



Engineering Material Specification

Material Name

Specification Number

BATT, GLASS FIBER-SOUND ABSORPTION

ESB-M12G66-A1, A2, A3, A4
VESB-M12G66-B1, B2, B3, B4

1. SCOPE

The materials defined by this specification are fine fibered, flexible, resilient blankets of fibrous glass, bonded with a thermosetting resin.

2. APPLICATION

ESB-M12G66-A1, A2, A3, A4 were released originally for materials used as molded sound absorbers and thermal insulators for the 1977 Econoline engine compartment.

VESB-M12G66-B1, B2, B3, B4 were released originally for materials used as molded roof side sound and thermal insulators for the 1982 Versailles.

3. REQUIREMENTS

3.1 CONDITIONING

All test values indicated herein are based on materials conditioned in a controlled atmosphere of $23 \pm 2^{\circ}\text{C}$ and $50 \pm 5\%$ relative humidity for 24 h prior to testing and tested under the same controlled conditions.

3.2 COLOR

Black or neutral

3.3 THICKNESS

(FLTM BN 23-2)

As specified on engineering drawings with the following tolerances:

- Under 25 mm + 3.2 mm - 1.6 mm
- 25 mm and over: + 6.4 mm - 3.2 mm

3.4 CONSTRUCTION

Fiber Diameter:

3.8 - 5.1 μm

Alternate:

7.1 - 13.0 μm

Binder Content:

Phenol formaldehyde $13 \pm 3\%$

Test Method:

Cut 1-2 g of sample* into a previously ignited porcelain crucible. Condition in a drying oven at $100 \pm 2^{\circ}\text{C}$ to a constant weight and record. Heat in a muffle furnace at $535 \pm 10^{\circ}\text{C}$ until binder is burned off. Cool, weigh, and calculate % binder on basis of conditioned weight (Step 2).

*or 10-20 g sample on a previously ignited wire screen.

Date	Para. No.	Revisions
1984 06 08	3.5 3.6	Revised, Retyped CU01-PA525112
1980 08 20	3.12,13,14	Released B-series, Added Flammability ALI-6000-61
1977 02 24		Released A-series AGI-6000-199

Eng Res 3948-8
June 77

Page 1 of 5

9009160 0011276 240



3.5 PHYSICAL PROPERTIES

ESB-M12G66-	Density (+20% -10%) kg/m ³	Specific Strength min		Compression % max	Recovery		Firmness min
		Most Adverse	Direction		% min	Dry Wet	
A1/ VB1	16.00	28		80	70	60	27
A2/ VB2	24.0	48		75	70	70	52
A3/ VB3	32.0	104		70	80	80	73
A4/ VB4	40.0	152		65	85	80	73

Test Methods:

Density - ASTM C 167 using the thickness test specified below

Thickness - FLTM BN 23-2

Specific Strength - ASTM D 461

Dry Compression - FLTM 15-2

Dry Recovery - FLTM BN 15-2

Wet Recovery - FLTM BN 15-1

Firmness - FLTM BN 23-1

3.6 ACOUSTICAL Properties, Initial approval only

ESB-M12G66-	Thickness mm	Min Sound Absorption Percent (ASTM C 384) Frequency in Hz			
		250	500	1000	2000
A1/ VB1	38	9	20	45	70
	25	5	10	20	40
	13	3	7	10	25
A2/ VB2	38	9	25	50	73
	25	5	10	25	60
	13	3	7	10	28
A3/ VB3	38	10	30	60	75
	25	6	10	30	70
	13	3	7	12	30
A4/ VB4	38	11	40	65	80
	25	7	15	45	75
	13	3	7	12	35

1984 06 08

Page 2 of 5

Eng Res 3948-b 24
June 77

9009160 0011277 187



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