MICHELIN® Technical Bulletin

February 1, 2011

MICHELIN® X ONE® RETREAD AND REPAIR RECOMMENDATIONS

REVISED

The MICHELIN® X One® tire may require some special equipment to handle the wider tread and casing, it does not require any special procedure to be repaired or retreaded. As with any tire, special care should be given to respect the recommendations and guidelines associated with the specific product to ensure optimum performance.

INITIAL INSPECTION

Inspect the MICHELIN® X One® casings as defined by your retread process manufacturer or industry recommended practices using appropriate equipment.

When using an electronic liner inspection device (such as the Hawkinson NDT), a new wide base probe of at least 275 mm / 10.9 inches is required to insure sufficient and consistent cable contact with the shoulder/upper sidewall area. (Hawkinson part # PROBE ASSEMBLY 009).

It is recommended to slow the rotation speed or make several additional cycles to catch as many small punctures as possible.

SHEAROGRAPHY

If using laser shearography inspection adjust and or modify to insure complete imaging shoulder to shoulder, per equipment manufacturer. Also make sure the correct vacuum level is applied.

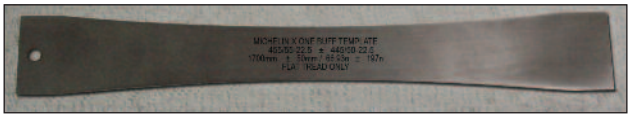
BUFFING

An expandable rim width of 14.5 inches is required. Buffing on a narrower rim can result in excess under-tread on the shoulder, thereby increasing the operating belt edge temperature. The beads of the casing should be lubricated with a fast drying tire lubricant. Runs of MICHELIN® X One® tires should start with new blades which should be changed as soon as the buff texture starts to degrade. Buffing should not start before the casing reaches target pressure in the expandable rim as defined by your retread process manufacturer. Recommended minimum inflation pressure is 1.2 bars or 18 psi, maximum inflation pressure is 1.5 bars or 22 psi. Recommended buffing radius for pre-cure flat treads (w/o wings) is 1700 mm ± 50 mm or 67 inches ± 2 inches.

USING BUFFING TEMPLATES

Check buff radius with the template after removing the tire from the buffer. A 2 mm gap is acceptable in the center of buffed surface when checking with the template.

NOTE: 1700 mm Buffing Template as available from TECH INTERNATIONAL (1-800-433-TECH/1-800-433-8342) See Pictures 1 and 2.



Picture 1 - Buffing Template

Picture 2 - Buffing Template

Recommended tread width ranges are given on Page 3 and may vary depending on the type and condition of the MICHELIN® X One® casing. The MICHELIN® X One® casing's finished buffed measured width should follow the same standards as other casings: **tread width + 8 mm/-2 mm.**

AFTER BUFF INSPECTION

If after buffing, circumferential cracks or splits remain in one or both shoulders of the tire in the vicinity of the outside tread groove (Picture 3), the crack or split should be probed. If the probing penetrates into steel or feels soft/loose material, the casing should be rejected. This should not be confused with a 360 degree product interface line that sometimes is visible after buff (Picture 4).

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If this line is visible, it should be probed and if found to be loose material, reject the casing. If it is tight, continue the retread process.

Picture 3

Picture 4

BUILDER

Expandable rim width of 14.5 inches is required.

Tread table rollers should be completely cleaned before and/or after each build series. The base of the wider MICHELIN® X One® tread will come in contact with the roller's outer edges, so care should be taken to prevent contamination by cleaning the rollers at frequent intervals.

Tread building should not begin until tire pressure has reached the target inflation pressures in the expandable rim as defined by your retread process manufacturer.

For cushion to casing extruded bonding gum application, recommended minimum inflation pressure is 0.8 bar or 12 psi. Bonding gum thickness should not exceed 1.5 mm (2/32 inch) in the crown and 2.5 mm (3/32 inch) in the shoulders.

Note: For non-Michelin wing tread products, contact MRT Duncan, SC at 1-888-678-5470, then press 3 for Technical Support.

ENVELOPING

Contact your envelope supplier for the recommended size envelopes to be used.

CURING

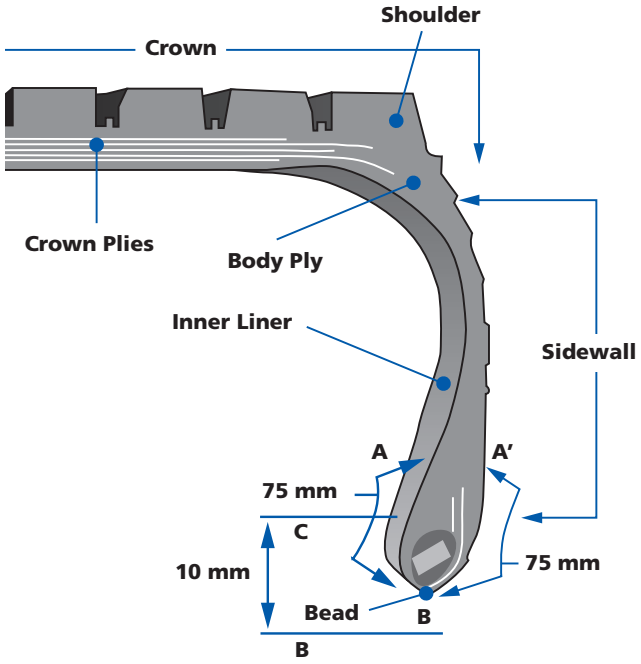
Cure the MICHELIN® X One® casing according to cure law for the tread design per the retread process manufacturer.

FINAL INSPECTION

Perform a final inspection of the MICHELIN® X One® casing according to the retread process manufacturer work method and specification.

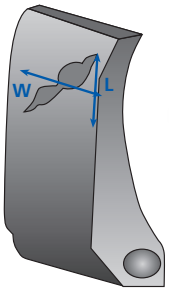
Note: The retreader is still responsible for determining if the MICHELIN® X One® casing is capable of being retreaded; the same as would be done for any other tire in the inspection process.

Principal Components



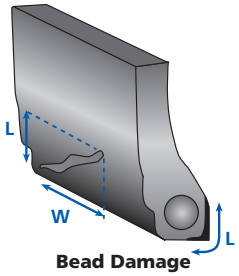
Note: For truck sizes, point B is considered the "toe" of the bead. Point A is found 75 mm from point B towards the interior of the casing, and point A' is also 75 mm from point B but is located on the exterior of the casing. Point C is located 10 mm from point B (measured as shown). Any repair patch material must be positioned ≥10 mm from the toe of the bead (point B).

Damage Guidelines

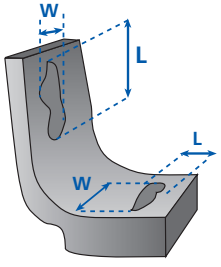


Sidewall Damage

Crown Damage



Bead Damage



Interior Damage

REPAIR RECOMMENDATIONS

Type of Repair	Application	Quantity Limits	Size Limits
Spot Repair (no body ply affected)	Long Haul, Pickup & Delivery (P&D)	Max 10 per sidewall	No limit
	Severe Service	Max 20 per sidewall	No limit
Bead Repairs (rubber damage only)	All	Max 4 per bead	Max width: 150 mm *(6 in)* Min distance between repairs: 75 mm *(3 in)*
	Severe Service (bead toe repair only)	No limit	L = 2 mm x W = 50 mm *(1/16 in. x 2 in)* Min distance between repairs: 75 mm *(3 in)*
Bead Repairs (chafer strip)	All	Max 4 per bead	L = 25 mm x W = 55 mm *(1 in. x 2 in)* Min distance between repairs: 75 mm *(3 in)*
Liner Repairs	All	No limit	If blister diameter is less than 5 mm *(3/16 in)*, leave intact; Repair between 5 mm *(3/16 in)* and 20 mm *(3/4 in)*
			If blister diameter is more than 20 mm *(3/4 in)*, reject casing
Buzzouts (protector ply of 3rd working ply)	Long Haul, P&D	Max 15 per tire	Max diameter: 40 mm *(1.6 in)* Max surface: 1600 mm² *(2.5 in²)*
	Severe Service	Max 60 per tire	Max diameter: 40 mm *(1.6 in)* Max surface: 1600 mm² *(2.5 in²)*
Buzzouts (2nd working ply; Infinicoil)	Long Haul, P&D	Max 3 per tire	Max diameter: 30 mm *(1.2 in)* Max surface: 900 mm² *(1.4 in²)*
	Severe Service	Max 20 per tire	Max diameter: 30 mm *(1.2 in)* Max surface: 900 mm² *(1.4 in²)*
Nail Hole Repairs	All	Max 5 per tire	Max diameter: 10 mm *(0.4 in)*
Section Repairs	All	Max 2 per tire	Crown Max diameter: 25 mm *(1.0 in)*
			Sidewall L 70 mm x W 25 mm *(2.8 in x 1.0 in)* L 90 mm x W 20 mm *(3.8 in x 0.8 in)* L 120 mm x W 15 mm *(4.7 in x 0.6 in)*

For up to 6 mm nail hole repairs in the shoulder area, the repair unit should be upsized (larger than CT20) and offset to move the reinforcement end as far away from the maximum flex area as possible.

RETREAD RECOMMENDATIONS

Casing Size	Buff Radius [1]	Circumference	Tread Width		
			Tread Type	Min	Max
445/50R22.5	1700 mm (± 50 mm) or *67 inches (± 2 inches)*	3070 mm or *121 inches*	Flat Tread	380 mm	390 mm
			Wing Tread [2]	375/420 mm	385/430 mm
455/55R22.5	1700 mm (± 50 mm) or *67 inches (± 2 inches)*	3225 mm or *127 inches*	Flat Tread	390 mm	400 mm
			Wing Tread [2]	385/430 mm	395/440 mm

1. For MRT Custom Mold™ Retread the buff radius should be 2200 mm *(87 in)*.
2. For non-Michelin wing tread sizes contact MRT Technical Support at 1-888-678-5470, Option 3.

www.michelintruck.com

To order more brochures, please call
Promotional Fulfillment Center

1-800-677-3322, Option #2

Monday through Friday, 9 a.m. to 5 p.m. Eastern Time

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