



## Steel **X18BC** X2CrNi19-11

Variant:

X18BCW: Consumable electrode remelted grade

### **S**PECIFICATIONS

European standards:

- X2CrNi19-11
- Numerical designation: 1.4306

AECMA:

- Designation: FE-PA11, FE-PA3901
- X1CrNi18-10

AIR : Z 2 CN 18-10

UNS : S30403

### **M**ECCHANICAL PROPERTIES

- In the solution treated condition:
  - UTS: 550 N/mm<sup>2</sup>
  - 0.2 % Yield strength: 190 N/mm<sup>2</sup>
  - Elongation (5d): 60 %
  - Impact strength KCU: 250 J/cm<sup>2</sup>

### **C**OMPOSITION

Carbon .....	< 0.03
Chromium .....	19.00
Nickel .....	11.00

### **A**PPPLICATIONS

- Industries: nuclear, aerospace industry, oil, electrical, chemical and food industries.
- Mechanical and marine assemblies.

### **C**HARACTERISTICS

- Low carbon austenitic stainless steel.
- Good resistance to intercrystalline corrosion.
- Suitable for electric welding.
- Good weldability.
- Can be hardened by cold working. For small diameters UTS can reach 1500 N/mm<sup>2</sup>.

## HEAT TREATMENT

---

- Heat to 1050/1100 °C.
- Water quench or air cool depending on the section of the parts.

## PHYSICAL PROPERTIES

---

- Density: 7.9
- Mean coefficient of expansion in m/m.°C:
  - between 20 °C and 200 °C:  $17.3 \times 10^{-6}$
  - between 20 °C and 400 °C:  $18.3 \times 10^{-6}$
  - between 20 °C and 600 °C:  $19.1 \times 10^{-6}$
- Modulus of elasticity in N/mm<sup>2</sup>:
  - at 20 °C:  $201 \times 10^3$
- Thermal conductivity in W.m/m<sup>2</sup>.°C:
  - at 100 °C: 16
  - at 400 °C: 20
  - at 800 °C: 26
- Specific heat in J/g.°C: 0.50
- Electrical resistivity in  $\mu\Omega.cm^2/cm$ :
  - at 20 °C: 70
- Absolute magnetic permeability in H/m:  $1.26 \times 10^{-6}$

## FORGING

---

- 1100/900 °C

### AUBERT & DUVAL

22, rue Henri-Vuillemin • 92230 Gennevilliers - France  
Tel: 33 (0)1 55 02 58 00 • Fax: 33 (0)1 55 03 58 01  
Internet: <http://www.aubertduval.fr> • e-mail: [dircom@aubertduval.fr](mailto:dircom@aubertduval.fr)

The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.