

3M Scotch-Weld™ DP8005 Black Structural Adhesive

Category : Polymer , Adhesive

Material Notes:

3M™ Scotch-Weld™ Structural Plastic Adhesive DP-8005 is a two-part acrylic-based adhesive (10:1 ratio by volume) that can bond many low surface energy plastics, including many grades of polypropylene, polyethylene, and TPO's without special surface preparation. It can replace screws, rivets, plastic, welding, and two-step processes which include chemical etchants, priming or surface treatments in many applications. Information provided by 3M

Order this product through the following link:

http://www.lookpolymers.com/polymer_3M-Scotch-Weld-DP8005-Black-Structural-Adhesive.php

Physical Properties	Metric	English	Comments
Brookfield Viscosity	15000 - 30000 cP	15000 - 30000 cP	Base, DV-II, #7 sp, 20 rpm
	35000 - 55000 cP	35000 - 55000 cP	Accecelerator, DV-II, #7 sp, 20 rpm

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	60	60	ASTM D2240
Tensile Modulus	0.40529 GPa	58.782 ksi	at 1% Strain
Shear Strength	0.345 MPa	50.0 psi	Overlap, Toluene for 14 days, Cohesive Failure
	1.38 MPa	200 psi	Overlap, PTFE, Adhesive Failure
	1.38 MPa	200 psi	Overlap, Acetone for 14 days, Cohesive Failure
	2.76 MPa	400 psi	Overlap, LDPE, Substrate Failure
	3.10 MPa	450 psi	Overlap, Gasoline for 14 days, Cohesive Failure
	3.62 MPa	525 psi	Overlap, Glass (3/16" thick), Substrate Failure
	3.96 MPa	575 psi	Overlap, HIPS, Substrate Failure
	5.17 MPa	750 psi	Overlap, UHMWPE, Substrate Failure
	5.17 MPa	750 psi	Overlap, Polystyrene, Substrate Failure
	5.86 MPa	850 psi	Overlap, HDPE/HDG, Adhesive/Cohesive Failure
	6.03 MPa	875 psi	Overlap, PE, Substrate Failure
	6.38 MPa	925 psi	Overlap, 71°C/100% RH salt water soak for 14 days, Cohesive Failure

Mechanical Properties	Metric	English	Comments
	6.55 MPa	950 psi	Overlap, Diesel Fuel for 14 days, Substrate Failure
	6.72 MPa	975 psi	Overlap, RT salt water soak for 14 days, Substrate Failure
	6.89 MPa	1000 psi	Overlap, 71°C water soak for 14 days, Substrate Failure
	6.89 MPa	1000 psi	Overlap, HCl for 14 days, Substrate Failure
	6.89 MPa	1000 psi	Overlap, Isopropyl Alcohol for 14 days, Substrate Failure
	7.067 MPa	1025 psi	Overlap, HDPE/Galvanealed, Substrate Failure
	7.067 MPa	1025 psi	Overlap, HDPE/CRS, Adhesive/Cohesive Failure
	7.067 MPa	1025 psi	Overlap, NaOH for 14 days, Substrate Failure
	7.067 MPa	1025 psi	Overlap, Antifreeze Coolant for 14 days, Substrate Failure
	7.412 MPa	1075 psi	Overlap, Plexiglass (PMMA), Substrate Failure
	7.58 MPa	1100 psi	Overlap, HDPE, Substrate Failure
	7.58 MPa	1100 psi	Overlap, Polycarbonate, Adhesive Failure
	7.58 MPa	1100 psi	Overlap, 304 Stainless Steel (1/32" thick), Cohesive Failure
	7.58 MPa	1100 psi	Overlap, Control, Substrate Failure
	7.93 MPa	1150 psi	Overlap, PP, Substrate Failure
	8.446 MPa	1225 psi	Overlap, Oily HDG, Adhesive/Cohesive Failure
	9.825 MPa	1425 psi	Overlap, Gel Coat (3/16" thick), Substrate Failure
	10.86 MPa	1575 psi	Overlap, ABS, Substrate Failure
	13.1 MPa	1900 psi	Overlap, PVC, Substrate Failure
	14.1 MPa	2050 psi	Overlap, Copper (1/16" thick), Cohesive Failure
	14.31 MPa	2075 psi	Overlap, Aluminum (1/16" thick), Cohesive Failure
	15.69 MPa	2275 psi	Overlap, CRS (1/32" thick), Adhesive Failure

Mechanical Properties	Metric	English	Comments
	11.1 MPa	1600 psi	Overlap, Green FRP, Cohesive Failure
	2.07 MPa	300 psi	Overlap
	@Temperature 82.0 °C	@Temperature 180 °F	
	5.17 MPa	750 psi	Overlap, HDPE, AF/CF
	@Temperature 82.0 °C	@Temperature 180 °F	
	6.21 MPa	900 psi	Overlap, Green FRP, Adhesive Failure
	@Temperature -29.0 °C	@Temperature -20.2 °F	
	6.72 MPa	975 psi	Overlap, HDPE, Adhesive Failure
	@Temperature -29.0 °C	@Temperature -20.2 °F	
	6.72 MPa	975 psi	Overlap, Green FRP, AF/CF
	@Temperature 82.0 °C	@Temperature 180 °F	
	7.067 MPa	1025 psi	Overlap, Green FRP, AF/CF
	@Temperature 66.0 °C	@Temperature 151 °F	
	7.93 MPa	1150 psi	Overlap, HDPE, AF/CF
	@Temperature 66.0 °C	@Temperature 151 °F	
	10.7 MPa	1550 psi	Overlap, Green FRP, AF/CF
	@Temperature 49.0 °C	@Temperature 120 °F	
	12.93 MPa	1875 psi	Overlap, HDPE, AF/CF
	@Temperature 49.0 °C	@Temperature 120 °F	
	16.5 MPa	2400 psi	Overlap
	@Temperature 24.0 °C	@Temperature 75.2 °F	
	16.9 MPa	2450 psi	Overlap, Green FRP, Adhesive Failure
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	17.06 MPa	2475 psi	Overlap, HDPE, Adhesive Failure
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Peel Strength	1.58 kN/m	9.00 pli	T-Peel, HDPE, Cohesive but shocky
	1.75 kN/m	10.0 pli	T-Peel

Thermal Properties	Metric	English	Comments
CTE, linear	125 µm/m-°C	69.4 µin/in-°F	Below Tg
	170 µm/m-°C	94.4 µin/in-°F	Above Tg

Thermal Properties	Metric	English	Comments
Glass Transition Temp. Tg	33.0 °C	91.4 °F	onset

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

Descriptive Properties	Value	Comments
Appearance	Black	Base
	Black	
	White	Accelerator

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