Secco Sistemi

Cor-ten Steel

THE MATERIAL

Cor-Ten steel is a high-tensile, self-passivating special alloy containing copper, chromium and phosphorus, which, as the name indicates, possesses considerable resistance to corrosion (Cor) and to tensile stress (Ten).
A singular feature of Cor-Ten is its natural oxidation upon exposure to air, which instead of continuing to corrode the material, stops and forms an unchanging protective patina.
These properties mean it can be used even in particularly corrosive or critical situations as testified to by its common use in architecture for monumental buildings and outdoor sculptures as well as for industrial applications such as bridge trestlework, guardrails and containers.

THE ADVANTAGES OF COR-TEN STEEL

· Very high structural resistance, resolves any design requirements, modulus of elasticity 3 times higher than that of aluminium and absolute maintenance of shape over the years

· Thermal conductivity 4 times less than aluminium: steel 55 w/mk - aluminium 220 w/mk

· Reduced coefficient of expansion, close to that of concrete and twice below that of aluminium

· High aesthetic value in terms of uniqueness and exclusivity of the product

· Customisable aesthetic values individual for each construction

· 10 times more resistant to corrosion than normal steels, also when used in critical situations

· Absolute certainty of duration and low maintenance costs

· Natural and essentially ecological material, 100% recyclable without limit

TRANSFORMATION PROCESS

The slab or bloom of Cor-Ten steel is cold rolled to obtain coils with the required gauge, which are subsequently sheared and cold formed. The resulting products upon exposure to the air form an unchanging protective patina in a process that can last from one to four years, depending on the surroundings. Formation of the protective patina
may be accelerated with a special process (oxidation, passivation and waxing) that, under natural but controlled conditions, gives the steel its particular final finish very fast

FINISH

The “rust” finish of Cor-Ten steel comes from the natural oxidation process, which, at the end of a period of stabilisation that can last from one to four years and during which chalking can occur, stops and forms a protective patina with an extraordinary aesthetic effect that remains the same for decades.