



MOLDING COMPOUND, IDENTIFICATION OF RENEWABLE MATERIAL CONTENT

WNS-M99P42-A4

1. SCOPE

The material defined by this specification is a thermoplastic, thermoset, elastomeric compound, foam or insulation material (felt) using a significant content of a renewable material derived from plant, animal or bacteria resources that are sustainably cultivated within a human life time.

2. APPLICATION

This specification provides direction to the suppliers of components with bio-based materials content.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification does not have approved sources.

3.2 MATERIAL IDENTIFICATION

RENEWABLE / BIO-BASED MATERIAL CONTENT is defined as the portion of a material's or product's weight that is composed of materials that are derived from plant, animal or bacteria resources, which are sustainably cultivated within a human life time.

3.2.1 Preferred renewable material content

Examples for preferred use of renewable materials are bio-based oils (e.g. castor oil) and foams (e.g. soybean based foam), and natural fibers such as, rice hulls, flax, hemp, sisal, jute, wheat straw, wood, cellulose, coconut, etc.

3.2.2 Must have an environmental benefit compared to currently used materials.

Data that demonstrate that bio-based materials offer an environmental advantage over other conventional non-renewable materials is required. Ideally the demonstration is guaranteed via LCA (Life Cycle Analysis). Documenting the environmental advantage is especially critical for, e.g. regenerated cellulose fibers (fibers produced with base on cellulose derived from plant but artificially produced, by breaking the cellulose molecular structure applying a chemical process and rearranging the molecular structure on demand to produce a "regenerated cellulose" fiber). Cotton is also rather a critical natural fiber due to the pesticides required during cultivation. Recycled cotton is, however, supported since it converts materials from landfill into raw materials.

Date	Action	Revisions	Rev. 0
2015 06 19	Released		



Documents
M. Magnani, EU
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3.2.3 Guiding principles for implementation:

- Renewable / bio-based materials will be selected whenever technically and economically feasible;
- Product quality, durability, weight, performance (material specification and/or part DV) and economics will not be adversely impacted
- Renewable content sourcing shall not compete with food supply.
- Sustainable supply is ensured (in terms of stable supply and sustainable growing).

3.2.4 Certification of sustainable growth / production

Supplier should certify that all bio-based materials used are originated from sustainable harvesting. This is especially relevant for:

- Wood and wood derived products which must not use tropical wood and follow the UN Forest principles: <http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>).
- Leather and natural rubber which are generally excluded unless accompanied by documentation that demonstrates a sustainable production / growing of these materials.

3.3 RESTRICTED SUBSTANCE MANAGEMENT STANDARD

Substance restrictions imposed by regulations or Company direction applies to the materials addressed by this document. The restrictions are identified in the Restricted Substance Management Standard WSS-M99P9999-A1 which is updated yearly. It is the supplier's responsibility to comply with this standard on a continuing basis through IMDS and or GMAP reporting.

3.4 MATERIAL CODE PARTS MARKING

All polymeric (plastic and elastomeric) parts shall be marked per Ford Motor Company Engineering CAD and Drafting Standard E-4.

Use latest publication of ISO 1043-1 / ISO 1043-2 / ISO 11469 / ISO 1629

4. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification. Contact gmfs@ford.com for questions concerning Engineering Material Specifications.

4.1 APPROVAL OF MATERIALS

Suppliers desiring approval of their materials shall first obtain an expression of interest from Purchasing, Design or Product Development, and Materials Engineering. The supplier shall submit a completed copy of their laboratory test reports, signed by a qualified and authorized representative of the test facility, demonstrating full compliance with all the requirements of the Material Specification. Tested material samples must be available for review upon request and kept for a minimum of one year. Upon request, the supplier will review the associated quality control documents (Process Failure Mode and Effects Analysis, Control Plans, Certification testing) with Ford.

4.2 SUPPLIER'S ONGOING RESPONSIBILITY

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

Prior to making any changes to the material originally approved, whether or not such changes affect the material's ability to meet the specification requirements, the supplier shall notify the affected Supplier Technical Assistance (STA), Purchasing, and Materials Engineering activities of the proposed changes (with reasons) by submission of a completed Supplier Request for