

LOW CARBON STEELS

Flat, Shaped and Round Wire

Applications

Cold headed, cold upset or cold pressed parts, Fasteners such as nuts and bolts, Carburized parts such as gears, pins, dowels and machine parts, Various types of levers, Wire products

Description

Low carbon steel is a type of metal that has an alloying element made up of a relatively low amount of carbon. Typically, it has a carbon content that ranges between 0.05% and 0.30% and a manganese content that falls between 0.40 and 1.5%. Low carbon steel is one of the most common types of steel used for general purposes, in part because it is often less expensive than other types of steel. This steel contains properties that work well in manufacturing a variety of goods.

Chemistry Typical

UNS #	CARBON	MANGANESE	PHOSPHORUS	SULFUR	IRON
G10060	0.080 max	0.25-0.40	0.040 max	0.050 max	Balance
G10080	0.10 max	0.15 max	0.030 max	0.035 max	Balance
G10100	0.80-0.13	0.30-0.60	0.040 max	0.050 max	Balance
G10180	0.14-0.20	0.60-0.90	0.040 max	0.050 max	Balance
G10200	0.17-0.23	0.30-0.60	0.040 max	0.050 max	Balance

* Contact Ulbrich Wire for request regarding the availability of other aluminum alloys.

Physical Properties

Typical Density: 0.284 lbs/in³, 7.87 g/cm³

Electrical Resistivity (typical): (ohm-cm @ 32°F, cold drawn): 0.0000143 - 0.0000174

Thermal Conductivity (typical): BTU-in/hr-ft²-°F: 360

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Mean Coefficient of Thermal Expansion (typical): $\mu\text{in/in-}^\circ\text{F}$:
68 - 212 $^\circ\text{F}$: 6.5 - 7

Modulus of Elasticity: KSI
27.5 - 30.5 x 10³ in tension

Melting Temperature: 2600 - 2800 $^\circ\text{F}$ (1425 - 1540 $^\circ\text{C}$)

Forms

Profile, Round, Flat, Square

Mechanical Properties at Room Temperature

Properties: Cold Drawn (Typical)

Ultimate Tensile Strength: 48 KSI min (330 MPa min)

Yield Strength: 41 KSI min (285 MPa min)

Elongation: 15% min

Properties: Tempered

These alloys can be cold worked to various tempers.

** Actual physical and mechanical properties are alloy dependent. Contact Ulbrich Technical Service for alloy specific properties.*

Additional Properties

Wire Finishes

XC - Extra clean. Annealed or annealed and cold rolled.

** Contact Ulbrich Wire with special finish requests.*

Heat Treatment

Most of these alloys are hardenable by cold working and heat treating.

** Contact Ulbrich Wire for additional information.*

Welding

Contact Ulbrich Wire for specific information.

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