Your Michelin solutions for

VOLVO®

VOLVO

MICHELIN
A better way forward
**TYRE USE**

Comparison between bias and radial tyres

Classification of earthmover Michelin tyres

Different earthmover Michelin tyres tread

- Tread depths
- Tread compounds
- Tread patterns

**EARTHMOVER TYRES FOR QUARRY AND CONSTRUCTION  6 to 11**

Tyres for **loaders**

Tyres for **articulated dump trucks**

Tyres for **graders**
**COMPARISON BETWEEN BIAS AND RADIAL TYRES**

**Bias or cross ply construction**

**Advantages:**
- Long tyre life
- Outstanding traction on all types of surface
- Lower fuel consumption due to lower rolling resistance
- Improved comfort
- Increased resistance to punctures / flats
- Increased resistance to heating
- Protect property and persons

The sidewall and tread function separately.
The tread is unaffected by the flexing of the sidewalls, so there is:
- Less deformation of the tyre contact area on the ground
- Less movement in the tread contact area
- No movement between casing plies

**Disadvantages:**
- Accelerated wear
- Less grip
- Increased fuel consumption

**The crown and sidewalls are formed by the same ply structure.**
The tread is affected by flexing of the sidewalls, resulting in:
- Deformation of the tyre contact area on the ground
- Movement in the tread contact area
- The casing plies tend to “scissor” in relation to each other

**The MICHELIN® X® radial**

**Advantages:**
- Long tyre life
- Outstanding traction on all types of surface
- Lower fuel consumption due to lower rolling resistance
- Improved comfort
- Increased resistance to punctures / flats
- Increased resistance to heating
- Protect property and persons

The casing has only one radial ply.
The crown is stabilized by several plies.

The sidewall and tread function separately.
The tread is unaffected by the flexing of the sidewalls, so there is:
- Less deformation of the tyre contact area on the ground
- Less movement in tread contact area
- No movement between casing plies

The crown is not stabilized.
CLASSIFICATION OF MICHELIN TYRES

According to their aspect ratio

The wide diversity of earthmover machines and their uses requires the development of numerous ranges of tyres.

Earthmover tyres differ from those mounted on cars or commercial vehicles by:

- Their size and weight
- Their tread depths are proportionally greater
- More reinforcements to deal with the harsher conditions of use

There are several families of earthmover tyres, characterized by their aspect ratio H/S (ratio in % between the height of the sidewall H and the section width of the tyre S).

- **100 series (standard)**
  - The H/S ratio is approximately equal to 1.
  - The nominal section width is expressed in inches. Examples: 18.00 R 33
  - Tyres for rigid trucks, handling equipment, etc...
  - The aspect ratio is not indicated in the size designation.

- **80 series**
  - The H/S ratio is approximately equal to 0.80.
  - The nominal section width is expressed in:
    - Inches or fractions of an inch: Examples: 8.25 R 15, 20.5 R 25
    - Or: Examples: 59/80 R 63
  - Tyres for rigid trucks, articulated dumpers, loaders, handling equipment, etc...
  - The aspect ratio is not indicated in the size designation.

- **65 series**
  - The H/S ratio is approximately equal to 0.65.
  - The nominal section width is expressed in inches or in millimeters, followed by the number 65. Examples: 35/65 R 33, 750/65 R 25
  - Tyres for large loaders, articulated trucks, etc...

- **90 series**
  - The H/S ratio is approximately equal to 0.90.
  - The nominal section width is expressed in inches followed by the number 90. Example: 50/90 R 57
  - Tyres for rigid trucks

Other series of tyres are also available: 95 series, 75 series, etc.
According to their tread depths

The tread depth ‘SUPER, D1, D2’ is sometimes indicated on the sidewall tyre.

Different Michelin earthmover tyre compounds

**Type A4:**
Particularly resistant to cuts, tread tearing and abrasion on very rough surfaces.  
**minimum TKPH (TMPH)**

**Type A:**
Particularly resistant to cuts, tread tearing and abrasion at average speeds which are higher than those for A4 (above).

**Type B4:**
Compromise solution between abrasion resistance and average speed on rough surfaces.  
**moderate TKPH (TMPH)**

**Type B:**
Higher resistance to internal heat generation on surfaces which are not particularly rough.  
**average TKPH (TMPH)**

**Type C4:**
Adapted to running on long cycles at high speeds on well-maintained roads.  
**high TKPH (TMPH)**

**Type C:**
Very high resistance to high average speeds on long cycles run on well-maintained roads.  
**very high TKPH (TMPH)**

Tread pattern

<table>
<thead>
<tr>
<th>Code</th>
<th>Tread pattern</th>
<th>Application</th>
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<tbody>
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<td>Compactor</td>
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<tr>
<td>E1</td>
<td>RIBBED</td>
<td>Transport</td>
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<tr>
<td>E2</td>
<td>Traction</td>
<td>Transport</td>
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<tr>
<td>E3</td>
<td>ROCK</td>
<td>Transport</td>
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<td>E4</td>
<td>ROCK (deep tread)</td>
<td>Transport</td>
</tr>
<tr>
<td>E7</td>
<td>FLATATION</td>
<td>Transport</td>
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<td>Grader</td>
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<tr>
<td>G2</td>
<td>Traction</td>
<td>Grader</td>
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<tr>
<td>G3</td>
<td>ROCK</td>
<td>Grader</td>
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<tr>
<td>G4</td>
<td>ROCK (deep tread)</td>
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<td>G5</td>
<td>ROCK (very-deep tread)</td>
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<td>L2</td>
<td>TRACTION</td>
<td>Loader</td>
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<tr>
<td>L3</td>
<td>ROCK</td>
<td>Loader</td>
</tr>
<tr>
<td>L4</td>
<td>ROCK (deep tread)</td>
<td>Loader</td>
</tr>
<tr>
<td>L5</td>
<td>ROCK (very-deep tread)</td>
<td>Loader</td>
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<td>Bulldozer</td>
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<tr>
<td>L5S</td>
<td>SMOOTH (very-deep tread)</td>
<td>Bulldozer</td>
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</tbody>
</table>

In addition, Michelin provides complementary identification to most earthmover tyres:

T = Traction, R = Rock, V = speed, F = Flotation, P = Multi purpose, S/R = Smooth/Rock

**e.g.:** L3T “Normal tread depth tyre (L3; Standardized identification code) where traction is needed (T; Michelin code)”
Multipurpose machine for occasional use

Specialised machine for productive use

Road building

Infrastructure building sites (roads, railways, canals, dams etc.)

Logging

Recovery of aggregate and other materials

Extraction from quarry or mine face

Demolition

Management of waste and recycling

Industrial handling

Highway maintenance

Maintenance of parks & green spaces

Rental machine

Building/Public works

Tyres for loaders

XSNOPLUS

XLD 65 serie

XLD D1

XLD D2

XMINE D2
Tyre performance

As a result of a close partnership with the machine manufacturers and long experience with the users in the field, MICHELIN tyres are developed with a single objective: maximising the efficiency of your loader when carrying out everyday tasks.

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Customised offer

For extreme usage requiring a high level of protection, it is possible to fit tyres for underground mining machines to your loader. Your MICHELIN representative is available to discuss the best solution with you.

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Michelin offer for Volvo

<table>
<thead>
<tr>
<th>VOLVO Models</th>
<th>Tyre Size</th>
<th>XSNOPPLUS</th>
<th>XTLA</th>
<th>XHLA</th>
<th>XHA2</th>
<th>XLD 65</th>
<th>XLD D1</th>
<th>XLD D2</th>
<th>XMINE D2</th>
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<td>L220H/G, L250H/G</td>
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</tr>
</tbody>
</table>

(80D): current models

Michelin tyres are not approved on block handling machines

RT: Replacement only

(1): Replacement only: L45G
Tyres for articulated dump trucks

- **Rental machine**

- **Public works**
  - Infrastructure building sites (roads, railways, canals, dams etc.)

- **Road building**
  - Use in quarries or mines
Tyre performance

Customised offer

In order to meet your specific needs, your MICHELIN representative can advise you on the following tyres:

- 29.5 R 25 XADN E3V TL 200E: ideal for high speeds and long cycles.
- 29.5 R 25 XS E7 SAND TL 196E: specifically for mobility on sand.

These products are available on special order following an analysis of your building site by your MICHELIN representative.

Michelin offer for Volvo

<table>
<thead>
<tr>
<th>VOLVO Models</th>
<th>Tyre Size</th>
<th>X-SUPER TERRAIN</th>
<th>XADN +</th>
<th>XAD 65</th>
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<td>✓ (R)</td>
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</table>

(BOLD) current models  
(F) Front axle  
(R) Rear axle

(1) evaluation based mainly on the inertia of rotating masses.
Tyres for grader

- **Snow clearance**: XSNOPLUS
- **Highway maintenance**: XTLA
- **Public works**: XGLA2
- **Rental machine**: XHA2
- **Road building**: XLD 65 serie
- **Transport infrastructure**: XLD D2

**Maintenance of quarry or mine slopes**
Tyre performance

MICHELIN tyres are designed to ensure availability of your machine and reduce costs of usage.

![Tyre performance chart]

**Customised offer**

For extreme usage requiring a high level of protection, it is possible to fit tyres for underground mining machines to your grader. Your MICHELIN representative is available to discuss the best solution with you.

---

**Michelin offer for Volvo**

<table>
<thead>
<tr>
<th>VOLVO Models</th>
<th>Tyre size</th>
<th>XGLA2</th>
<th>XSNPLUS</th>
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<td>G930B, G940B, G946B, G960B</td>
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(BOLD): current models  
RT: Replacement only

(1) evaluation based mainly on the inertia of rotating masses.