



AEROSPACE MATERIAL SPECIFICATION

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Superseding AMS7101

Fused Filament Fabrication, Material for

RATIONALE

Add key process variables (KPVs), statistical process control to monitor KPVs, and feedstock manufacturer requirements for a PCD.

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1. SCOPE

This specification establishes the minimum requirements for fused filament fabrication (FFF) feedstock.

1.1 Slash Sheet

This specification outlines the basic requirements for a FFF feedstock. A separate slash sheet shall contain the product specific FFF technical requirements for each FFF feedstock. This specification is in addition to and in no way limits, supersedes, or abrogates any contractual obligation as required by the applicable procurement documents. In the event of conflict in requirements, the order of precedence shall be:

- Specifications referenced on the drawing,
- Slash sheet associated with this specification,
- This specification, and
- All specifications referenced in this document.

1.2 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

1.3 FFF Feedstock Classification

The FFF feedstock shall have a slash sheet associated with it and shall be classified as outlined in this section. Additional types, classes, forms, grades, and colors will be added to this section as new materials are available. A current list of released slash sheets can be found at <http://www.sae.org>. The entity qualifying the FFF feedstock shall work with SAE to provide the statistically valid data to generate the slash sheet and have the material added to this specification.

1.3.1 Type

The type shall specify the predominant resin used in the feedstock. Currently defined types are listed in Table 1. The resin type shall use ASTM D4000 abbreviations (aka, standard symbols); if the resin type is not listed in ASTM D4000, abbreviations known in the industry shall be used. If the base resin is mixed with an amount of another resin, the name shall include "blend" to indicate a mixture of the blended component.

Table 1 - Material types

Type	Base Resin
Type 1	Polyetherimide (PEI) blend
Type 2	Polyetherimide (PEI)

1.3.2 Class

The class specifies polymer thermal characteristics (indicated by Tg) to further identify the material resin type. Currently defined classes are listed in Table 2.