

# MATERIAL SPECIFICATION

## **581. Metal**

### **1. Scope**

This specification covers the quality of steel and aluminum alloys.

### **2. Structural Steel**

Structural steel shall conform to the requirements of ASTM A 36.

High-strength low-alloy structural steel shall conform to ASTM A 242 or A 588.

Carbon steel plates of structural quality to be bent, formed, or shaped cold shall conform the ASTM A 283, Grade C.

Carbon steel sheets of structural quality shall conform to ASTM Standard A 570, Grade D or A 611, Grade D.

Carbon steel strip of structural quality shall conform to ASTM Standard A 570, Grade C.

### **3. Commercial or Merchant Quality Steel**

Commercial or merchant quality steel shall conform to the requirements of the applicable ASTM listed below:

<b>Product</b>	<b>ASTM Standards</b>
Carbon Steel Bars	A 575, Grade M 1015 to Grade M 1031
Carbon Steel Sheets	A 569
Carbon Steel Strips	A 569
Zinc-Coated Carbon Steel Sheets	A 653 or A 924

#### **4. Aluminum Alloy**

Aluminum alloy products shall conform to the requirements of the applicable ASTM Standard listed below. Unless otherwise specified, alloy 6061-T6 shall be used.

<b>Product</b>	<b>ASTM Standards</b>
Standard Structural Shape	B 308
Extruded Structural Pipe and Tube	B 429
Extruded Bars, Rods, Shapes, and Tubes	B 221
Drawn Seamless Tubes	B 210
Rolled or Cold-Finished Bars, Rods, and Wire	B 211
Sheet and Plate	B 209

#### **5. Bolts**

Steel bolts shall conform to the requirements of ASTM Standard A 307. If high-strength bolts are specified, they shall conform to the requirements of ASTM A 325.

When galvanized or zinc-coated bolts are specified, the zinc coating shall conform to the requirements of ASTM Standard A 153; except that bolts ½ inch or less in diameter may be coated with electro-deposited zinc or cadmium coating conforming to the requirements of ASTM Standard B 633, Service Condition SC 3 or ASTM A 165, Type TS, unless otherwise specified.

#### **6. RIVETS**

Unless otherwise specified, steel rivets shall conform to the requirements of ASTM Specification A 502, Grade 1. Unless otherwise specified, aluminum alloy rivets shall be Alloy 606-T6 conforming to the requirements of ASTM Standard B 316.

## 7. Welding Electrodes

Steel welding electrodes shall conform to the requirements of American Welding Society Specification AWS A5.1, "Specification for Mild Steel Covered Arc-Welding Electrodes," except that they shall be uniformly and heavily coated (not washed) and shall be of such a nature that the coating will not chip or peel while being used with the maximum amperage specified by the manufacturer.

Aluminum welding electrodes shall conform to the requirements of American Welding Society Specification AWS A5.10, "Specification for Aluminum and Aluminum-Alloy Welding Rods and Bare Electrodes."