

COBRANOX 12

CORROSION AND ABRASION RESISTANT STEEL

— **COBRANOX 12** is a duplex structure steel (ferrite martensite) with high levels of chromium giving excellent resistance to both corrosion and abrasion. Its lifetime is around 10 times superior to that of a normal mild steel.

— The mechanical characteristics of **COBRANOX 12** means that in many cases it can be used instead of a type 304 stainless grade. The very high sliding coefficient compared to normal mild steel enables **COBRANOX 12** to efficiently combat the sticking phenomenon.

Chemical composition

| C | Si | Mn | P | S | Cr | Ni | N |
|--------|--------|--------|--------|--------|------|-------|--------|
| ≤ 0.03 | ≤ 1.00 | ≤ 1.50 | ≤ 0.04 | ≤ 0.03 | ≤ 12 | ≤ 1.5 | ≤ 0.03 |

Mechanical properties in delivery condition

| Hardness (HB) | UTS (MPa) | Ys (MPa) | Impact values (min.) KCV -20 °C (J/cm ²) | E (%) |
|---------------|-----------|----------|---|-------|
| 220 max. | 550 | 355 | 35 | 27 |

— **Delivery condition:**

As rolled.

— **Heat resistance:**

The excellent heat resistant properties of **COBRANOX 12** enable it to be used where applications have a continuous temperature of up to 500 °C.

— **Fields of application:**

COBRANOX 12 has a wide range of application:

- Petro-chemical industry;
- Sugar production;
- Agricultural industry;
- Recycling industry;
- Coal production and handling;
- Etc.

Consumables: type 309 L, E 308 L, 316 L or equivalent.

Processing information

— It is of fundamental importance that the following information is adhered to in order to obtain the users complete satisfaction of products manufactured from this grade of steel. Therefore, the user should be assured that the calculation, construction and fabrication methods used are adapted to the material and also that they correspond with the accepted rules of processing, and for the desired usage.

— **Cold forming:**

The bending of **COBRANOX 12** requires approximately 40 % more power than for mild steel in the same conditions due to the increased yield point. Minimum internal radius: 2 x thickness
To bend material > 12 mm, heat to 150 °C in the bending zone.

— **Cutting:**

Cutting by plasma, laser or water-jet only.
The shearing process is difficult and requires very hard-wearing, sharp tools.

— **Welding:**

You can use the following methods:

- TIG manual and automatic;
- Plasma;
- MIG;
- Submerged arc.

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