

## Symmco Typical Properties

### Material Composition

MATERIAL COMPOSITION	SINTERED BRONZE	SINTERED IRON-COPPER
<b>Copper</b>	<b>87.5 - 90.5</b>	<b>18 - 22</b>
<b>Iron</b>	<b>1.0 max</b>	<b>76 - 81</b>
<b>Tin</b>	<b>9.5 - 10.5</b>	
<b>Carbon/Graphite</b>	<b>0.3 max</b>	<b>0.3 max</b>
<b>Other elements</b>	<b>1</b>	<b>2</b>

### Physical & Mechanical Properties

MATERIAL COMPOSITION	SINTERED BRONZE	SINTERED IRON-COPPER
<b>Density (gm. per cu. cent.)</b>	<b>6.4 - 6.8</b>	<b>5.8 - 6.2</b>
<b>Porosity (% by volume)</b>	<b>19 min.</b>	<b>19 min.</b>
<b>Tensile Strength (psi) as Sintered</b>	<b>14,000</b>	<b>22,000</b>
<b>Yield Strength in Comp.</b>	<b>11,000</b>	
<b>App. Rockwell Hardness as Sintered (Ref. Only)</b>	<b>H-45</b>	<b>F-35</b>
<b>K-Strength Constant</b>	<b>26,500</b>	<b>30,000</b>

### Comparable Specifications

MATERIAL COMPOSITION	SINTERED BRONZE	SINTERED IRON-COPPER
<b>ASTM</b>	<b>B438/438M-05 Gr. 1; Type 2</b>	<b>B-439 Grade 4</b>
<b>MPIF</b>	<b>CT-1000-K26</b>	<b>FC-2000-K30</b>
<b>SAE</b>	<b>AMS-4805-D</b>	
<b>SAE (Old)</b>	<b>841</b>	<b>863</b>
<b>Military</b>	<b>B438/438M-05 Gr. 1; Type 2</b>	<b>B-439 Grade 4</b>
<b>Symmco Designation</b>	<b>Sym 1</b>	<b>Sym 77</b>

**NOTE:** This data is based on parts as manufactured by Symmco.