

5.2.2 Bend Test Specimens: When arc melting is used for producing castings, three specimens at least 0.090 in. in diameter or thickness and approximately 2 in. in length shall be cast in each mold along with each cast part or parts.

5.3 Tensile Properties at Room Temperature: Tensile test specimens produced in accordance with 5.2.1 shall conform to the following requirements:

Tensile Strength	75,000 min
Yield Strength at 0.2% Offset or at 0.0037 in. in 1 in. Extension Under Load ($E = 28,500,000$), psi	50,000 min
Elongation, % in 4D	10 min

5.4 Bending: At least two of the specimens cast in each mold in accordance with 5.2.2 shall withstand, without cracking, bending at room temperature through an angle of 30 deg around a 0.5 in. diameter. If more than one specimen from a mold fails to pass this test, the disposition of the castings from that mold may be determined by applying a similar test to an actual casting or to specimens cut from castings, gates, or runners. Such specimens shall be not less than 0.090 in. in diameter or thickness. Failure of any such additional specimens will be cause for rejection of the castings. Unless otherwise specified, bend test shall be performed by producer of castings.

5.5 Hardness: Castings shall have hardness of Brinell 180 - 235 or equivalent.

5.6 Tensile Properties at 1500 F: Tensile test specimens produced in accordance with 5.2.1 heated to $1500\text{ F} \pm 10$, held at $1500\text{ F} \pm 10$ for 30 min. before testing, and tested at $1500\text{ F} \pm 10$ at a rate of 0.045 - 0.062 in. per min. shall conform to the following requirements. If supplied tensile test specimens fail to meet requirements or are not available, suitable specimens may be prepared from castings for test.

Tensile Strength, psi	53,000 min
Elongation, % in 1 in.	10 min

6. QUALITY:

6.1 Castings shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts. Castings shall have smooth surfaces and shall be well cleaned. Unless otherwise permitted, metallic shot or grit shall not be used for final cleaning.

6.2 When castings are broken for fracture test, the fracture shall have uniform color and be substantially free from oxides and other imperfections.

6.3 Radiographic and other quality standards shall be as agreed upon by purchaser and vendor.

6.4 Unless otherwise specified, castings shall be produced under radiographic control. This shall consist of radiographic examination of castings until proper foundry technique, which will produce castings free from harmful internal imperfections, is established for each part number, and of production castings as necessary to ensure maintenance of satisfactory quality.

6.5 Castings shall not be repaired by plugging, welding, or other methods, without written permission from purchaser.