

“Design The Future”

Corten Steel



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What is Corten Steel?

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Corten Steel

is a steel with rusty appearance that has very aesthetic qualities and is being increasingly used in design.





Corten, is the trademark name for weathering steels.

Weathering steels are a family of low carbon steel alloys that were specifically developed to provide higher strength and more importantly eliminate the need to paint to protect against the elements (rain, snow, humidity, sun, salt, etc.).

The name Cor-Ten

refers to the two distinguishing properties of this type of steel: corrosion resistance and tensile strength.

The original Corten

received the standard designation A242 (Corten A) and A588 (Corten B) from the ASTM International standards group.

Workability

Corten possesses workability similar to ordinary steels of same strength.

Paint Durability

Corten is paintable in the same way as ordinary steel. In addition, even if a painting defect should occur, Corten suppresses the progress of rust area and, accordingly, prolongs the service life of the paint, thereby reducing repainting costs.

Weather Resistance

While weather resistance depends on the product grade and the application environment, Corten's weather resistance is nearly 4-8 times that of ordinary steel.

Weldability

Corten can be welded.



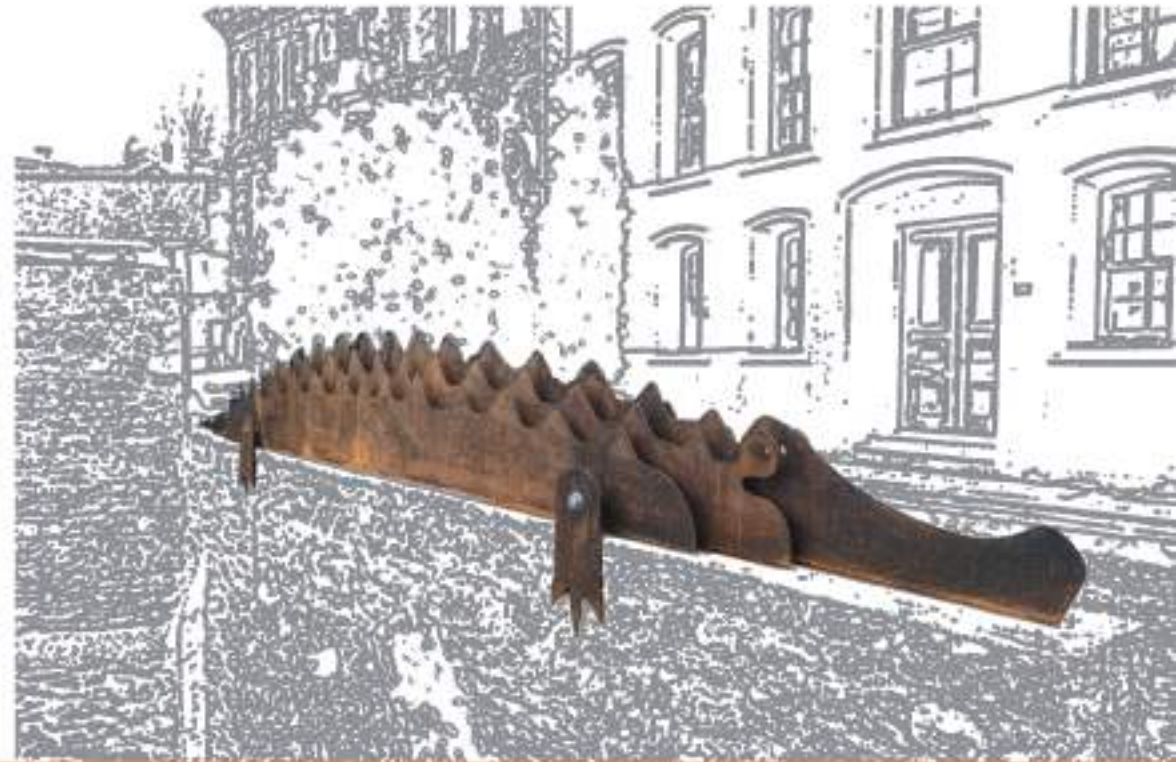
Corten is a copper chromium alloy steel.

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Chemical Composition

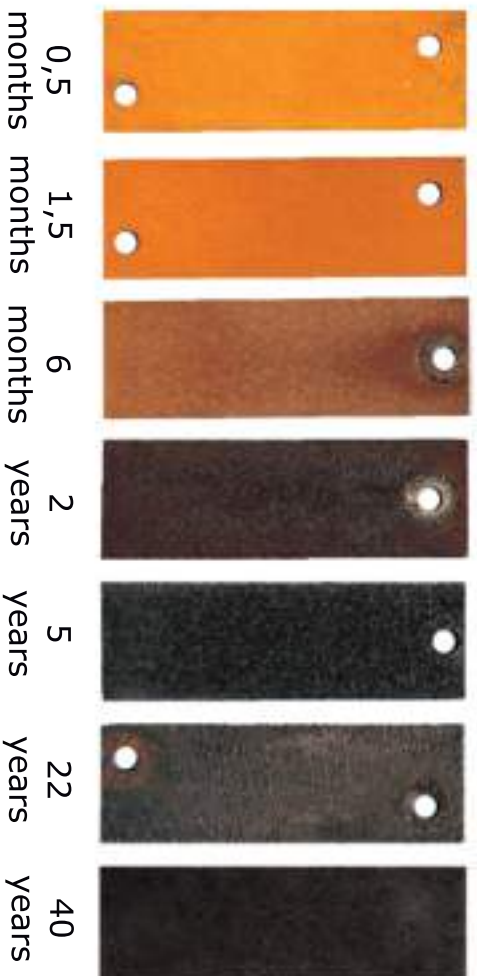
This alloy displays a greater level of resistance to atmospheric corrosion when compared to other unalloyed steels. This is because the steel forms a protective layer on its surface under the influence of the weather.

The layer protecting the surface develops and regenerates continuously when subjected to the influence of the weather.



Weathering steel grade chemical composition (excl. iron) by weight (%)

Grade	Chemical Composition (%)								
	C	Si	Mn	P	S	Cr	Cu	V	Ni
Corten A	0,12	0,25-0,75	0,20-0,50	0,01-0,20	0,030	0,50-1,25	0,25-0,55	-	0,65
Corten B	0,16	0,30-0,50		0,030	0,030	0,40-0,65	0,25-0,40	0,02-0,10	0,40



Changes in rust appearance



The speed of the colour transition is dependent on the frequency of wet and dry cycles the steel undergoes.

Generally, Corten steel will patina or rust within 6 months of atmospheric exposure.

Corten, if left alone, will take 2-4 years to reach its peak patina and then should remain in that state with very little change.

In the initial stage of application, Corten shows a yellowish appearance. This is followed by a gradual change in the color of the protective rust from brown to a stable dark brown after one to two years in general application environments.



Oct. 1969
(Under construction)



Apr. 1973
(4 years after completion)



Sep. 1977
(8 years after completion)



May 1991
(22 years after completion)



Jul. 2010
(40 years after completion)

Hokkaido Centennial Memorial Tower

An architectural rendering of a building facade. The building features a sign that reads "MARIN TOBACCO SHOP". A large orange rectangular overlay is positioned on the left side of the facade, containing the text "5 Reasons To Use Corten Steel". The rendering shows a brick wall on the left, a central entrance with a door, and a window on the right. The ground in front of the building is paved with bricks.

5 Reasons To Use Corten Steel

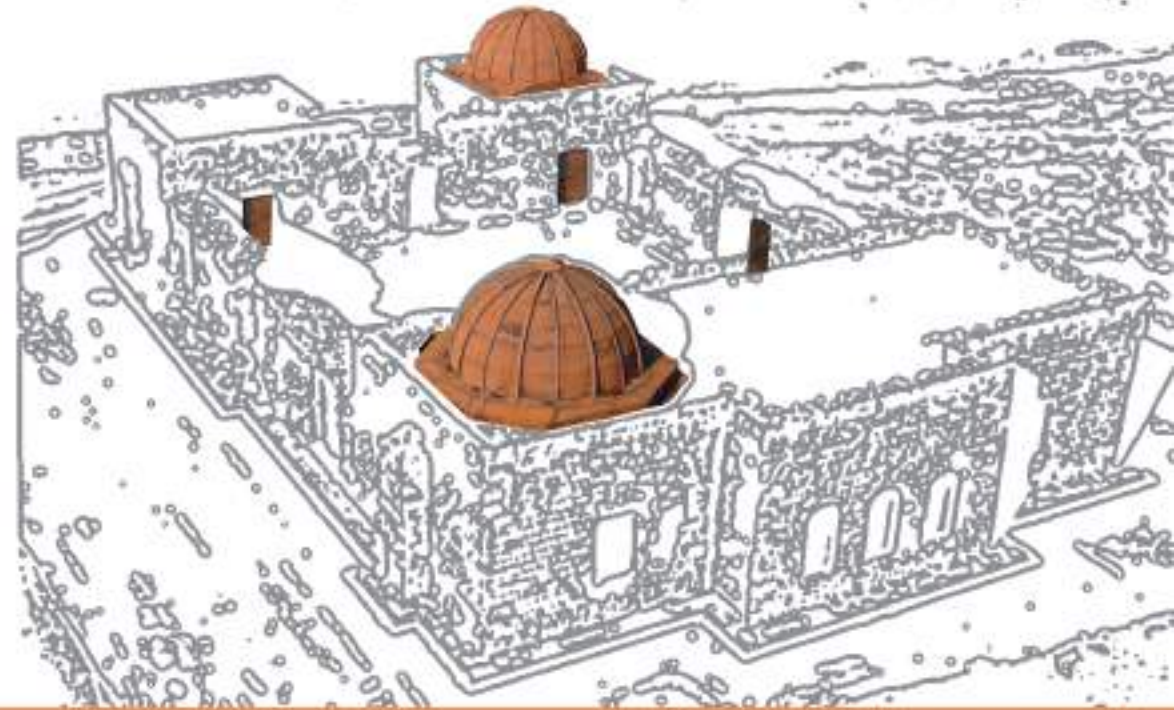
Corten has properties that are very advantageous

High-strength

Corten is useful for heavy-duty structures.

Saving maintenance cost

Corten is a very low maintenance steel which is ideal for structures where maintenance can be difficult and dangerous such as bridges, or where disruption needs to be minimised such as around major roads and railways.



Longevity

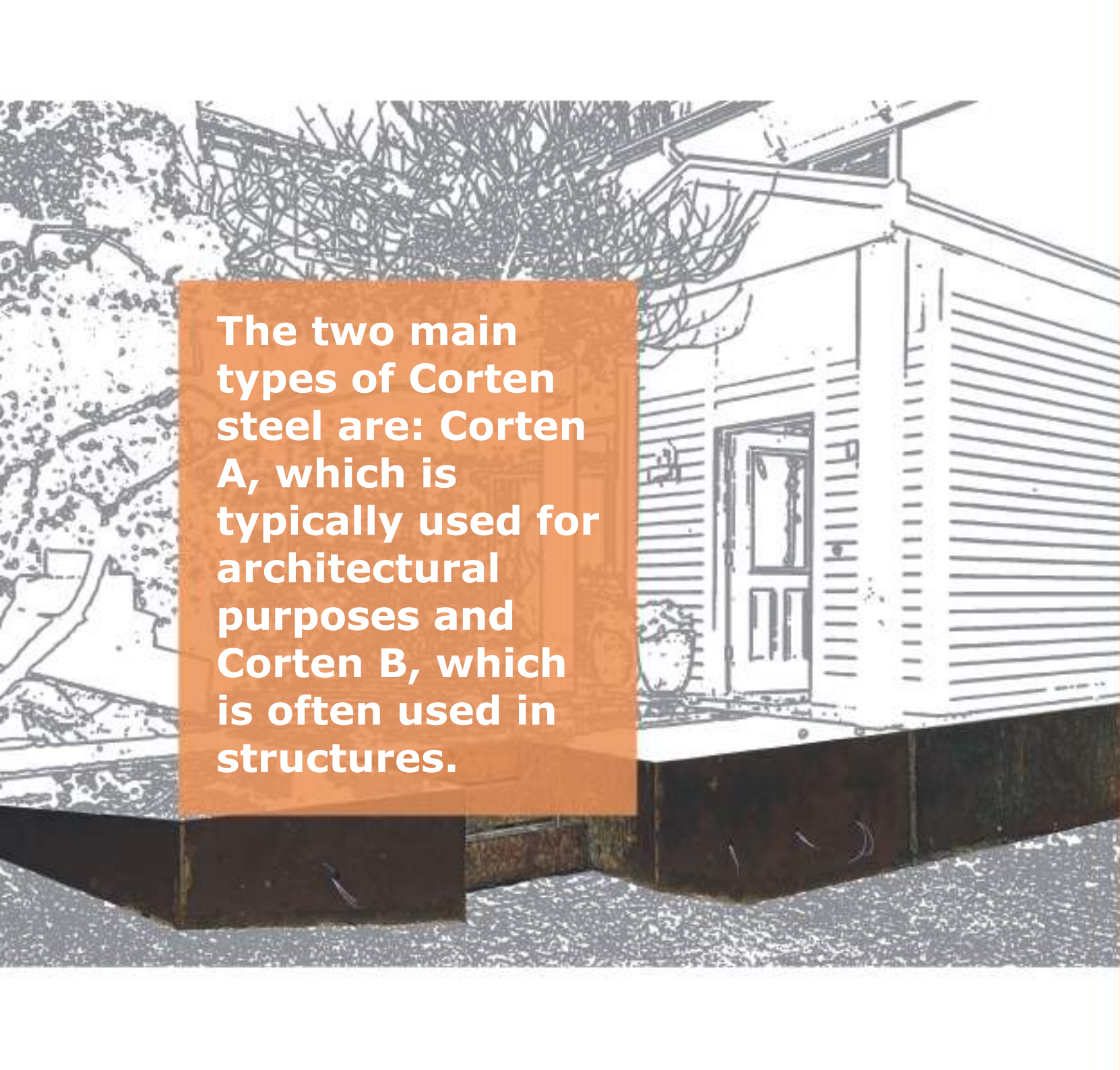
Corten steel has anti-corrosive properties that gives it an advantage over other structural steels. The naturally occurring rust that it develops helps to lengthen the lifecycle of a weathering steel structure, which in turn keeps costs to a minimum.

Unpainted use

Because Corten has high weather resistance, it can be used without painting. Unpainted applications not only offer the economic advantage of reducing repainting costs; they also offer aesthetic benefits associated with the calming color of the protective rust.

Attractive appearance

The protective rust that Corten steel develops has a distinctive reddish-brown appearance that is particularly popular among architects and design engineers.



The two main types of Corten steel are: Corten A, which is typically used for architectural purposes and Corten B, which is often used in structures.

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Uses



Used particularly in building, in public spaces (street furniture) or to make architectural sculptures, bridges, signs, chimineas and fire pits.

Corten A and Corten B, have different applications based on the thickness. Corten A is often used in housing structures, construction industry and freight cars. Corten B, is used primarily in urban furnishing, passenger ships or cranes.



**The unpainted
application of
Corten**

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Application Examples



**Maxx Royal Hotel
Mugla/TURKEY**

Bernar Venet Sculptures
Corten Steel arcs x 12
pieces-21 meters



**Beylerbeyi Villa
Istanbul/TURKEY**

Corten Steel planters



**Levent Villa
Istanbul/TURKEY**

Corten Steel single wing
gate
Corten Steel letter box
Corten Steel railing
Corten Steel automatic
sliding gate



**Cremma Cafe
Istanbul/TURKEY**

Building facade made of
Corten Steel
Corten Steel roofing
Corten Steel roof gutter



**The Red Sea Hotel
Jeddah/SAUDI ARABIA**

Corten Steel edging



**Sculpture
QATAR**

Corten Steel leaf
sculpture



**Istanbul Finance
Center/TURKEY**

Corten Steel planters



**Fire Pits
ISRAEL**

Corten Steel fire pits



**Asbos Wine Factory
Çanakkale/TURKEY**

Corten Steel pivot door



**Sculpture
Paris/France**

Corten Steel sculpture



**Istanbul Finance
Center/TURKEY**

Corten Steel railing



**Marin Tobacco Shop
Istanbul/TURKEY**

Building facade made of
Corten Steel



**Budin Chemistry
Izmir/TURKEY**

Building facade and
window jamb made of
Corten Steel



**Mint Kagithane
Istanbul/TURKEY**

Counter made of Corten
Steel



**Kandilli/Villa
Istanbul/TURKEY**

Corten Steel retaining
wall



**Göcek/Villa
Mugla/TURKEY**

Corten Steel double
swing gate
Corten Steel single wing
gate



**Mint Kağıthane
Istanbul/TURKEY**

Building facade made of
Corten Steel



**Şişecam Headquarters
Istanbul /TURKEY**

Perforated Corten Steel
panel



**Lord's Palas Hotel
CYPRUS**

Corten Steel planter
Corten Steel fire pit



**Park project
Erbil/IRAQ**

Corten Steel edging



**Urla Villa
Izmir/TURKEY**

Corten Steel double
swing gate



**Mosque
Kocaeli/TURKEY**

Corten Steel dome



**Municipality Building
Ankara/TURKEY**

Corten Steel pool



**Hopa Villa
Artvin/TURKEY**

Building facade made of
Corten Steel



**Gustave Roussy
Paris/France**

Corten Steel bench



**National Garden Cayirova
Kocaeli/TURKEY**

Perforated Corten Steel
panel



**Acar Kent Villa
Canakkale/TURKEY**

Corten Steel wall
cladding
Corten Steel stairs



**Assos Villa
Canakkale/TURKEY**

Corten Steel automatic
double swing gate
Corten Steel single wing
gate



**Yeşilyaka Koru/Villa
Istanbul/TURKEY**

Corten Steel edging



**Istanbul Finance
Center/TURKEY**

Corten Steel bicycle
racks



**IMM Halic Regional
Chief Istanbul/TURKEY**

Corten Steel steps



**IMM
Izmir/TURKEY**

Corten Steel 100th
anniversary monument



**Hasankeyf Archeopark
Batman/TURKEY**

Corten Steel door
Corten Steel lighting pole
Corten Steel railing
Corten Steel edging
Corten Steel dome



**Kandilli /Villa
Istanbul/TURKEY**

Corten Steel staircase
Corten Steel railing
Corten Steel bridge



**Lord's Palace Hotel
CYPRUS**

Corten Steel planter



**Beylikduzu Park
Istanbul/TURKEY**

Corten Steel 3D peg
sculpture



**Fair
Istanbul/TURKEY**

Corten Steel bench



**Kandilli /Villa
Istanbul/TURKEY**

Corten Steel railing



**Kingdom of Commagene
Adiyaman/TURKEY**

Expanded Corten Steel



**Mint Kagithane
Istanbul/TURKEY**

Corten Steel letter box



**Beykoz/Villa
Istanbul/TURKEY**

Corten Steel bollard



**Bodrum/Villa
Mugla/TURKEY**

Building facade and door
eave made of Corten
Steel



**Istanbul Finance
Center/TURKEY**

Corten Steel trash can



**Kandilli/Villa
Istanbul/TURKEY**

Corten Steel 3D love
sculpture



**Kandilli/Villa
Istanbul/TURKEY**

Corten Steel crocodile
sculpture



**Uzunyol
Trabzon/TURKEY**

Rainwater grate made of
Corten Steel



**Fair
Sapanca/TURKEY**

Corten Steel decorative
panel



**Kandilli/Villa
Istanbul/TURKEY**

Corten Steel wine cellar



**National Garden
Malatya/TURKEY**

Corten Steel notice boards



**Artuklu/YeniYol Street
Mardin/TURKEY**

Corten Steel wall cladding



**Cekmekoy Office
Istanbul/TURKEY**

Corten Steel watering planters



**Hasankeyf Archeopark
Batman/TURKEY**

Corten Steel lighting pole

