

Engineering Material Specification

Material Name

NYLON (TYPE 66), 13% FIBERGLASS REINFORCED -
IMPACT MODIFIED, HEAT STABILIZED

Specification Number

ESA-M4D349-B

1. SCOPE

This specification defines an impact modified, heat stabilized, 66 nylon reinforced with glass fibers.

2. APPLICATION

The specification was initially released for material used for disc brake splash shields.

3. REQUIREMENTS

3.1 MOLDING COMPOUND REQUIREMENTS

3.1.1 Melting Point, °C
(ASTM D 789) 250 - 263

3.1.2 Fiberglass Content 13 ± 2%

Test Method: Place approximately 4-7 grams of material in a previously ignited and weighed porcelain crucible and weigh. Place in a muffle furnace and heat to 1000° ± 25° F to constant weight. Cool in a dessicator, weigh, and calculate the percent glass.

3.1.3 Moisture Content, Dry As Molded, max
(ASTM D 789) 0.20%

3.2 MOLDED TEST SPECIMEN REQUIREMENTS

3.2.1 Tensile Strength, MPa, min
(ASTM D 638, dry as molded) 93

3.2.2 Ultimate Elongation, min
(ASTM D 638) 4%

3.2.3 Specific Gravity 1.17 to 1.25
(ASTM D 792)

Date	Para. No.	Revisions	Approved
			<i>U. Frederick</i>
			<i>B. Eger</i>
1979 03 26	4-2-79	Released CSJ2 - 822596-C 136	<i>E. P. Hauer 10/11/78</i>

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3.2.4 Thermal Stabilizer

present

Test Method: Boil 10 grams of molded specimen in 50 ml of distilled water for 1/2 hour. Decant and add while stirring one drop of nitric acid to the filtrate followed by three drops of 10% silver nitrate. The formation of a precipitate indicates the presence of heat stabilizer. An optional method may be used if agreed upon by the supplier and the affected product engineering office.

3.2.5 Flexural Modulus, MPa, min (ASTM D 790, dry as molded)

3,400

3.2.6 Flexural Strength, MPa, min

106

3.2.7 Izod Impact Strength (J/m of notch) (ASTM D 256)

at 23C, min

85

at -40C, min (required for initial approval only)

28

3.2.8 Heat Distortion Temperature, °C (ASTM D 648, annealed)

at 455 kPa (66 psi), min

240

at 1820 kPa (264 psi), min

230

3.3 MOLDED PART REQUIREMENTS

3.3.1 Melting Point, °C (ASTM D 789)

250 - 263

3.3.2 Specific Gravity (ASTM D 792)

1.17 - 1.25

3.3.3 Fiberglass Content (Per Test Method in Paragraph 3.1.2)

13 ± 2%

3.3.4 Maximum Allowable Regrind As Specified on Engineering Drawing

3.3.5 Specific Part Requirements

Specific requirements for additional physical properties of molded or extruded parts, when required, shall be specified on the engineering drawings and/or engineering specification.

3.4 INFRARED SPECTROPHOTOMETRY/THERMAL ANALYSIS

Ford Motor Company, at its option, may conduct infrared spectrophotometry/thermal analysis of material/parts supplied to this specification. The spectrums established for initial approval shall constitute the reference standards and shall be kept on file at Central Laboratory. All samples shall produce curves that correspond to the reference standards when tested under the same conditions as those specified on the master curves.

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