



ENGINEERING MATERIAL SPECIFICATION

Material Name

File Control No.

Specification Number

BATT, CERAMIC FIBER - THERMAL INSULATOR

WSE-M12G85-A

1. SCOPE

The material defined by this specification is a flexible insulating batt composed of a blend of alumina-silica ceramic fibers with an acrylic binder suitable for high temperature insulation up to 1260 C.

2. APPLICATION

This specification was released originally for a material used for a thermal insulator in the catalytic converter.

3. REQUIREMENTS

3.1 STATISTICAL PROCESS

Suppliers must conform to the requirements of Ford Quality System Standard Q-101. A mutually acceptable Control Plan as described therein is required for material/source approval. Appropriate statistical tools must be used to analyze process/product data so that variation in the final product is continuously reduced.

3.2 CONDITIONING

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5 % relative humidity for 24 h prior to testing and tested under the same controlled conditions.

3.3 CONSTRUCTION

This batt is composed of mineral fibers formed into a continuous web by a paper-making process (Fourdrinier) to provide a uniform insulating surface.

3.4 COMPOSITION

Ceramic Fibers and Other Oxides
Acrylic Binder

88 - 94 %
6 - 12 %

Date	Release No.	Release/Revision
88-04-22	NE01-E 10000474-010	Released <i>fwelshster</i>

WP 3948-a

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Test Method: Cut 10 g of sample into a previously ignited porcelain crucible. Condition at 102 +/- 3 C for 3 h. Record the weight. Heat in a muffle furnace at 980 +/- 28 C for 4 h. Cool, weigh, and calculate % binder on basis of weight loss. Calculate % mineral fiber on basis of retained weight.

Composition of ceramic fibers and other oxides:

Al2O3	57 - 62 %
SiO2	38 - 43 %
Na2O	Less Than 0.1 %
Fe2O3	Less Than 0.1 %

3.5 BASIS WEIGHT AND THICKNESS
(ASTM D 646/ISO 536)

THICKNESS* mm	BASIS WEIGHT g/m ²	BASIS WEIGHT kgm/279 m ²
1,4 - 2,3	365 - 609	102 - 170

*At 55,2 kPa

3.6 HEAT STABILITY, max

Shrinkage at 980 C 1,7 %

Test Method: Cut two strips 305 x 25 mm from the center of the specimen, one in each direction. Measure the strips to the nearest 0.25 mm. Place strips in a muffle furnace for 4 h at 980 +/- 28 C. Cool specimen to 23 +/- 2 C and measure the strips. Calculate the heat shrinkage from the change in length.

3.7 THERMAL CONDUCTIVITY, W/M/C, max
(ASTM C 177, plied to 13 mm thick sample)

538 C mean temperature K = 0,11

3.8 SUPPLIER'S RESPONSIBILITY

All materials supplied to this specification must be equivalent in all characteristics to the material upon which approval was originally granted.

Prior to making any change in the properties, composition, construction, color, processing or labeling of the material originally approved under this specification, whether or not such changes affect the material's ability to meet the specification requirements, the Supplier shall notify Purchasing, Toxicology and the affected Materials Engineering activity of the proposed changes and obtain the written approval of the Materials Engineering activity. Test data, test samples and a new code identification are to be submitted with the request.