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.

추락방지 시스템

안전대부착설비 · 수평·수직 라이프라인
레일 시스템 · 리지드 포스트

밀폐공간 진입·구조 솔루션

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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
구조용 스크류 · 목조건축 자재

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홈페이지 바로가기 →
문서 라이브러리 바로가기 →
시공사례 바로가기 →
문의하기 →

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English-US

Last Revision Date: September, 2024

Supersedes: August, 2024

Technical Data Sheet

3M™ Scotch-Weld™ Epoxy Adhesive/Coating 2290

Product Details

Regulatory Info/SDS

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive/Coating 2290 is an amber tinted thermosetting adhesive/coating for metal to metal bonding and coating. It can be used to assemble laminated steel cores for electrical motor stators and rotors, to adhere copper foil to B-staged epoxy in the manufacture of printed circuits, and to coat, protect, and utilize coils and electronic subassemblies.

Product Features

- Offers exceptionally high shear and peel strength properties.
- One-part formula; no premixing required.
- Dries to a tack-free film. Bonds can be made up to 3 months later.
- Excellent wetting during cure – only one surface need be coated.
- Requires only sufficient pressure to keep bonded parts dimensionally stable.

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	Light Amber [1]
Viscosity	40 — 80 cP
Net Weight	7.2 — 7.6 lb/gal
Base Resin	Epoxy

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

Typical Physical Properties

Attribute Name	Value
Cured Color	Light Amber
Solids Content by Weight	19.5 — 23 %
Solvent Resistance	Methyl Ethyl Ketone (MEK) Tetrahydrofuran
Flash Point	-14 °C (6 °F)

Typical Performance Characteristics

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
T-Peel Adhesion	ASTM D1876	10 lb/in width [1]

[1] Metal to Metal Structural Applications
The following typical performance data obtained in the 3M Laboratory under the conditions specified with a cure cycle of 75 psi bonding pressure applied by a platen press and a 60min, 350°F (177°C) cure cycle.

Electrical and Thermal Properties

Attribute Name	Test Condition	Value
Glass Transition Temperature (Tg)	Mid-Point	95 °C (203 °F) [1]
Coefficient of Thermal Expansion	-20 ~ 70 °C	262 x 10^{-6} m/m/°C
Coefficient of Thermal Expansion	100 ~ 120 °C	543 x 10^{-6} m/m/°C

[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	5.2
Dissipation Factor	ASTM D150	1 KHz	0.011
Volume Resistivity	ASTM D257		1.2 x 10^{15} Ω-cm

Handling/Application Information

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 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.
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 Balance of Volume
Note: Review and follow component supplier's environmental health and safety information 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 ± 5°F (66°C ± 2°C).
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 (0.1 mils or less) or primer such as 3M™ Scotch-Weld™ 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 and follow manufacturer's precautions and directions for use.

Application Techniques

3M™ Scotch-Weld™ Epoxy/Adhesive Coating 2290 can be applied by brushing, flow coating, dip coating, roll coating, knife coating and spraying. For spray application, use a DeVilbiss JGA-70-FX spray gun or equivalent applicator. The atomizing air should be approximately 30 psi. Apply the adhesive at a dry film thickness of 1 mil if coating only one surface. If coating two surfaces, apply a 0.5 mil dry film to each surface. For film thickness less than 1 mil, it may be necessary to dilute Scotch-Weld 2290. For dilution, a 4 parts by weight methyl ethyl ketone to 1 part by weight tetradhydrofuran solution should be made. (A dilution of 1 part of this solution to 1 part of Scotch-Weld 2290 will give a dried film thickness of approximately 0.5 mil). Coverage per 1 mil dry film thickness is approximately 300 sqft/gal.

Cure Cycle

Adhesive B Stage Cycles:
Scotch-Weld 2290 will air dry to a tack free coating in approximately 10-15 minutes @ 75°F (24°C). However, for optimum performance the drying time at 75°F (24°C) should be followed by any of the B stage cycles below:
Temperature Time
200°F (93°C) 45 minutes
250°F (121°C) 30 minutes
300°F (149°C) 10 minutes
After B-staging, Scotch-Weld 2290 need not be cured immediately. Protect the coated surface from contamination introduced by dust, fingerprints, oil, etc. Wrapping in unplasticized Kraft paper is generally satisfactory. Storage for 2-3 months is permissible.
Cure Cycle
Curing is accomplished with heat. Scotch-Weld 2290 must reach a minimum of 335°F (168°C) for curing to be initiated. A curing temperature of 350°F (177°C) for 30-60 minutes under a pressure of 75 psi is suggested for optimum results. Allow time for the bond lines to reach the cure temperature before timing the cycle. With experimentation and evaluation by the user, lower pressure and/or higher temperature cures for shorter times can be used to make satisfactory bonds depending upon the end use requirements of each individual application.

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 18 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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