



ArcelorMittal

CR700W – Ultra-High Strength Weathering Steel

Product characteristics

CR700W is an ultra-high strength cold rolled steel with a guaranteed minimum yield strength of 700MPa (100ksi). The material is heat treated in a continuous anneal line and then skin passed to lock in properties and impart surface texture. The weathering chemistry incorporates copper, chromium and nickel to provide an atmospheric corrosion resistance index greater than 6 in accordance with the calculation from ASTM G101. The surface can be left bare or painted for extra corrosion protection and aesthetics. When left bare, a patina will develop on the surface consisting of a smooth compact oxide layer, which inhibits atmospheric corrosion. If the surface is painted and the coating is scratched or removed at some point, the bare steel will form an oxide layer that will protect the base metal and minimize paint blistering from creeping corrosion.



Applications

CR700W should be used for applications where high loading conditions are encountered or where light weighting is desired to increase payload capacity. The excellent corrosion performance lends itself to applications highly susceptible to handling damage, or where accessibility for painting is difficult. Examples include ocean shipping containers, returnable totes or skids, and utility pole arms or light posts.



Fabrication

CR700W can be bent or profiled using conventional brake press and roll-forming methods. The chemistry is easily weldable using all fusion techniques. Filler wires with similar chemistry should be utilized to ensure corrosion performance of the weld.

Guaranteed mechanical properties

Yield strength	Tensile strength	Total elongation	Bending radius
700MPa (100ksi) min	800MPa (116ksi) min	5% minimum	2t

Chemistry

C (max)	Mn (max)	Cu (min)	Ni (min)	Cr (min)
0.154	1.2	0.25	0.15	0.55

Size availability

Gauge 0.8–1.6mm
Width to 1400mm
(please inquire outside of this range)

Benefits

- High strength reduces denting and damage during service
- Improved fatigue performance compared to alternative materials
- Enhanced corrosion performance
 - Reduced maintenance
 - Increased service life
- Thickness reduction potential when converting designs specified with lower strength materials.
 - Reduced weight
 - Improved material utilization and potential to reduce cost
 - Increased payload



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