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| Prepared by Per-Ake Bjornstedt | Qualified by P-O Oskarsson | Approved by Per-Ake Bjornstedt | Reg no EN008787 | Cancelling EN008698 | Reg date 2019-10-03 | Page 1 (2) |
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REASON FOR ISSUE

Elongation value updated.

GENERAL

25.10.4.L is used for welding of Sandvik SAF 2507 and other super-duplex steels. The grade is characterized by excellent resistance to stress corrosion in chloride-bearing environments and excellent resistance to pitting and crevice corrosion.

25.10.4.L can also be used for welding Sandvik SAF 2205 and corresponding duplex steels when the highest possible corrosion resistance is required. It is used for MIG/MAG welding.

CLASSIFICATIONS Wire Electrode

EN ISO 14343 25 9 4 N L
SFA/AWS A5.9 ER2594
Werkstoffnummer 1.4410*

APPROVALS

CE EN 13479
DNV-GL Duplex steel*
VdTÜV

APPROVAL COMMENT

* For MIG welding of ferritic-austenitic stainless steels

CHEMICAL COMPOSITION

| | All Weld Metal (%) | | Wire/Strip (%) | | |
|-----------|--------------------|-------|----------------|-------|--------|
| | Max | Nom | Min | Max | Nom |
| C | 0.020 | 0.01 | | 0.020 | 0.012 |
| Si | | 0.4 | 0.2 | 0.5 | 0.3 |
| Mn | | 0.4 | 0.3 | 0.7 | 0.4 |
| P | | 0.02 | | 0.020 | 0.015 |
| S | 0.015 | 0.001 | | 0.015 | 0.0005 |
| Cr | | 25 | 24 | 26 | 25 |
| Ni | | 9.5 | 9 | 10.5 | 9.5 |
| Mo | | 3.9 | 3.5 | 4.5 | 4 |
| W | | 0.01 | | 0.1 | 0.01 |
| Co | | | | | 0.04 |
| V | | | | | 0.05 |
| Nb | | 0.01 | | 0.05 | 0.01 |
| Cu | | 0.1 | | 0.3 | 0.07 |
| Ti | | | | | 0.003 |
| N | | 0.24 | 0.2 | 0.3 | 0.25 |
| PRE | | 41.7 | 41.5 | | 42 |
| FN WRC-92 | | 52 | | | 50 |

MECHANICAL PROPERTIES OF WELD METAL

| Properties | All Weld Metal | |
|-----------------------|------------------|-----|
| | As welded Min | Typ |
| Rp0.2 (MPa) | 550 | 650 |
| Rm (MPa) | 760 | 850 |
| A5 (%) | 18 | 25 |
| Charpy V at 20°C (J) | | 210 |
| Charpy V at -40°C (J) | | 170 |
| Charpy V at -46°C (J) | | 150 |
| Charpy V at -50°C (J) | | 140 |

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ECONOMICS & CURRENT DATA

| Dimension (mm) Ø | Current (A) | | W Nom | η Nom | H | | Feed | | | U Max |
|---------------------|-------------|-----|----------|----------|-----|-----|------|-----|-----|----------|
| | Min | Max | | | Min | Max | Min | Max | Min | |
| 0.8 | 40 | 120 | 12.0 | | | | 4 | 8 | 15 | 19 |
| 1.0 | 60 | 220 | 12-18 | | | | 4 | 12 | 15 | 28 |
| 1.2 | 150 | 260 | 18.0 | | | | 3 | 10 | 24 | 29 |
| 1.6 | 230 | 350 | 18.0 | | | | 3 | 5 | 25 | 30 |

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

H = Deposit rate (kg weld metal / hour arc time)

Feed = Feeding rate (m/min)

U = Arc voltage (V)

OTHER DATA

CORROSION RESISTANCE: 25.10.4.L has a high resistance to intergranular corrosion and pitting. The grade passes the ASTM G48A test at 40°C (105°F). The filler also has good resistance to stress corrosion cracking, especially in environments containing H₂S or chlorides.

RECOMMENDED WELDING DATA:

Electrode positive is used to give good penetration in all types of welded joint.

Sandvik can provide recommendations for shielding gases.

Short-arc welding is used with light gauge material of less than about 3 mm, in depositing root runs, and in welding out-of-flat positions.

The higher the inductance in short-arc welding, the higher the fluidity of the molten pool.

Spray-arc welding is normally used for heavier gauge material.

RECOMMENDED THERMAL DATA:

The interpass temperature should be kept below 150°C (302°F) and the heat input between 0.2 and 1.5kJ/mm for joint welding. Preheating is normally not recommended. In case post weld heat treatment is needed from a construction point of view, contact Sandvik for support.

WELD METAL CHARACTERISTICS: 25.10.4.L gives an austenitic-ferritic (duplex) microstructure with approximately 40 FN, calculated from the WRC-92 diagram