

Classifications

| | | | |
|-----------------------|-----------------------|-----------------|---------------------|
| SAW solid wire: | | | SAW flux: |
| EN ISO 14343-A | EN ISO 14343-B | AWS A5.9 | EN ISO 14174 |
| S 23 12 L | SS309L | ER309L | S A FB 2 DC |

Characteristics and typical fields of application

SAW wire/flux combination of type S 23 12 L / ER309L. This is a standard alloy for welding dissimilar joints, steels with poor weldability and weld surfacing.

SAW wire/flux-combination for multi-pass welding, smooth beads, low hydrogen contents, easy slag removal without any slag residues and good welding characteristics even for fillet welds are very much appreciated by users. The average ferrite content is 16 FN. Suitable up to service temperatures of +300 °C.

BÖHLER BB 202 is a fluoride-basic, agglomerated flux providing good operating characteristics. For information regarding this sub-arc welding flux see our detailed data sheet.

Base materials

Dissimilar joint welds: of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni- steels, manganese steels

Surfacing: for the first layer of corrosion resistant weld surfacing on ferritic-perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N, as well as of high temperature steels like 22NiMoCr4-7, 20MnMoNi5-5 and GS-18NiMoCr3-7.

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

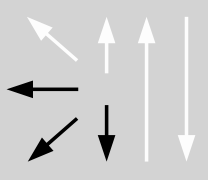
| | C | Si | Mn | Cr | Ni |
|------------------|--------|-----|-----|------|------|
| SAW wire wt-% | ≤ 0.02 | 0.5 | 1.8 | 24.0 | 13.2 |
| all-weld metal % | 0.015 | 0.6 | 1.3 | 23.5 | 13.2 |

Mechanical properties of all-weld metal

| Condition | Yield strength R _{p0.2} | Tensile strength R _m | Elongation A (L ₀ =5d ₀) | Impact work ISO-V KV J |
|-----------|-------------------------------------|------------------------------------|--|---------------------------|
| | MPa | MPa | % | +20 °C |
| u | ≥ 320 | ≥ 520 | ≥ 25 | ≥ 32 |

u untreated, as welded

Operating data

| | | | |
|---|---|---|----------------------|
|  | Polarity: DC (+) / DC (-) | Redrying of sub-arc flux: 300 – 350 °C / 2 – 10 h | ø (mm) 3.0 |
|---|---|---|----------------------|

Preheat and interpass temperatures as required by the base metal.

Approvals

SAW solid wire: TÜV (2604.), DNV (309L), CE