645	
				TL	7.50	295	275		262				
	TL	8.25	304	282		270							
285/70 R 19.5	144/142 M	M 130	EURO-FRONT M 249 EURO-DRIVE M 255	TL	7.50	309	290	911	275	895	413	2730	
				TL	8.25	318	297		283				
385/65 R 22.5	158/ - L (160/ - K)	L 120 (K 110)	EURO-FRONT M 350	TL	11.75	0	408	1092	389	1072	495	3250	
				TL	12.25	0	414		395				
	TL												
275/70 R 22.5	148/145 L	L 120	EURO-STEEL M 349 TRANS-STEEL M 470	TL	7.50	307	279	973	267	961	447	2920	
				TL	8.25	316	287		275				
315/70 R 22.5	152/148 M (154/150 L)	M 130 (L 120)	EURO-FRONT M 350 ^{*)} TRANS-STEEL M 470	TL	9.00	350	328	1032	312	1014	468	3090	
				TL									
295/80 R 22.5	152/148 M	M 130	EURO-FRONT M 350 SNOW-FRONT M 440	TL	8.25	338	305	1062	290	1044	487	3185	
				TL	9.00	346	313		298				
	TL												
	TL												
315/80 R 22.5	156/150 K	K 110	CYCLOP-STEEL N M 332	TL	9.00	355	328	1096	312	1076	500	3280	
	154/150 M	M 130	EURO-FRONT M 350	TL									
	156/150 L	(L 120)	SNOW-FRONT M 440 ^{*)}	TL									
	156/150 K	K 110	GRIP-STEEL M 247	TL									
	154/150 M	M 130	SNOW-DRIVE M 431	TL									
	154/150 L	(L 120)	TRANS-STEEL M 470	TL									

Footnotes see page 38

Refer to page 40 for valves, tubes and flaps

LOAD CAPACITIES

Load capacity (kg) per axle at tyre pressure⁴⁾ (bar)
(psi)

Load Index LI	Tyre fitment	Load capacity (kg) per axle at tyre pressure ⁴⁾ (bar) (psi)									
		4,5 (65)	5,0 (73)	5,5 (80)	6,0 (87)	6,5 (94)	7,0 (102)	7,5 (109)	8,0 (116)	8,5 (123)	9,0 (131)
136	E	2690	2930	3160	3390	3610	3835	4050	4265	4480	
134	ZW	5095	5545	5985	6415	6840	7260	7670	8075	8480	
143	E		3560	3845	4120	4395	4665	4930	5190	5450	
140	E	3155	3430	3700	3970	4230	4490	4745	5000		
141	ZW		6735	7270	7795	8310	8815	9315	9810	10300	
138	ZW	5955	6480	6995	7495	7995	8480	8960	9440		
144	E	3365	3660	3950	4235	4515	4790	5065	5330	5600	
142	ZW	6370	6930	7480	8020	8550	9075	9590	10095	10600	
160	E	5165	5620	6065	6505	6935	7360	7775	8190	8595	9000
158	E	5110	5555	6000	6430	6855	7275	7690	8095	8500	
148	E	3615	3935	4245	4550	4855	5150	5440	5730	6015	6300
145	ZW	6660	7245	7820	8385	8940	9485	10025	10555	11080	11600
154	E	4305	4685	5055	5420	5780	6130	6480	6825	7160	7500
152	E	4265	4640	5010	5370	5725	6075	6420	6760	7100	
150	ZW	7695	8370	9035	9685	10325	10955	11580	12195	12800	13400
148	ZW	7575	8240	8890	9535	10165	10785	11395	12000	12600	
152	E	4265	4640	5010	5370	5725	6075	6420	6760	7100	
148	ZW	7575	8240	8890	9535	10165	10785	11395	12000	12600	
156	E	4590	4995	5390	5780	6165	6540	6910	7280	7640	8000
154	E	4505	4905	5290	5675	6050	6420	6785	7140	7500	
150	ZW	8055	8760	9455	10140	10810	11470	12120	12765	13400	

SPECIFICATIONS

Size	Operating Code					Rim		Tyre dimensions					
	LI/SI ¹⁾	PR	Speed Index and ref. speed (km/h)	Pattern	TT/TL	Rim- ²⁾ width	Distance between rim centres	Max. standard value in service		Actual value		Stat. radius	Rolling circumference
								Width	Outer-Ø	Width +1%	Outer-Ø ± 1%		
10 R 22.5	140/138 L	14	L 120	EURO-STEEL M 234	TL	6.75	277	253	1033	246	1020	476	3110
	140/138 K	14	K 110	ATHLET-STEEL M 232 S	TL	7.50	286	262		254			
11 R 22.5	148/145 L		L 120	EURO-STEEL M 434	TL	7.50	305	279	1064	271	1050	489	3200
				TRANS-STEEL M 470	TL	8.25	314	287		279			
	148/145 J		J 100	TRAILER-STEEL M 422	TL								
12 R 22.5	152/148 L (150/148 M)		L 120 (M 130)	EURO-STEEL M 434	TL	8.25	329	301	1099	292	1084	504	3306
				CYCLOP-STEEL N M 332	TL	9.00	338	309		300			
	152/148 K		K 110	TRANS-STEEL M 470	TL								
	152/148 L		L 120	SNOW-DRIVE M 431	TL								
	152/148 K		K 110	GRIP-STEEL M 247	TL								
13 R 22.5	154/150 L (156/150 K)		L 120 (K 110)	EURO-STEEL M 434	TL	9.00	350	321	1141	312	1124	521	3428
				CYCLOP-STEEL N M 332	TL	9.75	358	329		320			
	154/150 K (156/150 G)		K 110 (G 90)	EURO-STEEL M 434	TL								
	154/150 L	18	L 120	ATHLET-STEEL M 232 S	TL								
	154/150 K		K 110	GRIP-STEEL M247	TL								

Data acc. to DIN 7805/4, WdK-Guidelines 134/2, 142/2, 143/14, 143/25

1) Load index single/dual wheel fitment and speed symbol

2) Rim sizes in bold type: see on page 8

4) For tyre pressure of 8.0 bar (116 psi) and over use valve slit cover plate

*) in preparation

LOAD CAPACITIES

**Load capacity (kg) per axle at tyre pressure⁴⁾ (bar)
(psi)**

Load Index LI	Tyre fitment	Load capacity (kg) per axle at tyre pressure ⁴⁾ (bar) (psi)									
		4,5 (65)	5,0 (73)	5,5 (80)	6,0 (87)	6,5 (94)	7,0 (102)	7,5 (109)	8,0 (116)	8,5 (123)	9,0 (131)
140	E	3320	3610	3900	4180	4455	4730	5000			
138	ZW	6270	6820	7365	7895	8415	8930	9440			
148	E	3785	4120	4445	4765	5080	5390	5695	6000	6300	
145	ZW	6970	7585	8185	8775	9355	9930	10490	11050	11600	
152	E	4265	4640	5010	5370	5725	6075	6420	6760	7100	
150	E	4225	4600	4960	5320	5670	6020	6360	6700		
148	ZW	7575	8240	8890	9535	10165	10785	11395	12000	12600	
156	E	4590	4995	5390	5780	6165	6540	6910	7280	7640	8000
154	E	4505	4905	5290	5675	6050	6420	6785	7140	7500	
150	ZW	8055	8760	9455	10140	10810	11470	12120	12765	13400	

VALVES, TUBES AND FLAPS

TL tyres 16" - 19.5"

Size	Rim	Valve
205/75 R 16 C	5 1/2 J	43 GS 11.5
	6 J	43 GS 11.5
	6 1/2 J	43 GS 11.5
215/75 R 16 C	5 1/2 J	43 GS 11.5
	6 J	43 GS 11.5
	6 1/2 J	43 GS 11.5
225/75 R 16 C	6 1/2 J	43 GS 11.5
	6 J	43 GS 11.5
	7 J	43 GS 11.5
6.00 R 16 C	4 1/2 J,K	43 GS 16
	4.50 E	43 GS 16
	4.50 E SDC	43 GS 16
	5 1/2 J,K	43 GS 16
	5 K	43 GS 16
6.50 R 16 C	5.00 E SDC	43 GS 16
	4 1/2 J,K	43 GS 16
	4.50 E SDC	43 GS 16
	4.50 F	43 GS 16
	5 1/2 K	43 GS 16
10 R 17.5	5 K	43 GS 16
	5.00 E SDC	43 GS 16
	5.50 F SDC	43 GS 16
205/75 R 17.5	6.75	MS
	7.50	MS
	5.25	MS
215/75 R 17.5	6.00	MS
	6.75	MS
	6.75	MS
225/75 R 17.5	6.00	MS
	6.75	MS
	6.00	MS
235/75 R 17.5	6.75	MS
	7.50	MS
	5.25	MS
8.5 R 17.5	6.00	MS
	6.75	MS
	6.00	MS
8 R 17.5 C	5.25	MS
	6.00	MS
	6.75	MS
245/70 R 19.5	6.75	MS
	7.50	MS
265/70 R 19.5	6.75	MS
	7.50	MS
	8.25	MS
285/70 R 19.5	7.50	MS
	8.25	MS
	9.00	MS

TL tyres 20" - 22.5"

Size	Rim	Valve
14.00 R 20	10.0	120MSF
	10.00V	120MSF
365/80 R 20	10.00V	120MSF
10 R 22.5	6.75	MS
	7.50	MS
11 R 22.5	7.50	MS
	8.25	MS
12 R 22.5	8.25	MS
	9.00	MS
13 R 22.5	9.00	MS
	9.75	MS
275/70 R 22.5	7.50	MS
	8.25	MS
295/80 R 22.5	8.25	MS
	9.00	MS
315/70 R 22.5	9.00	MS
315/80 R 22.5	9.00	MS
385/65 R 22.5	11.75	MS
	12.25	MS

TT tyres

Size	Rim	Tube	Valve	Flap
7.50 R 15	6.0	7.50-15	75 D-74	170-15
	6.5	7.50-15	75 D-74	170-15
8.25 R 15	6.5	8.25-15	75D-74	170-15
	7.0	8.25-15	75D-74	170-15
7.00 R 16	6.00 G SDC	7.00/7.50-16	105 D-Z	160-16
7.50 R 16	6.00 G SDC	7.00/7.50-16	105 D-Z	160-16
10.00 R 20	7.50	10.00 - 20	127 D-Z	200-20
11.00 R 20	8.00	11.00 - 20	127 D-Z	200-20
12.00 R 20	8.50	12.00 - 20	127 D-Z	200-20
14.00 R 20	10.0	14.00 - 20	140 D-Z	280-20
	10.00V	14.00 - 20	140 D-Z	280-20
9.00 R 20	7.00	9.00 - 20	115 D-Z	180-20
12.00 R 24	8.50	12.00 - 24	127 D-74	220-24

SPECIAL LOAD CAPACITIES FOR RADIAL TYRES

Tyre-size	Operating Code	Single/ dual fit-	Max. permitted axle weight (kg) for tyre pressure (bar/psi) including +10% extra as per German Transport Association +15% extra as per German Transport Association (DIN 78 05)									
			4.5/65	5.0/73	5.5/80	6.0/87	6.5/94	7.0/102	7.5/109	8.0/116	8.5/123	9.0/131
275/70 R 22.5	148	S	4160	4525	4885	5235	5580	5925	6260	6590	6920	7245
	145	D	7660	8335	8995	9640	10280	10910	11525	12140	12740	13340

Recommended tyre pressure for tyres on town and country buses for various axle loads

NOTES

REGROOVING

All Semperit tyres on which regrooving is permitted have on both sidewalls, in accordance with ECE regulation 54, the word

REGROOVABLE

The additional tread depth of up to 4 mm gained by regrooving means a significant increase in performance.

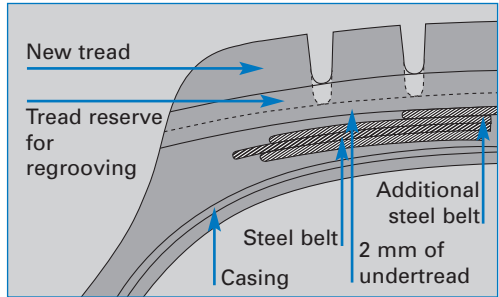
Example:

Tyre size	315/80 R 22.5 M 430
Original depth	20.0 mm
Additional tread as a result of regrooving	4.0 mm

As part of their design all-steel truck tyres have a so-called tread stock between the upper edge of the belt and the tread grooves. This tread stock is intended to prevent stones etc. penetrating into the steel belt and the casing.

In order to further increase the service life, all-steel truck tyres can be regrooved. Underneath the additional tread depth gained by regrooving a tread stock of 2 mm must remain.

Although tyres can be remoulded after reaching the legal wear limit, regrooving is not advisable in every case. The tread stock thickness is reduced and stones etc. can more easily penetrate and damage the steel belts, leading to rust formation. This has decidedly negative effect on the tyre's suitability for remoulding.



The best time for remoulding is when the tread is worn down to about 3 mm. The tyre must then be checked to make sure the wear is even all round. Attention should be paid to local or uneven wear patches.

Regrooving should be carried out by an expert, in order to avoid premature failure as well as any reduction in the tyre's suitability for remoulding.

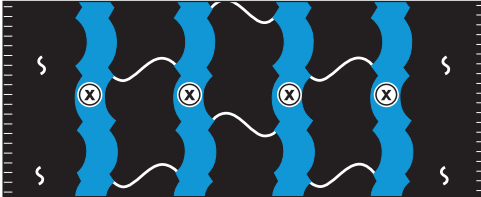
Regrooved tyres must not be used on driving axles of coaches with extended speed limit of 100 km/h.

All Semperit tyres on which regrooving is permitted are marked „regroovable“.

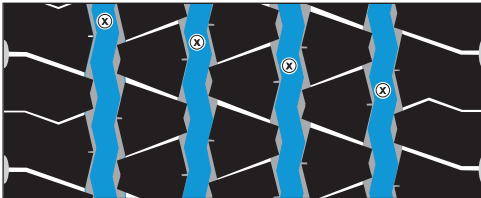
REGROOVING

ROAD

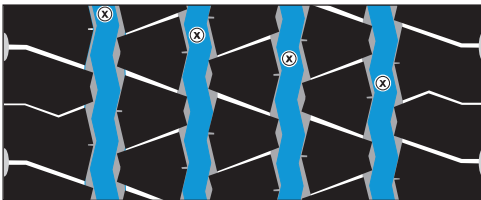
FRONT AXLE - HEAVY TRUCKS



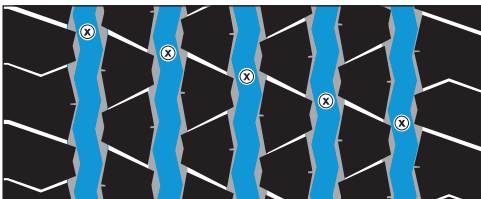
Regrooving width: 10 - 12 mm



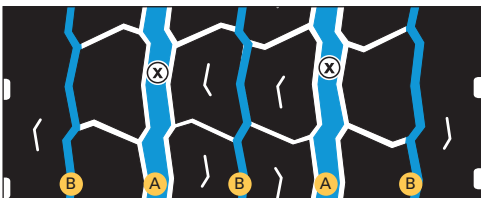
Regrooving width 9 - 11 mm



Regrooving width 10 - 12 mm



Regrooving width 11 - 12 mm



Regrooving width A: 8 - 10 mm; B: 4 - 5 mm

⊗ = Tread measuring point

EURO-STEEL M 349

Size	Depth (mm)
275/70 R 22.5	3.0

EURO-FRONT M 249

Size	Depth (mm)
245/70 R 19.5	3.0
265/70 R 19.5	3.0
285/70 R 19.5	3.0

EURO-FRONT M 350

Size	Depth (mm)
295/80 R 22.5	3.5
315/80 R 22.5	3.5

EURO-FRONT M 350

Size	Depth (mm)
315/70 R 22.5	3.5
385/65 R 22.5	3.5

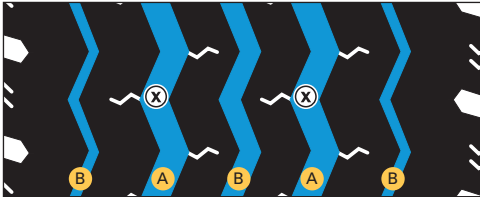
EURO-STEEL M 434

Size	Depth (mm)
11 R 22.5	3.5
12 R 22.5	3.5
13 R 22.5	3.5

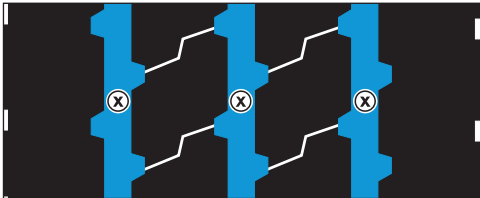
REGROOVING

ROAD

FRONT AXLE - HEAVY TRUCKS



Regrooving width A: 11 - 12 mm, B: 6 - 7 mm



Regrooving width: 10 - 12 mm

EURO-STEEL M 234

Size	Depth (mm)
10 R 22.5	3.0

EURO-WAY M 480

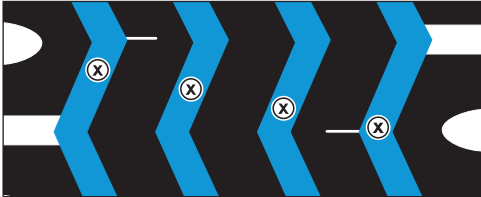
Size	Depth (mm)
10.00 R 20	4.0
11.00 R 20	4.0
12.00 R 20	4.0

⊗ = Tread measuring point

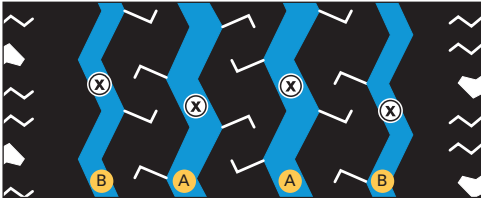
REGROOVING

ROAD

FRONT AXLE - LIGHT TRUCKS



Regrooving width: 7 - 8 mm



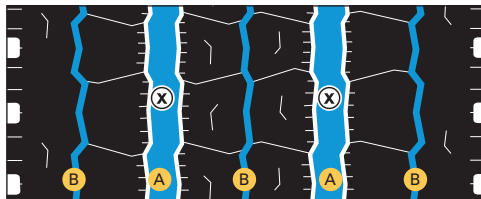
Regrooving width A: 9 - 10 mm; B: 5 - 6 mm

STC M 205

Size	Depth (mm)
7.50 R 16	2.0

EXPRESS-STEEL M 248

Size	Depth (mm)
7.00 R 16	2.0
7.50 R 16	2.0
8.25 R 16	2.5
8 R 17.5 C	2.0
8.5 R 17.5	2.0
10 R 17.5	3.0



Regrooving width A: 7 - 8 mm; B: 3 - 4 mm

EURO-STEEL M 434

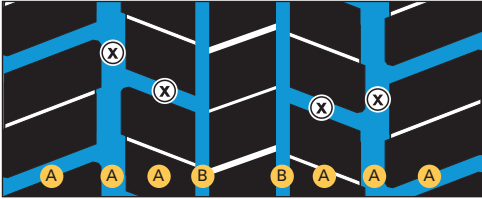
Size	Depth (mm)
205/75 R 17.5	3.0
215/75 R 17.5	3.0
225/75 R 17.5	3.0
235/75 R 17.5	3.0

⊗ = Tread measuring point

REGROOVING

ROAD

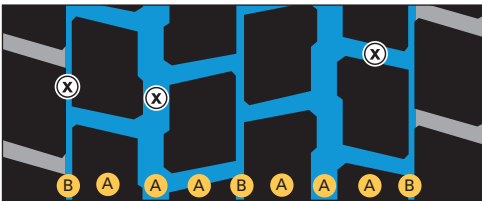
DRIVE AXLE - HEAVY TRUCKS



Regrooving width A: 8 - 10 mm; B: 3 - 4 mm

TRANS-STEEL M 470

Size	Depth (mm)
11 R 22.5	4.0
12 R 22.5	4.0
295/80 R 22.5	4.0
315/80 R 22.5	4.0
275/70 R 22.5	3.5
315/70 R 22.5	4.0



Regrooving width A: 11 mm; B: 5 mm

EURO-DRIVE M 255

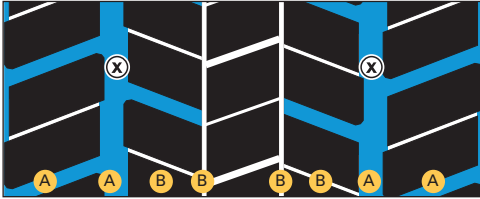
Size	Depth (mm)
245/70 R 19.5	3.0
265/70 R 19.5	3.0
285/70 R 19.5	3.0

⊗ = Tread measuring point

REGROOVING

ROAD

DRIVE AXLE - LIGHT TRUCKS



Regrooving width A: 6 - 7 mm; B: 3 - 4 mm

TRANS-STEEL M 470

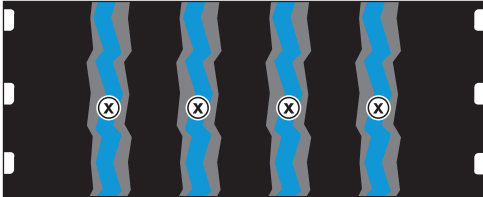
Size	Depth (mm)
205/75 R 17.5	3.0
215/75 R 17.5	3.0
225/75 R 17.5	3.0
235/75 R 17.5	3.0

⊗ = Tread measuring point

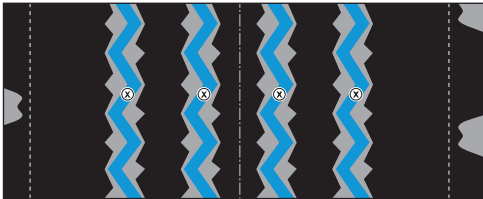
REGROOVING

ROAD

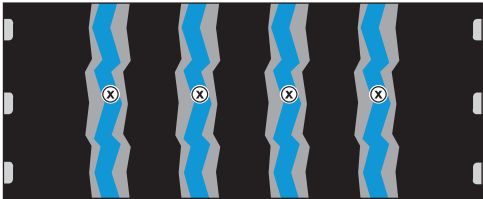
TRAILER - HEAVY TRUCKS



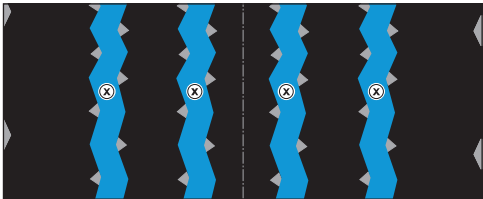
Regrooving width: 8 - 10 mm



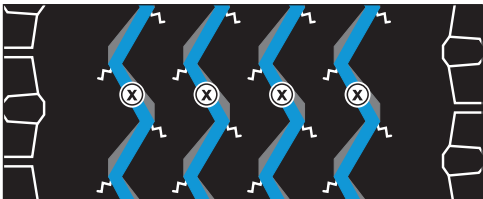
Regrooving width: 10 - 11 mm



Regrooving width: 8 mm



Regrooving width: 8 mm



Regrooving width: 8 - 10 mm

⊗ = Tread measuring point

TRAILER-STEEL M 422

Size	Depth (mm)
11 R 22.5	4.0

TRAILER M 423

Size	Depth (mm)
215/75 R 17.5	3.0
235/75 R 17.5	3.0
245/70 R 17.5	3.0

TRAILER M 223

Size	Depth (mm)
265/70 R 19.5	3.0

TRAILER M 223

Size	Depth (mm)
385/65 R 22.5	3.5

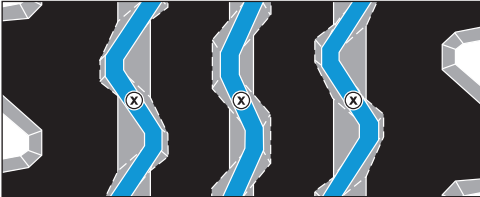
TRAILER-STEEL M 222

Size	Depth (mm)
365/80 R 20	3.5

REGROOVING

ON/OFF

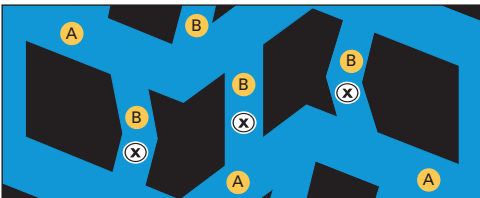
FRONT AXLE - HEAVY TRUCKS



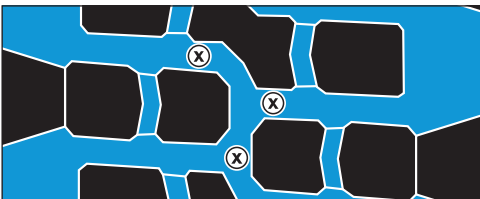
Regrooving width: 10 - 12 mm



Regrooving width A: 8 - 10 mm; B: 7 - 8 mm



Regrooving width A: 25-30 mm; B: 13-15 mm



Regrooving width: 8 - 10 mm

ATHLET-FRONT M 233

Size	Depth (mm)
9.00 R 20	4.0

CYCLOP-STEEL N M 332

Size	Depth (mm)
12 R 22.5	4.0
13 R 22.5	4.0
295/80 R 22.5	4.0
315/80 R 22.5	4.0

SAND-STEEL M 226

Size	Depth (mm)
14.00 R 20	4.0

GIGANT-STEEL M 235

Size	Depth (mm)
14.00 R 20	5.0

⊗ = Tread measuring point

REGROOVING

ON/OFF

DRIVE AXLE - HEAVY TRUCKS



Regrooving width: 10 - 12 mm



Regrooving width: 12 - 14 mm

ATHLET-STEEL M 232 S

Size	Depth (mm)
11.00 R 20	4.0
10 R 22.5	3.5
13 R 22.5	4.0

GRIP-STEEL M 247

Size	Depth (mm)
12.00 R 20	4.0
12 R 22.5	4.0
13 R 22.5	4.0
315/80 R 22.5	4.0

TRAILER - HEAVY TRUCKS



Regrooving width: 10 - 12 mm

⊗ = Tread measuring point

TRAILER-STEEL M 277

Size	Depth (mm)
385/65 R 22.5	4.0

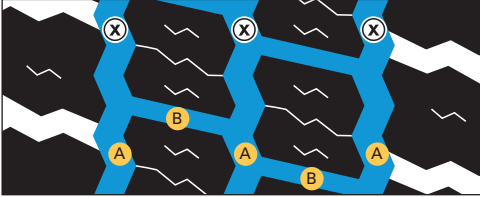
REGROOVING

SNOW

FRONT AXLE - HEAVY TRUCKS

SNOW-FRONT M 440

Size	Depth (mm)
<u>295/80 R 22.5</u>	<u>4.0</u>
315/80 R 22.5	4.0



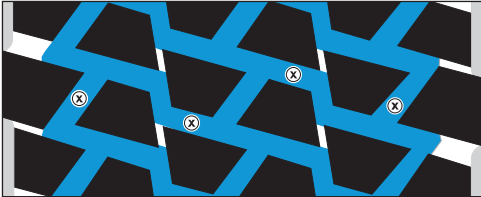
Regrooving width A: 11 - 13 mm; B: 10 mm

⊗ = Tread measuring point

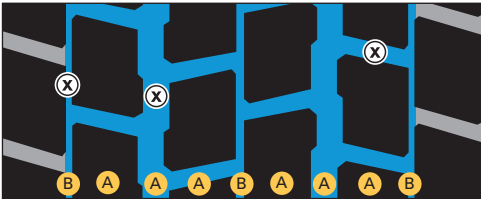
REGROOVING

SNOW

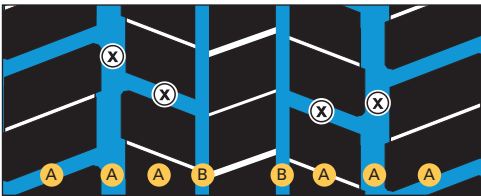
DRIVE AXLE - HEAVY TRUCKS



Regrooving width: 10 mm



Regrooving width A: 11 mm; B: 5 mm



Regrooving width A: 8 - 10 mm; B: 3 - 4 mm

SNOW-DRIVE M 431

Size	Depth (mm)
295/80 R 22.5	4.0
315/80 R 22.5	4.0
12 R 22.5	4.0

EURO-DRIVE M 255

Size	Depth (mm)
245/70 R 19.5	3.0
265/70 R 19.5	3.0
285/70 R 19.5	3.0

TRANS-STEEL M 470

Size	Depth (mm)
11 R 22.5	4.0
12 R 22.5	4.0
295/80 R 22.5	4.0
315/80 R 22.5	4.0
275/70 R 22.5	3.5
315/70 R 22.5	4.0

⊗ = Tread measuring point

MAINTENANCE AND CARE

The pre-condition for successful maintenance and care is the correct choice of tyre, following the recommendations of the tyre manufacturer.

Storage

Unused tyres should be stored in cool, dry, dark and lightly ventilated rooms.

Tyres which are not fitted on rims should be stored standing up. Avoid contact with fuel, lubricants, solvents and chemicals.

Should tyres, tubes and bead flaps need to be stored temporarily, they may age more quickly and develop cracks if they are exposed to intense sunlight or extreme heat. Effective air circulation accelerates this process.

Inner tubes may be particularly affected if their packaging is damaged.

Fitting the tyre

Before demounting a tyre, unscrew and remove the valve insert; then wait until all the air has been allowed to escape. If a tube-type tyre is fitted with an angled valve to DIN 7786-80 GD 80, unscrew the valve stem and wait until the escaping air ceases to make a noise before removing the tyre.

Particular care should be taken when fitting the tyre. Only rust-free rims of the right size should be used. These should not be damaged or show any signs of wear and tear. The loose flange side should be examined with great care.

Always use new rubber tubeless valves or new inner tubes and flaps on new tyres or new seals for tubeless metal valves.

Take special care after tyre repairs: inner tubes stretch in use and may form dangerous folds when re-fitted. If in doubt, always fit new inner tubes in order to avoid tube failure.

It is particularly important with large tyres that these should already fit on the rim flange with as little tyre pressure as possible. See also WdK-Guideline 104, where detailed fitting recommendations are given. As a guide:

When fitting, do not exceed 150% of the maximum standard tyre pressure.

Under no circumstances must 10 bar be exceeded.

Use only recommended fitting tools and equipment.

Should the tyre bead be jammed on the rim and the pressure be high, the bead may get damaged or even destroyed.

With tube type tyres, check that valves still move freely after the filler nozzle has been removed. This is important for later tyre pressure checks under difficult conditions.

Fast-running wheels should be balanced statically and dynamically to ensure smooth running.

MAINTENANCE AND CARE

Fitting the wheel on to the vehicle

WARNING!



Vehicle axle data such as toe-in, king pin inclination and castor as well as axle alignment must be checked and if necessary adjusted

and if necessary adjusted to within tolerances.

Only then should the wheel be fitted.

When fitting make sure that the axle hub is perfectly centred. Extra care is necessary with large, heavy tyres which do not have special centering.

If necessary re-balance the wheel when it is fitted on the vehicle.

Always remember to check that the valves move freely and are easily accessible. Valve extensions are necessary for dual tyres.

The free movement and easy access of the valves, even when they have become dirty in operation are necessary for checking the tyre pressures

Valve caps, preferably high pressure type, must be fitted.

On rolling road testers where the vehicle performance is examined, restrictive testing regulations must be observed: depending on the roller diameter only short tests may be carried out and these always below maximum speed.

If a vehicle has the same type of tyres on all round e.g. radial tyres, this will guarantee optimum driving characteristics and maximum driving stability.

The use of different tyre designs on each axle should be a rare exception.

Where vehicles are being used on the highway, minimum tread depths as specified in the latest national regulations must be observed.

For motor vehicles, trailers or semi-trailers it is essential that tyres of the same construction are fitted to the same axle.

Tyre Minimum Tread Depth

The legal minimum tread depth is 1.0 mm and must cover the complete width and circumference of the tread. The depth should be measured in the tread groove with the tread wear indicator (the area with the indicator should not be taken).

Vehicle in operation

The tyre pressure must be correct.

Otherwise poor vehicle handling and pronounced, irregular tread wear are inevitable.

If pressure is insufficient, the rolling resistance will increase and with it the fuel consumption. Hidden defects in the tyre may also occur which later lead to tyre failure.

MAINTENANCE AND CARE

WARNING!



Tyre inflation pressures specified by vehicle and tyre manufacturers are contained in the vehicle manual and, for instance, on the vehicle mudguard. These may vary with different loads and service conditions, and must be adjusted before commencing a journey. Specified tyre pressures always apply to cold tyres. It is quite normal for the pressure to increase as the tyres warm up during driving. Do not reduce pressure when the tyres are hot.

Never use different tyre pressures for the same axle.

The tyre pressures recommended for a vehicle by the manufacturer may differ depending on different load and service conditions.

Pressure checks must be made when the tyres are cold. An increase in tyre pressures during running is normal and must never be re-adjusted. Semperit can supply mudguard tyre pressure stickers on request.

The spare wheel should be inflated to at least the maximum inflation pressure given in the vehicle manual. Remember to always include the spare wheel when checking tyre pressures.

A balanced, even style of driving reduces the strain on the tyres. Every hasty reaction on the accelerator, brakes or steering shortens the life of the tyres.

The same also applies of course to all other forms of peak strain such as severe scuffing of the tyre along the kerb or

driving over obstacles that may be in the road. These can all result in damage to the tyre's construction.

Strain on the tyre should be avoided. This has the same effect as insufficient pressure.

Do not exceed the tyre's permitted maximum speed, otherwise tyre damage is inevitable.

Maintenance and care of the vehicle's tyres

The high standard of quality of the tyres and vehicle, which is achieved by the measures and recommendations stated above, can only be ensured by regular checking of all factors.

For example, pressure checks and external inspections of the tyres (including the sidewalls to the inside of the vehicle and between dual tyres).

Pressure checking devices and small replacement parts such as valve inserts, caps and extensions should always be close at hand

Tyres age as a result of physical and chemical processes and this may impair their performance.

Tyres, which are fitted to mainly stationary vehicles or those which are not used regularly, are particularly prone to premature ageing.

MAINTENANCE AND CARE

WARNING!

Unfavourable weather conditions also accelerate the ageing process as well as the storage conditions that were covered in the previous section.

An expert should always be called in to make a qualified judgment on the tyres.

Regrooving of the tread pattern - usually when there are 2 or 3 millimetres of tread depth left - should be carried out only by qualified experts when the word "REGROOVABLE" is displayed on the tyre sidewall.

Tyre repairs

Tyre damage may initially be just a question of damage to the outer rubber: however, this apparently superficial damage can eventually extend down to, or into, the tyre's reinforcing materials (casing/belt). Therefore no time should be lost in taking the tyre to a specialist for assessment as soon as any external damage is detected.

Damage to the reinforcing materials, for instance due to a nail puncture or a deep cut, is particularly dangerous because dirt and moisture may penetrate during the time between when the damage occurred and when it was detected. This may even result in more serious damage to the reinforcing materials. Damage to the inside of a tyre can also cause a slow puncture.

The tyre is then driven underinflated and consequently subjected to excessive strain. All these factors can make a tyre non-repairable by the time the damage is

finally discovered. If the tyre is repaired regardless, even if it is repaired by a reputable tyre specialist, it is possible that tyre failure can still occur as a result of an overstrained area, other than that originally damaged.

This is why each tyre must be carefully inspected by a tyre expert before it is repaired. For only a specially trained person can decide whether it is possible to repair the tyre and whether the tyre will be capable of delivering safe performance after the repair. Repairs must be carried out by an authorized workshop, which is then responsible for inspecting the tyre and for doing the job properly.

Repairs to the wheels are forbidden.

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A sound investment

	ROAD	ON/OFF	SNOW
FRONT	FRONT AXLE - HEAVY TRUCKS	FRONT AXLE - HEAVY TRUCKS	FRONT AXLE - HEAVY TRUCKS
	M 349 EURO-STEEL M 350 EURO-FRONT M 434 EURO-STEEL M 234 EURO-STEEL M 480 EURO-WAY M 249 EURO-FRONT	M 233 ATHLET-FRONT M 332 CYCLOP-STEEL N M 226 SAND-STEEL M 235 GIGANT-STEEL	M 440 SNOW-FRONT
	FRONT AXLE - LIGHT TRUCKS		
	M 205 STC-STEEL M 248 EXPRESS-STEEL M 434 EURO-STEEL		
DRIVE	DRIVE AXLE - HEAVY TRUCKS	DRIVE AXLE - HEAVY TRUCKS	DRIVE AXLE - HEAVY TRUCKS
	M 470 TRANS-STEEL M 255 EURO-DRIVE	M 232 S ATHLET-STEEL M 247 GRIP-STEEL	M 431 SNOW-DRIVE M 470 TRANS-STEEL M 255 EURO-DRIVE
	DRIVE AXLE - LIGHT TRUCKS		
	M 470 TRANS-STEEL		
TRAILER	TRAILER - HEAVY TRUCKS	TRAILER - HEAVY TRUCKS	
	M 422 TRAILER-STEEL M 423 TRAILER M 223 TRAILER M 222 TRAILER-STEEL	M 277 TRAILER-STEEL	
	TRANSPORTER/VANS		
	M 833 TRANS-SPEED 2 M 733 TRANS-SPEED VAN-LIFE		M 729 TOP-GRIP-SLG M 529 HI-GRIP M&S VAN-GRIP

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