

SA120 and SA180 AN001
Application Notes and Materials Report

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1 Introduction

This document provides materials information and adhesive application recommendations for BusBoard SA120 and SA180 adhesive standoffs.

The SA120 and SA180 are low standoff height (0.12" or 0.18") adhesive standoffs with 0.6" x 0.6" offset square base footprint allowing the standoff to be close to the PCB edge.

2 Application

The standoffs can be used with 1/16" and 1/32" thick PCBs.

They are design for use with 1/8" (0.125 inch) PCB mounting holes.

2.1 Adhesive Performance

The adhesive performance of the SA120 and SA180 are determined by the material types they are affixed to, the cleaning of the surface, and temperature.

The temperature range of the overall adhesive standoff is determined by the 3M part# 1600T-08 adhesive tape used.

2.2 Operating Temperature

Recommended operating temperature is -40°C to +80°C

Long-term Temperature Exposure (over a day)

For best adhesion strength, the tape surface temperature should be less than 80°C (175°F).

Short term (1-2 hours) exposure to 100°C (212°F) temperatures can be endured.

2.3 Installation Contact, Pressure, & Cleaning

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength. To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or N-heptane. Note: Carefully read and follow the manufacturer's precautions and directions for use when working with solvents.

2.3.1 Installation Temperature

Ideal tape application temperature range is 21°C to 38°C (70°F to 100°F). Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.



3 Materials

3.1 Plastic

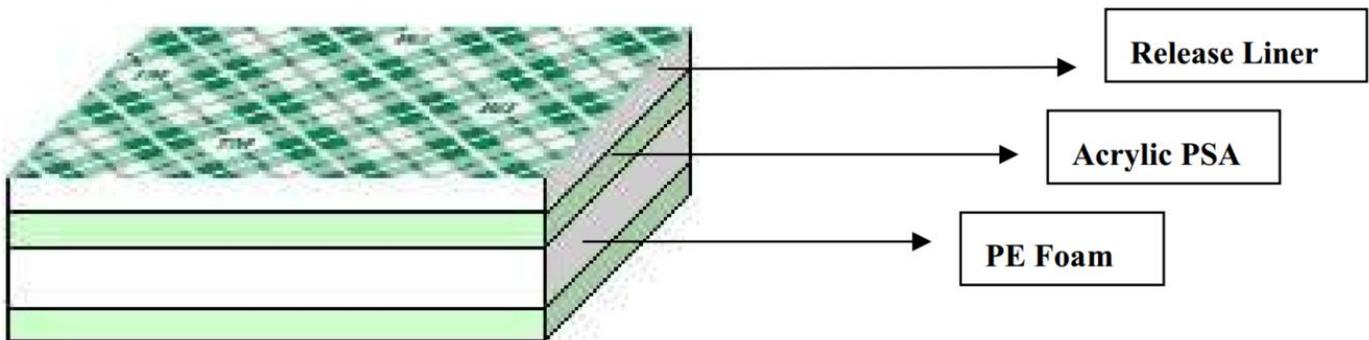
The plastic portion of the standard is a Nylon 66(UI) material with a 94V-2 flame class rating. It is also called polyamide 66 (PA66). It is provided in its natural off-white color.

3.2 Adhesive Tape

The adhesive tape backing is 1600T-08 material manufactured by 3M.

1600T-08 is a double-coated polyethylene foam tape. It combines a conformable closed cell foam with a high strength acrylic adhesive that provides good initial tack and high ultimate adhesion to a wide variety of surfaces. The tape also provides excellent adhesion to many low surface energy plastics. The 3M tape also possesses good shear properties that provides long term holding power, even under elevated temperature and environmental conditions.

Construction:



Product	Adhesive Type	Tape Thickness	Foam Type	Release Liner (Removable Tape)
1600T-08 Double-Sided Adhesive Tape	Acrylic	0.8 mm \pm 20%	Closed Cell PE (Polyethylene) Foam, White, Approx. Density 7 lb/ft ³ (112 Kg/m ³)	0.0027" (0.07 mm) White, Glassine Paper, With Green 3M Scotch™ Pattern

4 RoHS 2.0 Declaration

The SA120 and SA180 do not contain the following ROHS 2.0 substances above the listed concentrations.

No.	Substance Name	CAS No.	Declaration (ppm-mg/kg)
1	Cadmium (Cd)	7440-43-9	< 100ppm
2	Lead (Pb)	1317-36-8	< 1000ppm
3	Mercury (Hg)	7439-97-6	< 1000ppm
4	Hexavalent Chromium Cr(VI)	7789-006	< 1000ppm
5	Polybrominated Biphenyls (PBBs)	13654-09-6	< 1000ppm
6	Polybrominated Diphenyl Ethers (PBDEs)	1163-19-5	< 1000ppm
7	Dibutyl Phthalate (DBP)	84-74-2	< 1000ppm
8	Butylbenzyl Phthalate (BBP)	85-68-7	< 1000ppm
9	Di-2-ethylhexyl Phthalate (DEHP)	117-81-7	< 1000ppm
10	Diisobutyl Phthalate (DIBP)	84-69-5	< 1000ppm

5 REACH-SVHC 1.0 to 32.0 Declaration

The SA120 and SA180 do not contain the 247 substances identified as substances of very high concern (SVHC) and identified in REACH 1.0 to REACH SVHC-32.0 in excess of 1000ppm concentrations (0.1% by weight per article).

6 Revision History

Rev.	Date	Description	Author
1.00	07-Aug-2025	Created.	Scot Kornak

7 Appendix A – 3M 1600T-08 Tape Datasheet

The 3M 1600T-08 Tape Datasheet follows in this document.

8 Appendix B – 3M 1600T-08 Tape Regulatory Information

The 3M 1600T-xx (Double-Coated-Polyethylene-Foam-Tapes-1600T-Series)-Regulatory Datasheet follows in this document.



Double Coated Polyethylene Foam Tapes

1600T-08

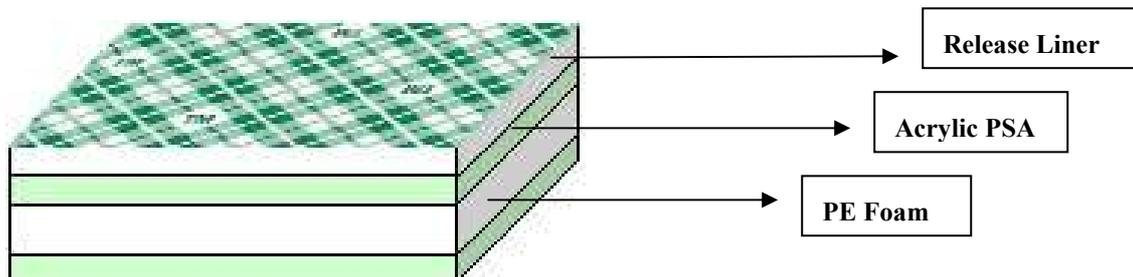
Technical Data

Jun., 2009

Product Description:

1600T-08 is double-coated polyethylene foam tape combines a conformable closed cell foam with a high strength acrylic adhesive that provide good initial tack and offer high ultimate adhesion to a wide variety of surfaces, including many plastics. In addition, it also possesses good shear property that provides long term holding power, even under elevated temperature and environmental conditions.

Construction:



Product Number	Adhesive type¹ / Tape Thickness/ Tolerance	Adhesive carrier/ Color	Release liner Thickness, Color, Type, Print	Approximate density (foam only)
1600T-08	Acrylic, 0.8 mm±20%	Closed cell PE ² foam, White	0.0027" (0.07 mm) White, Glassine paper, Print in green color	7 lb/ft ³ (112 Kg/m ³)

Note 1: Pressure Sensitive Acrylic Adhesive provides excellent initial tack and adhesion to a wide variety surface including many low surface energy plastics.

Note 2: PE (Polyethylene)

Feature

1. 3M 1600T-08, feature a medium-soft acrylic pressure sensitive adhesive system. The key characteristics of this adhesive include a combination of high initial adhesion and good shear and holding power to a wide variety of materials, including many plastics.
2. 3M 1600T-08, feature good structural polyethylene foam strength to withstand heavy loading and harsh peeling.
3. Glassine paper liner features good converting characteristics.

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product Number	1600T-08
Adhesion to stainless steel ASTM D3330 — 90 °angle peel, jaw speed 12 in/min, 72 hour dwell time, 5 mil Al foil backed, at 22°C, 50%RH	5 Kg/in (11.1 lb/in)
Normal tensile (T block) ASTM D897 —1 inch ² overlap, jaw speed 2 in/min, 72 hour dwell time	33 Kg/in ² (72 psi)
Adhesion to stainless steel after High Temp. High Humidity Aging Test (70°C 95%RH 3days) ASTM D3330 — 90 °angle peel, jaw speed 12 in/min, 5 mil Al foil backed, at 22°C, 50%RH	5 Kg/in (11.1lb/in)
Adhesion to stainless steel after Thermal cycling Aging test (-40°C 2hrs ~ +80°C 2hrs 12cycles) ASTM D3330 — 90 °angle peel, jaw speed 12 in/min, 5 mil Al foil backed, at 22°C, 50%RH	6Kg/in (13 lb/in)

Relative High temperature Operating Ranges	
Long Term (days, weeks)	80°C (175°F)
Short Term (minutes, hours)	100°C (212°F)
Shelf Life	
12 months from date of receipt by customer when stored in original carton at 22 °C and 50% relative humidity	

Application Techniques:

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength.

To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or N-heptane. Note: Carefully read and follow the manufacturer's precautions and directions for use when working with solvents.

Ideal tape application temperature range is 70° F to 100° F (21° C to 38° C). Initial tape application to surfaces at temperatures below 50° F (10° C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

Application Ideas

- The foam construction makes these products ideal for many joining, mounting, gasketing, and sealing application involving irregular surface.
- 1600T-08 tapes are specially formulated for many indoor/outdoor high performance purpose mounting and joining applications, including bonding to many Plastics, where moderate temperature and shear performance are required.
- For secure joining/mounting, 2 kilograms is the maximum static loading for 1 square inch tape application. Due to the consideration of less than 100% contact with the surface, variations in surface preparation, extreme/environmental conditions, customer evaluation and testing are required for every specific application.
- Application ideas for these tapes include
 - **Plastic Hooks, Racks and Dispensers**
 - **Sign, Nameplates and Plaques**
 - **Wire and Cable Clips**
 - **Appliance, Display Case and Electronic Equipment Trim**
 - **Automotive trim**

- **Point of Purchase and other Displays**
- **General purpose Joining/Mounting**

Important Notice

3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including negligence, warranty, or strict liability.

3M 1600T-08 was manufactured under a 3M's quality system registered to ISO 9002 standards; and environmental protection system registered to ISO 14000 standards.



Regulatory Data Sheet

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This Regulatory Data Sheet is provided as a courtesy in response to a customer request.

Document Group:	19-4037-8	Version Number:	4.00
Issue Date:	09/06/23	Supersedes Date:	05/08/23

3M™ Double Coated PE Foam Tape 1600T, 1600TG

3M
3M Taiwan
3M Center, St. Paul, MN 55144-1000, USA
1-888-3M HELPS (1-888-364-3577)

RDSs are available at www.3M.com

Regulations and Industry Standards

EU RoHS

This product does not exceed the maximum concentration values (MCVs) set under EU Directive 2011/65/EU (RoHS recast/RoHS 2), as stated in Annex II to that directive. This means that each of the homogenous materials within this product does not exceed the following MCVs: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers; and (b) 0.01% (by weight) for cadmium.

EU RoHS Phthalates

This product does not exceed the maximum concentration values (MCVs) for phthalates set under EU Directive 2011/65/EU (RoHS recast/RoHS 2), as amended by EU 2015/863, which applies to finished EEE after July 22, 2019 for Category 1-7, 10-11 products and after July 22, 2021 for Category 8 and 9 products. This means that each of the homogeneous materials within this product does not exceed the MCV of 0.1% (by weight) for each of the following phthalates: DEHP, BBP, DBP, and DIBP.

TSCA Section 6

This product is not known to contain 2,4,6-Tri-tert-butylphenol (CAS 732-26-3).

TSCA Section 6

This product is not known to contain Decabromodiphenyl Ether (Deca-BDE) (CAS 1163-19-5).

TSCA Section 6

This product is not known to contain Hexachlorobutadiene (HCBd) (CAS 87-68-3).

TSCA Section 6

This product is not known to contain Pentachlorothiophenol (PCTP) (CAS 133-49-3).

TSCA Section 6

This product is not known to contain Phenol, isopropylated phosphate (3:1) (PIP (3:1)) (CAS 68937-41-7).

Chemicals and/or Compounds of Interest

Gallium (CAS 7440-55-3) : Not known to contain.

Germanium (CAS 7440-56-4) : Not known to contain.

Rare Earth Elements (REE) or Rare Earth Metals (REM) : Not known to contain.

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS refers to a broad range of thousands of materials with varying properties and characteristics, which may include high resistance to oil, water, temperature, chemicals, and fire, which makes certain PFAS critical to the functioning of many modern products.

Per- and polyfluoroalkyl substances (PFAS) : Not intentionally added.

Perfluorohexane sulfonate (PFHxS) : Not intentionally added.

Perfluorohexanoic acid (PFHxA) (CAS 307-24-4) : Not intentionally added.

Perfluorooctanesulfonic Acid (PFOS) (CAS 1763-23-1) : Not intentionally added.

Perfluorooctanoic Acid (PFOA) (CAS 335-67-1) : Not intentionally added.

Definitions

Note: all Definitions take Disclaimers into account and apply to the “Chemicals and/or Compounds of Interest” and/or “Per and poly-fluoroalkyl Substances (PFAS)” sections only

Terms	Definitions
Contains*	Present based on composition information disclosed by 3M suppliers, analytical testing, or both.
Not known to contain*	1. Analytical measurement for presence is not currently available; 2. If measurement is possible, a) The material has not been identified or disclosed to 3M and b) The material has not been specifically quantified or detected; OR c) Based on information from raw material suppliers, possible presence as an impurity or by-product at or below regulatory thresholds (e.g., 0.1 or 0.01 %)
Intentionally added**	Desired in the final product to provide a specific characteristic, appearance, or quality and/or to perform a specific function.
Not intentionally added**	By-product(s), impurity(ies) and/or unintended artifact(s) resulting from the formulation and/or manufacture of a material.
By-product***	A chemical substance produced without a separate commercial intent during the manufacture, processing, use, or disposal of another chemical substance or mixture.
Impurity***	A chemical substance which is unintentionally present with another chemical substance (e.g., residuals, catalysts, process solvents).

**Terms apply to the Chemicals and/or Compounds of Interest Section only (if section is present)*

***Terms apply to the PFAS Section only (if section is present)*

****Terms apply to both the Chemicals and/or Compounds of Interest and PFAS Sections (if section(s) are present)*

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