

## RUUKKI® FAÇADE CLADDINGS IN COR-TEN® RAW MATERIAL

### RUUKKI® FAÇADE CLADDINGS

Ruukki offers a wide portfolio of high quality façade cladding products in form of the rainscreen panels, lamellas and profiled sheets, available in wide range of dimensions and shapes. With options for both excellent product and exceptional raw material, the scale and attenuation of the surface structure can meet the architectural needs of the façade in question. The choice of Cor-Ten® weathering steel for façade underlines the individual and natural outfit of envelope surface.

### Product portfolio

Ruukki® façade cladding portfolio presents a wide list of different shape and dimension of products available in Cor-Ten® raw material:

Table 1. Portfolio of Ruukki Liberta® rainscreen panels

Ruukki® rainscreen panel	Available material thickness in Cor-Ten® raw material
Ruukki Liberta® Cor-Ten® 600	1,5 mm
Ruukki Liberta® Cor-Ten® 700	1,5 mm
Ruukki Liberta® Cor-Ten® 800	1,5 mm

Table 2. Portfolio of Ruukki® Cladding lamellas

Ruukki® Cladding lamella	Available material thickness in Cor-Ten® raw material
Cladding lamella Cor-Ten® 20	1,5 mm
Cladding lamella Cor-Ten® 30	1,5 mm

Table 3. Portfolio of Ruukki® Design profiles

Ruukki® Design profile	Available material thickness in Cor-Ten® raw material
Ruukki® Design Tokyo S18	0,7 mm
Ruukki® Design Venice S10	0,7 mm
Ruukki® Design Rome S34	0,7 mm
Ruukki® Design Rome S S34	0,7 mm
Ruukki® Design Paris S55	0,7 mm
Ruukki® Design Oulu T10A	0,7 mm
Ruukki® Design Oulu T10B	0,7 mm
Ruukki® Design Cor-Ten® S7	0,7 and 1,0 mm

### Raw material

With its anti-corrosive properties, Cor-Ten® raw material minimizes the need for maintenance and corrosion-prevention treatment, contributing significantly to low maintenance costs throughout the product lifecycle. In addition, the weathering steels reduce the need for corrosion prevention, making Cor-Ten® an environmental friendly choice of steel. You can create your own rusty, life-like rhythm of ventilated envelope systems with Ruukki® façade claddings in Cor-Ten® material.

Due to its unique chemical composition, Cor-Ten® weather-resistant structural steel sheet has a significantly better ability to resist atmospheric corrosion comparing to similar normal structural steels due to its oxide layer, i.e. the patina that forms on the steel surface. The oxide layer is created when weather-resistant steel is wetted and dried repeatedly. The protective surface layer forms in normal weather conditions within 18...36 months.

Weather-resistant steel is used in architectural applications without requiring any separate surface treatment. Use of weather-resistant steel thus eliminates the need for surface treatments during the manufacturing and operational periods, in turn lowering the environmental load and costs throughout the product's life cycle.

### CE MARKING

CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA). The CE marking is manufacturer's declaration that the product meets the requirements of the applicable EC directives. CE marking is possible when product is covered with relevant harmonized EN standard or EAD guidelines are issued for the product or solution type.

### CE marking of Ruukki® façade cladding products

EN 14782 harmonized standard that describes the basis for CE marking and technical requirements for rainscreen panels, lamellas or profiled sheets in roofing or cladding applications does not include Cor-Ten® steel as the listed dedicated raw material. Considering this fact, CE marking based on harmonized standard for profiled façade products made of the weathering Cor-Ten® steel is not possible due to the lack of the relevant product standard. There are also no available EAD guidelines for such product type.

### Basis of the certification

In general, there is no available relevant European standard as the basis for certification and quality control of the Cor-Ten® cold rolled raw material or final profiled product. However, Ruukki has adapted some other reference documents and product technical approvals to ensure the best product quality.

Table 4. Essential characteristics of raw material

Essential characteristic	Declared value	Reference standard / document
Raw material Mechanical properties  Material: cold rolled Cor-Ten® A - yield strength $R_{eL}$ - tensile strength $R_m$ - elongation $A_{80}$ - minimum bending radius	   min. 310 MPa min. 450 MPa min. 22% 0,5 x t	   Not applicable / material certificate as confirmation of raw material quality

Table 4 cont. Essential characteristics of raw material

Essential characteristic	Declared value	Reference standard / document
Raw material Chemical composition  Material: cold rolled Cor-Ten® A - C - Si - Mn - P - S - Al - Cu - Cr - Ni	   max. 0,12 % 0,22 – 0,75% 0,20 – 0,50 % 0,07 – 0,15 % max. 0,03 % 0,015 – 0,060 % 0,25 – 0,55 % 0,5 – 1,25 % max. 0,65 %	Not applicable / material certificate as confirmation of raw material quality
Raw material Dimensional tolerances  Material: cold rolled Cor-Ten® A - thickness - width - length - flatness - shape of coil/strip	depending on raw material dimensions	EN 10131: 2006

Table 5. Essential characteristics of ready product

Essential characteristic	Declared value	Reference standard / document
Ready product Dimensional tolerances  Ruukki Liberta® rainscreen panels Material: cold rolled Cor-Ten® A - depth of profile - width/length - deviation from straightness - deviation from skewness - horizontal/vertical joint - other dimensions	depending on ready product dimensions	ITB-KOT-2019/0882, Issue 1 EN 14782 / EN 508-1
Ready product Dimensional tolerances  Ruukki® Cladding lamellas Material: cold rolled Cor-Ten® A - height of profile - width/length - deviation from straightness - other dimensions	depending on ready product dimensions	ITB-KOT-2019/0882, Issue 1 EN 14782 / EN 508-1

Table 5 cont. Essential characteristics of ready product

Essential characteristic	Declared value	Reference standard / document
Ready product Dimensional tolerances  Ruukki® Design profiles Material: cold rolled Cor-Ten® A - depth of profile - pitch - width/length - bending radius - deviation from squareness - other dimensions	depending on ready product dimensions	ITB-KOT-2019/0882, Issue 1 EN 14782 / EN 508-1
Ready product Fire properties  Ruukki Liberta® rainscreen panels Ruukki® Cladding lamellas Ruukki® Design profiles Material: cold rolled Cor-Ten® A - reaction to fire	A1 class (classification without further testing – CWFT option)	European Commission Decisions 96/603/EC and 2000/605/EC

#### Quality control of raw material and ready product

Ruukki ensures the highest quality of raw material and ready Ruukki® façade claddings made of Cor-Ten® weathering steel. Our products are under regular Factory Production Control supervision and all procedures connected with quality assurance are implemented and in use. Ruukki is subjected also to ISO 9001 and ISO 14001 certification that supports the increase in efficiency and productivity and gives the clear guidelines for both quality management and environment friendly approach.

#### Sustainable approach in Ruukki® façade claddings made of Cor-Ten® steel

Using our materials and products is safe. Continuous development, monitoring and testing aims to minimize health and safety risks. We openly communicate the correct use and material contents of our products to our customers. All of our products are designed for safe manufacturing, installation and end-use application.

Our products for façade structures meet all the requirements of modern, economical and sustainable envelope construction. Ruukki ensures that our façade claddings fulfill appropriate basic requirements for buildings given into Construction Product Regulation CPR 305/2011, especially this referring to the sustainable use of natural resources. Steel products can be reused and recycled up to almost 100%.