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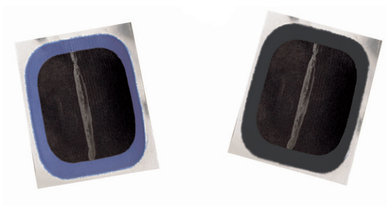
Tyre Repair application chart

Truck, Bus and Passenger Tyres

RAC PATCHES – Passenger Tyres

RAC PATCHES – PASSENGER TYRES						
RADIAL TYRES	SIZE	SPEED RATING	C X R (mm)	ØO (mm)	ØB (mm)	RAC
	145	S	10 x 15	6	10	10
	155		15 x 30	-	12	12
	165	T	20 x 35	8	20	14
	175	H	6 x 6	3	6	10
	185		10 x 10	6	10	14
	195	≥ V	3 x 3	3	6	10
	205		-	-	8	15

VF AND VFP REPAIRS



VF AND VFP REPAIRS			
BIAS AND RADIAL TYRES	DAMAGES	VF/VFP	
	mm		
	3	-	3
	6	-	6
	8	-	8

VD AND VDL PATCHES – TRUCK, BUS AND PASSENGER TYRES

VD AND VDL PATCHES – TRUCK, BUS AND PASSENGER TYRES											
BIAS TYRES	THROUGH-THE-TYRE DAMAGE										
	Ply Rating	D (max.)									
		5mm	10mm	15mm	25mm	30mm	35mm	50mm	70mm	75mm	100mm	125mm
	_4	1	2	3	3	4	4	5	-	-	-	-
	6_8	1	2	3	4	4	4	5	-	-	-	-
	10_12	2	3	4	5	5	5	6	7	7	8	-
	14_16	3	3	4	6	6	6	7	7	7	8	10
	18_20	4	4	5	6	7	7	8	9	9	9	10
	22_24	4	4	5	6	7	7	8	9	9	10	10
	DAMAGES THAT DID NOT GO THROUGH THE TYRE*											
	10_12	1	2	2	3	3	3	4	4	4	5	-
	14_16	2	2	3	3	4	4	4	5	5	5	6
	18_20	3	3	4	4	5	5	5	6	6	6	7
	22_24	3	4	4	5	5	5	6	6	6	7	8

ØD - Damage diameter measured in the tyre's 2nd external ply.

*Damages that did not go through bias ply tyres for trucks and buses require patches when the damage is larger than 30 mm, affecting 3 or more casing plies.

RAC, RA AND RS PATCHES – Truck and Bus Tyres

RAC, RA AND RS PATCHES – TRUCK AND BUS TYRES IC/LI max. 121					
RADIAL TYRES	SIZE	C X R (mm)	RAC	RA	RS
	6.00 - 7.50 7R - 8.5R 165 - 265	8 x 8	14	-	-
		15 x 30	22	31	31
		10 x 60	40	-	-
		10 x 75	-	33	33
		20 x 60	-	33	33
		20 x 90	-	35	35
		30 x 60	-	35	35
		ØO (mm)	RAC	RA	RS
		3	14	-	-
		8	22	-	-
		10	-	31	31
		12	-	33	33
		15	-	35	35
		ØB (mm)	RAC	RA	RS
		6	12	-	-
		10	15	31	31
		12	14	-	-
		15	22	-	25B
		20	-	33	33
		25	40	35	35
	IC/LI max. 121	C X R (mm)	RAC	RA	RS
		6 x 6	12	-	-
		10 x 10	15	31	31
		12 x 12	14	-	-
		15 x 15	22	-	25B
		20 x 30	-	33	33
		25 x 25	40	-	-
		25 x 40	-	35	35

RAC, RA AND RS PATCHES – TRUCK AND BUS TYRES IC/LI min. 122 IC/LI max. 158					
RADIAL TYRES	SIZE	C X R (mm)	RAC	RA	RS
	8.25 - 14.75 9R - 13R 205 - 285 295 - 385	6 x 6	20	-	-
		4 x 80	24	-	-
		8 x 60	24	-	-
		12 x 30	-	31	31
		12 x 75	-	33	33
		15 x 30	22	-	-
		15 x 60	26	-	-
		10 x 80	42	-	-
		10 x 60	40	-	-
		15 x 35	40	-	-
		20 x 90	-	35	35
		25 x 80	42	-	-
		10 x 100	42	-	-
		10 x 110	44	-	-
		10 x 140	-	37	37
		15 x 130	-	37	37
		25 x 120	-	37	37
		35 x 80	-	39	39
		15 x 150	-	39	39
		30 x 100	-	39	39
		40 x 85	-	39	39
		20 x 130	46	-	-
		40 x 80	46	-	-
		ØO (mm)	RAC	RA	RS
		8	20	-	-
		10	40	31	31
		15	-	33	33
		20	42	35	35
		25	44	37	37
		30	46	39	39
		ØB (mm)	RAC	RA	RS
		10	20	31	31
		12	22	-	-
		15	40	-	-
		18	-	-	25B
		20	42	33	33
		25	35	-	35B
		30	42	35	35
		35	44	37	37
		40	46	-	45B
		C X R (mm)	RAC	RA	RS
		10 x 10	-	31	31
		10 x 12	20	-	-
		10 x 15	22	-	-
		10 x 20	25	-	-
		15 x 25	40	-	-
		18 x 25	-	-	25B
		20 x 30	35	33	33
		25 x 40	35	-	-
		25 x 35	-	-	35B
		20 x 40	42	-	-
		30 x 50	42	35	35
		35 x 38	44	-	-
		35 x 70	-	37	37
		40 x 60	45	-	45B
	IC/LI min. 122 IC/LI max. 158	40 x 70	46	-	-
		40 x 80	-	39	39

RAC, RA AND RS PATCHES – TRUCK AND BUS TYRES IC/LI min. 159 IC/LI max. 178					
RADIAL TYRES	SIZE	C X R (mm)	RAC	RA	RS
	14.00 - 16.00 15R - 24R 375 - 495	10 x 20	-	31	31
		10 x 50	-	33	33
		10 x 90	-	35	35
		10 x 160	-	39	39
		12 x 110	-	37	37
		12 x 30	40	-	-
		15 x 120	-	39	39
		15 x 170	-	-	43
		10 x 100	42	-	-
		20 x 60	42	35	35
		25 x 70	-	37	37
		30 x 60	44	-	-
		30 x 80	-	39	39
		40 x 80	-	-	41
		20 x 130	46	-	41
		30 x 140	46	-	-
		45 x 100	46	-	43
		ØO (mm)	RAC	RA	RS
		8	-	31	31
		10	40	33	33
		15	-	35	35
		20	42	37	37
		25	44	39	39
		30	46	-	43
		ØB (mm)	RAC	RA	RS
		12	-	31	31
		15	40	33	33
		18	-	-	25B
		20	42	35	35
		25	-	-	35B
		30	44	39	39
		35	35	-	41
		40	46	-	45B
		C X R (mm)	RAC	RA	RS
		12 x 12	-	31	31
		15 x 25	40	33	33
		18 x 18	-	-	25B
		20 x 30	42	35	35
		25 x 25	-	-	35B
		25 x 40	-	37	37
		30 x 50	-	39	39
		30 x 55	44	-	-
		35 x 50	35	-	-
		35 x 60	-	-	41
		40 x 40	-	-	45B
		40 x 70	46	-	43

REMOPAT

REMOPAT		
BIAS PLY AND RADIAL TYRES	DAMAGES mm	
	Ø1	**Remopat 01** Remopat 01 with polyester base
	Ø2	**Remopat 36** Remopat 36 with polyester base Remopat with 20x20 reinforcement ply
	Ø3	**Remopat 50** Remopat with 35x35 reinforcement ply
	3 x 1	**Remopat 02**

Remopat is used to repair damages of up to 3 mm on the tread area of radial and bias ply passenger tyres, which have been retreaded by the remolding process.

IMPORTANT:

These application charts are globally valid for Vipal repairs. The range of damage in these charts is the result of field tests. The applicator must always analyze whether the tyre's physical condition is adequate for safe repairs. They absolutely must inspect the casing to verify whether or not there are other damages that are not visible at first glance. The maximum damage measurements must be respected. Repairs with dimensions larger than those provided in this chart, which are permitted by the legislation in some countries, are not included here. The applicator is responsible for the quality of the repair. They must judge the technical situation, and if necessary, increase or decrease these amounts, while always respecting the legislation in their country. The correct methods for application and assembly must always be followed, as well as the tyre manufacturer's instructions for repairs.

NOMENCLATURE

C - Circumference - Size of damage measured in the direction of the tyre's rotation.

R - Radial - Size of damage measured bead to bead (Radial).

ØB - Tread - Diameter of the through-the-tyre damage on the tread region.

ØO - Shoulder - Diameter of the through-the-tyre damage on the shoulder region.

Thought the tyre damages on the tread region of radial truck and bus tyres, larger than 8mm, that affect the belts closest to the casing plies, always require a patch.

In order to provide guidelines for performing tyre repairs, Vipal Rubber certifies that the tyre repair materials presented by the company follow the characteristics required by Mercosur Norm NBR-NM225/2000, Inmetro Ordinances 444/2010 and 19/2012, European Union Regulations ECE-R 108 (passenger vehicle tyres) and ECE-R 109 (truck and bus tyres). This statement is valid as long as the technical application guidelines are followed according to the Vipal Repair Manuals and/or instructions that are provided with the products. The permitted repair area, the maximum damage limit and the maximum number of repairs must be observed. Patches can never be placed on top of each other. When these conditions are followed, Vipal Radial and Bias Ply repairs can support up to twice the amount of pressure established by the tyre manufacturer. The chart on the right contains specifications on the quantity of patches per tyre.

STATEMENT FOR TYRE REPAIR APPLICATION		
Tyre categories		Maximum number of patches allowed for each tyre.
BIAS	Automobiles and light trailers.	2
	Mixed use pickup trucks and its trailers.	4
	Trucks, buses, minibuses and their trailers/semitrailers < 9.00-20.	6
	≥ 9.00-20.	6
RADIAL	Automobiles and light trailers. Speed index S and T.	2
	Speed index H.	1
	Speed index V and above.	NP
	Pickups and similar vehicles and their trailers.	6
	Trucks and buses or similar vehicles and their trailers, with section heights lower than or equal to 230 mm.	6
	Trucks and buses or similar vehicles and their trailers, with section heights over 230 mm.	6

Mercosur Norm NBR NM - 225 - OUT/2000

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