



**Revisions:**

<b>Rev</b>	<b>By</b>	<b>Date</b>	<b>Pages Revised or Added</b>
N/C	John Tomblin, Brian Smith	TBD	Document Initial Release
A	Neville Tay and Jorge Chavez- Salas	10/16/23	<ol style="list-style-type: none"> <li>1. Table 1: Notes and reference to notes were added to specify incoming raw feedstock lot requirements.</li> <li>2. Table 2: Notes and reference to notes were added to specify in-process filament material requirements.</li> <li>3. Filament class, glass transition, melt temperature and composition requirements for outgoing filament testing were removed from Table 3 and revised with cross-sectional area, and single-axis diameter requirements.</li> <li>4. Table 3: Notes and reference to notes were added to specify outgoing filament lot requirements.</li> <li>5. Specification limits added to Table 4 and Table 5</li> <li>6. Table 5 note 2: The appropriate amount of material lot to represent a set of specimens was detailed for both the OFRA and CFRA material.</li> </ol>
B	Neville Tay	11/13/23	<ol style="list-style-type: none"> <li>1. Added “The value for the Class must be immediately appended to the Composition abbreviation (e.g. CF30 for 30% carbon fiber and the remaining 70% is a Type 1 and FR blend).” to the end of the sentence in section 1.1</li> <li>2. Units were added to the Requirement columns in Table 1 and 2.</li> </ol>

## **1. SCOPE**

This detailed specification along with the base specifications NMS 754 and NMS 755 establishes the requirements for the manufacturing of Onyx FR-A with Carbon Fiber FR-A Aerospace Fused Filament Fabrication (FFF) filament/fiber. The filament/fiber is produced using an extrusion process.

This detailed specification contains additional superseding requirements. The base specifications must govern where no additional requirement is specified; in such cases, the applicable sections are omitted from

Orientation: ZX			Modulus: <b>0.1858 to 0.3304 Msi</b>
Compressive Strength and Modulus <sup>(5)</sup> Room Temperature, Dry Orientation: XZ	PF	ASTM D6641	Strength: Min. Ind. <b>8.000 ksi</b> Strength: Average <b>13.02 ksi</b> Modulus: <b>1.672 to 2.521 Msi</b>
Flexural Strength and Modulus <sup>(6)</sup> Room Temperature, Dry Orientation: XZ	PF	ASTM D790	Strength: Min. Ind. <b>20.24 ksi</b> Strength: Average <b>24.16 ksi</b> Modulus:

