

# Long-length guttering in stainless steel

## What is stainless steel?

Stainless steel is steel that contains a minimum of 10.5% chrome, alloying elements, and less than 1.2% carbon. The chrome content gives stainless steel its corrosion resisting properties: it allows a protective layer of chromium oxide to form naturally and continually on its surface, giving it strong protection against all types of corrosion. This passive layer naturally regenerates in contact with atmospheric humidity or water.

## The advantages of stainless steel

### Economic performance

- > Due to stainless steel's low expansion coefficient, for widths of less than 500 mm French building regulation P36-201 permits lengths of 20 m of Uginox Patina and 15 m of Uginox Top. For widths > 500 mm the maximum permitted length is 15 m of Uginox Patina and 12 m of Uginox Top. For other countries, it is advisable to refer to the relevant national standards to find the authorised lengths.
- > Stainless steel allows manufacturing and assembly costs to be reduced. The pieces can be folded directly on site, at ground level or on the roof, in long lengths and broad widths. Due to the long lengths permitted, the number of soldered joints, expansion joints or expansion stop ends is lowered, decreasing installation time and the risk of leaks.
- > Stainless steel is compatible with all types of wood and does not require the use of a membrane to separate it from the wood, unlike other roofing materials. However, when renovating corroded galvanised steel, cast iron, concrete or mortar guttering, it is obligatory to fit an isolating material between the stainless steel and its support.
- > Stainless steel retains its mechanical properties even at very low temperatures; it does not become fragile even at temperatures below freezing. This property is an important advantage in cold regions, making it the ideal material for mountainous areas.
- > Stainless steel possesses good mechanical properties, reducing its weight per m<sup>2</sup> and allowing its use at lower thicknesses than other materials.

### Durability

- > Stainless steel is corrosion resistant thanks to its passive layer, allowing its use in a wide range of atmospheric environments.
- > Choosing stainless steel means long-term durability.

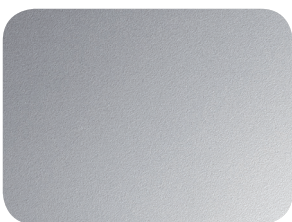


### Environment and Recyclability

- > Stainless steel is a "green material" par excellence, endlessly recycled and recyclable. In construction its recycling and reuse rate is close to 100%.
- > Highly resistant, it is also environmentally neutral: in contact with water it does not release compounds that may alter the composition of the water, unlike other materials such as lead, copper and zinc.
- > Stainless steel's longevity makes it perfect for building applications that require durability.



## Our range



These aspects make it suitable for all types of environment, rural or urban, classic or modern, and adaptable to all architectural styles.

#### UGINOX Top

- > A permanent, matte, surface appearance from the time of installation.
- > Easy to maintain.

#### UGINOX Patina

- > Stainless steel covered with tin through electroplating on both sides.
- > Acquires a patina over time, giving it a grey tone and a matte surface appearance.



**Construction products manufactured in all Aperam plants and service centers comply with the CE standard.**

## Guide to choosing the right grade for the atmospheric conditions

Commercial designations	Standards				External environment					
	ASTM		EN	Unpolluted rural	Urban and industrial		Marine			
	Designations				Normal	Severe <sup>(2)</sup>	20 to 10 km	10 to 3 km	Coastal (< 3 km)	
	TYP	UNS								
<b>UGINOX Top</b>										
Austénitics	304	304	S30400	1.4301	✓	✓	▲	✓	X	X
	316L	316L	S31603	1.4404	✓	✓	▲	✓	▲	▲
<b>UGINOX Patina</b>										
Tinned Ferritics	UGINOX Patina K41	441 <sup>(1)</sup>	S43932	1.4509	✓	✓	▲	▲	X	X
	UGINOX Patina K44	444	S44400	1.4521	✓	✓	▲	✓	▲	▲

✓ : 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 range of sizes

Commercial designations	UGINOX Patina			UGINOX Top		
	K41	K44		304	316L	
Thicknesses (mm)	0.4	0.5	0.5	0.4	0.5	0.5
Widths (mm)						
500	65	51	51	63	50	50
580	56	44	44	54	43	43
625				50	40	40
650						
670	48	38	38	47	37	
800	40	32	32	39	31	31
1000	32	26	26	31	25	25
1160	28	22	22			
1250				25	20	20

In this table you will find, for each width and thickness, the calculated length in linear metres of a 100kg roll.

## Our recommendations

- > Depending on the length of the pieces, folding can be carried out directly in the workshop or on site, with the help of a gripping tool.
- > Soldering is carried out using a copper-tipped soldering iron and a solder containing a minimum of 28% tin. The soldering flux is normally an orthophosphoric acid solution and is not allowed to contain chlorinated or fluorinated compounds.
- > Any cutting or milling of metallic elements which risks polluting the stainless steel through splattering is not recommended.