



ESP International  
5920 Dry Creek Ln NE  
Cedar Rapids, IA 52402  
[www.espint.com](http://www.espint.com)

# 1002-N90

Revision: A

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**MATERIAL:** NBR  
**COMPOUND:** 1002-N90  
**SPECIFICATION:** ASTM D2000 M7BG910A14B14EA14EO14EO34EF11EF21  
**COLOR:** Black  
**CERTIFICATIONS:** None

Spec	<u>Original Physical Properties</u>	<u>Requirements</u>	<u>Result</u>
	Hardness, Shore A Pts	90±5	90
	Tensile Strength, Mpa (psi) min.	10 (1450)	15.6 (2270)
	Ultimate Elongation, % min.	100	110
<b>A14</b>	<b><u>Heat Resistance (ASTM D 573) 70 Hrs @ 100 C</u></b>	<b><u>Requirements</u></b>	<b><u>Result</u></b>
	Change in Hardness, Pts		4
	Change in Tensile, %		-12
	Change in Elongation, % max		-25.6
<b>B14</b>	<b><u>Compression Set (ASTM D 395B) 22 Hrs @ 100 C</u></b>	<b><u>Requirements</u></b>	<b><u>Result</u></b>
	% of Original Deflection, max.	25	19.8
<b>EA14</b>	<b><u>Water resistance (ASTM D471) 70 Hrs @ 100 C</u></b>	<b><u>Requirements</u></b>	<b><u>Result</u></b>
	Change in Hardness, Pts	±10	-1
	Volume Change, %	±15	4.4
<b>EF11</b>	<b><u>Fluid resistance (ASTM D471) 70 Hrs in Reference Fuel A @ 23 C</u></b>	<b><u>Requirements</u></b>	<b><u>Result</u></b>
	Change in Hardness, Pts	±10	-1
	Change in Tensile, %	-25	-7
	Change in Elongation, % max	-25	4
	Volume Change, %	-5~+10	1.6
<b>EF21</b>	<b><u>Fluid resistance (ASTM D471) 70 Hrs in Reference Fuel B @ 23 C</u></b>	<b><u>Requirements</u></b>	<b><u>Result</u></b>
	Change in Hardness, Pts	-30~0	-16
	Change in Tensile, %	-60	-58
	Change in Elongation, % max	-60	-42
	Volume Change, %	0~+40	28



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		<u>Requirements</u>	<u>Result</u>
<b>EO14</b>	<b><u>Oil Resistance (ASTM D 471) 70 Hrs in IRM901 Oil @ 100 C</u></b>		
	Change in Hardness, Pts	-5~+5	2
	Change in Tensile, %	-25	-14.8
	Change in Elongation, % max	-45	-18
	Volume Change, %	-10~+5	-2
<b>EO34</b>	<b><u>Oil Resistance (ASTM D 471) 70 Hrs in IRM903 Oil @ 100 C</u></b>		
	Change in Hardness, Pts	-10~+5	-6
	Change in Tensile, %	-45	-26
	Change in Elongation, % max	-45	-40
	Volume Change, %	0~+25	11.7