

The American Society for Testing and Materials is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

ASTM A588 High strength, low-alloy structural steel improved atmospheric corrosion resistance.

ASTM A588 covers high strength, low-alloy structural steel shapes, plates, and bars with improved atmospheric corrosion resistance that is intended for riveted, bolted, or welded construction. When properly exposed to the atmosphere, this steel is suitable for many applications in the bare/unpainted condition.

Mechanical Requirements

This abridged table shows only the mechanical requirements for bars 4” and under. The complete table including shapes and plates can be found in the ASTM standard at www.astm.org

Tensile, min, ksi	70
Yield, min, ksi	50
Elongation, min % in 8”	18
Elongation, min % in 2”	21

A588 Chemical Requirements

Element %	Grade A	Grade B	Grade C
Carbon	0.19 max	0.20 max	0.17 max
Manganese	0.80 - 1.25	0.75 - 1.35	0.50 - 1.20
Phosphorus	0.04 max	0.04 max	0.04 max
Sulfur	0.05 max	0.05 max	0.05 max
Silicon	0.30 - 0.65	0.15 - 0.50	0.25 - 0.50
Nickel	0.40 max	0.50 max	0.40 max
Chromium	0.40 - 0.65	0.40 - 0.70	0.40 - 0.70
Molybdenum	-	-	0.10 max
Copper	0.25 - 0.40	0.20 - 0.40	0.30 - 0.50
Vanadium	0.02 - 0.10	0.01 - 0.10	-
Columbium	-	-	0.005 - 0.05