

COLOURING OF STAINLESS STEELS INOX-SPECTRAL PROCESS

PROCESS

The INOX-SPECTRAL[®] colouring process for stainless steel is based on patents of International Nickel, supplemented by patents of POLIGRAT INOX COLOR.

It is electrochemical dip process comprising several phases during which a layer of chromium oxide that is perfectly transparent and extremely fine, 0.05 to 0.3 microns according to the colour is deposited on the surface of the steel.

COLOUR

The coloration is applied exclusively to austenitic stainless steel (grades 4301, 4307, 4404...). The range of colours is as follows:

- ✓ **Champagne, Gold, Bronze,**
- ✓ **Cobalt Blue, Black, Anthracite Grey***

(on polish grain 180 stainless steel only)*

It is not possible to shade these specified colours without taking the risk of altering them radically. The reproducibility of the shade cannot be totally guaranteed from one batch of steel to another due to the influence of the chemical composition of the steel to be coloured and its surface.

If an additional order is placed for the same work it is essential to supply at least one sample of the initial production to obtain a shade that is as close to it as possible, but there is no guarantee of an exact reproduction.

METAL SUPPORT

SURFACE CONDITION: Since surface condition influences the result of the coloration it can only be applied to austenitic stainless steel sheets that have been previously surface treated (polishing, bead blasting).

For example, the mirror polish requires a longer dipping time than poly grain.

On the other hand, if certain areas are subject to pressure of varying intensity during the previous operations, particularly polishing, the coloration will lack homogeneity.

To remedy any flaws due to previous surface treatment, or on « textured » sheets, electro polishing is carried out.

Generally speaking the colour always « appears » more homogeneous on the grains and textured finishes than on the mirror polish, if only because it better reflects the light and the surroundings.

It is possible to colour hot rolled meal (large thicknesses), where it is surface treated, then polished.

SIZES

SHEETS (Only):

Dimensions: 2000 x 6000 maximum
Thicknesses: 0.5 mm to 3mm.

Note: this colouring process requires the use of tongs or hooks for dipping in the bath, and a strip of 25-30mm throughout the length of the sheet will not be coloured or will have a perforation.

Please, make allowance for this area when calculating the dimensions required in your order.

PVC coating: replaced by paper inserts for thicknesses < 0.8 mm

PROPERTIES

The properties of coloured stainless steel are generally the same as those of non-coloured stainless steel.

MECHANICAL PROPERTIES: The deformation and folds leave the coloured surface intact. It is therefore possible to carrying out the bending and even light stamping operations without any deterioration in the colour, and without causing cracking or scaling of the coloured surface.

Welding is not recommended because a difference in shade will appear after coloration in the zone thermally affected by the welded joint. However, mechanical assembly methods, such as screwing, riveting or flanging, are recommended.

CORROSION RESISTANCE: this is absolutely identical to that of the base metal, and is in most cases even improved where the colouring is applied to the mirror polished metal.

A test study carried out over a period of period of 10 years in a marine atmosphere testifies to the perfect corrosion resistance.

In all cases it is important to specify clearly the base metal to be used, in most cases grade 4301/4307, but if there is exposure to an aggressive atmosphere, such as the sea side, the recommended choice will be 4404. In case cases adhere to the recommendations of the stainless steel manufacturer.

LIGHT RESISTANCE: The chromium oxide deposited on the transparent steel surface does not undergo any ultraviolet alteration. The coloration therefore displays excellent ageing resistance.

TEMPERATURE RESISTANCE: Black is able to resist 350/400°C, and the other colours resist 200°C with possible peaks of up to 260°/280°C, but only for a short time.

MAINTENANCE: Taking into account the surface condition and properties of the coloured stainless steel, it is sufficient to follow the following simple instructions for maintenance:

- The frequency of cleaning depends on the degree of soiling and individual assessment ;
- It is normally sufficient to wipe with a clean, soft rag, or to use water first, possibly adding soap later ;

N.B: **Never use an abrasive product, a product intended for the maintenance of copper or chromium, or a product designed for polishing furniture**

APPLICATIONS

There are numerous interior as well as exterior applications, limited only by the imagination of the user:

- ✓ Facades,
- ✓ Door lifts and door cage linings,
- ✓ Metal joinery, frames,
- ✓ Signs,
- ✓ Street furniture,
- ✓ Fixtures and fittings.
- ✓ Public buildings, shops, hotels, offices, stations, terminals, lamps transport equipment...