



3M™ Scotch-Weld™ Epoxy Adhesive DP100 Clear

Last Revision Date: February, 2019

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	Additional Information
Color	Clear	View

Notes: Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.

Base Viscosity	8,000-15,000 cP	View
Test Method: 3M C1d Temp C: 27C Temp F: 80F Notes: Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.		

Accelerator Viscosity	9,000-16,000 cP	View
Test Method: 3M C1d Temp C: 27C Temp F: 80F Notes: Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.		


Base Resin	Epoxy
Base Net Weight	9.5 to 9.9 lb/gal

Accelerator Net Weight	9.2 to 9.6 lb/gal
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Mix Ratio by Volume (B:A)	1:1
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Mix Ratio by Weight (B:A)	1:0.98
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Typical Mixed Physical Properties

Property	Values	Additional Information
Open Time	5 min	View 

Notes: Maximum time allowed after applying adhesive to one substrate before bond must be closed and fixed in place. Cure times are approximate and depend on adhesive temperature. For hotmelts: The approximate bonding range of a 1/8" bead of molten adhesive on a non-metallic surface.


Worklife, 10g mixed	5 min	View 
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Test Method: 3M C548

Temp C: 23C

Temp F: 73F


Notes: 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	View 
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Temp C: 23C

Temp F: 73F


Notes: Minimum time required to achieve 50 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.

Time to Full Cure	24 to 48 hr	View 
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Temp C: 23C


Temp F: 73F

Notes: 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.

Time to Full Cure	24 to 48 hr	View 
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Temp C: 23C

Temp F: 73F

Rate of Strength Buildup 20min	400 lb/in ²	View 
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Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 20

Dwell Time Units: min


Temp C: 23C

Temp F: 72F


Substrate: Aluminum

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)


Rate of Strength Buildup	0 lb/in ²	View 
<p>Test Method: ASTM D1002</p> <p>Test Name: Overlap Shear Strength Dwell/Cure Time: 10 Dwell Time Units: min Temp C: 23C Temp F: 72F Substrate: Aluminum</p> <p>Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)</p>		

Typical Physical Properties


Property	Values	Additional Information
Color	Clear	View 
<p>Test Name: Cured</p>		

Typical Cured Characteristics

Property	Values	Additional Information
Shore D Hardness	82	View 
<p>Test Method: ASTM D2240</p> <p>Temp C: 23C Temp F: 73F</p>		
Weight Loss by Thermal Gravimetric Analysis (TGA)	585°F(307°C)	View 
<p>Test Method: ASTM E1131</p> <p>Notes: Weight loss by Thermal Gravimetric Analysis reported as that temperature at which 5% weight loss occurs by TGA in air at 5°C (9°F) rise per minute.</p>		


Compression Strength	8400 lb/in ²	View 
<p>Test Method: ASTM D695</p> <p>Test Condition: Room Temperature</p>		

Typical Performance Characteristics

Property	Values	Additional Information
Overlap Shear Strength 7day Aluminum	950 lb/in ²	View 
<p>Test Method: ASTM D1002</p> <p>Test Name: Overlap Shear Strength Dwell/Cure Time: 7 Dwell Time Units: day</p>		

Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Aluminum
 Surface Preparation: MEK/Abrade/MEK


Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Cold Rolled Steel 1000 lb/in² View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Cold Rolled Steel
 Surface Preparation: MEK/Abrade/MEK


Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Copper 950 lb/in² View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Copper
 Surface Preparation: MEK/Abrade/MEK

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Brass 700 lb/in² View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Brass
 Surface Preparation: MEK/Abrade/MEK

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Stainless Steel 750 lb/in² View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Stainless Steel

Surface Preparation: MEK/Abrade/MEK

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day ABS

490 lb/in²

View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 7

Dwell Time Units: day

Temp C: 23C

Temp F: 73F

Environmental Condition: 50%RH

Substrate: ABS

Surface Preparation: IPA Wipe/Abrade/IPA Wipe

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Polyvinyl chloride (PVC)

330 lb/in²

View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 7

Dwell Time Units: day

Temp C: 23C

Temp F: 73F

Environmental Condition: 50%RH


Substrate: Polyvinyl chloride (PVC)

Surface Preparation: IPA Wipe/Abrade/IPA Wipe

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Polycarbonate (PC)

250 lb/in²

View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 7

Dwell Time Units: day

Temp C: 23C

Temp F: 73F

Environmental Condition: 50%RH

Substrate: Polycarbonate (PC)

Surface Preparation: IPA Wipe/Abrade/IPA Wipe

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Acrylic (PMMA)

100 lb/in²

View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 7

Dwell Time Units: day

Temp C: 23C

Temp F: 73F

Environmental Condition: 50%RH

Substrate: Acrylic (PMMA)

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Overlap Shear Strength 7day Fiber-Reinforced Plastic

950 lb/in²

View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 7

Dwell Time Units: day

Temp C: 23C

Temp F: 73F

Environmental Condition: 50%RH

Substrate: Fiber-Reinforced Plastic

Surface Preparation: IPA Wipe/Abrade/IPA Wipe

Notes: 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 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. 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. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

Solvent Resistance Acetone 1hr

A

View 

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

Environmental Condition: Acetone 1hr

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Acetone 1month

A

View 

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

Environmental Condition: Acetone 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Isopropyl Alcohol 1hr

A

View 

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

Environmental Condition: Isopropyl Alcohol 1hr

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Isopropyl Alcohol 1month

B

View 

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

Environmental Condition: Isopropyl Alcohol 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Freon TF 1hr

A

View 

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

Environmental Condition: Freon TF 1hr

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Freon TF 1month

A

View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: Freon TF 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Freon TMC 1hr A View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: Freon TMC 1hr

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance Freon TMC 1month A View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: Freon TMC 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance 1, 1, 1 - Trichloroethane 1hour A View 


Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: 1, 1, 1 - Trichloroethane 1hour

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance 1, 1, 1 - Trichloroethane 1month B View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: 1, 1, 1 - Trichloroethane 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance RMA Flux 1hr A View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: RMA Flux 1hr

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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.

Solvent Resistance RMA Flux 1month A View 

Dwell/Cure Time: 24hr @ RT + 2hr @ 160F(71C)
Environmental Condition: RMA Flux 1month

Notes: Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n 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 7day Galvanized Steel 900 lb/in² View 

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 7
Dwell Time Units: day

Temp C: 23C
 Temp F: 73F
 Environmental Condition: 50%RH
 Substrate: Galvanized Steel
 Surface Preparation: MEK/Abrade/MEK

Notes: ½” overlap; samples pulled at 0.1 in/min for metals and 2 in/min for plastics; all surfaces prepared with light abrasion and solvent clean; substrates used were 1/16” thick aluminum and 1/8” thick plastics; composites varied. SF: Substrate Failure AF: Adhesive Failure CF: Cohesive Failure MF: Mixed failure modes

T-Peel Adhesion 7day 23C Aluminum 2 lb/in width (2 lb/in width) View 

Test Method: ASTM D1876

Test Name: T-Peel Adhesion
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Substrate: Aluminum

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.

T-Peel Adhesion 7day 23C Aluminum 2 lb/in width View 

Test Method: ASTM D1876

Test Name: T-Peel Adhesion
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Substrate: Aluminum

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.



T-Peel Adhesion 7day 23C Cold Rolled Steel 2 lb/in width View 


Test Method: ASTM D1876

Test Name: T-Peel Adhesion
 Dwell/Cure Time: 7
 Dwell Time Units: day
 Temp C: 23C
 Temp F: 73F
 Substrate: Cold Rolled Steel
 Surface Preparation: MEK/Abrade/MEK

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.


Electrical and Thermal Properties

Property	Values	Additional Information
Glass Transition Temperature (Tg)	33 °C (91 °F)	View 
Test Condition: Mid-Point		
Notes: Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 68°F (20°C) per minute. Second heat values given.		
Glass Transition Temperature (Tg)	91 °F	View 
Test Condition: Mid-Point		
Notes: Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 68°F (20°C) per minute. Second heat values given.		

Volume Resistivity	3.5 x 10 ¹² Ω-cm	View 
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Test Method: ASTM D257

Temp C: 23C
Temp F: 73F

Coefficient of Thermal Expansion	60 x 10 ⁻⁶ m/m/°C	View 
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Test Condition: -40°C to 20°C (-38°F to 68°F)

Notes: Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.

Coefficient of Thermal Expansion	209 x 10 ⁻⁶ m/m/°C	View 
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Test Condition: 60°C to 120°C (140°F to 248°F)

Notes: Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.

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.

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.

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.

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.

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/all-3m-products/~//3M-Scotch-Weld-Epoxy-Adhesive-DP100/?N=5002385+3293242434&rt=rud
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=DP100 Clear

Family Group

Link Tags:

• DP100 Clear

• DP100NS Translucent

Products	Open Time	Color	Time to Handling Strength	Time to Full Cure	Shore D Hardness
DP100 Clear	5 min	Clear	15 to 20 min	24 to 48 hr	82
DP100NS Translucent	5 min	Translucent	15 to 20 min	24 to 48 hr	82

ISO Statement

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