

## Classifications

|                           |                  |                     |
|---------------------------|------------------|---------------------|
| SAW solid wire            |                  | SAW flux            |
| <b>EN ISO 14171-A</b>     | <b>AWS A5.17</b> | <b>EN ISO 14174</b> |
| S2Mo                      | EA2              | SA AR 1 76 AC H5    |
| SAW wire/flux combination |                  |                     |
| <b>EN ISO 14171-A</b>     | <b>AWS A5.23</b> |                     |
| S 46 0 AR S2Mo            | F8A0-EA2-A2      |                     |

## Characteristics and typical fields of application

**Union S 2 Mo** is a coppered low alloyed wire with 0,5%Mo.

**UV 305** is an aluminate-rutile agglomerated flux suited for direct and alternating current.

The flux is donating Mn and Si to the weld pool (desoxidation) and therefore it is less sensitive for porosity issues due to dirt and rust on the plate.

**Union S 2 Mo / UV 305** is a wire-flux combination for submerged-arc welding of unalloyed and low alloyed steel grades.

Very good slag detachability and nice bead appearance.

It is recommended to be used for single-wire or Twin-arc welding with small wire diameter (e.g. with 2,0 mm) with high welding speed, especially for fillet welding in low wall thickness. (<10 mm).

It is particularly well-suited to welding of "water walls" (tube-web-tube joint) for steam water-tube boiler.

**Grain size:** EN ISO 14174: 4 – 14 (0.4 – 1.4 mm)

**Basicity (Boniszewski):** 0.7 (Mol-%) / 0.6 (Weight-%)

**Main constituents in %:**  $SiO_2 + TiO_2 = 30\%$  /  $Al_2O_3 + MnO = 55\%$  /  $CaF_2 + CaO + MgO = 8\%$

## Base materials

General and fine grained structural steels, shipbuilding steels, pipe steels up to 460 MPa minimum yield strength and boiler plates and tubes alloyed with 0,5%Mo like 16Mo3.

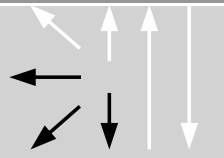
## Typical analysis of the wire and of all-weld metal (wt.-%)

|              | C    | Si   | Mn  | Mo   |
|--------------|------|------|-----|------|
| Wire %       | 0.10 | 0.12 | 1.0 | 0.50 |
| Weld metal % | 0.06 | 0.5  | 1.2 | 0.45 |

## Mechanical properties of all-weld metal

| Heat-treatment | Yield strength $R_e$ | Tensile strength $R_m$ | Elongation A ( $L_0=5d_0$ ) | Impact work ISO-V (J)<br>(Average value from 3 test results) |           |
|----------------|----------------------|------------------------|-----------------------------|--|-----------|
|                |                      |                        |                             | 0 °C   | -18 °C    |
| AW             | ≥ 460 (510)          | ≥ 540 (590)            | ≥ 20 (24)                   | ≥ 47 (65)  | ≥ 27 (35) |

## Operating data

|   |                             |   |                                      |                                  |
|---|-----------------------------|---|--------------------------------------|----------------------------------|
|  | <b>Polarity:</b><br>DC / AC | <b>Redrying of flux:</b><br>300 – 350 °C / 2 hrs min. | <b>Packing:</b><br>25 kg plastic bag | <b>ø mm</b><br>2.5<br>3.0<br>4.0 |
|---|-----------------------------|---|--------------------------------------|----------------------------------|

## Approvals

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