

CABLE ASSEMBLY MATERIAL MATRIX

Strain Relief Materials

	Thermoplastic Polyurethane Elastomer	Polyurethane, 2-Part, Heat Cured	Neoprene (Polychloroprene Elastomer)	Viton (Fluorocarbon Elastomer)	Santoprene Thermoplastic Elastomer	PVC Plastic	Shrinkable Boots	Mechanical Backshell - Non-Environmental/ Non-EMI	Mechanical Backshell - Environmental/ EMI
Process Description	Injection Molded	Cast Molded	Transfer Press Molded	Transfer Press Molded	Injection Molded	Injection Molded	Hot Air Shrink	Hand Assembly	Hand Assembly
Max Operating Temp (Deg C)	100	120	120	200	120	105	Various	120	120
Min Operating Temp (Deg C)	-55	-55	-55	-40	-55	-40	Various	-55	-55
Abrasion Resistance	Excellent	Excellent	Good	Poor	Good	Poor	Good	Poor	Poor
Tear Strength	Excellent	Excellent	Good	Poor	Good	Good	Good	N/A	N/A
Flexibility	Good	Good	Excellent	Good	Good	Poor	Good	N/A	N/A
Chemical Resistance	Good	Excellent	Good	Excellent	Good	Good	Good	Excellent	Excellent
Water Immersion Per MIL-STD-810	Limited	Yes	Yes	Yes	Limited	Limited	Poor Reliability	Poor Reliability	Yes
Bonds With Metal	Poor	Excellent	Good	Good	Poor	Poor	With Adhesive	N/A	N/A
Bonds With Thermoplastic Polyurethane Jacket	Poor	Excellent	Melts Jacket	Melts Jacket	No	No	With Adhesive	N/A	N/A
Bonds With Neoprene Jacket	No	Good	Excellent	No	No	No	With Adhesive	N/A	N/A
Bonds With Viton Jacket	No	Good	No	Excellent	No	No	With Adhesive	N/A	N/A
Bonds With Santoprene Jacket	No	No	Melts Jacket	Melts Jacket	Poor	No	With Adhesive	N/A	N/A
Bonds With PVC Jacket	No	Good	Melts Jacket	Melts Jacket	No	Poor	With Adhesive	N/A	N/A
Cost	Low	Medium	High	High	Low	Low	High	Low	High
Specification	MIL-I-3930/21 (cancelled)	MIL-M-24041, Category B	MIL-R-6855, Class 2, Type A, Grade 60	AMS 3216 or ASTM-D-2000		Not recommended for defense applications		MIL-C-85049	MIL-C-85049
Part No.	Estane 58300, 58370	Cytec EN-1556			Santoprene 101-55		Raychem, 3M		

Jacket Materials

	Thermoplastic Polyurethane Elastomer	Neoprene (Polychloroprene Elastomer)	Viton (Fluorocarbon Elastomer)	Santoprene Thermoplastic Elastomer	PVC Plastic	Shrinkable Tubing
Process Description	Extrusion or Blow On	Extrusion or Blow On	Extrusion or Blow On	Extrusion or Blow On	Extrusion or Slide On	Hot Air/Infrared Shrink
Max Operating Temp (Deg C)	100	120	200	120	105	Various
Min Operating Temp (Deg C)	-55	-55	-20	-55	-40	Various
Abrasion Resistance	Excellent	Good	Poor	Good	Poor	Good
Tear Strength	Excellent	Good	Poor	Good	Good	Good
Flexibility	Good	Excellent	Good	Good	Poor	Good
Chemical Resistance	Good	Good	Excellent	Good	Good	Good
Water Immersion Per MIL-STD-810	Yes	Yes	Yes	Yes	Yes	Yes
Over 100 Foot Lengths In Low Volume	Yes	No	No	Yes	Yes	No
Typical Wall Thickness (inch)	0.047	0.062	0.062	0.047	0.047	0.050
Suitable For Multi-Leg Cables	Good	Excellent	Excellent	Good	Poor	Excellent
Comparative Cost in Low Volume	High	Low	High	High	High	Medium
Comparative Cost In High Volume	Low	Medium	High	Low	Low	High
Specification	MIL-I-3930/21 (cancelled)	MIL-R-6855, Class 2, Type A, Grade 60	AMS 3216 or ASTM-D-2000		Not recommended for defense applications	
Part No.	Estane 58300, 58370			Santoprene 101-55		Raychem, 3M

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Other materials are available, consult factory.