Technisches Datenblatt

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3M SCOTCH-WELD EC-3550 B/A FST

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3M™ Scotch-Weld™ Structural Void Filling Compound EC-3550 B/A FST

Technical Data Sheet

Introduction

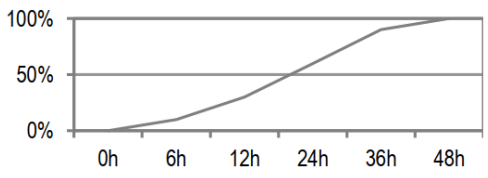
3M™ Scotch-Weld™ Structural Void Filling Compound 3550 B/A FST (Fire Smoke Toxicity) is a two-part, low-density, flame-retardant epoxy compound that can be stored, applied, and cured at room temperature. Scotch-Weld 3550 B/A FST Compound can be used for void-filling, edge-sealing, and complex gap-filling. The cured material has meets FAR 25.853 (a) (d) and offers excellent water and chemical resistance. It is designed for both metal and non metal honeycomb sandwich constructions which are typically found in aircraft interior structures such as galley structures, luggage bins, partition walls, lavatory structures, crew rest compartments, seating structures, ceiling panels, doghouses, sidewall panels, cargo bay panels, bar units, coatrooms and passenger doors. In these applications the Scotch-Weld 3550 B/A FST Compound is used for honeycomb sandwich structures as edge close-out, corner reinforcement, and local reinforcement for mechanical fixation or complex gap-filling.

Key advantages are:

- Extrudable through both cartridge and dispensing systems
- Meets FAR 25.853 (a) (d)
- 100 % solids, sag resistant material
- Full room temperature processing
- Paintable

Product Characteristics

NOTE: All technical data and information in this data sheet should be considered representative or typical only and should not be used for specification purposes.

General Properties	**Part B**	**Part A**
Colour	Brown with black spots	Off white
Base	Epoxy	Modified Amine
Typical Uncured Density	0.56 g/ccm	0.58 g/ccm
Mix Ratio by Volume (by weight)	100 (100)	50 (52)
Consistency	Thixotropic paste	
Solid content	100%	
Work life at 23 ± 2°C	≥ 2 hours in static mixer	
Time to form stability	~ 6 hours at 23 ± 2 °C	
Typical strength build-up at 23 ± 2 °C		
Full Cure cycle at 23 ± 2°C	48 hours	
Slump Resistance	~ 0.5mm	
Typical Cured Density	0.57 g/ccm	
Packaging	Cartridges and Pails	

Product Performance

The following product performance data was obtained under the conditions specified. All values are based on specimens extruded through a static mixer. Cure cycle was as follows: 48 hours at 23 ±2 °C. The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Mechanical properties	**Test temperature**	**Result**
Compressive Strength	-55 ± 2 °C	30 MPa
ISO 604	23 ± 2 °C	27 MPa
12.5 x 12.5 x 25 mm³ specimen	80 ± 2 °C	5 MPa
Compressive Modulus	-55 ± 2 °C	550 MPa
ISO 604	23 ± 2 °C	1200 MPa
12.5 x 12.5 x 25 mm³ specimen	80 ± 2 °C	75 MPa
Shear Strength	23 ± 2 °C	2500 N

Flammability, Smoke Density and Toxic Gas Emission

FST properties have been measured in a standalone mode. Pure adhesive has been cured and tested in the dimensions specified.

Fire properties		**Requirements**	**Results**
Flammability - 12s vertical Bunsen burner	Flame extinguishing time	≤ 3 s	0 s
FAR/JAR/CS 25.853(a), App. F Part. I §(a)(1)(ii)	Burn length	≤ 203 mm	3 mm
Sample size: 6,35 x 76 x 305 mm³	Drip flame time	≤ 15 s	0 s
Flammability - 60 s vertical Bunsen burner	Flame extinguishing time	≤ 3 s	0 s
FAR/JAR/CS 25.853(a), App. F Part. I §(a)(1)(i)	Burn length	≤ 150 mm	21 mm
Sample size: 6,35 x 76 x 305 mm³	Drip flame time	≤ 15 s	0 s
Smoke density - flaming mode FAR/JAR/CS 25.853, App. F part V & AITM 2.0007 Sample size: 3,0 x 76 x 76 mm³	DS_{max}[(a)] in 4 min	≤ 200	162
Toxic gas emission	HCN	≤ 150 ppm	33 ppm
Airbus ABD0031 & AITM 3.0005	HF	≤ 100 ppm	< 1 ppm
Sample size: 3,0 x 76 x 76 mm³	HCl	≤ 150 ppm	< 1 ppm
	$SO_2 + H_2S$	≤ 100 ppm	< 1 ppm
	NO_x	≤ 100 ppm	9 ppm
	CO	≤ 1000 ppm	450 ppm

[(a)] *DSmax: maximum optical smoke density*

Handling

Refer to product label and 3M Safety Data Sheet (SDS) for health and safety information before using this product. For SDS requirements, please visit our website www.3m.com/sds

Instructions for use

The following information is provided as a general application guide based on typical conditions and applications. However, it is recognized that no two applications are identical due to differing assemblies, methods of heat and pressure application, production equipment and other environmental factors. It is therefore suggested that experiments be run as per the application requirements to determine optimum conditions for your specific application and to determine suitability of product for the intended use.

Surface Preparation

A thoroughly cleaned, dry, grease-free surface is essential for maximum performance. For repeatable results, the material and the substrates should be in the range of 20–25 °C (object temperature).

Application

This product consists of two parts. Mix Part B and Part A thoroughly manually or automatically by weight or volume in the proportions specified on the product. Mix manually approximately 15 seconds after a uniform colour is obtained. For semi-or full-automatic applications it is recommended to use either MC 13-12, or MBLT14-12 T static mixer for optimum extrusion rate. NOTE: The static mixer is linked to the packaging system. Please contact your sales representative for more details. For repeatable performance keep mixing ratio in a range of ± 5 %. Duo-pack cartridge configurations allow for maximum accuracy and easy handling. When using a new mixer, scrap the first ccm's until a uniform colour is obtained. The work life of mixed material is around 2 hours.
CAUTION: Work life differs according to pot size and temperature. Larger sizes and higher temperatures create faster reaction times. Use a spatula to form the applied material in custom designed shape.

Curing

Cure the product at room temperature or with mild heat. NOTE: Higher temperatures generate faster curing times and can expand the product. The following times and temperatures will result in a full cure:

- 2 days at 23 ± 2 °C
- 1 hour at 80 ± 2 °C

Important: Be careful when curing larger quantities at elevated temperature because exothermic reaction may occur. Finish the shape mechanically earliest 12hours after mixing, e.g. abrasive, or milling. This product is paintable.

Cleaning

Excess uncured void filler can be cleaned with ketone type solvents. After cure, the adhesive can be removed mechanically. NOTE: When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and instructions for use.

Storage

Store the product at room temperature or below. Shelf life is minimum 12 months from date of shipment in the original unopened packaging.

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