SNAPSHOOT
ENGINEERED FOR A SAFER TOMORROW

현장을 이해하고, 필요한 솔루션을 연결합니다.

산업안전 · 추락방지 시스템
산업용 소재 · 건축자재
제품 제안부터 공급·시공·설치·교육까지



COMPANY INFORMATION

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TECHNICAL DOCUMENTS

인증서 · 데이터시트 · 기술자료

제품의 규격과 성능, 인증 및 적용 조건을 확인하기 위한 자료입니다.

ABOUT SNAPSHOOT

제품 공급을 넘어, 현장에 맞는 해결책으로

스냅슛은 산업현장의 작업 환경과 요구 조건을 바탕으로
적합한 제품과 시스템을 제안합니다. 현장 실사를 통해 설치 조건을 확인하고,
공급부터 시공·설치 및 사용 교육까지 필요한 과정을 함께합니다.

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윈치 안전블록 · 구조장비

산업안전 보호구

전신형 안전대 · 랜야드 · 안전블록
작업 환경에 맞춘 개인보호구

산업용 소재·건축자재

산업용 테이프 · 접착제 · 기능성 소재
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본 페이지는 스냅슛의 자료 제공 안내용 표지입니다. 첨부된 인증서 및 기술자료의 발행 주체, 인증 대상과 적용 범위는 해당 원문을 기준으로 확인해 주세요.



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English-US

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Technical Data Sheet

3M™ Scotch-Weld™ Epoxy Adhesive DP100 Clear

Product Details

Regulatory Info/SDS

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

Attribute Name	Value
Color	Clear [1]
Mix Ratio by Weight (B:A)	1:0.98
Mix Ratio by Volume (B:A)	1:1

[1] Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.

Attribute Name	Test Method	Temperature	Value
Base Resin			Epoxy
Base Net Weight			1.14 — 1.19 g/cm³ (9.5 — 9.9 lb/gal)
Accelerator Net Weight			1.1 — 1.15 g/cm³ (9.2 — 9.6 lb/gal)
Base Viscosity	3M C1d	27 °C (80 °F)	8,000-15,000 cP [1]
Accelerator Viscosity	3M C1d	27 °C (80 °F)	9,000-16,000 cP [1]

[1] Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.

Typical Mixed Physical Properties

Rate of Strength Buildup

Substrate: Etched Aluminum
Temperature: 23 °C (73 °F)
Test Method: ASTM D1002, ISO 4587

Dwell Time	Value
10 min	0 MPa (0 lb/in²) [1]
20 min	2.8 MPa (400 lb/in²) [1]

[1] 25 mm wide 12.7 mm (1 in, 0.5 in) overlap shear specimens. 2 panels 1.6 mm (0.063 in) thick, 100 x 180 mm (4 x 7 in) of 2024T-3 clad aluminum bonded and cut 25 mm (1 in) wide samples after 24hr. 0.18 mm (7mil) bondline. Jaw Separation 2.5 mm/min (0.1 in/min)

Attribute Name	Test Method	Temperature	Value
Open Time			5 min [1]
Worklife, 10g mixed	3M C548	23 °C (73 °F)	5 min [2]
Set Time (min)		23 °C (73 °F)	15 — 20 min [3]

[1] Max time allowed after applying adhesive to a substrate before bond must be closed and fixed. Cure times approximate and depend on adhesive temperature. Hotmelts: The approx. bonding range of a 3.2 mm (1/8 in) bead of molten adhesive on a non-metallic surface.

[2] 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.

[3] Minimum time required to achieve 0.3 MPa (50 psi) of overlap shear strength. Cure times are approximate and depend on adhesive temperature.

Typical Physical Properties

Attribute Name	Value
Cured Color	Clear

Typical Cured Characteristics

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Compression Strength	ASTM D695	58 MPa (8400 lb/in²)
Shore D Hardness	ASTM D2240	82

Typical Performance Characteristics

Overlap Shear Strength

Temperature: 23 °C (73 °F)
Dwell Time: 7 d
Test Method: ASTM D1002, ISO 4587

Substrate	Surface Prep	Value
Aluminum	MEK/Abrade/MEK	6.6 MPa (950 lb/in²) [1]
Cold Rolled Steel	MEK/Abrade/MEK	6.9 MPa (1000 lb/in²) [1]
Stainless Steel	MEK/Abrade/MEK	5.2 MPa (750 lb/in²) [1]
Galvanized Steel	MEK/Abrade/MEK	6.2 MPa (900 lb/in²) [1]
Copper	MEK/Abrade/MEK	6.6 MPa (950 lb/in²) [1]
Brass	MEK/Abrade/MEK	4.8 MPa (700 lb/in²) [1]
ABS	IPA Wipe/Abrade/IPA Wipe	3.4 MPa (490 lb/in²) [1]
Polycarbonate (PC)	IPA Wipe/Abrade/IPA Wipe	1.7 MPa (250 lb/in²) [1]
Acrylic (PMMA)	IPA Wipe/Abrade/IPA Wipe	0.7 MPa (100 lb/in²) [1]
Fiber-Reinforced Plastic	IPA Wipe/Abrade/IPA Wipe	6.6 MPa (950 lb/in²) [1]
Polyvinyl chloride (PVC)	IPA Wipe/Abrade/IPA Wipe	2.3 MPa (330 lb/in²) [1]

[1] 25 mm (1") wide, 12.7 mm (1/2") overlap samples, 25 mm (1") x 102 mm (4") substrates, bondline thickness: 0.13-0.20 mm (5-8 mil)
Separation rate 2.5 mm/min (0.1 in/min) metal, 51 mm/min (2 in/min) plastic, 510 mm/min (20 in/min) rubber.
Substrate thickness: steel 1.5 mm (60 mil), other metal 1.3-1.6 mm (50-64 mil), rubber and plastic 3.2 mm (125 mil)
Cohesive Failure (CF), Adhesive Failure (AF), Mixed Failure (MF), Substrate Failure (SF)

T-Peel Adhesion

Temperature: 23 °C (73 °F)
Dwell Time: 7 d
Test Method: ASTM D1876

Substrate	Surface Prep	Value
Aluminum		4 N/cm (2 lb/in) [1]
Cold Rolled Steel	MEK/Abrade/MEK	4 N/cm (2 lb/in) [1]

[1] 0.8 mm (0.032 in) thick, 13 - 20 µm (5 - 8 mil) bondline
T-peel strengths with 25 mm (1 in) wide bonds. Jaw separation rate @ 500 mm/min (20 in/min)

Typical Environmental Performance

Solvent Resistance

Environmental Condition	Value
24hr @ RT + 2hr @ 71 °C (160 °F) + Isopropyl Alcohol 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Acetone 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + 1, 1, 1 - Trichloroethane 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Freon TF 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Freon TMC 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + RMA Flux 1hr	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Isopropyl Alcohol 1mo	B [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Acetone 1mo	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + 1, 1, 1 - Trichloroethane 1mo	B [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Freon TF 1mo	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + Freon TMC 1mo	A [1]
24hr @ RT + 2hr @ 71 °C (160 °F) + RMA Flux 1mo	A [1]

[1] Cured OLS samples immersed in solvent and after dwell, examined for surface attack compared to control.
A: Unaffected, no color or texture change
B: Slight attack, slight swelling of surface.
C: Moderate/severe attack, extreme swelling of surface.

Electrical and Thermal Properties

Attribute Name	Test Condition	Value
Glass Transition Temperature (Tg)	Mid-Point	33 °C (91 °F) [1]
Coefficient of Thermal Expansion	-40 ~ 20 °C	60 x 10^{-6} m/m/°C [2]
Coefficient of Thermal Expansion	60 ~ 120 °C	209 x 10^{-6} m/m/°C [2]

[1] Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 20 °C (68 °F) per minute. Second heat values given.

[2] CTE determined using TMA Analyzer using a heating rate of 10 °C per minute. Second heat values given.

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Volume Resistivity	ASTM D257	3.5 x 10^{12} Ω-cm

Handling/Application Information

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 suppled 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 make 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.

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.

Industry Specifications

UL 94 HB

Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) in the original, unopened packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

Automotive Disclaimer

Select Automotive Applications:
This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

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ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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