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



English-US

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# Technical Data Sheet

3M™ Scotch-Weld™ Epoxy Adhesive 2158 B/A

Product Details

Regulatory Info/SDS

## Product Description

3M™ Scotch-Weld™ Epoxy Adhesive 2158 B/A is a gray, two-part, high strength adhesive that chemically cures at room temperature. It has good adhesion to a variety of substrates including metals, many plastics, wood and concrete.

## Product Features

- Equal mix ratio by weight or volume.
- Good adhesion to damp concrete.
- Recognized as meeting 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 |
|---|---|
| Mix Ratio by Weight (B:A) | 1:1 |
| Mix Ratio by Volume (B:A) | 1:1 |

| Attribute Name | Temperature | Value |
|---|---|---|
| Base Color | | White |
| Accelerator Color | | Dark Gray |
| Base Resin | | Modified Epoxy |
| Accelerator Resin | | Synthetic Resin |
| Base Net Weight | | 13.0 ± 0.2 lb/gal |
| Accelerator Net Weight | | 12.8 ± 0.4 lb/gal |
| Base Viscosity | 23 °C (73 °F) | 250,000-450,000 cP [1] |
| Accelerator Viscosity | 23 °C (73 °F) | 200,000-800,000 cP [2] |

[1] Viscosity obtained by Brookfield, DV-II, #7 Spindle, 20 rpm

[2] Viscosity obtained by Brookfield, DV-II, #7 Spindle, 20 rpm.

## Typical Mixed Physical Properties

| Attribute Name | Temperature | Value |
|---|---|---|
| Open Time | | 120 min [1] |
| Worklife, 100g mixed | 23 °C (73 °F) | 120 min |
| Time to Handling Strength | 23 °C (73 °F) | 8 — 12 h |
| Time to Full Cure | 23 °C (73 °F) | 7 d |

[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.

## Typical Physical Properties

| Attribute Name | Value |
|---|---|
| Cured Color | Gray |

## Typical Cured Characteristics

Temperature: 23 °C (73 °F)

| Attribute Name | Test Method | Value |
|---|---|---|
| Shore D Hardness | ASTM D2240 | 85 |

## Typical Performance Characteristics

Substrate: FPL Etched Aluminum
Temperature: 23 °C (73 °F)
Dwell Time: 7 d

| Attribute Name | Test Method | Value |
|---|---|---|
| T-Peel Adhesion | ASTM D1876 | 3 lb/in width [1] |

[1] 2 psi applied during dwell

## Electrical and Thermal Properties

| Attribute Name | Test Condition | Value |
|---|---|---|
| Coefficient of Thermal Expansion | -50 ~ 30 °C | 53 x $10^{-6}$ m/m/°C |
| Coefficient of Thermal Expansion | 70 ~ 130 °C | 135 x $10^{-6}$ m/m/°C |
| Thermal Conductivity | | 0.283 (btu-ft)/(h-$ft^2$-°F) |
| Glass Transition Temperature (Tg) | Mid-Point | 52 °C [1] |

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

Temperature: 23 °C (73 °F)

| Attribute Name | Test Method | Test Condition | Value |
|---|---|---|---|
| Dielectric Constant | ASTM D150 | 1 KHz | 5.6 |
| Dissipation Factor | ASTM D150 | 1 KHz | 0.019 |
| Volume Resistivity | ASTM D257 | | 1.4 x $10^{15}$ Ω-cm |

## Handling/Application Information

### Directions for Use

1. For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. The amount of surface preparation depends on the required bond strength and the environmental aging resistance desired by user. For specific surface preparations on common substrates, see the section on surface preparation.
2. Use gloves to minimize skin contact with adhesive.
3. This product consists of two parts. Mix thoroughly by weight or volume in the proportions specified in the Uncured Properties Section. Mix approximately 15 seconds after a uniform color is obtained.
4. For maximum bond strength apply product evenly to both surfaces to be joined.
5. Application to the substrates should be made within 120 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 firm. Heat, up to 200°F (93°C), will speed curing.
7. The following times and temperatures will result in a full cure:
Cure Temperature Time
75°F (24°C) 7 days
150°F (49°C) 120 minutes
200°F (93°C) 30 minutes
8. Keep parts from moving until handling strength is reached. Contact pressure is necessary. Maximum shear strength is obtained with a 3-5 mil bond line.
9. Excess uncured adhesive can be cleaned up with ketone type solvents.* Adhesive coverage: A 0.005 in thick bond line will yield a coverage of 320 sqft/gallon.

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

### Surface Preparation

For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. The amount of surface preparation depends on the required bond strength and the environmental aging resistance desired by user.
**The following cleaning methods are suggested for these common surfaces:**
**Steel:**
1. Wipe free of dust with oil-free solvent such as acetone, isopropyl or alcohol solvents.*
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. Vapor Degrease: Perchloroethylene condensing vapors for 5-10 minutes.*
2. Alkaline Degrease: Oakite 164 solution (9-11 oz./gallon water) at 190°F ± 10°F (88°C ± 5°C) for 10-20 minutes. Rinse immediately in large quantities of cold running water.
3. 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
**Note:**Read and follow component supplier's environmental health and safety recommendations prior to preparation of this etch solution.
4. Rinse: Rinse panels in clear running tap water.
5. Dry: Air dry 15 minutes; force dry 10 minutes at 150°F ± 10°F (66°C ± 5°C).
6. If primer is to be used, it should be applied within 4 hours after surface preparation.
Plastics/Rubbers:
1. Wipe with isopropyl alcohol.*
2. Abrade using fine grit abrasives.
3. Wipe with isopropyl alcohol.*
**Glass:**
1. Solvent wipe surface using acetone or methyl ethyl ketone (MEK).*
2. Apply a thin coating (0.0001 in. or less) or primer such as 3M™ Scotch-Weld™ Structural Adhesive Primer EC-3901 to the glass surfaces to be bonded and allow the primer to dry before bonding.
*__Note:__When using solvents, extinguish all ignition sources, including pilot lights, and follow manufacturer's precautions and directions for use.

### Application Equipment

These products may be applied by spatula, trowel or flow equipment. Two-part mixing/proportioning/dispensing equipment is available for intermittent or production line use. These systems are ideal because of their variable shot size and flow rate characteristics and are adaptable to most applications. For more information, contact your local 3M sales representative.

## 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.

## Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577

## 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.

## Information

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## ISO Statement

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

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