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MARANGONI INDUSTRIAL TYRES

INDUSTRIAL & MPT TYRES
TECHNICAL DATA BOOK 2024

MARANGONI BY FERENTINO

MARANGONIINDUSTRIALTYRES.IT

SPECIALIST STRENGTH

The quality of the compounds used is essential in the solid industrial tyre sector.

TREAD COMPOUND
Resistant to wear and tear, guarantees excellent grip on wet or slippery surfaces (e.g. oil stains).

CUSHION COMPOUND
Central compound, lowers operating temperature and ensures low rolling resistance.

+LIFE

+COMFORT

+SAVING

+STABILITY

BASE 2
Extremely hard material that reduces deformation and supports the load while preserving bead stiffness and preventing the tyre from coming off the rim.

BASE 1
Ensures the tyre remains attached to the rim over time: the metal rings inside the tyre adhere perfectly to the metal. Perfect coupling to the rim: easy to fit and remove.

SPECIAL - S

This version was designed and developed especially for loaders and produced in the 20 and 24 inch sizes. It is constructed using compounds which are particularly resistant to tearing. The tyre stands out for its resistance to wear and tear, jolts, cuts and abrasions, as well as for its high rigidity that provides stability to the vehicle and, therefore, to the load. Used for vehicles which carry loads, usually in environments with extreme conditions, such as scrap yards and dumps.

HIGH CAPACITY - HL

This is a tyre designed with a highly rigid structure in comparison to standard tyres. It is constructed with extremely hard compounds that are able to maintain all the other physical and mechanical characteristics to excellent levels. The distinguishing feature of Super-elastic and Cushion tyres is their ability to sustain high loads with minimal deformation. It is widely used in situations where it is of paramount importance to maintain the stability of the vehicle and, therefore, of the load. It is also utilised in other specific cases. Contact a MARANGONI INDUSTRIAL TYRES technician for advice before choosing this version.

NO MARKING - NM

This is a light coloured tyre, designed not to leave dark marks on the ground surface. It is constructed with a yellow mixture, containing no dark substances. It's use is recommended in environments where cleanliness is of great importance, for example in the pharmaceutical, food and beverage, and electronic industries, or anywhere light coloured floors must stay clean.
Available in yellow, white and gray.

ANTISTATIC - AS

This tyre was designed to release the static electricity accumulated by the vehicle onto the ground. It is constructed with special additives which perform this action while maintaining all the other physical and mechanical characteristics to excellent levels. It is typically used in paint and solvent factories, in gas tank deposits, in environments with easily flammable fine dust particles or in environments where the accumulation of static electricity can cause explosions. In all of these cases, the use of this tyre increases safety levels. The AS Super-elastic and Cushion tyres are in compliance with the ISO/DIS 2883 standards. A certificate of conformity shall be provided upon customers' request.

NEW

ANTISTATIC NO MARKING - AS-NM

This is a fully no marking & electrically conducting compound, constructed and designed using years of expertise. It is essential for changing needs in modern warehouse environments.
Available in yellow only.

SUPERIOR

PRO4SNOW

- High proportion of natural rubber.
- Open profile for optimal grip on snow and ice.
- Soft rubber even at extremes temperatures.
- Short braking distance.

TYRE SIZE (inches)		PROFILE	RIM SIZE	TYRE DIMENSIONS (1)		WEIGHT (kg)	LOAD CAPACITY (KG) AT MAX SPEED (KM/H) (2)				
				W (mm) ± 2%	D (mm) ± 2%	± 2%	CARRYING WHEEL 25 km/h	STEERING WHEEL 25 km/h	TRAILERS (3) 25 km/h	10 km/h	6 km/h
18x7-8 (180/70-8)	NEW	SNOW	4.33R-8	149	450	20,8	2.145	1.650	1.650	1.945	2.145
18x7-8 (180/70-8)	NEW	SNOW FIX	4.33R-8	149	450	21,1	2.145	1.650	1.650	1.945	2.145
6.00-9	NEW	SNOW	4.00E-9	135	527	26,6	1.885	1.450	1.450	1.710	1.885
6.00-9	NEW	SNOW FIX	4.00E-9	135	527	26,9	1.885	1.450	1.450	1.710	1.885
6.50-10	NEW	SNOW	5.00F-10	160	572	36,8	2.340	1.800	1.800	2.125	2.340
6.50-10	NEW	SNOW FIX	5.00F-10	160	572	37,1	2.340	1.800	1.800	2.125	2.340
23x9-10 (225/75-10)	NEW	SNOW	6.50-F10	192	579	47,6	3.445	2.650	2.650	3.125	3.445
23x9-10 (225/75-10)	NEW	SNOW FIX	6.50-F10	192	579	47,9	3.445	2.650	2.650	3.125	3.445
7.00-12	NEW	SNOW	5.00S-12	168	653	50,4	2.920	2.240	2.240	2.645	2.920
7.00-12	NEW	SNOW FIX	5.00S-12	168	653	50,7	2.920	2.240	2.240	2.645	2.920
23x10-12 (250/60-12)	NEW	SNOW	8.00G-12	227	579	50,9	3.770	2.900	2.900	3.420	3.770
23x10-12 (250/60-12)	NEW	SNOW FIX	8.00G-12	227	579	51,2	3.770	2.900	2.900	3.420	3.770
27x10-12 (250/75-12)	NEW	SNOW	8.00G-12	227	672	75,0	3.900	3.000	3.000	3.540	3.900
27x10-12 (250/75-12)	NEW	SNOW FIX	8.00G-12	227	672	75,3	3.900	3.000	3.000	3.540	3.900
8.25-15	NEW	SNOW	6.5-15	205	814	92,4	4.750	3.650	3.650	4.300	4.750
8.25-15	NEW	SNOW FIX	6.5-15	205	814	92,6	4.750	3.650	3.650	4.300	4.750
28x9-15 (225/75-15)	NEW	SNOW	7.0-15	207	689	61,5	3.445	2.650	2.650	3.125	3.445
28x9-15 (225/75-15)	NEW	SNOW FIX	7.0-15	207	689	61,8	3.445	2.650	2.650	3.125	3.445
250-15 (250/70-15)	NEW	SNOW	7.0-15	207	715	69,2	4.745	3.650	3.650	4.310	4.745
250-15 (250/70-15)	NEW	SNOW FIX	7.0-15	207	715	69,5	4.745	3.650	3.650	4.310	4.745
300-15 (315/70-15)	NEW	SNOW	8.0-15	251	816	114,6	5.850	4.500	4.500	5.310	5.850
300-15 (315/70-15)	NEW	SNOW FIX	8.0-15	251	816	114,9	5.850	4.500	4.500	5.310	5.850

SOLID TYRES - USER INSTRUCTIONS, MAINTENANCE, REPLACEMENT AND CALCULATION OF WEAR LIMITS

1) INTRODUCTION
Tyres are the only contact between the vehicle and the ground. It is therefore of paramount importance that they are maintained in good condition at all times, and that when the time comes to change them, correct replacements are done.
The tyres fitted to your vehicle as Original Equipment were selected by the vehicle and tyre manufacturers concerned taking into account the intended operations of the vehicle.
Changes in tyre type, size and load capacity should not be made without first checking with the tyre and/or vehicle manufacturer regarding possible effects on vehicle behaviour and safety.

2) FITTING AND REMOVAL OF TYRES
It is recommended that these operations be entrusted only to specialists who have the necessary equipment and expertise. Inexpert fitment may lead to personal injury and concealed damage to tyres and wheels.
No special equipment is necessary for fitting solid tyres on centrally divided conical rims, but appropriate presses and accessories are required for fitment on off-set divided conical rims, cylindrical rims and pneumatic tyre rims.
The published instructions of the tyre manufacturer must be strictly followed. Only approved proprietary tyre lubricants should be used.
To avoid damage to the base of the tyre, it must be placed on the rim concentrically and parallel to the axis. Only rims recommended by the tyre manufacturer must be used.

3) TYRE LOAD AND SPEED
Tyre load capacities are specified per tyre. Published Standards or manufacturers' Manuals should be consulted to obtain the actual values applicable to a particular application at the speed specified, up to a maximum of 25 km/h.
Load interpolation within the specified speed steps is not permitted and the speed rating of the tyre must be at least equal to the maximum speed capability of the unladen vehicle.
Continuous running should be avoided in order, to prevent excessive heat build-up which may lead to tyre break-up.

4) TYRE MAINTENANCE
Although solid tyres require relatively little maintenance, they should be inspected from time to time in order to check their suitability for further use.

5) TYRE REPLACEMENT
Worn or damaged tyres must be replaced in accordance with the tyre manufacturer's recommendations. Also, national legal requirements should be checked as they vary from Country to country. When replacing a tyre, special attention should be paid to the condition and suitability of the rim, as rim damage and incorrect fitment can result in tyre break-up.

6) TYRE AGEING
Tyres age even if they have not been used or have only been used occasionally. Rubber cracking may be evidence of ageing. Exposure to sunlight, heat and ozone will accelerate this process. Aged tyres should be examined by a tyre specialist to check their suitability for further use.

7) TYRE MIXING
Tyres mounted on the same axle must be of the same type and size and must have approximately the same external diameter.

8) TREAD WEAR
8.1 INTRODUCTION
The limit for the tread wear of industrial vehicles is not defined by national or international standards. Several manufacturers provide instructions solely for their products. Recommendations by tyre manufacturers should always be followed. However, in case no recommendations are provided by manufacturers, please abide by the contents published in this standard.

8.2 PURPOSE
This standard suggests tread wear limits for solid tyres used on industrial vehicles that operate under conditions that are not regulated by the Highway Code and are to be used in case no instructions are provided by the manufacturer of the vehicle or tyres. NOTE: Industrial vehicles that operate on public roads must be in order and comply with traffic circulation standards.

8.3 HAZARDS DUE TO EXCESSIVE TYRE TREAD WEAR
The hazards due to excessive tyre wear are the following:
a) Loss of load capacity that promotes the accelerated wear of the tread and leads to overheating of the tyre.
b) Loss of adhesion while accelerating or braking on unstable road conditions.
c) Hazards are heightened if the tyres mounted on the same axle are worn differently.
d) Reduction in the vehicle's stability.
e) Loss of the vehicle's directional control.
f) Uneven load on twinned tyres.

8.4 REDUCING HAZARDS
The hazards mentioned in the foregoing section can be reduced if: The tyres mounted on the same axle are built by the same manufacturer, have the same size and are worn equally (this applies to any type of tyre).

8.5 TYRE TREAD WEAR LIMITS
1) Pneumatic tyre rim sizes
Wear indicators or Kerbing Rib are recommended. Solid Rubber tyres for Pneumatic Rims may be used until the tread is worn to the wear indicator, if the tyre has such a marking, or to the top of the kerbing rib, see page IS.3 of EDI. Where there is no indicator, use the tyre until 3/4 of the original total thickness of the tyre remains.
To calculate the minimum diameter corresponding to this wear limit, measure the outside diameter of the worn tyre, the outside diameter of an unworn tyre of the same type, make and size, and the diameter of the wheel rim. The minimum permitted diameter of the worn tyre is given by the formula:

$$D_{worn} = 3/4\ (D_{new} - D_{rim}) + D_{rim}$$

where D_{worn} = the outside diameter of the worn tyre
D_{new} = the outside diameter of an unworn
D_{rim} = the diameter of the wheel rim

2) Press-on-band, cured-on-band and conical base tyres (rubber and non-rubber)
Press-on-band, cured-on and conical base tyres may be used until 2/3 of the original total radial thickness of the tyre remains, as given by the formula:

Cured-on tyres:
$$D_{worn} = 2/3\ (D_{new} - D_{rim}) + D_{rim}$$

Press-on-band and conical base tyres:
$$D_{worn} = 2/3\ (D_{new} - D_{rim} - 20) + (D_{rim} + 20)$$

Notes:
a) All dimensions are measured in millimetres.
b) The outside diameter of the tyre D_{worn} and D_{new} may be calculated by measuring the circumference of the tyre with a flexible tape, and calculating the diameter from the formula:

$$\text{Diameter} = \frac{\text{Circumference}}{\Pi}$$

TREAD WEAR INDICATOR (TWI) MARANGONI INDUSTRIAL TYRES recommends for tyres not to be worn beyond the TWI (Tread Wear Indicator) positioned on the tread of the tyre.
The height of the TWI was defined according to a study based on safety and cost savings for the user. However, in case there is no TWI, MARANGONI INDUSTRIAL TYRES recommends to replace the tyres for safety reasons when 10% of the original tread is worn.

General conditions of sales available on
WWW.MARANGONIINDUSTRIALTYRES.IT

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