

# SF 104

Submerged Arc Welding Flux - Unalloyed & Low Alloyed Steels

### Standards

|                 |          |
|-----------------|----------|
| EN ISO 14174    | S A AB 1 |
| TS EN ISO 14174 | S A AB 1 |

### Approvals & Certificates

|     |        |         |
|-----|--------|---------|
| TL  | DNV-GL | ClassNK |
| CE  | TUV    | BV      |
| ABS |        |         |

### Properties and Applications

Alumina-basic type, agglomerated submerged arc welding flux, which is designed for butt and fillet welding and for the single- and multi-pass butt welding of mild, medium and high tensile steels in shipbuilding and steel constructions. Provides good penetration in one-side-welding and two-side-welding processes. Has a high current carrying capacity and good operating characteristics both on alternative and direct currents. Very easy slag removal in fillet and V-groves. Smooth and clean weld beads blending into base metal. Suitable to use in steel construction, shipbuilding, tank, pressure vessel and boiler production.



### Typical Chemical Values of Weld Metal

| Welding Wire | Type of Analysis | C    | Si   | Mn   | Mo   |
|--------------|------------------|------|------|------|------|
| SW 701       | Weld Deposit     | 0.05 | 0.25 | 0.85 |      |
| SW 702       | Weld Deposit     | 0.05 | 0.30 | 1.10 |      |
| SW 702 Mo    | Weld Deposit     | 0.05 | 0.40 | 1.10 | 0.50 |
| SW 702Si     | Weld Deposit     | 0.05 | 0.50 | 1.10 |      |
| SW 703Si     | Weld Deposit     | 0.06 | 0.45 | 1.55 |      |

### Typical Mechanical Values of Weld Metal

| Test Condition | Welding Wire | Yield Strength (N/mm <sup>2</sup> ) | Tensile Strength (N/mm <sup>2</sup> ) | Elongation A5 (%) | Charpy V-Notch Properties (J) |            |            |
|----------------|--------------|-------------------------------------|---------------------------------------|-------------------|-------------------------------|------------|------------|
| As welded      | SW 701       | 410                                 | 480                                   | 30                | 0°C → 90                      | -20°C → 85 | -30°C → 50 |
| As welded      | SW 702       | 435                                 | 510                                   | 28                | -20°C → 65                    | -30°C → 45 |            |
| As welded      | SW 702 Mo    | 480                                 | 560                                   | 26                | 0°C → 65                      | -20°C → 50 |            |
| As welded      | SW 702Si     | 425                                 | 510                                   | 29                | 0°C → 80                      | -20°C → 50 | -30°C → 40 |
| As welded      | SW 703Si     | 460                                 | 550                                   | 28                | -20°C → 90                    | -30°C → 75 | -40°C → 60 |

### Wire-Flux Combinations Standards

| Welding Wire | EN Designation of Wire | EN ISO/TS EN ISO 14171 - A | AWS Designation of Wire | AWS/ASME SFA 5.17/SFA 5.23 |
|--------------|------------------------|----------------------------|-------------------------|----------------------------|
| SW 701       | S1                     | S 38 2 AB S1               | EL12                    | F6A2-EL12                  |
| SW 702       | S2                     | S 42 2 AB S2               | EM12                    | F7A2-EM12                  |
| SW 702 Mo    | S2Mo                   | S 46 2 AB S2Mo             | EA2                     | F8A3-EA2                   |
| SW 702Si     | S2Si                   | S 42 2 AB S2Si             | EM12K                   | F7A2-EM12K                 |
| SW 703Si     | S3Si                   | S 46 4 AB S3Si             | EH12K                   | F7A5-EH12K                 |

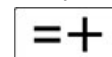
### Application Information

#### Welding Positions



Welding Parameters & Efficiency

#### Polarity:



### Packaging Information

| Product Code | Quantity per Box | Box Gross Weight (kg) | Boxes per Outer Box | Outer Box Gross Weight (kg) | Packaging Type |
|--------------|------------------|-----------------------|---------------------|-----------------------------|----------------|
| 401000AGM2   | 25 kg            | 25.60                 | 1                   | 25.60                       | Craft Bag      |

**Storage & Re-Drying Information**

Generally not required. If required, redry for 1 hour at 110°C.  
During transportation and storage, it should be ensured that the packaging is not damaged or torn.  
It should be stored in a dry room (relative humidity < 50%, room temperature > 20°C) on wooden pallets.  
It has to be dried at 350°C for 2 hours.