1. Industry Standard

Bridgestone Corporation has developed a wide range of tire patterns and specifications, so that the proper Off-the-Road tire can be matched to any vehicle, service, or operating conditions.

Bridgestone’s Off-the-Road tires are designed and produced to meet the commonly accepted international standards, those set by the TRA (Tire and Rim Association) in the U.S.A., by the ETRTO (European Tire and Rim Technical Organization) in Europe and/or by the JATMA (Japan Automobile Tire Manufacturers’ Association) in Japan*.

Load capacities, inflation pressures, dimensions such as overall tire diameter and width, as well as the relative rims and tube valves follow these standards.

If a tire is to be used for a purpose other than that for which it is originally intended, please consult Bridgestone Corporation for advice.

*Where differences exist between the TRA, ETRTO and JATMA standards, Bridgestone selects the most applicable.

2. Application Vehicle Matching Chart

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>VEHICLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthmover Service</td>
<td>Dump Trucks, Motor Scrapers, Articulated Dump Trucks, Other Mining Trucks, etc.</td>
</tr>
<tr>
<td>Grader Service</td>
<td>Motor Graders</td>
</tr>
<tr>
<td>Loader &amp; Dozer Service</td>
<td>Front-End Loaders, Back-hoe Loaders, Skid Steer Loaders, Dozers, Underground Trucks, Load-Haul-Dumps, etc.</td>
</tr>
<tr>
<td>Mobile Crane Service (High-Speed)</td>
<td>All-Terrain Cranes, High-Speed Vehicles, etc.</td>
</tr>
<tr>
<td>Industrial Service</td>
<td>Straddle Carriers, Aircraft Towing Tractors, Container Stackers, Counter-balanced Lift Trucks, Mobile Crushers, Log Stackers, etc.</td>
</tr>
<tr>
<td>Logging Service</td>
<td>Log-Skidders</td>
</tr>
<tr>
<td>Compactor Service</td>
<td>Compactor, Road Rollers</td>
</tr>
<tr>
<td>Sand Service</td>
<td>Sand Service Trucks</td>
</tr>
<tr>
<td>Underground Service</td>
<td>Underground Trucks, Load Haul Dumps, Drilling Jumbo</td>
</tr>
</tbody>
</table>
1. Structural Diagram

Off-The-Road Radial Tire (ORR)

Off-The-Road Bias Tire (ORS)

2. Definitions

2.1 Tire Size

The size of each tire is indicated by nominal width and rim diameter in inches and mm. Radial structure is indicated by the letter “R”. For some tire the aspect ratio is indicated by percentage.

Example

Radial Tire : 40.00R57, 33.25R35, 445/95R25
Bias Tire : 21.00-35, 45/65-45

2.2 Star Rating, Ply Rating and Load Index

The load capacity of a tire is indicated by the star rating (in case of radial tire) and the ply rating (in case of bias tire).

The load index is applied in countries where the ETRTO standards are used.

2.3 Overall Diameter (OD)

“Overall Diameter” is twice the section height of a new tire, plus the nominal rim diameter, including 24-hour inflation growth.

2.4 Overall Width (OW)

“Overall Width” is the width of a new tire, including 24-hour inflation growth, and including protective side ribs, bars or decorations.

2.5 Section Width (SW)

“Section Width” is the width of a new tire, including 24-hour inflation growth and including normal sidewalls, but not including protective side ribs, bars, or decorations.

2.6 Static Loaded Radius and Width (SLR, SLW)

“Static Loaded Radius” is the shortest distance from the axle center to the contact surface of a tire and “Static Loaded Width” is the overall width of a tire, mounted on the approved rim at the specified inflation pressure and placed still and vertically on a flat board, and loaded with the specified load.

2.7 Original Tread Depth (OTD)

“Original Tread Depth” is the tread depth of a new tire measured at the point of tread-indicator where available or one-fourth the width of the tire crown section from the crown center, including 24-hour inflation growth.
### 3. Classification

#### 3.1 Uses and Characteristics of Off-The-Road Tires

The characteristics that Off-The-Road tires must possess differ according to their function and the type of vehicles they are mounted on.

<table>
<thead>
<tr>
<th>Type/Service</th>
<th>Function</th>
<th>Vehicles</th>
<th>Main tire characteristics required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grader</td>
<td>Grading, Leveling</td>
<td>Graders</td>
<td>Traction, Maneuverability, (directional stability)</td>
</tr>
<tr>
<td>Loader and dozer</td>
<td>Loading and dozing</td>
<td>Loaders, Bulldozers</td>
<td>Cut-resistance, Wear-resistance</td>
</tr>
<tr>
<td>Compactor</td>
<td>Compacting</td>
<td>Oil-resistance, Cut-resistance, Wear-resistance, Stability</td>
<td></td>
</tr>
<tr>
<td>Logging</td>
<td>Log-skidding</td>
<td>Log-skidders</td>
<td>Traction, Flotation, Cut-resistance</td>
</tr>
<tr>
<td>Mobile crane (High-speed)</td>
<td>High-speed Travelling</td>
<td>All-Terrain Cranes</td>
<td>Heat-resistance, Wear-resistance, Traction</td>
</tr>
<tr>
<td>Industrial</td>
<td>Handling &amp; Towing</td>
<td>Handling &amp; Towing Equipments, LHD, Drilling Jumbo</td>
<td>Uneven wear, Wear-resistance, Stability</td>
</tr>
<tr>
<td>Underground</td>
<td>Underground</td>
<td>Underground Trucks</td>
<td>Cut-resistance, Wear-resistance</td>
</tr>
</tbody>
</table>

---

#### 3.2 TRA Classification and Corresponding Bridgestone Off-The-Road Tires

Off-The-Road tires are classified by the TRA as follows, and the names of the tread patterns of the corresponding Bridgestone Off-The-Road tires are described below.

<table>
<thead>
<tr>
<th>TRA Classification</th>
<th>Tread Type</th>
<th>Bridgestone Tread Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>E= Earthmover (Haulage Service)</td>
<td></td>
<td>VUT VKT VSB, VFT VHS VSW, VLT VMT VTS, VRL VRF, L317 VTLS VSN TMTS, VMTP VZTS VZTP VZTB, VELS VRLS VREP VRDP, VRPS VREVP VRWP VRQP, VSJ</td>
</tr>
<tr>
<td>G=Grader</td>
<td></td>
<td>VU VSW, GL FG, RL</td>
</tr>
<tr>
<td>L=Loader &amp; Dozer (Slow Speed Service)</td>
<td></td>
<td>VLT VJTS VTSN, GL FG, RL, LS</td>
</tr>
<tr>
<td>C=Compactor Service</td>
<td></td>
<td>RR AL2</td>
</tr>
<tr>
<td>LS=Logging Service (High-Speed)</td>
<td></td>
<td>VGB VHS VHS2 VSW</td>
</tr>
<tr>
<td>Mobile Crane Service</td>
<td></td>
<td>VGB VCH VCHD VCHR VCHP, VCHS VELS VRLS VSDL VSMD, GL FG, RL, RLS, ELS2, STMS2</td>
</tr>
<tr>
<td>Industrial Service</td>
<td></td>
<td>VGB VCH VCHD VCHR VCHP, VCHS VELS VRLS VSDL VSMD, GL FG, RL, RLS, ELS2, STMS2</td>
</tr>
<tr>
<td>Underground Service</td>
<td></td>
<td>VSND VSN TORM VSDL, VMDL VSDL VSMD VSMS2, STMS DL</td>
</tr>
</tbody>
</table>

**Design Tread-Depth**

- **100%**
  - Regular Tread: E-2, E-3, E-4, L-2/L-3, G-2/G-3
  - Deep Tread: L-4
  - Extra Deep Tread: L-5/L-5S

- **150%**
  - Regular Tread: E-2, E-3, E-4, L-2/L-3, G-2/G-3
  - Deep Tread: L-4
  - Extra Deep Tread: L-5/L-5S

- **250%**
  - Regular Tread: E-2, E-3, E-4, L-2/L-3, G-2/G-3
  - Deep Tread: L-4
  - Extra Deep Tread: L-5/L-5S
4. Tire Markings (ORR)

### 4.1 Type of Tire Size Designation

<table>
<thead>
<tr>
<th>Type</th>
<th>Tire Size</th>
<th>Star Rating</th>
<th>Rim Diameter (inches)</th>
<th>Radial Structure</th>
<th>Section Width (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>27.00 R 49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wide Base</td>
<td>33.25 R 35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super Wide Base</td>
<td>40 / 65 - 39 30PR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 Type of Tire Structures Classified by Service and Designated by Bridgestone

Each Bridgestone tire has a Bridgestone code number on the tire sidewall according to its specifications.

#### Tire Structures Classified by Type of Service and Bridgestone’s Designations

<table>
<thead>
<tr>
<th>Service</th>
<th>BS Code No.</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthmover Service (E)</td>
<td>1A</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>2A</td>
<td>Cut-resistant</td>
</tr>
<tr>
<td></td>
<td>3A</td>
<td>Heat-resistant</td>
</tr>
<tr>
<td>Grader Service (G)</td>
<td>1A</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>2A</td>
<td>Cut-resistant</td>
</tr>
<tr>
<td>Loader &amp; Dozer Service (D)</td>
<td>2V*</td>
<td>Special cut-resistant (Type “V”)</td>
</tr>
<tr>
<td></td>
<td>2Z*</td>
<td>Special cut-resistant (Type “Z”)</td>
</tr>
<tr>
<td>Logging Service (S)</td>
<td>2V</td>
<td>Cut-resistant</td>
</tr>
<tr>
<td>Subterranean Service (L)</td>
<td>2A</td>
<td>Cut-resistant</td>
</tr>
</tbody>
</table>

**NOTES:**
* Bias Tire Only
**2V tires are standard for log skidder service since the possibility of the cutting is high in log skidder operations.

### Steel Breaker Tire

**Steel Breaker Bias Tire**

Steel Breaker Off-The-Road tires feature breaker material which is changed from nylon to steel in order to resist cutting and cut bursting. Bridgestone Steel Breaker Off-The-Road tires are widely used on loaders at mining and quarry sites, loaders and underground trucks in underground mines, and also on log loaders.

**Side Steel Breaker Bias Tire**

In this tire the side steel breaker extends to the sidewall of the tire to protect it against damage. The construction is similar to that described above.
4.3 Load Index

The LOAD INDEX is an international numerical code for the maximum load a tire can carry at the speed indicated by its speed symbol under service conditions specified by Bridgestone.

4.4 Speed Symbol

The SPEED SYMBOL indicates the speed at which the tire can carry a load corresponding to its load index under service conditions specified by Bridgestone.

4.5 Conversion Table: Star Rating to Ply Rating

<table>
<thead>
<tr>
<th>Service</th>
<th>Tire Size</th>
<th>Star Rating</th>
<th>Corresponding Ply Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grader</td>
<td>14.00R24</td>
<td>1</td>
<td>up to 16</td>
</tr>
<tr>
<td></td>
<td>16.00R24</td>
<td>1</td>
<td>up to 16</td>
</tr>
<tr>
<td></td>
<td>17.5R25</td>
<td>1</td>
<td>up to 16</td>
</tr>
<tr>
<td>Loader</td>
<td>15.5R25</td>
<td>1</td>
<td>up to 16</td>
</tr>
<tr>
<td></td>
<td>20.5R25</td>
<td>2</td>
<td>up to 28</td>
</tr>
<tr>
<td></td>
<td>23.5R25</td>
<td>2</td>
<td>up to 36</td>
</tr>
<tr>
<td></td>
<td>26.5R25</td>
<td>1</td>
<td>up to 28</td>
</tr>
<tr>
<td></td>
<td>29.5R25</td>
<td>2</td>
<td>up to 36</td>
</tr>
<tr>
<td></td>
<td>29.5R29</td>
<td>1</td>
<td>up to 34</td>
</tr>
<tr>
<td></td>
<td>30.5R29</td>
<td>2</td>
<td>up to 54</td>
</tr>
</tbody>
</table>

| General Information

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Star Rating</th>
<th>Corresponding Ply Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.00R57</td>
<td>1</td>
<td>up to 16</td>
</tr>
<tr>
<td>21.00R35</td>
<td>1</td>
<td>up to 24</td>
</tr>
<tr>
<td>18.00R33</td>
<td>2</td>
<td>up to 36</td>
</tr>
<tr>
<td>18.00R25</td>
<td>1</td>
<td>up to 24</td>
</tr>
<tr>
<td>16.00R25</td>
<td>1</td>
<td>up to 36</td>
</tr>
<tr>
<td>15.5R25</td>
<td>1</td>
<td>up to 36</td>
</tr>
<tr>
<td>14.00R24</td>
<td>2</td>
<td>up to 40</td>
</tr>
<tr>
<td>13.00R24</td>
<td>2</td>
<td>up to 44</td>
</tr>
<tr>
<td>12.00R24</td>
<td>2</td>
<td>up to 44</td>
</tr>
<tr>
<td>11.00R24</td>
<td>2</td>
<td>up to 44</td>
</tr>
<tr>
<td>10.00R24</td>
<td>2</td>
<td>up to 44</td>
</tr>
</tbody>
</table>

Note: Due to the practice of altering inflation pressure to improve flotation on sand, Bridgestone does not apply a star rating to tire size 21.00R25 VSJ.
Earth-moving, mining and logging tires have become increasingly important with the development of large construction vehicles. The primary task of these heavy-duty tires is to haul heavy loads faster, over longer distances. This heavy hauling inevitably causes heat build-up in the tires. As tires have limited resistance to heat, deterioration of the tire may occur at an early stage of operation if used beyond the rated TKPH. Accordingly, it is necessary when selecting tires, to determine the amount of work which will keep the tire within a safe range to avoid over-heating when the vehicle is operated under given conditions. The amount of work done under the given conditions and within a safe range is shown as “Operating Ton-Kilometer-Per-Hour (Operating TKPH)” which can be determined by the following formula:

$$\text{TKPH} = \frac{\text{Tire Load (Empty) + Tire Load (Loaded)}}{\text{Round Trip Distance (km)} \times \text{Number of Cycles per Shift}} \times \text{Total Hours of Operation per Shift}$$

*Calculation formula of “Operating TKPH” may be different between tire manufacturers.

5.2 Tire TKPH

Tire TKPH varies depending on the tire’s design (size, tread pattern and the type of compound). A High TKPH tire generates less heat than that of lower TKPH tire. However, the lower TKPH tire will have greater cut and wear resistance than the higher TKPH one.

The TKPH method is applicable in the following situations.

1. One way distance: within 16 km (10 miles)
   - When haul length exceeds 16 km one way, consult a Bridgestone Representative.
   - If the round-trip distance is less than 5km (3miles), Tire TKPH figures can be increased by 12%.

2. Ambient temperature: 38˚C (100˚F)
   - For ambient temperatures other than 38˚C (100˚F), the Tire TKPH rating should be revised based on the following formula.

   - Radial Tire
     $$\text{Revised TKPH rating} = \left(1 + \alpha \times (38˚C - \text{Max. Ambient Temperature (˚C)})\right) \times \text{Tire TKPH}$$
     - Below 27.00 (33.5) inches in Section Width: \(\alpha = 0.010\)
     - Above 30.00 (37.25) inches in Section Width: \(\alpha = 0.009\)
   - Bias Tire
     $$\text{Revised TKPH rating} = \left(1 + \alpha \times (38˚C - \text{Max. Ambient Temperature (˚C)})\right) \times \text{Tire TKPH}$$
     - Below 27.00 (33.5) inches in Section Width: \(\alpha = 0.006\)
     - Above 30.00 (37.25) inches in Section Width: \(\alpha = 0.005\)

*Revising coefficient: The value is shown in the following table.
### Revising Coefficient

<table>
<thead>
<tr>
<th>Ambient Temperature</th>
<th>Bias Tire Type Section</th>
<th>Radial Tire Type Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>14˚C</td>
<td>27.00 and below</td>
<td>27.00 and below</td>
</tr>
<tr>
<td>15˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>16˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>18˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>20˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>22˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>24˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>26˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>28˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>30˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>32˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>34˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>36˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>38˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>40˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>42˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>44˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>46˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>48˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>50˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
<tr>
<td>52˚C</td>
<td>30.00 and over</td>
<td>30.00 and over</td>
</tr>
</tbody>
</table>

For all ambient temperatures below 14˚C (57˚F), the same TKPH value as calculated at 14˚C (57˚F) should be used.

(3) **Maximum speed**

a. **Radial Tire**

For 65km/h (40mph) maximum speed, the loads must be reduced 12% with no change in inflation pressure.

b. **Bias Tire**

When the maximum speed exceeds 50 km/h (30 mph) under loaded conditions, the following formula is used:

\[
\text{Revised TKPH Rating} = \frac{\text{Max. speed}}{\text{Tire TKPH}} \times 226
\]

Example:

The TKPH Rating for 21.00-35, 36PR RLS E1A is 226; if the tire is to run at 60 km/h when loaded.

<table>
<thead>
<tr>
<th>Tempeature</th>
<th>Max. Speed</th>
<th>Revised TKPH Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>50˚C</td>
<td>60 km/h</td>
<td>188</td>
</tr>
</tbody>
</table>

(4) To obtain the TKPH(TMPH) for type 2A-LS, multiply type 2A rating by 0.8.

(5) The respective types of vehicles are subject to the following speed limitations.

#### Maximum Speed

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Maximum Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dump &amp; Scrapper</td>
<td>50 km/h (30 mph)</td>
</tr>
<tr>
<td>Grader</td>
<td>40 km/h (25 mph)</td>
</tr>
<tr>
<td>Loader &amp; Dozer</td>
<td>10 km/h (5 mph)</td>
</tr>
</tbody>
</table>

### 6. Bridgestone MASTERCORE

**MASTERCORE** tires are engineered for ultra-high durability with performance that can be customized to various mine sites and operations. These tires can be customized to meet the needs of any site so you can run your mines more efficiently, with greater productivity.

With currently available MASTERCORE tires, users can customize the usage: Up to 5% more durability, 10% faster speeds, or 15% greater payloads.*1 MASTERCORE tire’s flexibility is made possible by new compounds and a revolutionary steel cord with new anti-rust and adhesion coatings.

#### 6.1 Bridgestone MASTERCORE

**MASTERCORE** VREV

- MASTERCORE VREV
- MASTERCORE VRWP
- MASTERCORE VRPS
- MASTERCORE VRP
- MASTERCORE VZTB

**6.2 Available Sizes and Patterns**

- 59/80R63
- 63/80R63
- 50/80R65
- 46/90R65

**6.3 Conventional vs MASTERCORE Load Capacity**

<table>
<thead>
<tr>
<th>Size</th>
<th>Recommended Load (ton)</th>
<th>Tire Type</th>
<th>80 psi</th>
<th>83 psi</th>
<th>87 psi</th>
<th>91 psi</th>
<th>94 psi</th>
<th>98 psi</th>
<th>102 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>59/80R65</td>
<td>Conventional</td>
<td>85,000</td>
<td>87,500</td>
<td>90,000</td>
<td>92,500</td>
<td>95,000</td>
<td>97,500</td>
<td>100,000</td>
<td></td>
</tr>
<tr>
<td>59/80R63</td>
<td>MasterCore</td>
<td>97,500</td>
<td>100,000</td>
<td>103,000</td>
<td>106,000</td>
<td>109,000</td>
<td>112,000</td>
<td>115,000</td>
<td></td>
</tr>
<tr>
<td>53/80R63</td>
<td>Conventional</td>
<td>82,000</td>
<td>84,000</td>
<td>86,000</td>
<td>88,000</td>
<td>91,000</td>
<td>94,000</td>
<td>96,000</td>
<td></td>
</tr>
<tr>
<td>53/90R63</td>
<td>MasterCore</td>
<td>94,000</td>
<td>96,000</td>
<td>99,000</td>
<td>102,000</td>
<td>105,000</td>
<td>108,000</td>
<td>110,000</td>
<td></td>
</tr>
<tr>
<td>50/80R65</td>
<td>Conventional</td>
<td>69,000</td>
<td>71,000</td>
<td>75,000</td>
<td>77,500</td>
<td>80,000</td>
<td>82,500</td>
<td>85,000</td>
<td></td>
</tr>
<tr>
<td>50/80R63</td>
<td>MasterCore</td>
<td>61,500</td>
<td>63,000</td>
<td>65,000</td>
<td>67,000</td>
<td>69,000</td>
<td>71,000</td>
<td>73,000</td>
<td></td>
</tr>
<tr>
<td>50/80R65</td>
<td>Conventional</td>
<td>54,500</td>
<td>56,000</td>
<td>58,000</td>
<td>60,000</td>
<td>61,500</td>
<td>63,000</td>
<td>65,000</td>
<td></td>
</tr>
<tr>
<td>46/90R65</td>
<td>MasterCore</td>
<td>63,000</td>
<td>65,000</td>
<td>67,000</td>
<td>69,000</td>
<td>71,000</td>
<td>73,000</td>
<td>75,000</td>
<td></td>
</tr>
<tr>
<td>46/90R65</td>
<td>Conventional</td>
<td>60,000</td>
<td>63,000</td>
<td>65,000</td>
<td>67,000</td>
<td>69,000</td>
<td>71,000</td>
<td>73,000</td>
<td></td>
</tr>
</tbody>
</table>

### 5.3 Proper TKPH

The average operating TKPH, calculated after several samples, should not exceed the tire TKPH rating. Exceeding the tire TKPH may result in serious tire damage or failure.
7. Subterranean Products for Underground Mines

7.1 Subterranean LHD Standard
Registered to JATMA and TRA-EDI, the Subterranean LHD Standard standardizes higher load capacity while maintaining lower air pressure. The standard table of Tire load limits at various cold inflation pressures is shown under 7.4.

7.2 Subterranean LHD (L2A) products
Subterranean LHD (L2A) products have +15% load capacity compared to D2A products at the same inflation pressure (94psi/650kPa). This performance is made possible by bead construction enhancement and belt construction optimization. In addition, VSMS2 has an upgraded sidewall structure which ensures maximum sidewall cut resistance.

- Enhanced case durability
- Enhanced Sidewall cut resistance (VSMS2 only)
- Optimized belt construction

7.3 Available Sizes and Patterns

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>TRA Code</th>
<th>Application</th>
<th>Spec</th>
<th>Star rating</th>
<th>70 psi</th>
<th>78 psi</th>
<th>80 psi</th>
<th>83 psi</th>
<th>87 psi</th>
<th>91 psi</th>
<th>94 psi</th>
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</thead>
<tbody>
<tr>
<td>26.5R25</td>
<td>VSDL</td>
<td>L5</td>
<td>Conventional</td>
<td>15,000kg</td>
<td>★</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VSMS2</td>
<td>L5S</td>
<td>Subterranean LHD</td>
<td>17,500kg</td>
<td>★★</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VSDL</td>
<td>LHDS</td>
<td>Subterranean LHD</td>
<td>22,400kg</td>
<td>★★★</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.5R29</td>
<td>VSMS2</td>
<td>L5S</td>
<td>Conventional</td>
<td>19,500kg</td>
<td>★</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VSMS2</td>
<td>LHDS</td>
<td>Subterranean LHD</td>
<td>22,400kg</td>
<td>★★</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.4 Conventional(D2A) vs Subterranean LHD(L2A) Load Capacity (based on cold inflation)

- VUT: V-STEEL ULTRA TRACTION E-2
  Non-directional pattern. Features superior traction and excellent self-cleaning. Lighter weight provides superior maneuverability and fuel consumption.

- VKT: V-STEEL K-TRACTION E-2
  Ideal for soft or muddy surfaces, offering good traction and flotation.

- VSB: V-STEEL S-BLOCK E-2
  VSB exhibits excellent traction and maneuverability. Suitable for both gravel and hard packed surfaces like paved roads. Designed for heavy-duty trucks and trailers.

Earthmover Service

- VFT: V-STEEL F-TRACTION E-2
  Provides good traction, generates low heat and assures long tread life on soft, muddy or packed surfaces.

- VHS: V-STEEL H-SERVICE E-2
  Minimum heat build-up enables high-speed operation for coal and bauxite hauling. Reducing irregular wear means a longer tread life. Suitable for rigid or bottom-type coal haulers in high TKPH operations.

- VSW: V-STEEL SNOW WEDGE E-2
  VSW is the first of its kind in snow radials, especially developed for machines used in snow removal work. This tire has excellent traction from a standing start and during acceleration as well as superior cornering and braking performance, especially on icy, packed or soft snow surfaces. VSW provides all-season service, requiring no replacement during summer and offers exceptional ability to be retreaded.
Earthmover Service

**VLT**
V-STEEL L-TRACTION
E-3

- **For ADT**
- **For Scraper**

Wide and self-cleaning tread pattern offers excellent maneuverability, traction and flotation on soft or muddy surfaces.

**VMT**
V-STEEL M-TRACTION
E-3

- **Wide Base**
- **Regular**

Normal-depth tread with a non-directional traction pattern, featuring strong resistance to heat build-up. Most suitable for hauling equipment used in coal mines, and equally applicable to operations on soft or muddy surfaces.

**VTS**
V-STEEL TRACTION-STABILITY
E-3

VTS tire offers exceptional stability, superior riding comfort, optimum traction and reduced cost per performance than the 80 series of the same tread class.

**VLTS**
V-STEEL L-TRACTION S
E-4

Offers outstanding cut resistance and long tread life on rocky or gravel surfaces in mining, quarry and construction, with superior traction.

**VSNT**
V-STEEL N-TRACTION
E-4

Unique non-directional traction pattern VSNT provides optimum traction without compromising tread life. The wide tread is our concept to minimize sidewall cuts. Applicable for underground trucks in underground mines.

**VMTS**
V-STEEL M-TRACTION S
E-4

Non-directional deep tread pattern for strong traction, especially resistant to side-slipping. High wear resistance ensures long tread life. Applicable for muddy or soft surfaces.

**VRL**
V-STEEL R-LUG
E-3

Wide Base

Tough lug-pattern VRL features excellent traction as well as good resistance to cutting and casing fatigue. Suitable for scrapers on rocky surfaces.

**VRF**
V-STEEL ROCK FAST
E-3

Regular

VRF has great wear and cut resistance and has a long tread life as an E-3 premium pattern. MASTERCORE VRF can be customized to meet the needs of any site so you can run your mines more efficiently, with greater productivity.

**L317**
V-STEEL M-TRACTION PREMIUM
E-4

This tire's features are extra-long life, superior cut resistance and excellent traction. The casing is reinforced by ★3 for heavy-duty mining trucks in cyclical operation.

**VMTP**
V-STEEL M-TRACTION PREMIUM
E-4

Non-directional extra-deep tread corresponding to E4.5 ensures long tread life and offers superior traction, especially on muddy surfaces.

**VZTS**
V-STEEL Z-TRACTION S
E-4

Deep tread pattern with sidewall protectors. Specifically designed for giant dump trucks. Non-directional deep tread pattern ensures excellent traction and strong resistance to side-slipping as well as long life and cut resistance on rocky surfaces.

**VZTP**
V-STEEL Z-TRACTION PREMIUM
E-4

Extra-deep tread pattern with sidewall protectors. VZTP focuses especially on traction, extra-long tread life and superior cut resistance. Narrow center tread grooves, which reduce tread block movement and help with heat dissipation, along with wider side lugs, achieve the perfect balance of opposing performance targets: traction, tread life, and heat resistance. VZTP can be the best solution for large, rigid dump trucks working on muddy surfaces.
Deep tread pattern with sidewall protectors. Suited for abrasive roads, such as rocky, gravel or packed surfaces. High resistance to cutting, chipping and shock damage.

Rock-deep tread with tough lug and sidewall protectors. High resistance to cutting and chipping for long tread life. Specially designed for dump trucks engaged in earthmoving.

Extra-Deep rock tread with sidewall protectors is the main feature of VRDP, enabling extended tread life and superior cut resistance without compromising resistance to heat build-up. VRDP is suitable for giant rigid dump trucks. Can be used on abrasive or rocky road surfaces and can reduce cost per performance of standard E-4 rock patterns.

Without sacrificing wear resistance compared to the current standard pattern, VREP minimizes heat generation and achieves the highest TKPH among current E-4 rock patterns. This makes it suitable for giant rigid dump trucks running at high speeds which can cause extreme heat buildup inside the tire.

The VREV pattern achieves minimized heat generation that allows maximum workload. MASTERCORE VREV can be customized to meet the needs of any site so you can run your mines more efficiently with greater productivity in addition to extra protection against wear, cuts and penetration.

New tread pattern designed specifically to provide higher wear resistance. Grooves reduce pattern strain and provide additional heat reduction. MASTERCORE VRWP can be customized to meet the needs of any site so you can run your mines more efficiently with greater productivity in addition to extra protection against wear, cuts and penetration.

New tread pattern designed specifically to provide maximum traction and increased airflow which reduces temperature and extends tire life. Full width grooves aid traction and increase material ejection for superior grip. MASTERCORE VZTB can be customized to meet the needs of any site so you can run your mines more efficiently with greater productivity in addition to high traction/grip performance.

Extra-thick tread pattern VRQP assures longer tread life and superior cut resistance. Greatly reduces tire costs for replacement. Specially developed for mid-size rigid dump trucks working in quarries and other tough operations.

The unique tread design ensures maximum flotation and traction. VSJ is designed with a steel radial construction for operating on desert or soft ground, as well as paved roads.
Non-directional pattern VUT features superior traction and excellent self-cleaning. Lighter weight provides superior maneuverability and fuel consumption.

VSW is the first of its kind in snow radials, especially developed for machines used in snow removal work. This tire has excellent traction from a standing start and during acceleration as well as superior cornering and braking performance, especially on icy, packed or soft snow surfaces. VSW provides all-season service, requiring no replacement during summer and offers exceptional ability to be retreaded.

Next-generation pattern reduces vibrations, and achieves higher riding comfort plus VMT’s long-standing grip and long tread life. VJT is suitable for construction and general duties.

VSW is the first of its kind in snow radials, especially developed for machines used in snow removal work. This tire has excellent traction from a standing start and during acceleration as well as superior cornering and braking performance, especially on icy, packed or soft snow surfaces. VSW provides all-season service, requiring no replacement during summer and offers exceptional ability to be retreaded.

Next-generation pattern reduces vibrations, and achieves higher riding comfort plus VMT’s long-standing grip and long tread life. VJT is suitable for construction and general duties.

VTS tire offers exceptional stability, superior riding comfort, optimum traction and reduced cost per performance than the 80 series of the same tread class. Designed primarily for wheeled loaders as the preferred line.
Optimized sidewall shape ensures maximum sidewall cut resistance.

VSMS2 boost longer tire life compared to VSMS. Designed for operating over severe rocky surfaces, in underground mines, open pits and quarries.

Newly developed technology assures excellent performance, especially for mobile crane service (on-road conditions). New tread rubber achieves extra-long life and ideal tread pattern (closed shoulder, variable pitches) reduces noise level. Suitable for all-terrain cranes.

❖ DOT approved

VSMS2 is the first of its kind in snow radials, especially developed for machines used in snow removal work. This tire has excellent traction from a standing start and during acceleration as well as superior cornering and braking performance, especially on icy, packed or soft snow surfaces. VSW provides all-season service, requiring no replacement during summer and offers exceptional ability to be retreaded.

❖ DOT approved

Extra-deep tread designed for severe or rocky surfaces, offering excellent traction, stability and a comfortable ride. Specially designed sidewall provides extended protection from cutting. For use in underground mines, open pits and quarries.

VMDL is applied Subterranean LHD Standard for use in underground mines. Extra-deep tread designed for severe or rocky surfaces, offering excellent traction, stability and a comfortable ride. Specially designed sidewall provides extended protection from cutting.

Block pattern with normal-depth tread suitable for higher speeds and longer transport operations on paved or packed roads with strong resistance to heat build-up and irregular wear. On rough terrain, this tire offers strong traction and flotation. Especially applicable to fire engines at airports or all-terrain cranes.

❖ DOT approved

VMDL is applied Subterranean LHD Standard for use in underground mines. Extra-deep tread designed for severe or rocky surfaces, offering excellent traction, stability and a comfortable ride. Specially designed sidewall provides extended protection from cutting.

Extra-deep tread for excellent traction, comfortable ride, superior cut resistance and long tread life. The wide tread is our concept to minimize sidewall cuts. For use in underground mines, open pits and quarries.

Extra super deep tread designed for severe or rocky surfaces, offering excellent traction, stability and a comfortable ride. Specially designed sidewall provides extended protection from cutting. For use in underground mines, open pits and quarries.

VSW is the first of its kind in snow radials, especially developed for machines used in snow removal work. This tire has excellent traction from a standing start and during acceleration as well as superior cornering and braking performance, especially on icy, packed or soft snow surfaces. VSW provides all-season service, requiring no replacement during summer and offers exceptional ability to be retreaded.

❖ DOT approved

Bridgestone’s newest addition to their range of premium Off-the-road crane tyres is built to deliver longest lasting heavy-duty performance. Combining outstanding durability and long wear life with excellent on-road performance, this advanced all-terrain crane tyre has all the ingredients to lift both your payload and your business to new heights.

❖ DOT approved

VHBT is designed for all-terrain cranes. Featuring long tread life thanks to a wear-resistant tread rubber compound. Great flotation and traction due to the unique tread pattern. And reliable durability and high resistance to cutting and heat build-up.

❖ DOT approved
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRLS</td>
<td>Designed for container handling equipment, such as straddle carriers. Features great resistance to heat build-up for high speed operations.</td>
</tr>
<tr>
<td>VCH</td>
<td>Features extra-long life, thanks to newly developed tread compound and smooth wear due to optimized contact pressure. Specially designed for container handling equipment, such as straddle carriers, container stackers, etc.</td>
</tr>
<tr>
<td>VCHS</td>
<td>Newly developed all-steel radial casings improve operational stability and safety. The unique pattern is designed for longer tread life by preventing irregular wearing. Specially designed for container handling equipment, such as container stackers.</td>
</tr>
<tr>
<td>VCHP</td>
<td>The VCHP has an exceptionally longer tread life with superior driving comfort and enhanced overall driving efficiency. Specially optimized for Straddle Carrier operation.</td>
</tr>
<tr>
<td>VCHR</td>
<td>The VCHR has an exceptionally longer tread life with superior driving comfort and enhanced overall driving efficiency. Specially developed for Straddle Carrier operation.</td>
</tr>
<tr>
<td>VCHD</td>
<td>Features extra-long life, thanks to newly developed tread compound and smooth wear due to optimized contact pressure. Specially designed for container handling equipment, such as straddle carriers, container stackers, etc.</td>
</tr>
<tr>
<td>VSDL</td>
<td>Extra-deep tread with a reinforced all-steel radial casing for heavy reach stackers.</td>
</tr>
<tr>
<td>VELS</td>
<td>Designed for container handling equipment. Features great resistance to heat build-up for high speed operations.</td>
</tr>
<tr>
<td>VHB</td>
<td>Features exceptional casing durability. Specially designed for mobile harbor cranes and towing tractors.</td>
</tr>
<tr>
<td>VSMS</td>
<td>Smooth extra-deep tread with a reinforced all-steel radial casing. For container handling equipment especially on abrasive concrete surfaces.</td>
</tr>
</tbody>
</table>

**Industrial Service**
## 2. Application

### Earthmover Service

**Rigid dump trucks / Bottom dump trucks**

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>335/80 R 20</td>
<td>T/L</td>
<td></td>
</tr>
<tr>
<td>365/80 R 20</td>
<td>T/L</td>
<td></td>
</tr>
<tr>
<td>405/70 R 20</td>
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<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLT(E3)</td>
<td>20.5 R 25</td>
<td>T/L MS</td>
</tr>
<tr>
<td>VLT(E3)</td>
<td>23.5 R 25</td>
<td>T/L MS</td>
</tr>
<tr>
<td>75/65(55/65) R 25</td>
<td>T/L MS</td>
<td></td>
</tr>
<tr>
<td>VLT(E3)</td>
<td>26.5 R 25</td>
<td>T/L MS</td>
</tr>
<tr>
<td>VLT(E3)</td>
<td>29.5 R 25</td>
<td>T/L MS</td>
</tr>
<tr>
<td>VLT(E3)</td>
<td>33.25 R 29</td>
<td>T/L MS</td>
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<td>37.25 R 35</td>
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<td>VLT(E3)</td>
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<td>VLT(E3)</td>
<td>875/65 R 29</td>
<td>T/L MS</td>
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<tr>
<td>VMT(E3)</td>
<td>30.00 R 51</td>
<td>T/L MS</td>
</tr>
<tr>
<td>VMT(E3)</td>
<td>33.00 R 51</td>
<td>T/L MS</td>
</tr>
<tr>
<td>VMT(E3)</td>
<td>40.00 R 57</td>
<td>T/L MS</td>
</tr>
</tbody>
</table>

**VHS:** multiple star rating (MS) or tubeless type (T/L)

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
</table>

*VSW(E2)*

<table>
<thead>
<tr>
<th>Size</th>
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<th>Star Rating</th>
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</thead>
<tbody>
<tr>
<td>20.5 R 25</td>
<td>T/L</td>
<td></td>
</tr>
<tr>
<td>23.5 R 25</td>
<td>T/L</td>
<td></td>
</tr>
<tr>
<td>29.5 R 25</td>
<td>T/L</td>
<td></td>
</tr>
<tr>
<td>33.25 R 25</td>
<td>T/L</td>
<td></td>
</tr>
</tbody>
</table>

*T/T: Tube Type  T/L: Tubeless Type  MS: Multiple Star Rating

*VSW is especially designed for snow surface operations.*

### Articulated dump trucks

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
</table>

| VMP(E4)     | 12.00 R 24 | T/L MS |
| VMP(E4)     | 18.00 R 33 | T/L MS |
| VMP(E4)     | 21.00 R 35 | T/L MS |
| VMP(E4)     | 21.00 R 35 | T/L MS |
| VMP(E4)     | 24.00 R 35 | T/L MS |
| VMP(E4)     | 27.00 R 49 | T/L MS |
| VMP(E4)     | 33.00 R 51 | T/L MS |
| VMP(E4)     | 46.90 R 57 | T/L MS |

### Off road trucks

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
</table>

| VMP(E4)     | 14.00 R 24 | T/L MS |
| VMP(E4)     | 18.00 R 33 | T/L MS |
| VMP(E4)     | 21.00 R 35 | T/L MS |
| VMP(E4)     | 21.00 R 35 | T/L MS |
| VMP(E4)     | 24.00 R 35 | T/L MS |
| VMP(E4)     | 27.00 R 49 | T/L MS |
| VMP(E4)     | 30.00 R 51 | T/L MS |
| VMP(E4)     | 33.00 R 51 | T/L MS |
| VMP(E4)     | 36.00 R 51 | T/L MS |
| VMP(E4)     | 37.00 R 57 | T/L MS |

### Scrapers

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
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| VRPS(E4)     | 27.00 R 49 | T/L MS |

### VTRP(E4)

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Star Rating</th>
</tr>
</thead>
</table>

| VRPS(E4)     | 33.00 R 51 | T/L MS |
| VRPS(E4)     | 42.90 R 57 | T/L MS |

*Please see P.10 for more details.*

---

**HEAT RESISTANT**

**CUT RESISTANT**
### Grader Service

- **HEAT RESISTANT**
- **CUT RESISTANT**

#### Size | Type | Star Rating
--- | --- | ---
**VUT(G2)** | 13.00 R 25 TG | T/L | 1
14.00 R 25 TG | T/L | 1
15.5 R 25 | T/L | 1
17.5 R 25 | T/L | 1
20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1

* **VSW**

- 14.00 R 25 TG | T/L | 1

* **VJT**

- 20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1

* **VMTS(G4)**

- 14.00 R 24 TG | T/L | 1

* **VRS** is especially designed for snow surface operations.

---

### Loader & Dozer Service

- **HEAT RESISTANT**
- **CUT RESISTANT**

#### Size | Type | Star Rating
--- | --- | ---
**VUT(L2)** | 35R05 R 20 | T/L | 1
36R05 R 20 | T/L | 1
40R05/1 R 20 | T/L | 1
5.5 R 25 | T/L | 1
7.5 R 25 | T/L | 1
10.5 R 25 | T/L | 1
12.5 R 25 | T/L | 1
17.5 R 25 | T/L | 1
20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1

* **VUT(L3)**

- 55R05 R 25 | T/L | 1
65R05 R 25 | T/L | 1
75R05 R 29 | T/L | 1
875R05 R 29 | T/L | 2

* **VLT(L4)**

- 20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1
875R05 R 29 | T/L | 1

* **VST(L4)**

- 26.5 R 25 | T/L | 1
29.5 R 25 | T/L | 1
29.5 R 25 | T/L | 2
29.5 R 25 | T/L | 3
29.5 R 25 | T/L | 4
35R05 R 33 | T/L | 2
45R05 R 45 | T/L | 2

* **VST(L5)**

- 23.5 R 25 | T/L | 1
26.5 R 25 | T/L | 1
29.5 R 25 | T/L | 1
29.5 R 25 | T/L | 2
35R05 R 33 | T/L | 1

* **VST(L5)**

- 8.25 R 15 | T/T | 1
10.00 R 15 | T/T | 1
14.5 R 15 | T/T | 2
12.00 R 20 | T/T | 2

* **VST(L5)**

- 15.5 R 25 | T/L | 1
17.5 R 25 | T/L | 1
20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1
26.5 R 25 | T/L | 1
29.5 R 25 | T/L | 2

- **VST(L5)**

- 9.00 R 20 | T/T | 2
12.00 R 20 | T/T | 2
12.00 R 24 | T/T | 2
14.00 R 24 | T/T | 2
17.5 R 25 | T/L | 1
18.00 R 25 | T/L | 1
20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1
26.5 R 25 | T/L | 1
29.5 R 25 | T/L | 2

* **VST(L5)**

- 14.00 R 20 | T/T | 2
45R05 R 45 | T/T | 2
35R05 R 33 | T/T | 1

* **VST(L5)**

- 8.25 R 15 | T/T | 2
10.00 R 15 | T/T | 2
14.5 R 15 | T/T | 2
12.00 R 20 | T/T | 2

* **VST(L5)**

- 15.5 R 25 | T/L | 1
17.5 R 25 | T/L | 1
20.5 R 25 | T/L | 1
23.5 R 25 | T/L | 1
26.5 R 25 | T/L | 1
29.5 R 25 | T/L | 2

---

* **VST**

- For Semi-Drop Center Rim

* **VSTNT**

- (Please see P.10 for more details.)

---

**T/L**: Tubeless Type  
**T/T**: Tube Type  
**MS**: Multiple Star Rating (1+1+2)  
**MT**: Multiple Star Rating (1+2+4)  
**TG**: For Semi-Drop Center Rim  

* **VST** is especially designed for snow surface operations.
### Underground Service

- **VSNT**
- **VSDT**
- **VSDL**
- **VMDL**

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
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<tbody>
<tr>
<td>26.5 R 25</td>
<td>T/L</td>
</tr>
<tr>
<td>29.5 R 29</td>
<td>T/L</td>
</tr>
<tr>
<td>35/65 R 33</td>
<td>T/L</td>
</tr>
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</table>

### Mobile Crane Service (High-Speed)

- **VGT**
- **VHS**
- **VHB**

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<tr>
<td>170E 445/80 R 25</td>
<td>T/L</td>
</tr>
<tr>
<td>170E 385/95 R 24</td>
<td>T/L</td>
</tr>
<tr>
<td>170F 385/95 R 24</td>
<td>T/L</td>
</tr>
<tr>
<td>177E 445/95 R 25</td>
<td>T/L</td>
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<tr>
<td>177E 385/95 R 24</td>
<td>T/L</td>
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<tr>
<td>186E 505/95 R 25</td>
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<td>179E 525/80 R 25</td>
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<td>176F 525/80 R 25</td>
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### Size Type

- **VMDL** (LHD5) Subterranean LHD(L2A)

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<td>T/L</td>
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### T:T/Tube Type

- **T/L: Tubeless Type**

- **MS: Multiple Star Rating (1/2) MT: Multiple Star Rating (2/4)**

---

*VSW is especially designed for snow surface operations.*

- **T/T: Tube Type**
- **T/L: Tubeless Type**

---

<table>
<thead>
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<td>29.5 R 29</td>
<td>T/L</td>
</tr>
<tr>
<td>39/65 R 33</td>
<td>T/L</td>
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### Industrial Service

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<tr>
<th>Lift trucks, Empty container handlers</th>
<th>Loaded container handlers</th>
<th>Straddle carriers</th>
<th>Harbor cranes</th>
<th>Automated guided vehicles</th>
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<td><img src="image" alt="Loaded container handler" /></td>
<td><img src="image" alt="Straddle carrier" /></td>
<td><img src="image" alt="Harbor crane" /></td>
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<td></td>
<td>16.00 R 25 T/L #2</td>
</tr>
<tr>
<td></td>
<td>18.00 R 25 T/L #3</td>
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<tr>
<td>VCH</td>
<td>12.00 R 20 T/T #3</td>
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<td>12.00 R 24 T/T #2</td>
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<td>14.00 R 24 T/T</td>
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<td>14.00 R 24 TG</td>
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<td>18.00 R 33 T/L</td>
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### Sand Service

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<td>16.00 R 25</td>
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<tr>
<td>21.00 R 25</td>
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</table>

T/T: Tube Type  
T/L: Tubeless Type

VSJ: For Semi-Drop Center Rim
### 3. Technical Data

#### 3.1 Earthmover, Grader, Loader & Dozer Service

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>LSS</th>
<th>Star rating</th>
<th>Spec</th>
<th>TPKH</th>
<th>Approximate Inflated Dimensions</th>
<th>TOD</th>
<th>OD</th>
<th>GTD</th>
<th>Width</th>
<th>Minimum</th>
<th>Dual Spacing</th>
<th>Recommended</th>
<th>Rim Flange Height</th>
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<tr>
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<td>-</td>
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<td>-</td>
<td>7.50</td>
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<td>VSMS</td>
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<td>D2A</td>
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<td>359</td>
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<td>11.00/1.5</td>
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For the TPKH(TMPH) Ratings, please refer to page 11.

#### Tire Load Limits at Various Cold Inflation Pressures

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<tr>
<th>Size</th>
<th>Loaders</th>
<th>VSDL 10</th>
<th>15</th>
<th>VSDL 20</th>
<th>15</th>
<th>VSDL 20</th>
<th>10</th>
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</table>

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>LS/SS</th>
<th>Spec</th>
<th>TRPH</th>
<th>7MPH</th>
<th>Approximate Inflated Dim.</th>
<th>OTS</th>
<th>Minimum Dual Spacing</th>
<th>Recommended Tire Range Height</th>
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<td>E4</td>
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<td>E3A</td>
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<td>43.7 11.5 20.4 12.9 13.5</td>
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<td>VSW</td>
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<td>G2</td>
<td>G2A</td>
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<td>E3A</td>
<td>E2A</td>
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</table>

For the TRPH/7MPH Ratings, please refer to page 11.

1) Figures under the star rating denote the maximum load and inflation pressures.

2) For Loader & Dozer Service, Tire Load Limits depend on a type of the operation. Please refer to page 88.

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RADIAL TIRE 37
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Application</th>
<th>Loaders/Graders</th>
<th>Tire Load Limits at Various Cold Inflation Pressures</th>
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<tbody>
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</tbody>
</table>

For the TKPH (TMPH) Ratings, please refer to page 11. Will be discontinued.

1) Figures under the star rating denote the maximum load and inflation pressure.
2) For Load & Oiler Service, Tire Load Limits depend on the type of the operation. Please refer to page 88.
<table>
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<th>Tire Size</th>
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<th>PSI Rating</th>
<th>THA Code</th>
<th>Spec.</th>
<th>TKPH</th>
<th>Approximate Inflated Dimensions</th>
<th>OD (in)</th>
<th>OW (in)</th>
<th>SLR</th>
<th>SLW</th>
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<td></td>
<td>VIT</td>
<td>*1</td>
<td>G2, L2</td>
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<td>608</td>
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<th>THA Code</th>
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<th>Approximate Inflated Dimensions</th>
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<th>OW (in)</th>
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<th>SLW</th>
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For the TKPH(TMPH) ratings, please refer to page 11.
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<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>L/SS</th>
<th>Size Rating</th>
<th>TRC Code or Application</th>
<th>Spec.</th>
<th>Tire Load at Various Cold Inflation Pressures</th>
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<tbody>
<tr>
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<td>EA3-LA3</td>
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<td>D2A</td>
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For the TPMin/TPMx Ratings, please refer to page 11. 
* Will be discontinued.

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.
Tire Size | Pattern | L/S | Size Rating | TRA Code or Application | Spec | TMPH | Approximate Inflated Dimensions (in) | Minimum Dual Spacing | Recommended Rim/Flange Height (in) | VMS52 (LOM) |
|-------|-------|----|-----------|-----------------|------|------|------------------------------------|---------------------|-------------------------------------|------------------|

**29"**

VLT Tubeless

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Application</th>
<th>Size (in)</th>
<th>Load (lbs)</th>
<th>Tire Load Limits at Various Cold Inflation Pressures</th>
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For the TMPH/TMPH Ratings, please refer to page 11.

Will be discontinued.

For Load & Order Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.
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<th>Tire Size</th>
<th>Pattern</th>
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<th>Size Rating</th>
<th>Spec. THA Code</th>
<th>Typ. TKPH</th>
<th>Approximate Inflated Dimensions</th>
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<tr>
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<td>22D40</td>
<td>M/</td>
<td>E4</td>
<td>E09</td>
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<td>L4</td>
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<td></td>
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<td>-</td>
<td>2</td>
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<td>904</td>
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<tr>
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<td>22D42</td>
<td>M/</td>
<td>E4</td>
<td>DE4</td>
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For the TKPH/THA (TMPH) Ratings, please refer to page 11.

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<th>kPa</th>
<th>Size</th>
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<td>675</td>
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1. Figures under the star rating denote the maximum load and inflation pressures.
2. For Loader & Dozer Service, Tire Load Limits depend on a type of the operation. Please refer to page 88.
<table>
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<tr>
<th>Tire Size</th>
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<th>Size Rating</th>
<th>THA Code</th>
<th>Spec</th>
<th>TPMS</th>
<th>Approximate Inflated Dimensions</th>
<th>OTD</th>
<th>OTL</th>
<th>SLR</th>
<th>SLW</th>
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For the TPMS/TPM Ratings, please refer to page 11. Will be discontinued.

Tire Load Limits at Various Cold Inflation Pressures

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<tr>
<td>VMT</td>
<td>VMT</td>
<td>425</td>
<td>2860</td>
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<tr>
<td>VMT</td>
<td>VRLS</td>
<td>400</td>
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<td>VRMP</td>
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<td>VRPS</td>
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</table>

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.

RADIAL TIRE
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Application</th>
<th>TRA Code or Application Spec.</th>
<th>TPMP</th>
<th>Approximate Inflated Dimensions (mm)</th>
<th>Minimum Operating Pressures (kPa)</th>
<th>Recommended Tongue and Flange Height (inch)</th>
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<tr>
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<td>VRPS</td>
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<td>1323</td>
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For the TKPH/TMPH Ratings, please refer to page 11.

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Ocean Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.
3) For 55.5/80R57 VISOL, recommendation may vary depending on the vehicle. Please consult a Bridgestone Representative for details.

**For 55.5/80R57 VISOL, recommendation may vary depending on the vehicle. Please consult a Bridgestone Representative for details.**
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>L/SS</th>
<th>Size Rating</th>
<th>Spec</th>
<th>TKPH/7MPH</th>
<th>Approximate Inflated Dimensions</th>
<th>Minimum Dual Spaces</th>
<th>Recommended Rim/Range Height</th>
<th>Notes</th>
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**Notes:**
- For the TKPH/7MPH Ratings, please refer to page 11.
- ★ Will be discontinued.

---

### Tire Load Limits at Various Cold Inflation Pressures

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1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Load & Occasion Service, Tire Load Limits will depend on a type of the operation. Please refer to page 11.
3) For 60/8057 VSDL, recommendation may vary depending on the vehicle. Please consult a Bridgestone Representative for details.
### 3.2 Industrial Service

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**3.3**

Tire Size | Pattern | Li/SS | Star Rating | TIA Code or Application | Spec. | Approximate Inflation Dimensions | CTD | Minimum Dual Spacing | Recommended Load/Range Height |
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**3.4**

Tire Size | Pattern | Li/SS | Star Rating | TIA Code or Application | Spec. | Approximate Inflation Dimensions | CTD | Minimum Dual Spacing | Recommended Load/Range Height |
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### 2) Use Specifications of Industrial Service only.

**Off-the-Road Tires Used for Industrial Vehicle Applications (IDU Spec)**

1) Industrial vehicles comprise vehicles such as counter-balanced lift trucks, container handlers, straddle carriers, aircraft tow tugs, mobile crushers, log stackers, etc., and are built to handle rough surfaces, such as gravel, mud, and snow.

2) Use Specifications of Industrial Service only.

3) For Speeds exceeding 33km/h (20mph), consult a Bridgestone Representative.

4) For tire sizes and star ratings other than those listed above, consult a Bridgestone Representative.

5) For Minimum Dual Spacing information, please consult a Bridgestone Representative.

---

**For Straddle Carrier use only**

**Compliant with the ETRTO standard of industrial tires**

*Radial Tire*
3.3 Mobile Crane Service (High-Speed)

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<th>Minimum Dual Spacing</th>
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VSW, VHS, VHS High-Speed, VHB, VHS High-Speed, VSW, VHS High-Speed

3.3 Mobile Crane Service (High-Speed)

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<td>Mobile Crane Service</td>
<td>1365 3.4 15.1 624 422 23.0 450</td>
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### 3.4 Logging Service

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<th>Approximate Inflated Dimensions</th>
<th>OTD</th>
<th>Minimum Dual Spacing</th>
<th>Recommended Rim/Flange Height</th>
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<td></td>
<td></td>
<td></td>
<td>mm/ mm</td>
<td>inch/inch</td>
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<td>VSJ</td>
<td>Truck, Trailers</td>
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### 3.5 Sand Service

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<td>inch/inch</td>
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<td>mm/ mm</td>
<td>inch/inch</td>
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<td>mm/ mm</td>
<td>inch/inch</td>
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<tr>
<td>21.00R25</td>
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<td></td>
<td></td>
<td>mm/ mm</td>
<td>inch/inch</td>
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*1 When you mount 16.00R20 VSJ tubeless tire on flat base rim (10.00V), installation of "sealing ring" is recommended. For further information, please consult a Bridgestone representative.

### Tire Load Limits at Various Cold Inflation Pressures

#### Logging Service 25"

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<thead>
<tr>
<th>Size</th>
<th>Pattern</th>
<th>Application</th>
<th>Ply rating</th>
<th>Max. Speed</th>
<th>Tire Load Limits at Various Cold Inflation Pressures</th>
<th>Size</th>
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<tbody>
<tr>
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<td>kPa</td>
<td>psi</td>
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<td>Dual</td>
<td></td>
<td>3610</td>
<td>51</td>
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#### Sand Service 25"

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<th>Pattern</th>
<th>Application</th>
<th>Ply rating</th>
<th>Max. Speed</th>
<th>Tire Load Limits at Various Cold Inflation Pressures</th>
<th>Size</th>
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### Earthmover Service

<table>
<thead>
<tr>
<th>Tire</th>
<th>Pattern</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>RL</td>
<td>R-LUG E-3</td>
<td>RL’s regular tread is designed with a specially compounded rubber to resist cutting and wearing, as well as overheating. Designed for operating on rock, coal and earth surfaces.</td>
</tr>
<tr>
<td>VL2</td>
<td>V-LUG2 E-3</td>
<td>VL2 has incorporated all the benefits of RL, while increasing durability and lowering vibrations.</td>
</tr>
<tr>
<td>WL</td>
<td>W-LUG E-3</td>
<td>WL’s regular tread with wide lugs has been designed for operations on rock, coal and earth, and it resists cutting and irregular wearing on paved roads.</td>
</tr>
</tbody>
</table>

### Grader Service

<table>
<thead>
<tr>
<th>Tire</th>
<th>Pattern</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>RIB GRADER G-1</td>
<td>The RG, ideal for use on the steer axle of graders, features a rib-type pattern which minimizes side slipping and gives good maneuverability.</td>
</tr>
<tr>
<td>FG</td>
<td>FAST GRIP G-2</td>
<td>FG’s separate lugs are tapered for greater traction and self-cleaning, resulting in better driving on heavy dirt and in mud.</td>
</tr>
<tr>
<td>GL</td>
<td>G-LUG G-2</td>
<td>The GL features excellent traction and self-cleaning for easy operation in heavy dirt and mud.</td>
</tr>
</tbody>
</table>

### Loader & Dozer Service

<table>
<thead>
<tr>
<th>Tire</th>
<th>Pattern</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>R-LUG G-3</td>
<td>RL’s regular tread is designed with a specially compounded rubber to resist cutting and wearing, as well as overheating. Designed for operating on rock, coal and earth surfaces.</td>
</tr>
<tr>
<td>GL</td>
<td>G-LUG L-2</td>
<td>The GL features excellent traction and self-cleaning for easy operation in heavy dirt and mud.</td>
</tr>
<tr>
<td>FG</td>
<td>FAST GRIP L-2</td>
<td>FG’s separate lugs are tapered for greater traction and self-cleaning, resulting in better driving on heavy dirt and in mud.</td>
</tr>
<tr>
<td>VL2</td>
<td>V-LUG2 L-3</td>
<td>VL2 has incorporated all the benefits of RL, while increasing durability and lowering vibrations.</td>
</tr>
<tr>
<td>RLS</td>
<td>R-LUG S L-4</td>
<td>RLS’s deep specially compounded rubber resists cutting and overheating. Designed for operating on rock, coal and earth surfaces where serviceability and tread cutting are problems.</td>
</tr>
</tbody>
</table>
**Loader & Dozer Service**

**DL**
- D-LUG
- L-5

DL’s extra-deep and specially compounded rubber and shoulder protecting ribs ensure maximum serviceability and resistance to cutting. Designed for severe rocky surfaces, and offers excellent traction and stability.

**STMS**
- SMOOTH TREAD-MS
- L-5S

STMS’s smooth, extra-deep, and specially compounded rubber ensures maximum resistance to cutting and wearing. Designed for severe, rocky surfaces, such as those in underground mines, open pits and quarries.

**Compactor Service**

**RR**
- ROAD ROLLER
- C-1

RR’s smooth tread is specially designed for compaction materials.

**AL2**
- ALLIGATOR
- C-2

AL2’s unique tread pattern offers maximum flotation with minimum resistance to rolling, ideal for use in the desert and on soft ground.

**Industrial Service**

**RL**
- R-LUG

RL has a standard tread depth and is applicable to a wide range of industrial type machines, especially the slow wearing type, such as a rubber-tired gantry crane (RTG).

**RLS**
- R-LUG S

RLS’s features are long tread life, thanks to extra-deep tread. Unique rubber compound resists cutting and wearing on smooth surface. Suitable for empty container handlers.

**ELS2**
- E-LUG S2

Extra-deep tread corresponding to E4.5 is the main features of ELS2, which ensures longer tread life. Suitable for container handling equipment such as loaded container handlers (reach stackers), notorious for being the most severe conditions for tire wear.

**Loader & Dozer Service**

**STMS**
- SMOOTH TREAD-MS

STMS’s main features are extra-long tread life and best riding comfort due to extra-deep and smooth tread design. Suitable for empty and loaded container handlers, especially on abrasive concrete surfaces.

**YS2**
- YARD SERVICE-2

YS2 delivers excellent wear resistance for long serviceability as well as good traction and braking. Wear indicators inserted around the tread’s circumference allow for easy measuring of the tread depth from any position. Specially designed for straddle carriers.
2. Application

■ Earthmover Service

- HEAT RESISTANT
- CUT RESISTANT

<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Ply Rating</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>9.00-20</td>
<td>T/T</td>
<td></td>
</tr>
<tr>
<td>RL(E3)</td>
<td>T/T</td>
<td>14</td>
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<tr>
<td>10.00-20</td>
<td>T/T</td>
<td>14</td>
</tr>
<tr>
<td>11.00-20</td>
<td>T/T</td>
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</tr>
<tr>
<td>12.00-20</td>
<td>T/T</td>
<td>16</td>
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<tr>
<td>12.00-24</td>
<td>T/T</td>
<td>20</td>
</tr>
<tr>
<td>14.00-24</td>
<td>T/T</td>
<td>24 28</td>
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<tr>
<td>16.00-25</td>
<td>T/L</td>
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<td>18.00-25</td>
<td>T/L</td>
<td>32</td>
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<td>37.25-35</td>
<td>T/L</td>
<td>36</td>
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<tr>
<td>VL2(E3)</td>
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<td>T/L</td>
<td>20 24 26</td>
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■ Grader Service

- HEAT RESISTANT
- CUT RESISTANT

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T/T: Tube Type
T/L: Tubeless Type
TG: For Semi-Drop Center Rim
### Loader & Dozer Service

#### HEAT RESISTANT

- GL
- FG
- FGF
- RL
- VL2
- RLS

#### CUT RESISTANT

- DL
- STMS

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<th>Size Type Ply Rating</th>
<th>Size Type Ply Rating</th>
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### Compactor Service

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<td>14/70-20</td>
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<th>Ply Rating</th>
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### Industrial Service

<table>
<thead>
<tr>
<th>Lift trucks, Empty container handlers</th>
<th>Loaded container handlers</th>
<th>Straddle carriers</th>
<th>Harbor cranes</th>
<th>Rubber tired gantry cranes</th>
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</thead>
<tbody>
<tr>
<td>![Lift truck icon]</td>
<td>![Loaded container handler icon]</td>
<td>![Straddle carrier icon]</td>
<td>![Harbor crane icon]</td>
<td>![Rubber tired gantry crane icon]</td>
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<table>
<thead>
<tr>
<th>Size</th>
<th>Type</th>
<th>Ply Rating</th>
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<tbody>
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<td>14.00-24</td>
<td>T/T</td>
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<td>14.00-24 TG</td>
<td>T/L</td>
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<td>16.00-25</td>
<td>T/L</td>
<td>28 32</td>
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<td>18.00-25</td>
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*TWhen the average operating speed exceeds 10 km/h, consult your Bridgestone representative.*

T/T: Tube Type  
T/L: Tubeless Type  
TG: For Semi-Drop Center Rim
3. Technical Data

3.1 Earthmover, Grader, Loader & Dozer, Compactor Service

### Approximate Inflated Dimensions

<table>
<thead>
<tr>
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<th>Max. Speed</th>
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### Tire Load Limits at Various Cold Inflation Pressures

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<td>1050/1605</td>
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<tr>
<td>8-16.5</td>
<td>FG Loader</td>
<td>1050/1605</td>
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</table>

1) Figures under the star rating denote the maximum load and inflation pressures.

2) For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Ply rating</th>
<th>TIA Code or Application</th>
<th>Spec</th>
<th>TKPH</th>
<th>TMHP</th>
<th>Approximate Inflated Dimensions</th>
<th>OTR</th>
<th>Minimum Dual Spacing</th>
<th>Recommended Tire/Frame Height</th>
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</table>

For the TKPH(TMHP) Ratings, please refer to page 11.

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.

<table>
<thead>
<tr>
<th>Pattern</th>
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<th>Wt. psi</th>
<th>Wt. kPa</th>
<th>Wt. psi</th>
<th>Wt. kPa</th>
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<td>RL 14</td>
<td>E3</td>
<td>CRT 49</td>
<td>J4</td>
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<td>J6</td>
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For the TKPH(TMHP) Ratings, please refer to page 11.
### Tire Load Limits at Various Cold Inflation Pressures

<table>
<thead>
<tr>
<th>Size</th>
<th>Application</th>
<th>Tire Load Limits at Various Cold Inflation Pressures</th>
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<tbody>
<tr>
<td></td>
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<td>PSI</td>
</tr>
<tr>
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<td>650</td>
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1. Figures under the star rating denote the maximum load and inflation pressures.
2. For Loader & Dozer Service, Tire Load Limits will depend on a type of the operation. Please refer to page 68.
## Tire Size

<table>
<thead>
<tr>
<th>Size</th>
<th>Pattern/Method</th>
<th>TL Code or Application</th>
<th>Spec/Type</th>
<th>TKPH</th>
<th>Approximate Inflated Dimensions</th>
<th>TIR Minimum</th>
<th>OTR/TLR Minimum</th>
<th>Recommended Tire/Rim Height</th>
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</thead>
<tbody>
<tr>
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<td>12 L3 DZA</td>
<td>-</td>
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<td>28 E3 EZA 139 85</td>
<td>1407</td>
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<td>-</td>
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<tr>
<td>17.5-25 Tubeless</td>
<td>VL2</td>
<td>16 L3 DZA</td>
<td>1346</td>
<td>53.1 17.5 597 23.5 470 18.5</td>
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<td>18.00-25 Tubeless</td>
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<td>16 L5 DZA</td>
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<td>54.5 17.7 645 25.4 462 18.9</td>
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<td>VL2</td>
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<td>20.5-25 Tubeless</td>
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<td>58.8 21.3 641 25.2 587 23.1</td>
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For the TKPH(TMPH) Ratings, please refer to page 11. 

### Tire Load Limits at Various Cold Inflation Pressures

<table>
<thead>
<tr>
<th>Type</th>
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<th>psi</th>
<th>kg</th>
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<td>10</td>
<td>50</td>
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For the TKPH(TMPH) Ratings, please refer to page 11.

<table>
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<tr>
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<th>PR</th>
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<th>kPa</th>
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<td>15000</td>
<td>100000</td>
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<tr>
<td>V22</td>
<td>25</td>
<td>50</td>
<td>35000</td>
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</table>

1) Figures under the star rating denote the maximum load and inflation pressure.
2) For Loader & Dozer Service, Tire Load Limits will depend on the type of the operation. Please refer to page 88.
<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Ply Rating</th>
<th>Tread Code or Application</th>
<th>Spec</th>
<th>TPW</th>
<th>TPO</th>
<th>Approximate Inflated Dimensions</th>
<th>OTD</th>
<th>Minimum Dual Spacing</th>
<th>Recommended Toe/Halving Height</th>
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<td>E3</td>
<td>DE2</td>
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<td>23</td>
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<td>-</td>
<td>1490 595 654 618 19.0</td>
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<td>28.00/3.5</td>
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</table>

For the TKPH(TMPH) Ratings, please refer to page 11.

1) Figures under the star rating denote the maximum load and inflation pressures.
2) For Loader & Otis Service, Tire Load Limits will depend on a type of the operation. Please refer to page 88.

| Pattern | Application | Load or Temp | Spec | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp | Load or Temp |
|---------|-------------|--------------|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| VL2     | Loader      | PR           | 16   | 11500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        | 12500        |
|         |             | kg           | 16   | 35000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        | 36000        |
|         |             | mph          | 16   | 25400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        | 26400        |
|         |             | LBS           | 16   | 75000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        | 78000        |
|         |             | PSI           | 16   | 365000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       | 375000       |
|         |             | PS             | 16   | 520000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       | 530000       |

For the TKPH(TMPH) Ratings, please refer to page 11.
### Approximate Inflated Dimensions

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Ply</th>
<th>Application</th>
<th>Spec</th>
<th>TNPH</th>
<th>Approximate Inflated Dimensions</th>
<th>OTD</th>
<th>Minimum</th>
<th>Recommended</th>
<th>Rim/Flange Height</th>
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</thead>
<tbody>
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<td>RL</td>
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<td>41.4</td>
<td>38.5</td>
</tr>
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<td>DL</td>
<td>LS</td>
<td>D2V</td>
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<td>LS</td>
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<td>LS</td>
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<td>2410</td>
<td>95.3</td>
<td>40.2</td>
<td>43.8</td>
<td>42.1</td>
</tr>
</tbody>
</table>

For the TKPH/TMPH Ratings, please refer to page 11.
### 3.2 Industrial Service

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Pattern</th>
<th>Ply Rating</th>
<th>TMA Code or Application</th>
<th>Spec</th>
<th>Approximate Inflated Dimensions</th>
<th>QTD</th>
<th>Minimum Dual Spacing</th>
<th>Recommended Rim/Flange Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00-20</td>
<td>RL</td>
<td>20</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1138 316 507 348 24.0 378 8.50V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24&quot;</td>
<td>STMS</td>
<td>20</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1275 321 606 339 55.0 391 8.50V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.00-24</td>
<td>RL</td>
<td>20</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1366 387 627 40.0 28.0 450 10.00V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.00-24</td>
<td>TG</td>
<td>24</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1360 395 614 28.0 450 10.00V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.00-25</td>
<td>RL</td>
<td>28</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1495 445 671 459 33.5 513 11.25V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.00-25</td>
<td>RL</td>
<td>40</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1608 508 727 36.0 587 23.1</td>
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<td></td>
</tr>
<tr>
<td>21.00-25</td>
<td>RL</td>
<td>40</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1750 570 775 41.0 688 26.3 15.00V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.00-33</td>
<td>ELS2</td>
<td>36</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>1878 515 887 533 66.5 587 13.00V</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>25.00-35</td>
<td>ELS2</td>
<td>40</td>
<td>Industrial Service</td>
<td>IDU</td>
<td>2040 592 955 617 70.0 701 15.00V</td>
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### Pattern

<table>
<thead>
<tr>
<th>Industrial Service</th>
<th>KPa</th>
<th>psi</th>
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<tbody>
<tr>
<td>RL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Load</td>
<td>1000 kg</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>9505 850 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>9360 825 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>8500 795 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>7205 665 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>6080 575 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>5350 505 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>4725 445 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>4225 395 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>3800 355 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>3400 325 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>3050 295 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>2700 275 lbs</td>
<td>145 lbs</td>
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<tr>
<td>20 Load</td>
<td>2375 235 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>2075 205 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>1800 175 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>1500 145 lbs</td>
<td>145 lbs</td>
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<tr>
<td>20 Load</td>
<td>1250 125 lbs</td>
<td>145 lbs</td>
</tr>
<tr>
<td>20 Load</td>
<td>1000 100 lbs</td>
<td>145 lbs</td>
</tr>
</tbody>
</table>

### Inflation Pressure

<table>
<thead>
<tr>
<th>Industrial Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
</tr>
<tr>
<td>RLS</td>
</tr>
<tr>
<td>STMS</td>
</tr>
</tbody>
</table>

### Load Ratings

<table>
<thead>
<tr>
<th>Load Rating</th>
<th>Load Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>Load Size</td>
</tr>
<tr>
<td>RLS</td>
<td>Load Size</td>
</tr>
<tr>
<td>STMS</td>
<td>Load Size</td>
</tr>
</tbody>
</table>

### Industrial Service

<table>
<thead>
<tr>
<th>Size</th>
<th>Tire Load Limits at Various Speeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.00-33</td>
<td></td>
</tr>
<tr>
<td>21.00-25</td>
<td></td>
</tr>
<tr>
<td>16.00-25</td>
<td></td>
</tr>
<tr>
<td>14.00-24</td>
<td></td>
</tr>
<tr>
<td>12.00-20</td>
<td></td>
</tr>
</tbody>
</table>

### Specifications

1) Industrial Vehicles comprise vehicles such as counter-balanced lift trucks, container handlers, straddle carriers, aircraft tug trucks, mobile crushers, log loaders etc., used on hard surfaced surfaces, smooth floors and pavements.
2) Use Specifications of Industrial Service only.
3) For speeds exceeding 30km/h (18mph), consult a Bridgestone Representative.
4) For tire sizes and star ratings other than listed above, consult a Bridgestone Representative.
5) For RTG (Rubber Tired Gantry Crane) operation, consult a Bridgestone Representative.
REMARKS & SPECIAL OPERATIONS

1. Remarks

Both rules of 1.1 and 1.2 can't be applied at the same time.

1.1 Excess Load

Due to the specialized nature of Off-The-Road vehicle usage, loads in excess of those in the appropriate above-listed load tables are often encountered. These excess loads result from items such as actual vehicle weight exceeding the design weight, varying density of materials, field modifications to the equipment, load transfer, etc. Only under these conditions, the actual tire load in service may exceed the above load ratings for the tire(*), by an amount not greater than shown in the following table:

For Radial Tires

<table>
<thead>
<tr>
<th>E2, E3, E4*</th>
<th>E3, E4*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Excess Load</td>
<td>7%</td>
</tr>
<tr>
<td>Maximum Excess Pressure</td>
<td>820kPa</td>
</tr>
<tr>
<td>Maximum Pressure</td>
<td>116psi</td>
</tr>
</tbody>
</table>

(Except for underground vehicles) Please see P.89, 90

When excess loads are encountered, cold inflation pressures must be increased to compensate for higher loads. For each 1% increase in load, the inflation pressure must be increased by 2%.

*Except following sizes on the list

11.00R20 335/80R20 405/70R20 12.00R24
12.00R20 365/80R20 12R22.5

About 63" tires, consult a Bridgestone representative.

**Except 55.5/80R57 and 60/80R57

The maximum excess loads will result in reduced tire performance.

1.2 The Variation in Load Carrying Capacity with Operating Speed

For Radial Tires

<table>
<thead>
<tr>
<th>Maximum Speed (km/h)</th>
<th>G</th>
<th>L*</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>+60%</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>+50%</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>+40%</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>+30%</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>+20%</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>+10%</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>+0%</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>-10%</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>-20%</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>-30%</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>-40%</td>
<td></td>
</tr>
<tr>
<td>12.5/70-16</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>17.5/65-20</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Reference speed for calculating load variance
About the size of 55.5/80R57 and 60/80R57, consult a Bridgestone representative.

*Earthmover Size
For 65km/h(40mph) speed, tire load must be reduced 15% (Narrow), 17% (widebase) with no change in inflation pressure.

*Except following sizes on the list

27x8.50-15 10-16.5 15.5/70-18 16.9-24
33x12.5-15 12-16.5 42x17-20 18.4-24
12.5/70-16 15.5/60-18 17.5/65-20

- These tables don’t secure to prevent the risk derived from heat buildup.
- Consult Bridgestone Representative for another speed set for Earthmover Size.

For Bias Tires

<table>
<thead>
<tr>
<th>E2, E3, E4*</th>
<th>E3, E4*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Excess Load</td>
<td>15%</td>
</tr>
<tr>
<td>Maximum Excess Pressure</td>
<td>30%</td>
</tr>
<tr>
<td>Maximum Pressure</td>
<td>820kPa</td>
</tr>
</tbody>
</table>

(Except for underground vehicles) Please see P.89, 90

When excess loads are encountered, cold inflation pressures must be increased to compensate for higher loads. For each 1% increase in load, the inflation pressure must be increased by 2%.

*Except following sizes on the list

9.00-20 10.00-20 11.00-20

**Except following sizes on the list

27x8.50-15 10-16.5 15.5/70-18 16.9-24
33x12.5-15 12-16.5 42x17-20 18.4-24
12.5/70-16 15.5/60-18 17.5/65-20

***For L5/LS5 tires following sizes on the list, on front tires for front end loaders, it is permissible to increase inflation pressure up to 100kPa (15psi) above, with no increase in load.
(Maximum inflation pressure should not exceed 825 kPa (120psi).)

17.5-25 26.5-25 35/65-33 50/65-51
20.5-25 29.5-25 40/65-39 65/65-57
23.5-25 35.5-29 45/65-45

The maximum excess loads will result in reduced tire performance.

1.3 The Variation in Load Carrying Capacity with Operating Speed for Mobile Crane

<table>
<thead>
<tr>
<th>Speed</th>
<th>Maximum Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed Symbol E</td>
</tr>
<tr>
<td>30 km/h (20 mph)</td>
<td>+30%</td>
</tr>
<tr>
<td>45 km/h (28.5 mph)</td>
<td>+24%</td>
</tr>
<tr>
<td>50 km/h (30 mph)</td>
<td>+18%</td>
</tr>
<tr>
<td>60 km/h (35 mph)</td>
<td>+12%</td>
</tr>
<tr>
<td>70 km/h (43 mph)</td>
<td>0%</td>
</tr>
<tr>
<td>80 km/h (50 mph)</td>
<td>-18%</td>
</tr>
<tr>
<td>90 km/h (55 mph)</td>
<td>-30%</td>
</tr>
<tr>
<td>100 km/h (62 mph)</td>
<td>-40%</td>
</tr>
</tbody>
</table>

Reference speed for calculating load variance

This table doesn’t secure to prevent the risk derived from heat buildup.
1.4 Recommended Inflation Pressure Calculation

Below is the inflation pressure calculation formula for various tire load (for your reference).

Radial Tire:

\[
\frac{W_2}{W_1} = \frac{P_2^{0.75}}{P_1^{0.75}} \quad P_2 = \left\{ \begin{array}{ll} \frac{W_2^{0.75}}{W_1} \end{array} \right\}^{(1/0.75)}
\]

Bias Tire:

\[
\frac{W_2}{W_1} = \frac{P_2^{0.585}}{P_1^{0.585}} \quad P_2 = \left\{ \begin{array}{ll} \frac{W_2^{0.585}}{W_1} \end{array} \right\}^{(1/0.585)}
\]

Tire Load: W1, W2
Inflation Pressure: P1, P2
*Tire Load and Inflation Pressure should not exceed maximum load and pressure of tires.

1.5 Allowance in Outer Diameters for Dual Mounting

The following table lists the allowance in outer diameters for dual mounting. Exceeding the figures listed (Table 1) may result in rapid tread wear and possible damage to the tire. For the dual mounted tires shown in Fig. 1, if the outer diameter of tire No.1 is larger than that of No.2, the No.1 tire with a larger diameter will eventually be damaged, wear rapidly and unevenly from overloading, while the No.2 tire with a smaller diameter will rapidly wear out in the center.

Tires already mounted on vehicles can be checked by the following methods. Be sure that the tires to be checked are all inflated to their standard recommended inflation pressures.

Table 1 Permissible Difference in Outer Diameters for the Dual Mounted Tires

<table>
<thead>
<tr>
<th>Tire Section</th>
<th>Radial Tire</th>
<th>Bias Tire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference in Outer Diameters</td>
<td>Difference in Circumferential Difference</td>
<td>Difference in Outer Diameters</td>
</tr>
<tr>
<td>less than 8.25</td>
<td>less than 8mm</td>
<td>less than 19mm</td>
</tr>
<tr>
<td>9.00-14.00</td>
<td>less than 8mm</td>
<td>less than 25mm</td>
</tr>
<tr>
<td>16.00-18.00</td>
<td>less than 15mm</td>
<td>less than 47mm</td>
</tr>
<tr>
<td>more than 21.00</td>
<td>less than 19mm</td>
<td>less than 90mm</td>
</tr>
</tbody>
</table>

(1) By placing a right angled square across duals, the difference in outer diameter can be obtained. (Fig 2-1) Or measure circumference.

(2) By using a cord across both the right and left duals, the difference can be obtained. (Fig 2-2)

(3) Do not use regular tread (E3) and deep tread (E4) tires together for dual mounting.

(4) Any object trapped between dual mounted tires represents a risk. Use of rock ejectors between dual mounted tires is recommended. To remove an object trapped between dual mounted tires, it is essential to deflate both tires prior to removing the wheels.

1.6 Tire Volume for Filling Nitrogen Gas

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Tire Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liter</td>
<td>U.S. Gal</td>
</tr>
<tr>
<td>For L5</td>
<td>For L5</td>
</tr>
<tr>
<td>14.5 R15</td>
<td>-</td>
</tr>
<tr>
<td>12.00 R20</td>
<td>137</td>
</tr>
<tr>
<td>16.00 R20</td>
<td>300</td>
</tr>
<tr>
<td>33.80 R20</td>
<td>130</td>
</tr>
<tr>
<td>405/70 R20</td>
<td>197</td>
</tr>
<tr>
<td>365/80 R20</td>
<td>159</td>
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<tr>
<td>12.00 R24</td>
<td>162</td>
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</tr>
<tr>
<td>16.00 R24</td>
<td>359</td>
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<tr>
<td>14.00 R25</td>
<td>259</td>
</tr>
<tr>
<td>15.5 R25</td>
<td>225</td>
</tr>
<tr>
<td>16.00 R25</td>
<td>363</td>
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<td>18.00 R25</td>
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<td>750/65 R25</td>
<td>758</td>
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<td>26.5 R25</td>
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<td>29.5 R25</td>
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<tr>
<td>775/65 R29</td>
<td>900</td>
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<td>875/65 R29</td>
<td>118</td>
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<tr>
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<td>1260</td>
</tr>
<tr>
<td>33.25 R29</td>
<td>1586</td>
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</table>

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Tire Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liter</td>
<td>U.S. Gal</td>
</tr>
<tr>
<td>For L5</td>
<td>For L5</td>
</tr>
<tr>
<td>18.00 R33</td>
<td>582</td>
</tr>
<tr>
<td>21.00 R33</td>
<td>810</td>
</tr>
<tr>
<td>35/65 R35</td>
<td>1463</td>
</tr>
<tr>
<td>37.5 R35</td>
<td>2444</td>
</tr>
<tr>
<td>21.00 R36</td>
<td>841</td>
</tr>
<tr>
<td>24.00 R36</td>
<td>1098</td>
</tr>
<tr>
<td>29.5 R36</td>
<td>1434</td>
</tr>
<tr>
<td>33.25 R36</td>
<td>1789</td>
</tr>
<tr>
<td>37.5 R36</td>
<td>2333</td>
</tr>
<tr>
<td>40.5 R39</td>
<td>2885</td>
</tr>
<tr>
<td>45/65 R39</td>
<td>2613</td>
</tr>
<tr>
<td>45/65 R45</td>
<td>3005</td>
</tr>
<tr>
<td>24.00 R49</td>
<td>1375</td>
</tr>
<tr>
<td>27.00 R49</td>
<td>1869</td>
</tr>
<tr>
<td>31.00 R49</td>
<td>1960</td>
</tr>
<tr>
<td>30.00 R51</td>
<td>2514</td>
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<tr>
<td>33.00 R51</td>
<td>3079</td>
</tr>
<tr>
<td>36.00 R51</td>
<td>3865</td>
</tr>
<tr>
<td>50/65 R51</td>
<td>4027</td>
</tr>
<tr>
<td>37.00 R57</td>
<td>4481</td>
</tr>
<tr>
<td>42/90 R57</td>
<td>4799</td>
</tr>
<tr>
<td>40/65 R57</td>
<td>5477</td>
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<tr>
<td>46/90 R57</td>
<td>5487</td>
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<tr>
<td>55/90 R57</td>
<td>7216</td>
</tr>
<tr>
<td>53/90 R63</td>
<td>7305</td>
</tr>
<tr>
<td>55/90 R63</td>
<td>8568</td>
</tr>
<tr>
<td>59/90 R63</td>
<td>9793</td>
</tr>
</tbody>
</table>

L5 tire has smaller tire volume than the others and the value listed specifically.
2. Special Operations

Please check your operation to make sure of the Tire Load Limit.

<table>
<thead>
<tr>
<th>Type/Service</th>
<th>Type of Operations</th>
<th>Reference No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthmover</td>
<td>Standard</td>
<td>2.1.3</td>
</tr>
<tr>
<td></td>
<td>Underground Truck Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When the vehicle is driven over the highway for delivery, or moved by an operator to a new job site - Drive-Away</td>
<td>2.2.1</td>
</tr>
<tr>
<td>Loader &amp; Dozer</td>
<td>Distance of picking up and relocating material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less than 76m (one way) - Standard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distance of picking up and relocating material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 76m (one way) - Load-and-Carry Operations</td>
<td>2.1.1</td>
</tr>
<tr>
<td></td>
<td>Underground Load Haul Dump Service</td>
<td>2.1.2</td>
</tr>
<tr>
<td></td>
<td>Underground Truck Service</td>
<td>2.1.3</td>
</tr>
<tr>
<td></td>
<td>When the vehicle is driven over the highway for delivery, or moved by an operator to a new job site - Drive-Away</td>
<td>2.2.2</td>
</tr>
</tbody>
</table>

2.1 For Load-and-Carry Operations

Service conditions of a loader is defined as “picking up material and relocating a short distance away, a maximum of 76m (250 feet), one way, with a maximum speed of 10km/h (5 mph)”. However, a loader can pick up a load and transport such load to another location and return unloaded for a longer distance. This type of service is called as Load-and-Carry operations. Transportation usually occurs at low speeds, up to 25km/h (15 mph), and distances are limited.

The tires when used in Load-and-Carry operations may encounter heat problems especially on the front axle tires. To avoid such problems, Bridgestone recommends the following operating conditions.

For tires over 33” inch rim diameter tires, careful study is required to maximize tire life while considering Ton-Kilometer-Per-Hour limits. Please consult a Bridgestone representative for more information.

If you need to use the tire beyond this recommendation, please consult a Bridgestone representative.

2.1.1 For Front End Loader Service

For Radial Tires

<table>
<thead>
<tr>
<th>Tread Class</th>
<th>Inflation Pressure</th>
<th>Load Capacity 10km/h (5mph)</th>
<th>Maximum Cycle Distance (m)</th>
<th>Allowable Average Work-shift Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2, L3</td>
<td>Standard Inflation Pressure</td>
<td>100% of STD. load</td>
<td>1800</td>
<td>16</td>
</tr>
<tr>
<td>L4</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1600 (VSDT)</td>
<td>14</td>
</tr>
<tr>
<td>L5</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1200 (VSDL, VSDR)</td>
<td>10</td>
</tr>
<tr>
<td>L5S</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1200</td>
<td>6</td>
</tr>
</tbody>
</table>

** STD load: Maximum permissible load at standard inflation pressure for respective tire size and star rating.
* STD load: Maximum permissible load at standard inflation pressure for respective tire size and star rating.

For Bias Tires

<table>
<thead>
<tr>
<th>Tread Class</th>
<th>Inflation Pressure</th>
<th>Load Capacity 10km/h (5mph)</th>
<th>Maximum Cycle Distance (m)</th>
<th>Allowable Average Work-shift Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2, L3</td>
<td>Standard Inflation Pressure</td>
<td>90% of STD. load</td>
<td>1200</td>
<td>10</td>
</tr>
<tr>
<td>L4</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td>300</td>
<td>3</td>
</tr>
<tr>
<td>L5</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L5S</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.2 For Load Haul Dump Service

Since a load haul dump (LHD) unit has a similar structure and operational characteristics as load and carry service on a front end loader, the following operating parameters are recommended.

For Radial Tires

<table>
<thead>
<tr>
<th>Tread Class</th>
<th>Inflation Pressure</th>
<th>Load Capacity 10km/h (5mph)</th>
<th>Maximum Cycle Distance (m)</th>
<th>Allowable Average Work-shift Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2, L3</td>
<td>Standard Inflation Pressure</td>
<td>100% of STD. load</td>
<td>1800</td>
<td>14</td>
</tr>
<tr>
<td>L4</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1600 (VSDT)</td>
<td>10</td>
</tr>
<tr>
<td>L5</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1200 (VSDL, VSDR)</td>
<td>6</td>
</tr>
<tr>
<td>L5S</td>
<td>Standard Inflation Pressure**</td>
<td>100% of STD. load</td>
<td>1200</td>
<td>5</td>
</tr>
</tbody>
</table>

** Not permissible

The inflation pressure should not exceed 825kPa (120psi).

For Bias Tires

<table>
<thead>
<tr>
<th>Tread Class</th>
<th>Inflation Pressure</th>
<th>Load Capacity 10km/h (5mph)</th>
<th>Maximum Cycle Distance (m)</th>
<th>Allowable Average Work-shift Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2, L3</td>
<td>Standard Inflation Pressure</td>
<td>90% of STD. load</td>
<td>1200</td>
<td>10</td>
</tr>
<tr>
<td>L4</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td>300</td>
<td>3</td>
</tr>
<tr>
<td>L5</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L5S</td>
<td>Standard Inflation Pressure**</td>
<td>85% of STD. load</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Not permissible

The inflation pressure should not exceed 825kPa (120psi).
2.1.3 For Underground Truck Service

Underground truck service is defined as small and low vehicle height dump truck used in underground mines. However, the application is considered to be similar to load and carry operation which has relatively slower speed and shorter distance with more load than normal dump truck use. Consequently, the severity to the tire is estimated using the load and carry concept. Bridgestone defines the recommendation in this section.

For Radial Tires

<table>
<thead>
<tr>
<th>Tread Class Pattern</th>
<th>Spec</th>
<th>Inflation Pressure</th>
<th>Load Capacity*</th>
<th>Maximum Speed (km/h)</th>
<th>Allowable Average Work-shift Speed (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4/E4 VISNT</td>
<td>MT DUH</td>
<td>700 kpa</td>
<td>See note in P.47</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>L4 VISNT</td>
<td></td>
<td>800 kpa</td>
<td></td>
<td>40</td>
<td>14</td>
</tr>
<tr>
<td>L5 VISDT</td>
<td></td>
<td></td>
<td></td>
<td>100% of STD. load</td>
<td>25</td>
</tr>
<tr>
<td>L5S VMS2</td>
<td></td>
<td></td>
<td></td>
<td>100% of STD. load</td>
<td>10</td>
</tr>
<tr>
<td>E4 VMTS</td>
<td></td>
<td></td>
<td></td>
<td>115% of STD. load</td>
<td>30</td>
</tr>
<tr>
<td>E4 VMLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

*See note in 2.1.1.

For Bias Tires

Not recommendable.

2.2 Drive-Away Tires on Vehicles

2.2.1 Off-the-Road Tires for Earthmover

(1) Recommendations for Off-the-Road Tires

Because of the special extra-heavy construction of Off-the-Road tires, special precautions must be observed to protect these expensive tires when the vehicle is driven over the highway for delivery, or moved by an operator to a new job site.

If the precautions are not observed, excessive tire heat is built up and the tires most likely will fail prematurely. These precautions are as follows and apply to tires on all vehicles in transit—driven or towed. Consult a Bridgestone Representative for specific information before starting out on a drive-away trip.

(2) Load and Pressure

[1] Vehicles must be empty during transportation.
[2] Inflation pressure is to be checked before starting, each break and adjusted to the pressure recommended for over-the-highway transit by Bridgestone.
[3] Inflation pressures are not to be reduced by “bleeding” tires during transportation.
[4] Periodical inflation pressure checks during transportation (i.e. every 2 hours) is recommended. Although operational pressure build-up in tires is normal during transportation, when it increases 20% or more than the cold pressure reading, it indicates over heating, and the vehicle should be stopped and a Bridgestone Representative should be consulted.

(3) Speed

[1] Regular tread tires (E-3):

(Note: For deep tread tires (E-4), always consult a Bridgestone Representative.)

a. Maximum highway speed:

Maximum Speed (Drive-Away)

<table>
<thead>
<tr>
<th>Radial / Bias</th>
<th>Regular</th>
<th>Maximum Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Base</td>
<td>50 km/h</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

b. Stop for a 30-minute cooling period after each 80 km (50 miles) of driving or before 2 hours of continual operation, whichever comes first. (shown in the following figure)

c. One-hour minimum midday lunch stop should be observed during full day operations. (shown in the following figure)

Drive-Away

2 Hrs. or 80 km (50 miles) STOP 0.5 hr.

2 Hrs. or 80 km (50 miles) STOP 0.5 hr.

2 Hrs. or 80 km (50 miles) STOP 0.5 hr.

[2] Vehicles in transit should be accompanied by responsible personnel in a pilot car to enforce these precautions and maintain a check on equipment. This is good insurance for a valuable investment.

2.2.2 Off-the-Road Tires for Loader & Dozer

During or after the operation, please wait for the following hours prior to start Drive-Away.

<table>
<thead>
<tr>
<th>Size &amp; Pattern</th>
<th>Load per tire (ton)</th>
<th>Maximum Travel Distance (One way)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35/65R33 VSDL</td>
<td>16.6</td>
<td>5 km or 3.1 Mi</td>
</tr>
<tr>
<td>35/65R45 VSDL</td>
<td>30.3</td>
<td>10 km or 6.2 Mi</td>
</tr>
<tr>
<td>50/80R57 VSDL</td>
<td>40.3</td>
<td>20 km or 12.4 MPH</td>
</tr>
<tr>
<td>55/80R57 VSDL</td>
<td>64.8</td>
<td>20 km or 12.4 MPH</td>
</tr>
<tr>
<td>60/80R57 VSDL</td>
<td>69.5</td>
<td>20 km or 12.4 MPH</td>
</tr>
<tr>
<td>65/65-57 DL</td>
<td>64.8</td>
<td>20 km or 12.4 MPH</td>
</tr>
</tbody>
</table>

Remarks:

1. Time for cooling temperature of the tire (Parked up the loader) should be applied prior to start to travel on the road.
2. Ambient temperature of 38˚C or 100˚F is assumed.
3. Maximum load on tire should be less than the Load per tire in the above table.
4. Air pressure for “Drive-Away” should be the same as our recommended figures, and need to confirm whether it would not be higher figures that we experienced prior to travel.
5. We recommend that it would be best way for Giant loaders to use tow hauler for long way traveling. The drive away distance should be shorter than 60km (37 miles) within 20 km/h as the maximum speed to minimize the risk of tire heat damage.
6. If you have a plan of Drive-Away, please consult a Bridgestone representative.
1. O-Ring Specifications

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Applicable Size</th>
<th>Diameter</th>
<th>Inner Circumference</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-24A</td>
<td>13.0R44 T5</td>
<td>6.6</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>13.00-24 T5</td>
<td></td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>14.00-24 T4</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>14.00-24 T3</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td>P-25AX</td>
<td>14.0R25</td>
<td>6.8</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>15.5R25</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>17.5R25</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>20.5R25</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>38.5R55</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>44.5R65</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>55.0R65*</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>60.0R65*</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>65.0R65*</td>
<td></td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>70.0R65*</td>
<td></td>
<td>7.0</td>
</tr>
</tbody>
</table>

2. Flap Specifications

<table>
<thead>
<tr>
<th>Flap</th>
<th>dP</th>
<th>Fr</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>55/00/0-15</td>
<td>5</td>
<td>115</td>
<td>109, 5.1</td>
</tr>
<tr>
<td>65/00/0-75-15</td>
<td>5</td>
<td>1177</td>
<td>463, 4.0</td>
</tr>
<tr>
<td>12/65/15</td>
<td>7</td>
<td>1196</td>
<td>47.1, 7.0</td>
</tr>
<tr>
<td>75/33/0-15</td>
<td>7</td>
<td>1804</td>
<td>47.3, 6.0</td>
</tr>
<tr>
<td>75/32/0-15</td>
<td>7</td>
<td>1804</td>
<td>47.3, 6.0</td>
</tr>
<tr>
<td>200/100-16</td>
<td>5</td>
<td>295</td>
<td>47.3, 6.0</td>
</tr>
<tr>
<td>75/80/0-20</td>
<td>5</td>
<td>1804</td>
<td>62.8, 5.9</td>
</tr>
<tr>
<td>90/A111-20</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>100/120/20-20</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>120/130/20-20</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>130/140/20-20</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>120/140/20-24</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>110/120/20-24</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>130/140/20-24</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>140/160/20-24</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>150/160/24-25</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>155/180/24-25</td>
<td>5</td>
<td>1594</td>
<td>62.8, 6.0</td>
</tr>
<tr>
<td>235-25</td>
<td>5</td>
<td>1594</td>
<td>76.1, 9.0</td>
</tr>
<tr>
<td>235-25</td>
<td>5</td>
<td>1594</td>
<td>76.1, 9.0</td>
</tr>
<tr>
<td>210/23</td>
<td>5</td>
<td>1594</td>
<td>100.5, 9.0</td>
</tr>
</tbody>
</table>

3. Rim and Valve

- **Nominal Diameter of Rim (inches)**
- **Flange Type**
- **Rim Width (inches)**

**O-Ring**: Five-piece fully-tapered bead-seat rim with air-sealing "O"-ring gasket for earthmover

**Nominal Diameter**: 92

**Valve-Stem Support**: 93

**Locking Key (part of lock rings)**

**Bead-Seat Band**:

**Flange Type**: 8.50V × 24
### 3.1 Rim Designation

#### Full Tapered Bead Seat Rims (5 pieces)

<table>
<thead>
<tr>
<th>Recommended Rim Flange Height</th>
<th>Tire Size</th>
<th>Radial</th>
<th>Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.00X1.5</td>
<td>14.5R15</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>12.00X2.0</td>
<td>15.0R25</td>
<td>-</td>
<td>25.0-25</td>
</tr>
<tr>
<td>13.00X2.5</td>
<td>15.0R25</td>
<td>-</td>
<td>25.0-25</td>
</tr>
<tr>
<td>14.00X2.0</td>
<td>15.0R25</td>
<td>-</td>
<td>25.0-25</td>
</tr>
<tr>
<td>16.00X2.5</td>
<td>15.0R25</td>
<td>-</td>
<td>25.0-25</td>
</tr>
<tr>
<td>19.50X4.0</td>
<td>27.0R49</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>20.00X3.0</td>
<td>30.0R24(30/6SR24)</td>
<td>-</td>
<td>26.5-25</td>
</tr>
<tr>
<td>22.00X3.0</td>
<td>30.0R24(30/6SR24)</td>
<td>-</td>
<td>26.5-25</td>
</tr>
<tr>
<td>24.00X3.5</td>
<td>37.5R29</td>
<td>-</td>
<td>29.5-29</td>
</tr>
<tr>
<td>25.00X3.5</td>
<td>37.5R29</td>
<td>-</td>
<td>29.5-29</td>
</tr>
<tr>
<td>26.00X5.0</td>
<td>38.0R51</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>27.00X5.5</td>
<td>45.0R67</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>27.00X6.0</td>
<td>45.0R67</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>28.00X6.5</td>
<td>45.0R67</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>29.00X6.0</td>
<td>45.0R67</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>31.00X4.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
</tr>
<tr>
<td>32.00X4.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
</tr>
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<td>34.00X5.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
</tr>
<tr>
<td>36.00X5.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
</tr>
<tr>
<td>38.00X5.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
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<tr>
<td>40.00X5.0</td>
<td>47.5R75</td>
<td>-</td>
<td>25-25</td>
</tr>
<tr>
<td>42.00X6.0</td>
<td>50.0R87</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>44.00X6.0</td>
<td>50.0R87</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>47.00X6.0</td>
<td>50.0R87</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>52.00X8.0</td>
<td>50.0R87</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

#### Full Tapered Bead Seat Rims (3 pieces)

<table>
<thead>
<tr>
<th>Recommended Rim Flange Height</th>
<th>Tire Size</th>
<th>Radial</th>
<th>Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00X1.5</td>
<td>14.00R25</td>
<td>14.00-25</td>
<td></td>
</tr>
<tr>
<td>12.00X1.3</td>
<td>15.0R25</td>
<td>15.5-25</td>
<td></td>
</tr>
<tr>
<td>14.00X1.5</td>
<td>17.0R25</td>
<td>17.5-25</td>
<td></td>
</tr>
<tr>
<td>17.00X1.7 (Full Tapered Bead Seat Rims)</td>
<td>20.0R55</td>
<td>20.5-25</td>
<td></td>
</tr>
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#### Drop Center Rims (DC, W, DW)

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<th>Recommended Rim Flange Height</th>
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<th>Radial</th>
<th>Bias</th>
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<td>7JA</td>
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<td>10LB</td>
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<td>8.25</td>
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<td>9.00</td>
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<td>9.15</td>
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<td>15.50-18</td>
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<td>1R16</td>
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<td>W15L</td>
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<td>W20B</td>
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#### Semi Drop Center Rims (SDC)

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<td>7.05-15</td>
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<td>8.00TG</td>
<td>13.00R24 TG</td>
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<td>10.00TG</td>
<td>14.00R24 TG</td>
<td>14.00-24 TG</td>
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<tr>
<td>11x20</td>
<td>33/36R20</td>
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<td>11x20</td>
<td>365/38R20</td>
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<td>13x20</td>
<td>475/70R20</td>
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#### Flat Base Rims

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<th>Bias</th>
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<td>9.50R20</td>
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<td>7.50V</td>
<td>10.00R15</td>
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<td>16.00R20</td>
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OTHER SPECIFICATION
3.2 Valve Types

**Interchangeable Swivel Valves For Tubeless Or Tube Type Tires**

**Large Bore Valves**

<table>
<thead>
<tr>
<th>Valve No.</th>
<th>Dimensions (mm)</th>
<th>A</th>
<th>B</th>
<th>F˚</th>
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<td>TRJ4000-4/2</td>
<td>27.5</td>
<td>79.5</td>
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<td>TRJ4000-4</td>
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<td>114.0</td>
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<td>TRJ4000-8</td>
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<td>203.0</td>
<td>90˚</td>
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<tr>
<td>TRJ4000-7/2</td>
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<td>190.5</td>
<td>90˚</td>
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This type of VALVE consists of a combination of the rubber base SP-4000 or SP-2.

**Tubeless Type Spud**

**SP2**

**Tube Type Spud**

**SP4000**

**Tube Type Rubber Base Valves**

**TR218**

**PV-7**

**Valve Types**

- **Tube Valve**
- **Tubeless Valve**

**Dimensions (mm)**

- **A**
- **B**
- **C**
- **D**

**3.2 Valve Types**

**Tube Valve and Rim Section**

**Tubeless Valve and Rim Section**

**Flap**

**“O”-Ring Gasket**

**Rim Valve**

**Valve No.**

- **TRJ650**
- **TRJ4000-4 1/2**
- **TRJ4000-8**
- **TRJ4000-7 1/2**

**Valve No.**

- **TRJ650**
- **TRJ4000-4 1/2**
- **TRJ4000-8**
- **TRJ4000-7 1/2**
Valve No. | Dimensions (mm) | Other Specifications
--- | --- | ---
**JS75** | A: 24 B: 70 F: 82 | **JS75** | A: 24 B: 70 F: 82
**TR76A** | A: 24 B: 86 F: 86 | **TR76A** | A: 24 B: 86 F: 86
**TR77A** | A: 24 B: 105 F: 86 | **TR77A** | A: 24 B: 105 F: 86
**TR77E** | A: 35 B: 94 F: 86 | **TR77E** | A: 35 B: 94 F: 86
**TR78A** | A: 24 B: 127 F: 86 | **TR78A** | A: 24 B: 127 F: 86
**TR79A** | A: 24 B: 115 F: 86 | **TR79A** | A: 24 B: 115 F: 86
**TR77B** | A: 28 B: 91 F: 86 | **TR77B** | A: 28 B: 91 F: 86
**JS79** | A: 36 B: 133 F: 86 | **JS79** | A: 36 B: 133 F: 86
**JS79A** | A: 29 B: 137 F: 86 | **JS79A** | A: 29 B: 137 F: 86
**TR179** | A: 24 B: 141 F: 86 | **TR179** | A: 24 B: 141 F: 86
**PV88** | A: 42.8 B: 123 F: 86 | **PV88** | A: 42.8 B: 123 F: 86
**V3-02-3** | A: 35.8 B: 44.5 F: 85 | **V3-02-3** | A: 35.8 B: 44.5 F: 85
**V3-02-15** | A: 23.3 B: 145.5 F: 86 | **V3-02-15** | A: 23.3 B: 145.5 F: 86

**Tube Type Rubber Covered Valves**

**TR13**

Valve No. | Dimensions (mm) | Other Specifications
--- | --- | ---
**TR13** | A: 11.5 | **TR13** | A: 11.5
**TR15** | A: 16.5 | **TR15** | A: 16.5

**Tube Type Screw-on Valves**

**PV88**

Valve No. | Dimensions (mm) | Other Specifications
--- | --- | ---
**PV88** | A: 24 B: 86 F: 86 | **PV88** | A: 24 B: 86 F: 86
**PV118** | A: 24 B: 86 F: 86 | **PV118** | A: 24 B: 86 F: 86

**Large Bore Valves**

**JSJ177**

Valve No. | Dimensions (mm) | Other Specifications
--- | --- | ---
**JSJ177** | A: 36 B: 121 F: 84 | **JSJ177** | A: 36 B: 121 F: 84
**JSJ175** | A: 35 B: 105 F: 82 | **JSJ175** | A: 35 B: 105 F: 82
**JSJ175B** | A: 35 B: 105 F: 80 | **JSJ175B** | A: 35 B: 105 F: 80
**JSJ175C** | A: 35 B: 102 F: 60 | **JSJ175C** | A: 35 B: 102 F: 60

**TR150CW**

Valve No. | Dimensions (mm) | Other Specifications
--- | --- | ---
**V3-06-2** | A: 23.3 B: 44.5 C: 20.8 F: 37.5 G: 55 | **V3-06-2** | A: 23.3 B: 44.5 C: 20.8 F: 37.5 G: 55
**PV118** | A: 35.4 B: 130.0 F: 84.0 G: 10 | **PV118** | A: 35.4 B: 130.0 F: 84.0 G: 10

Valves, TR150 and TR150CW, are also called Hand Bendable Valves, that is, their stems are made of very flexible material permitting manual bending in all directions and to any angle.
### 1. Unit Conversion Tables

#### INFLATION PRESSURE

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#### WEIGHT

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<td>10 lb</td>
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<td>20 lb</td>
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<td>30 lb</td>
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<td>40 lb</td>
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<td>50 lb</td>
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<td>90 lb</td>
<td>40.79 kg</td>
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#### TREAD DEPTH CONVERSION TABLE FROM INCH TO MILLIMETER

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<td>4.0</td>
<td>101.6</td>
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<td>4.8</td>
<td>121.9</td>
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<td>5.6</td>
<td>142.2</td>
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<tr>
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#### TEMPERATURE

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#### FROM MILIMETER TO INCH

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#### OTHER INFORMATION

- OTHER INFORMATION
### Material Properties

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<th>Metric Tons/m³</th>
<th>Material</th>
<th>Pounds/cu.yd</th>
<th>Metric Tons/m³</th>
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<td>Iron ore: Magnetite</td>
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Note: Weight of materials varies with moisture content, grain size, degree of compaction, etc. Test must be made to know exact weight.

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### Conversion Factors

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</tr>
<tr>
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</tr>
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<tr>
<td>Volume (cubic centimeters)</td>
<td>cm³</td>
<td>0.0001</td>
</tr>
<tr>
<td>Volume (cubic feet)</td>
<td>ft³</td>
<td>0.0283</td>
</tr>
<tr>
<td>Volume (cubic yards)</td>
<td>yd³</td>
<td>0.7646</td>
</tr>
<tr>
<td>Volume (cubic miles)</td>
<td>mi³</td>
<td>1.2334</td>
</tr>
<tr>
<td>Capacity (cubic meters)</td>
<td>m³</td>
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</tr>
<tr>
<td>Capacity (cubic feet)</td>
<td>ft³</td>
<td>0.0283</td>
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<td>Capacity (cubic inches)</td>
<td>in³</td>
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<tr>
<td>Capacity (cubic yards)</td>
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<td>Capacity (cubic miles)</td>
<td>mi³</td>
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<tr>
<td>Force (kilograms)</td>
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<tr>
<td>Force (Newton)</td>
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<td>9.807</td>
</tr>
</tbody>
</table>

### Other Information

- **OTHER INFORMATION**
- **LENGTH**
- **AREA**
- **WEIGHT**
- **CAPACITY**
- **FORCE**
- **POWER (horse power)**