What is stainless steel?

Steel is an iron and carbon alloy. Stainless steel is a steel containing in its mass at least 10.5% chromium, other alloying elements, and less than 1.2% carbon. The chromium content provides stainless steel with its corrosion resistance, enabling the natural and continuous development of a chromium oxide surface layer. This oxide, referred to as the “passive layer”, provides it with lasting protection against all types of corrosion. This passive layer is naturally self-healing when in contact with humidity or water.

The advantages of stainless steel in Roofing

Environment and recyclability

- Stainless steel is a « green material » par excellence and is infinitely recyclable and recycled. Within the construction sector, its actual recovery rate is close to 100%.
- It is unchangeable and totally inert with regard to the environment: in contact with elements such as water, it does not release compounds which could modify the composition.
- Stainless steel’s longevity fulfils the requirements of sustainable construction (THQE, BBC).

Economic performance

- Cost levels of stainless steel transformation are comparable with other metals traditionally used.
- The cost of stainless steel roofing enables an excellent quality versus price ratio to be achieved in construction.
- Choosing stainless steel offers a long-term guarantee.

Durability

- Stainless steel is corrosion resistant, thanks to its passive layer, which allows its use in various atmospheric environments, even the most severe.
- Stainless steel has a high strength resistance and an excellent resistance to thermal shock.
- Stainless steel is ranked A2s1d0 for fire resistance with no toxic fume emissivity.
- No embrittlement of stainless steel in very cold weather.

Implementation

- On site machinery used for implementation of stainless steel is the same as for other materials.
- Stainless steel solders easily.
- Stainless steel can be worked in winter temperatures, which allows a longer laying period.

Design

- Stainless steel is suited to all styles of roofing (batten rolls, standing seams, self-supporting trays), both new build and renovation projects.
- It allows architectural creation, design and the realisation of complex shapes.
- It combines easily with other materials (glass, wood, concrete…).
- A low thermal expansion coefficient allows the manufacture of continuous lengths of up to 20m in a single run.
All that is required is to identify the grade of stainless steel and the surface finish:
> A grade of stainless steel corresponds to a steel product characterised by its chemical composition. This composition has a direct influence on its resistance to corrosion and its mechanical properties.
> A given surface finish can be achieved on different grades of stainless steel.
> Surface finishes are the result of mechanical or physical-chemical treatment of the surface of the steel.

Refuge Topali, Switzerland - Meier Associés architectes SA - © Aperam
Executed using grade 304 Uginox Top finish

Uginox Top
> Permanent and dural matt finish from the installation.
> It blends into all types of environment, both rural and urban, traditional or modern, and is suited to all styles of architecture.

Uginox Patina
> Stainless steel with an electro-tinned coating on both sides.
> It weathers over time, and becomes grey with a matt finish.
> The tin tones down the stainless steel's natural lustre, enabling it to blend into all environments.

Uginox Bright
> Particulary bright and uniform surface.
> Its smooth bright lends itself to both light and form.

Uginox Mat
> This uniform dull surface enables the accomplishment of very elegant, aesthetic projects.

Selection guide of grades taking account the environment

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<td>Tinned stainless offer - Uginox Patina</td>
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<td>K44</td>
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√: Type suited to the environment
∆: Type whose selection will be determined after consulting us
X: Type not suited to the environment

(1) Current designation - (2) In particular, any environment or atmosphere containing corrosive substances or halogens: chlorides, fluorides, etc.

Our dimensional range

Forms: coils, small coils, sheets
Thicknesses: 0.4 and 0.5 mm (please contact us for other thicknesses)

Widths: 500 - 580 - 625 - 670 - 800 - 1000 - 1160 or 1250 mm according to grades
Finishes: Uginox Top, Uginox Bright, Uginox Mat, Uginox Patina (please contact us for other finishes)