

3M Scotch-Weld™ DP270 Black Structural Adhesive

Category : Polymer , Adhesive

Material Notes:

Rigid potting compound, Non-corrosive Information provided by 3M

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Scotch-Weld-DP270-Black-Structural-Adhesive.php

Physical Properties	Metric	English	Comments
Viscosity	6000 - 12000 cP	6000 - 12000 cP	Accelerator
	7000 - 16000 cP	7000 - 16000 cP	Base
	12000 cP	12000 cP	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	83	83	ASTM D2240
Compressive Strength	55.8 MPa	8100 psi	ASTM D695-68T
Shear Strength	2.07 MPa	300 psi	Overlap
	@Temperature 82.0 °C	@Temperature 180 °F	
	2.07 - 2.41 MPa	300 - 350 psi	Overlap Al/Al (etched); ASTM D1002-72
	@Temperature 82.0 °C	@Temperature 180 °F	
	8.27 MPa	1200 psi	Overlap
	@Temperature -55.0 °C	@Temperature -67.0 °F	
	8.27 - 8.62 MPa	1200 - 1250 psi	Overlap Al/Al (etched); ASTM D1002-72
	@Temperature -55.0 °C	@Temperature -67.0 °F	
	11.7 - 12.1 MPa	1700 - 1750 psi	Overlap Copper/Copper (MEK Wiped); ASTM D1002-72
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	12.1 - 12.4 MPa	1750 - 1800 psi	Overlap FR-4/FR-4 (MEK Wiped); ASTM D1002-72
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	16.9 - 17.2 MPa	2450 - 2500 psi	Overlap Al/Al (etched); ASTM D1002-72
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	17.2 MPa	2500 psi	Overlap
	@Temperature 24.0 °C	@Temperature 75.2 °F	
Peel Strength	<= 0.351 kN/m	<= 2.00 pli	90° T-Peel, Alum/Alum; ASTM D1876-

Mechanical Properties	Metric	English	Comments
	0.351 kN/m	2.00 pli	T-Peel

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Below Tg
	@Temperature 5.00 - 30.0 $^\circ\text{C}$	@Temperature 41.0 - 86.0 $^\circ\text{F}$	
	180 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	100 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	Above Tg
	@Temperature 60.0 - 125 $^\circ\text{C}$	@Temperature 140 - 257 $^\circ\text{F}$	
Thermal Conductivity	0.177 W/m-K	1.23 BTU-in/hr-ft ² - $^\circ\text{F}$	
	@Thickness 6.35 mm, Temperature 43.3 $^\circ\text{C}$	@Thickness 0.250 in, Temperature 110 $^\circ\text{F}$	
Glass Transition Temp, Tg	43.0 $^\circ\text{C}$	109 $^\circ\text{F}$	Onset
	49.0 $^\circ\text{C}$	120 $^\circ\text{F}$	Mid-point

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.10e+14 ohm-cm	4.10e+14 ohm-cm	ASTM D257
Insulation Resistance	2.00e+11 ohm	2.00e+11 ohm	1000 hrs
	3.00e+13 ohm	3.00e+13 ohm	Initial
Dielectric Constant	3.5	3.5	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	33.5 kV/mm	850 kV/in	ASTM D149
Dissipation Factor	0.018	0.018	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Processing Properties	Metric	English	Comments
Cure Time	180 min	3.00 hour	Time to Handling Strength
	2880 min	48.0 hour	

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