



TSE Industries, Inc.
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60 Shore A Millathane® 76 Roll Compound Cured in Hot-air Autoclave



Formulation

Millathane® 76	100
Zinc Stearate	0.5
HiSil 243LD	12
Mistron Vapor	30
Cumar P-10	5
TP-95	3
Struktol WB222	1
Carbowax 3350	1
Red Iron Oxide	2
MBTS-75%	5.3
MBT-75%	2.7
THANECURE® ZM	1.0
Sulfur-80%	2.0
	165.5
Curemeter at 160°C (320°F)	
ts1, min.	3.5
tc90, min	7.9

Physical Properties

Autoclave cure 40' to 149°C + 120' at 149°C	
Hardness, Shore A	55
100% Modulus, psi (MPa)	325 (2.3)
200% Modulus, psi (MPa)	505 (3.5)
300% Modulus, psi (MPa)	775 (5.3)
Tensile Strength, psi (MPa)	2510 (17)
Elongation, %	580
Tear, Die C, lb/in (kN/m)	146 (26)
Press Cure 9 min./160°C (320°F)	
Hardness, Shore A	53
100% Modulus, psi (MPa)	245 (1.7)
200% Modulus, psi (MPa)	365 (2.5)
300% Modulus, psi (MPa)	510 (3.5)
Tensile Strength, psi (MPa)	3310 (23)
Elongation, %	775
Tear, Die C, lb/in (kN/m)	167 (29)

Roll Building Procedure

Stock was sheeted off a lab mill to 1/8 in. [3 mm] thickness and wrapped around a 1 1/8 in. [29 mm] diameter solid roll to a thickness of 3/4 in. [19 mm] (2 5/8 in. [67 mm] OD). Roll was previously shot-blasted and one coat of Chemlok 219 was applied. Roll was wrapped with two layers of high-shrink Mylar.

Roll Curing Procedure

Roll was cured in a hot-air autoclave with the following conditions:
 Air pressure: 60 psi [0.4 MPa]
 Temperature cycle: 40' rise to 300°F [149°C], 2 hours at 300F.

Finished Roll Properties

The roll was ground with a taper to check hardness throughout the thickness of the rubber. The roll tested a consistent 59-60 Shore A throughout its thickness and the rubber had a good bond to the core.

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