

## Classifications

| EN ISO 17633-A      | EN ISO 17633-B    | AWS A5.22   |
|---------------------|-------------------|-------------|
| T 23 12 2 L P M21 1 | TS 309LMo-F M21 1 | E309LMoT1-4 |
| T 23 12 2 L P C1 1  | TS 309LMo-F C1 1  | E309LMoT1-1 |

## Characteristics and typical fields of application

BÖHLER CN 23/12 Mo PW-FD is a rutile flux cored welding wire with fast freezing slag providing excellent positional welding characteristics and fast travel speeds. It is easy to use and operates with a powerful penetrating spray arc transfer, minimum spatter formation and self releasing slag. This flux cored welding wire offers many economical and quality advantages over solid wire pulse arc welding. High deposition rates and productivity gains are easily achievable. Additional cost effective benefits are offered through use of less expensive shielding gases (Argon + 15-25 % CO<sub>2</sub> or 100 % CO<sub>2</sub>), good wetting characteristics (less grinding), little temper discoloration & bead oxidation, easy operation and safe penetration (reduces the risk of weld defects and associated repair work costs), and smooth and clean weld finish (less post weld work). Due to its characteristics mainly for positional welding and service temperatures between -60°C to +300°C. For downhand & horizontal welding positions (1G, 1F, 2F) our flux cored wire BÖHLER CN 23/12 Mo-FD should be preferred.

## Base materials

dissimilar joint welds: mild steels and low-alloyed constructional and QT-steels among themselves or among each other; unalloyed as well as low-alloyed boiler or constructional steels with stainless Cr-, CrNi- and CrNiMo-steels; ferritic-austenitic joint welds in boiler and pressure vessel parts.

weld surfacing: for the first layer of corrosion resistant surfacing on P235GH, P265GH, S255N, P295GH, S355N - S500N; for the first layer of corrosion resistant weld claddings on high temperature quenched and tempered fine-grained steels acc. AD- Merkblatt HPO, class 3.

## Typical analysis of the wire and of all-weld metal (wt.-%)

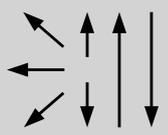
|      | C    | Si  | Mn  | Cr   | Mo  | Ni   |
|------|------|-----|-----|------|-----|------|
| wt-% | 0.03 | 0.7 | 1.4 | 23.0 | 2.7 | 12.5 |

## Mechanical properties of all-weld metal

| Condition | Yield strength     | Tensile strength   | Elongation                           | Impact work |                  |
|-----------|--------------------|--------------------|--------------------------------------|-------------|------------------|
|           | R <sub>p0.2</sub>  | R <sub>m</sub>     | A (L <sub>0</sub> =5d <sub>0</sub> ) | ISO-V KV J  |                  |
|           | MPa                | MPa                | %                                    | +20 °C      | -60 °C           |
| u         | <b>530</b> (≥ 350) | <b>720</b> (≥ 550) | <b>32</b> (≥ 25)                     | <b>65</b>   | <b>50</b> (≥ 32) |

u untreated, as welded – shielding gas Argon + 18 % CO<sub>2</sub>

## Operating data

|  | Polarity: | Shielding gases:  | Redrying if necessary:   | ∅ (mm) | Amp A     | Voltage V |
|---|-----------|---|--------------------------|--------|-----------|-----------|
|   | DC (+)    | Argon +<br>15 – 25 % CO <sub>2</sub><br>100 % CO <sub>2</sub> | possible,<br>150 °C/24 h | 1.2    | 100 – 220 | 20 – 31   |

Welding with standard GMAW-facilities possible, slightly trailing torch position (angel appr. 80°), slight weaving is recommended for positional welding. When using 100% CO<sub>2</sub> as shielding gas it is necessary to increase the voltage by 2 V. The gas flow should be 15-18 /min. Preheat and interpass temperatures as required by the base metal.

## Approvals

TÜV (09116.), BV (309 Mo), LR (SS/CMn), SEPROZ, CE, DNV (309 MoL)