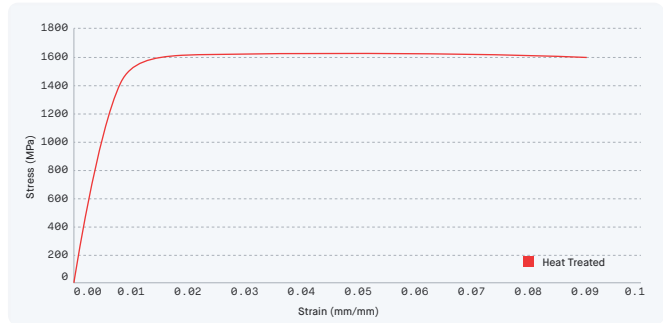


[Material Data Sheet]

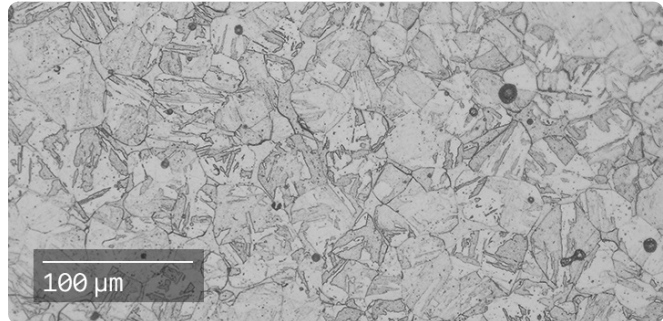
# DM HH-SS

## High Strength & Hardness Stainless Steel



**COMPOSITION %**

|    |            |
|----|------------|
| Fe | Balance    |
| Cr | 11 – 13    |
| Ni | 8.4 – 10   |
| Mo | 1.1 – 1.7  |
| Al | 1.2 – 2.0  |
| Mn | 0.4 (max)  |
| Si | 0.4 (max)  |
| C  | 0.05 (max) |



as-sintered microstructure

**MECHANICAL PROPERTIES**

|  | Standard | Production System™<br>Solutionized & Aged<br>ASTM A564 |
|--|----------|--|
| Ultimate tensile strength <sup>1</sup> (MPa) | ASTM E8M | <b>1,595 ± 33</b>                                      |
| Yield strength <sup>1,2</sup> (MPa)          | ASTM E8M | <b>1,480 ± 32</b>                                      |
| Elongation at break (%)                      | ASTM E8M | <b>8.9 ± 1.9</b>                                       |
| Young's modulus (GPa)                        | ASTM E8M | <b>197</b>   |
| Hardness (HRC)                               | ASTM E18 | <b>49.1 ± 0.9</b>                                      |
| Charpy impact strength (J)                   | ASTM E23 | <b>133 ± 23</b>  |
| Density (g/cc)                               | -        | <b>7.54 ± 0.01</b>                                     |
| Surface roughness <sup>3</sup> (μm Ra)       | ISO 4287 | <b>3 – 8</b>   |

**OTHER STANDARD DESIGNATIONS**

UNS 13800 Modified

**ATTRIBUTES & APPLICATIONS**

Tooling-grade steel that combines good corrosion resistance with high strength and hardness while maintaining high elongation

Excellent wear and fatigue resistance

Wide range of applications from tooling to high-volume, end-use components

1. YS & UTS properties noted represent mean values across Xy orientations.  
 2. 0.2% Offset Yield Strength  
 3. Surface roughness measured in Z direction after sintering & sand blasting.  
 Stress strain curve reported in X print orientations after heat treatment.