



**Adhesive  
Solutions**

GROUP OF COMPANY

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**3M** Science.  
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ASK A 3M EXPERT

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## 3M™ Scotch-Weld™ Epoxy Adhesive DP100 Clear

### Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP100 is a two-part adhesive offering fast cure and machinability. Available in larger containers as 3M™ Scotch-Weld™ Epoxy Adhesives 100 B/A or 100 NS B/A.

### Product Features

- Easy mixing
- High Flow
- Fast Cure
- Meets UL 94 HB



**Technical Information Note**

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

**Typical Uncured Physical Properties**

Property	Values	Notes	Method	Test Condition
Color	Clear/Lt. Amber	Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.		
Base Viscosity	8,000-15,000 cP	Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.	3M C1d	80° F(27° C)
Accelerator Viscosity	9,000-16,000 cP	Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.	3M C1d	80° F(27° C)
Base Resin	Epoxy			
Base Net Weight	9.5 to 9.9 lb/gal			
Accelerator Net Weight	9.2 to 9.6 lb/gal			
Mix Ratio by Volume (B:A)	1:1			
Mix Ratio by Weight (B:A)	1:0.98			

**Typical Mixed Physical Properties**

Property	Values	Method	Test Condition	Notes	Substrate	Dwell/Cure Time	Substrate Notes
Worklife, 10g mixed	5 min	3M C548	Room Temperature	Procedure involves periodically measuring a 10 gram mixed mass for spreading and wetting properties. This time approximates the usable worklife in an EPX applicator nozzle.			
Time to Handling Strength	15 to 20 min	3M C3179	Room Temperature	Time to handling strength taken to be that required to achieve a 50 psi overlap shear (OLS) strength using aluminum substrates.	Aluminum		

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**Typical Mixed Physical Properties (continued)**

Property	Values	Method	Test Condition	Notes	Substrate	Dwell/Cure Time	Substrate Notes
Time to Full Cure	24 to 48 h		Room Temperature	The cure time is defined as that time required for the adhesive to achieve a minimum of 80% of the ultimate strength as measured by aluminum-aluminum OLS.			
Rate of Strength Buildup (OLS)	0 lb/in <sup>2</sup>	ASTM D1002	Room Temperature	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.	Aluminum	10 min @ Room Temperature	7mil bondline
Rate of Strength Buildup (OLS)	400 lb/in <sup>2</sup>	ASTM D1002	Room Temperature	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.	Aluminum	20 min @ Room Temperature	7mil bondline

**Typical Cured Characteristics**

Property	Values	Notes	Method	Test Condition
Color	Translucent	Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.		

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Adhesive

**Typical Cured Characteristics (continued)**

Property	Values	Notes	Method	Test Condition
Shore D Hardness	80 to 85		ASTM D2240	Room Temperature
Weight Loss by Thermal Gravimetric Analysis (TGA)	5 %	Weight loss by Thermal Gravimetric Analysis reported as that temperature at which 5% weight loss occurs by TGA in air at 5 °C (41 °F) rise per minute.	ASTM E1131	585 °F(307 °C)
Compression Strength	8400 lb/in <sup>2</sup>		ASTM D695	Room Temperature

**Typical Performance Characteristics**

Solvent Resistance	Environmental Condition
A	Immersed in Acetone one hour
A	Immersed in Acetone one month
A	Immersed in Isopropyl Alcohol one hour
B	Immersed in Isopropyl Alcohol one month
A	Immersed in Freon TF one hour
A	Immersed in Freon TF one month
A	Immersed in Freon TMC one hour
A	Immersed in Freon TMC one month
A	Immersed in 1, 1, 1 - Trichloroethane one hour
B	Immersed in 1, 1, 1 - Trichloroethane one month
A	Immersed in RMA Flux one hour
A	Immersed in RMA Flux one month

Property: Solvent Resistance

Dwell/Cure Time: 24 hr @ Room Temperature + 2 hr @ 160° F(71° C)

notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed in the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.

Overlap Shear Strength (at Temperature)	Test Condition
900 lb/in <sup>2</sup>	@ -67° F(-55° C)
1500 lb/in <sup>2</sup>	Room Temperature

Table continued on next page

**Typical Performance Characteristics (continued)**

Overlap Shear Strength (at Temperature)	Test Condition
300 lb/in <sup>2</sup>	15 min @ 180°F(82°C)

Property: Overlap Shear Strength (at Temperature)

Method: ASTM D1002

Dwell/Cure Time: 7 days at Room Temperature under 2 psi cure pressure

Substrate: Etched Aluminum

Substrate Notes: 0.005-0.008in bondline

notes: Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
1500 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Etched Aluminum	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	
950 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Aluminum	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK

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## Typical Performance Characteristics (continued)

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
1000 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Cold Rolled Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK
950 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Copper	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
700 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Brass	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK
750 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Stainless Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
900 lb/in <sup>2</sup>	7 days at Room Temperature under 2 psi cure pressure	Galvanized Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	MEK/Abrade/MEK
490 lb/in <sup>2</sup>		ABS	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
330 lb/in <sup>2</sup>		Polyvinyl chloride (PVC)	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe
250 lb/in <sup>2</sup>		Polycarbonate (PC)	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
100 lb/in <sup>2</sup>		Acrylic (PMMA)	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe
950 lb/in <sup>2</sup>		Fiberglass Reinforced Plastic	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
125 lb/in <sup>2</sup>		SBR to Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe
140 lb/in <sup>2</sup>		Neoprene Rubber to Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe

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**Typical Performance Characteristics (continued)**

Overlap Shear Strength	Dwell/Cure Time	Substrate	Notes	Surface Preparation
140 lb/in <sup>2</sup>		Nirtile Steel	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>	IPA Wipe/Abrade/IPA Wipe

Property: Overlap Shear Strength  
 Method: ASTM D1002  
 Test Condition : Room Temperature  
 Substrate Notes: 0.005-0.008in bondline

T-Peel Adhesion	Substrate	Substrate Notes	Surface Preparation
2 lb/in width	Aluminum	0.032in thick; 17 - 20 mil bondline	
2 lb/in width	Aluminum	0.032in thick; 5 - 8 mil bondline	
2 lb/in width	Cold Rolled Steel	0.032in thick; 17 - 20 mil bondline	MEK/Abrade/MEK

Property: T-Peel Adhesion  
 Method: ASTM D1876  
 Dwell/Cure Time: 7 days at Room Temperature under 2 psi cure pressure  
 Test Condition : Room Temperature  
 notes: Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. T-peel strengths were measured on 1 in. wide bonds. The testing jaw separation rate was 20 inches per minute.

**Typical Performance Characteristics (continued)**

Property	Values	Method	Dwell/Cure Time	Environment Condition	Test Condition	Substrate	Substrate Notes	Notes
Environmental Resistance (OLS)	500 lb/in <sup>2</sup>	ASTM D1002	7 days at Room Temperature under 2 psi cure pressure	30 days, Room Temperature	Room Temperature	Etched Aluminum	0.005-0.008in bondline	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>

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Adhesive Solutions

**Typical Performance Characteristics (continued)**

Property	Values	Method	Dwell/Cure Time	Environment Condition	Test Condition	Substrate	Substrate Notes	Notes
Environmental Resistance (OLS)	1500 lb/in <sup>2</sup>	ASTM D1002	7 days at Room Temperature under 2 psi cure pressure	3 days, Water Vapor, 160°F/100 RH	Room Temperature	Etched Aluminum	0.005-0.008in bondline	<p>Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. The data shown here was generated using the 3M™ Scotch-Weld™ EPX™ Applicator System equipped with an EPX static mixer according to manufacturer's directions. Thorough hand mixing will afford comparable results.</p> <p>Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024 T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hours.</p> <p>The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in., other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in.</p>

**Electrical and Thermal Properties**

Property	Values		Notes	Method	Test Condition
Glass Transition Temperature (Tg) by DSC	33 °C	91 °F	Glass transition temperature (Tg) determined using Perkin Elmer (DSC) Analyzer with a heating rate of 20 °C (68 °F) per minute. Second heat values given.		
Dielectric Strength	860 V/mil			ASTM D149	Room Temperature

Table continued on next page

Adhesive

**Electrical and Thermal Properties (continued)**

Property	Values		Notes	Method	Test Condition
Thermal Conductivity	0.107 (btu-ft)/(h-ft <sup>2</sup> -°F)		Thermal conductivity determined using C-matic Instrument with 2 in. diameter samples.	C177	115°F(46°C)
Volume Resistivity	$3.5 \times 10^{12} \Omega\text{-cm}$			ASTM D257	Room Temperature
Coefficient of Thermal Expansion	$60 \times 10^{-6} \text{ m/m/}^\circ\text{C}$		Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.		-40°C to 20°C (-38°F to 68°F)
Coefficient of Thermal Expansion	$209 \times 10^{-6} \text{ m/m/}^\circ\text{C}$		Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.		60°C to 120°C (140°F to 248°F)

**Handling/Application Information****Application Equipment**

For small or intermittent applications the 3M™ Scotch-Weld™ EPX™ applicator is a convenient method of application.

For larger applications these adhesives may be applied by use of flow equipment. Two-part meter/mixing/dispensing equipment is available for intermittent or production line use. These systems may be desirable because of their variable shot size and flow rate characteristics and are adaptable to many applications.

## Handling/Application Information (continued)

### Directions for Use

1. For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by user. For specific surface preparations on common substrates, see the following section on Surface Preparation.

2. Use gloves to minimize skin contact with adhesive.

3. These products consist of two parts.

#### Mixing and Applying

For Duo-Pak Cartridges - 48.5 ml

3M™ Scotch-Weld™ DP100 and DP100 NS Adhesives are supplied in a dual syringe plastic Duo-Pak cartridge as part of the 3M™ Scotch-Weld™ EPX™ Applicator system. To use, simply insert the Duo-Pak cartridge into the EPX applicator and start the plunger into the cylinders using light pressure on the trigger. Next, remove the Duo-Pak cartridge cap and expel a small amount of adhesive to be sure both sides of the Duo-Pak cartridge are flowing evenly and freely. If mixing of Part A and Part B is desired, attach the EPX mixing nozzle to the Duo-Pak cartridge and begin dispensing the adhesive. For hand mixing, expel the desired amount of adhesive and mix thoroughly. Mix approximately 15 seconds after uniform color is obtained.

For Duo-Pak Cartridges - 200/400 ml

Directions for Use: While holding cartridge in an upright position, remove insert from Duo-Pak cartridge by unscrewing plastic nut. Detach metal removal disc from insert to free plastic nut for nozzle attachment. Clear orifices if necessary. Attach mixing nozzle and secure with plastic nut. Place cartridge into EPX Applicator.

Dispense a small quantity of adhesive to assure both components are dispensing equally. Apply adhesive to clean surfaces, join parts, secure until set up (20 minutes @ 75° F [24° C]). Leave nozzle attached to store. Replace nozzle after storage.

#### For Bulk Containers

Mix thoroughly by weight or volume in the proportions specified in the Typical Uncured Properties section. Mix approximately 15 seconds after uniform color is obtained.

4. For maximum bond strength apply adhesive evenly to both surfaces to be joined.

5. Application to the substrates should be made within 5 minutes. Larger quantities and/or higher temperatures will reduce this working time.

6. Join the adhesive coated surfaces and allow to cure at 60° F (16° C) or above until completely firm. Heat, up to 200° F (93° C), will speed curing. These products will fully cure in 24-48 hours @ 75° F (24° C).

7. Keep parts from moving during cure. Contact pressure is necessary. Maximum shear strength is obtained with a 3-5 mil bond line.

8. Excess uncured adhesive can be cleaned up with ketone type solvents.\*

\*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.

Adhesive Coverage: A 0.005 in. thick bondline will typically yield a coverage of 320 sqft/gallon.



## Handling/Application Information (continued)

### Surface Preparation

For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by the user.

The following cleaning methods are suggested for common surfaces:

Steel:

1. Wipe free of dust with oil-free solvent such as acetone or isopropyl alcohol.\*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with solvent to remove loose particles.
4. If a primer is used, it should be applied within 4 hours after surface preparation.

Aluminum:

1. Acid Etch: Place panels in the following solution for 10 minutes at 150°F ± 5°F (66°C ± 2°C).

Sodium Dichromate 4.1 - 4.9 oz./gallon

Sulfuric Acid, 66° Be 38.5 - 41.5 oz./gallon 2024-T3 aluminum (dissolved) 0.2 oz./gallon minimum Tap Water as needed to balance

2. Rinse: Rinse panels in clear running tap water.

3. Dry: Air dry 15 minutes and force dry 10 minutes at 150°F ± 10°F (66°C ± 5°C).

4. If primer is to be used, it should be applied within 4 hours after surface preparation.

5. Option 2: Degrease with an industrial solvent such as MEK\*; abrade with ScotchBrite™ 7447 abrasive (or sandpaper of approximately 180 grit) and wipe again with solvent\*.

Plastics/Rubber:

1. Wipe with isopropyl alcohol.\*
2. Abrade using fine grit abrasives.
3. Wipe with isopropyl alcohol.\*

\*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.

### Storage and Shelf Life

Store products at 60-80°F (16-27°C) for maximum storage life. Rotate on "first in-first out" basis.

When stored as recommended in original unopened container, this product has a shelf life of 24 months from date of manufacture.

### Industry Specifications

UL 94 HB

### Trademarks

3M, Scotch-Weld and EPX are trademarks of 3M Company.

### Family Group

	DP100 Clear	DP100NS Translucent
Shore D Hardness Test Condition: Room Temperature	80 to 85	80 to 85
Time to Handling Strength (min) Test Condition: Room Temperature Substrate: Aluminum	15 to 20	15 to 20
Color	Clear/Lt. Amber	Translucent

## References

1. 3m.com Product Page  
Url: [http://www.3m.com/3M/en\\_US/company-us/all-3m-products/-/3M-Scotch-Weld-Epoxy-Adhesive-DP100?N=5002385+3293242434&rt=rud](http://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Scotch-Weld-Epoxy-Adhesive-DP100?N=5002385+3293242434&rt=rud)
2. Safety Data Sheet  
Url: [https://www.3m.com/3M/en\\_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en\\_US&co=ptn&q=DP100 Clear](https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=DP100 Clear)

## ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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