

SINCRON STEELS

The evolution of high toughness structural plates

SINCRON WHS 800T

Sincron is a Usiminas trademark for TMCP plates produced by CLC – Continuous-on-Line Control technology developed by Nippon Steel Sumitomo Co. The WHS series were developed for applications that the use of high strength steel, high toughness and, at the same time, welding easiness and productivity are required. SINCRON WHS 800T plates was designed for weight reduction of equipments and excellent toughness at low temperatures are required. Another important characteristic of this product is its good performance in welding due to lower C content and carbon equivalent compared to most quenched and tempered steels of the class of 80 kgf/mm² of tensile strength.

Technical requirements:

| Espessura (mm) Thickness | Composição Química Típica (% em massa) Chemical Composition | | | | | | Propriedades Mecânicas Mechanical Properties | | | | | |
|-----------------------------|--|--------|--------|---------|---------|--------|--|----------------|---------------------------|------|--------------------------------|-----------------------|
| | C | Si | Mn | P | S | Ceq | LE (MPa) YP | LR (MPa) TS | Alongamento Elongation | | Ensaio Charpy (Charpy Test) | |
| | | | | | | | | | BM (mm) | % | Temp (°C) | Energia (J) Energy |
| 8,00 - 25,40 | ≤ 0,19 | ≤ 0,30 | ≤ 1,40 | | | ≤ 0,40 | | | | | | |
| 25,41 - 35,00 | ≤ 0,23 | ≤ 0,50 | ≤ 1,50 | ≤ 0,025 | ≤ 0,010 | ≤ 0,46 | ≥ 690 | 770 ~ 930 | 50 | ≥ 18 | -40 | ≥ 40 J |
| 35,01 - 40,00 | | | | | | ≤ 0,54 | | | | | | |

$$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

SINCRON WHS 800T meets all requirements of mechanical properties - traction (YP, TS, El) and Charpy impact of USI SAR 80T and EN 10025-6 S690QL. Not recommended for pressure vessels applications and heat bending.

Bending

Recommended maximum 3 x T (90°).

Tolerances

Dimensional: ASTM A6 Symmetrical.

Shape: 50% ASTM A6.

Surface quality

Commercial surface / En 10163-2 class A subclass 1.

Specification name

SINCRON-WHS-800-T

(1) (2) (3) (4)

(1): Trademark for Usiminas TMCP (TMR+AcC) plates

(2): Weldable High Strength

(3): Tensile strength average (MPa)

(4): Direct quenching + Tempering