Stainless Steel for Roofing

Discover the advantages of stainless steel

Memphrémagog Lake House | Canada (Quebec) | naturehumaine ©Adrien Williams | Uginox Patina K41

Environment & Recyclability

- Infinitely recyclable, stainless steel is the 'green material' par excellence. Within the construction sector, its actual recovery rate is close to 100%.
- Stainless steel is environmentally neutral and inert. When in contact with elements such as water, it does not leach compounds that might modify its composition and could harm the environment.
- The longevity of stainless steel is perfectly in line with the construction sector's sustainability criteria (THQE, BBC).
- Aperam provides environmental product declarations (EPDs) that describe the impact its products have throughout their life cycle. Our customers use these EPDs to make informed decisions about the stainless steel they purchase.

CO_2 Footprint per m² (thickness 0.5 mm)

Reference*	27.14 kg CO_2e/m²
Uginox Top 304	7.98 kg CO_2e/m² -71%
Uginox Patina K41	9.90 kg CO_2e/m² -64%

*Source: World Stainless Association, based on an assumption of 30% scrap metal.

Economic Performance

- Stainless steel's processing costs are comparable to other traditionally used construction materials.
- The cost of a stainless steel roof provides an excellent quality/price ratio.
- Choosing stainless steel offers a long-term guarantee.
- Stainless steel's low coefficient of expansion enables the laying of long strips – up to 20 m in one go – limiting the number of protrusions and need for expansion joints.

Durability

A unique passive coating makes stainless steel corrosion-resistant, meaning it can be used in a wide range of environments – even the most severe.

Furthermore, stainless steel:

- Can be used with all types of wood with no risk of corrosion.
- Has high mechanical strength and excellent resistance to thermal shock.
- Does not tear or break and can withstand even the lowest temperatures.
- Is classified A2s1d0 for fire resistance and does not give off toxic fumes.

Processing

- Stainless steel can be processed using the same tools one uses with other metals.
- It is also easy to braze.
- Because stainless steel can be used in winter temperatures, it can be laid longer.

Design

- Stainless steel is suitable for all types of roofing (battens, standing seams, self-supporting panels) and for both new-build and refurbishment projects.
- Its use enables complete freedom of architectural creation and design and allows for the creation of complex shapes.
- Stainless steel easily blends in with other materials (glass, wood, concrete, etc.) and with the surrounding environment.

Our Range of Aspects and Grades

Campana de Cloutou Mountain Station | Bagnères de Bigorre, France
TRIPTYQUE © Florent Roussy | Aperam 304, Uginox Top

A distinction must be made between stainless steel grade and surface appearance:

- A stainless steel grade is characterised by its chemical composition and has a direct impact on the material's corrosion resistance and mechanical properties. The same surface appearance can be obtained using different grades of stainless steel.
- Surface aspects are the result of mechanical or physico-chemical treatment to the stainless steel's surface.

Uginox Top

Definitive mat appearance on installation. Whether rural or urban, classic or modern, Uginox Top blends in with all environments and adapts well to all architectural styles.

Available in 304 and 316L austenitic grades

Uginox Patina

Stainless steel electroplated on both sides with tin. Develops a patina over time, taking on a grey tint and a mat appearance.
The use of tin reduces the material's natural shine, making it easier to integrate into any type of site.

Available in K41 and K44 ferritic grades

Uginox Top and Uginox Patina: Products in Stock

- Shapes: coils, bobbins, sheets
- Thicknesses: 0.4 and 0.5 mm (depending on grade)
- Widths (mm): 500 / 580 / 625 / 670 / 800 / 1,000 / 1,160 / 1,250 (depending on grade)

Solar Reflectance

Crèche Baby | Issy-les-Moulineaux, France
Bernard Ropa | Aperam 304, Uginox Bright

The Solar Reflectance Indices (SRI) of our range extend from the lowest values (Uginox Patina) to the highest (Uginox MECA mirror polishes such as MECA 8 ND® non-directional mirror polish).

High-gloss finishes prevent facades and roofs from absorbing solar heat and contributing to local temperature increases. As such, they are often used to meet certain LEED requirements or BREEAM programmes.

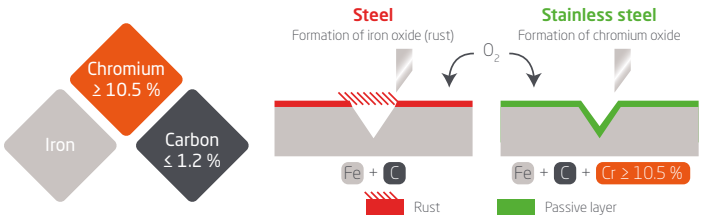
Mat finishes bring a strong architectural character to a building and make it easier to integrate the building into its surroundings — making these finishes a popular choice for roofs located near historic buildings.

More About Stainless Steel

What is Stainless Steel?

Steel is an alloy of iron and carbon. Stainless steel is steel containing a minimum of 10.5% chromium, alloying elements and less than 1.2% carbon.

The chromium content allows for the natural and continuous development of chromium oxide on the material's surface, which gives stainless steel its unique corrosion resistant property. This oxide, known as the 'passive layer', provides long-term protection against all types of corrosion. The passive layer can also naturally regenerate on contact with the moisture found in the air or with water.



Your Guide to Choosing the Right Grade

Your choice of stainless steel grade must take into account the type of exposure and environment it will be used in. Our experts are at your disposal to provide you with further information and help you build a made-to-measure solution.

Trade names		Outdoor Environments					
		Rural, unpolluted	Urban and Industrial		Marine		
			Normal	Severe*	20 to 10 km	10 to 3 km	Seaside (<3 km)
Austenitic	304	✔	✔	▲	✔	✘	✘
	316L	✔	✔	▲	✔	▲	▲
Ferritic	K41	✔	✔	▲	▲	✘	✘
	K44	✔	✔	▲	✔	▲	▲

✔ Type suitable for exposure.
▲ Type selected after consultation with us.
✘ Type not suitable for exposure.

*In particular, any environment or atmosphere containing corrosive or halogenated products: chlorides, fluorides, etc.

Raimundtheather | Vienna, Austria | Roman Mramor Architecte © Christoph Bertos
Uginox Patina K41

Santa Maria Church | Gunzenhausen, Germany | Uginox Patina K41

Refuge du Goûter | Saint-Gervais, France | Groupe H & Déca-Laage © Pascal Tournaire
Aperam 304, Uginox Top

Courthouse | Strasbourg, France | Garcés.De Seta.Bonet Arquitectes & Serra-Vives-Cartagena © jm.bannwarth@drone-images-alsace.com | Aperam 304, Uginox Top

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aperam | Responsible Steel standards & certification

Aperam is the first stainless steel company
to be certified by **ResponsibleSteel™**.