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

**Last Revision Date:** September, 2024

**Supersedes:** June, 2024

# Technical Data Sheet

3M™ Adhesive Transfer Tape 467MPF

Product Details

Regulatory Info/SDS

## Product Description

**Finite Element Analysis (FEA)**data is available for this product at: **3m.com/FEA**

3M™ High Performance Acrylic Adhesive 200MP is a popular choice for graphic attachment and general industrial joining applications. It provides outstanding adhesion to metal and high surface energy plastics. This adhesive provides some initial repositionability for placement accuracy when bonding to plastics. It also performs well after exposure to humidity and hot/cold cycles.

## Product Features

- Up to 400°F short-term heat resistance
- Excellent solvent resistance
- Excellent shear strength to resist slippage and edge lifting

## 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 Physical Properties

| Attribute Name | Test Method | Value |
|---|---|---|
| Adhesive Type | | Acrylic |
| Total Tape Thickness | ASTM D3652 | 0.06 mm (2.3 mil) |
| Liner | | Polyester Film (PET) |
| Liner Thickness | | 0.05 mm (2 mil) |
| Primary Liner Color | | Clear |

## Typical Performance Characteristics

Substrate: Stainless Steel
Temperature: 23 °C (73 °F)
Dwell Time: 72 h
Backing: 2 mil Aluminum Foil

| Attribute Name | Test Method | Value |
|---|---|---|
| 180° Peel Adhesion | ASTM D3330 | 8.4 N/cm (77 oz/in) [1] |

[1] 304 mm/min (12 in/min)

### 90° Peel Adhesion

Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

| Dwell Time | Temperature | Substrate | Value |
|---|---|---|---|
| 15 min | 23 °C (73 °F) | Stainless Steel | 5.4 N/cm (49 oz/in) [1] |
| 72 h | 23 °C (73 °F) | ABS | 2.4 N/cm (22 oz/in) [1] |
| 72 h | 23 °C (73 °F) | Acrylic (PMMA) | 7 N/cm (64 oz/in) [1] |
| 72 h | 23 °C (73 °F) | Aluminum | 7 N/cm (64 oz/in) [1] |
| 72 h | 23 °C (73 °F) | Glass | 9.9 N/cm (90 oz/in) [1] |

| Dwell Time | Temperature | Substrate | Value |
|---|---|---|---|
| 72 h | 23 °C (73 °F) | Polycarbonate (PC) | 7.8 N/cm (71 oz/in) [1] |
| 72 h | 23 °C (73 °F) | Polyvinyl chloride (PVC) | 4.4 N/cm (40 oz/in) [1] |
| 72 h | 23 °C (73 °F) | Stainless Steel | 10 N/cm (92 oz/in) [1] |
| 72 h | 70 °C (158 °F) | Stainless Steel | 16.7 N/cm (153 oz/in) [1] |

[1] 304 mm/min (12 in/min)

**Static Shear**

| Temperature | Test Condition | Value |
|---|---|---|
| 23 °C (73 °F) | 1000 g | 10000+ min [1] |
| 70 °C (158 °F) | 1000 g | 10000+ min [1] |
| 93 °C (200 °F) | 1000 g | 10000+ min [1] |
| 177 °C (350 °F) | 500 g | 10000+ min [1] |
| 232 °C (450 °F) | 400 g | 2,284 min [1] |
| 232 °C (450 °F) | 200 g | 10000+ min [1] |

[1] 25 x 25 mm (1 in x 1 in) sample area, test terminated after 10,000 minutes

| Attribute Name | Value |
|---|---|
| Short Term Temperature Resistance | 204 °C (400 °F) [1] |
| Long Term Temperature Resistance | 149 °C (300 °F) [2] |

[1] Short Term (minutes, hour)

[2] Long Term (day, weeks)

Substrate: Aluminum

| Attribute Name | Test Method | Value |
|---|---|---|
| Tensile Lap Shear – Peak Load | ASTM D1002, ISO 4587 | 164 lb [1] |

[1] 3.2 $cm^2$ (0.5 $in^2$) sample size

## Typical Environmental Characteristics

**Environmental Resistance**

Humidity Resistance – High humidity has a minimal effect on adhesive performance. Bond strength shows no significant reduction after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

UV Resistance – When properly applied, nameplates and decorative trim parts are not adversely affected by outdoor exposure.

Water Resistance – Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

Temperature Cycling Resistance – High bond strength is maintained after cycling four times through:
4 hours at 158°F (70°C)
4 hours at -20°F (-29°C)
4 hours at 73°F (22°C)

Chemical Resistance – When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

Bond Build-up: The bond strength of 3M™ High Performance Acrylic Adhesive 200MP increases as a function of time and temperature

Temperature/Heat Resistance: 3M™ High Performance Acrylic Adhesive 200MP is usable for short periods (minutes, hours) at temperatures up to400°F (204°C) and for intermittent longer periods (days, weeks) up to 300°F (149°C).

**Lower Temperature Service Limit:**The glass transition temperature for 3M™ High Performance Acrylic Adhesive 200MP is -31°F (-35°C). Many applications survive below this temperature (factors affecting successful applications include: materials being bonded, dwell at RT before cold exposure, and stress below the TG [i.e. expansion/contraction stresses, impact]). Optimum conditions are: bonding high surface energy materials, longer time at RT before cold

exposure, and little or no stress below the TG. The lowest service temperature is -40°F (-40°C).

## Electrical and Thermal Properties

Temperature: 43 °C (109 °F)

| Attribute Name | Test Method | Value |
|---|---|---|
| Thermal Conductivity | ASTM C518 | 0.18 W/m/K (1.21 (btu-in)/(h-ft²-°F)) [1] |

[1] results listed are at 43 °C (109° F)

| Attribute Name | Test Method | Temperature | Test Condition | Value |
|---|---|---|---|---|
| Dielectric Constant | ASTM D150 | 23 °C (73 °F) | 1 KHz | 2.72 |
| Dissipation Factor | | | | 0,0241 |
| Dielectric Strength | ASTM D149 | | 500 vac, rms[60 hz/sec] | 690 V/mil |
| Insulation Resistance | Mil-I-46058C | | test voltage = 100 VDC | >2.5 x $10^{16}$ Ω |
| Breakdown Voltage | | | | 2,200 V |

## Handling/Application Information

### Application Examples

• Long term bonding of graphic nameplates and overlays (“subsurface” printed polycarbonate or polyester) to metal and high surface energy plastics in the aerospace, medical and industrial equipment, automotive, appliance and electronics markets.
• Bonding metal nameplates and rating plates in the aerospace, medical and industrial equipment, automotive, appliance and electronics markets.
• Bonding graphic overlays for membrane switches and for bonding the complete switch to the equipment surface.
• High speed processing of parts in the medical, telecommunications and electronics markets (medical components, durable labels, and flexible circuits).
• Lamination to industrial foams for rotary die-cutting of small gaskets for industrial and electronics markets.

### Application Techniques

For maximum bond strength (during installation of the final part) the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane (for oily surfaces) or isopropyl alcohol for plastics. Use reagent grade solvents since common household materials like rubbing alcohol frequently contain oils to minimize the drying affect on skin and can interfere with the performance of a pressure-sensitive adhesive.

*Note: Carefully read and follow the manufacturer’s precautions and directions for use when working with solvents. These cleaning recommendations may not be in compliance with the rules of certain air quality management districts in California; consult applicable rules before use.

It is necessary to provide pressure during lamination (1.5-20 pli recommended) and during final part installation (10-15 psi) to allow the adhesive to come into direct contact with the substrate. Using a hard edged plastic tool, which is the full width of the laminated part, helps to provide the necessary pressure at the point of lamination. Heat can increase bond strength when bonding to metal parts (generally this same increase is observed at room temperature over longer times, weeks). For plastic parts, the bond strength is not enhanced with the addition of heat.

The ideal adhesive application temperature range is 60°F (15.6°C) to 100°F (38°C). Application is not recommended if the surface temperature is below 50°F (10°C) because the adhesive becomes too firm to adhere readily. Once properly applied, at the recommended application temperature, low temperature holding is generally satisfactory (please refer to section VII of the Typical Physical Properties and Performance Characteristics).

When bonding a thin, smooth, flexible material to a smooth surface, it is generally acceptable to use 2 mils of 3M™ Adhesive 200MP. If a texture is visible on one or both surfaces, the 5 mil 3M adhesive 200MP would be suggested. If both materials are rigid, it may be necessary to use a thicker adhesive to successfully bond the components. 3M™ VHB™ Acrylic Foam Tapes may be required (please refer to the data page 70-0709-3830-6).

To apply adhesives in a wide web format, lamination equipment is required to ensure acceptable quality. To learn more about working with pressure-sensitive adhesives please refer to technical bulletin, Lamination Techniques for Converters of Laminating Adhesives (70-0704-1430-8). For additional dispenser information, contact your local 3M sales representative, or the toll free 3M sales assistance number at 1-800-362-3550.

## Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

## Recognition/Certification

**TSCA:**This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements

**MSDS:**3M has not prepared a MSDS for this product which is not subjected to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R.1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, this product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

**UL:**These products have been recognized by Underwriters Laboratories, Inc. under Ul 746C and UL 969. For more information on the UL Certification, please visit the website at http://www.3M.com/converter, select UL Recognized Materials, then select the specific product area.

**Note:**One of 3M's core values is to respect our social and physical environment. 3M is committed to comply with ever-changing, global, regulatory and consumer environmental, health, and safety (EHS) requirements. As a service to our customers, 3M is providing information on the regulatory status of many 3M products. Further regulation information including that for OSHA, USCPSI, California Proposition 65, READY and RoHS, can be found at 3M.com/regs.

## 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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