

## Classifications

|                         |           |          |
|-------------------------|-----------|----------|
| EN ISO 18274            | AWS A5.14 | Mat. No. |
| S Ni 6082 (NiCr20Mn3Nb) | ERNiCr-3  | 2.4806   |

## Characteristics and typical fields of application

Nickel based alloy; heat resistant; high temperature resistant.

Cold toughness at subzero temperatures as low as  $-269\text{ }^{\circ}\text{C}$  ( $-452\text{ }^{\circ}\text{F}$ ). Good for welding austenitic-ferritic joints. No Cr carbide zone that become brittle in the ferrite weld deposit transition zone, even as a result of heat treatments above  $300\text{ }^{\circ}\text{C}$  ( $572\text{ }^{\circ}\text{F}$ ).

Good for fabricating tough joints and surfacing with heat resistant Cr and CrNi steels/cast steel grades and Ni-base alloys.

Temperature limits:  $500\text{ }^{\circ}\text{C}$  ( $932\text{ }^{\circ}\text{F}$ ) in sulphureous atmospheres,  $800\text{ }^{\circ}\text{C}$  ( $1472\text{ }^{\circ}\text{F}$ ) max. for fully stressed welds. Resistant to scaling up to  $1000\text{ }^{\circ}\text{C}$  ( $1832\text{ }^{\circ}\text{F}$ ).

## Base materials

TÜV-certified parent metals

1.4876 – Alloy 800 – UNS N08800 – X10NiCrAlTi32-20

1.4877 – X5NiCrCeNb32-27

1.4958 – Alloy 800 H – UNS N08810 – X5NiCrAlTi31-20

2.4816 – Alloy 600 – UNS N06600 – NiCr15Fe

2.4817 – Alloy 600 L – UNS N06600 – LC-NiCr15Fe

2.4851 – Alloy 601 – UNS N06601 – NiCr23Fe

Combinations of

1.4539 – X1NiCrMoCu25-20-5      1.4583 – X10CrNiMoNb18-12

and ferritic boiler steels;

1.5662 – X8Ni9      1.7380 – 10CrMo9-10

## Typical analysis of solid wire (wt.-%)

|       | C    | Si  | Mn  | Cr   | Ni   | Nb  | Fe    |
|-------|------|-----|-----|------|------|-----|-------|
| wt.-% | 0.02 | 0.2 | 2.8 | 19.5 | > 67 | 2.5 | < 2.0 |

**Structure:** Austenite

## Mechanical properties of all-weld metal

| Heat-treatment | Yield strength<br>$R_{p0.2}$ | Yield strength<br>$R_{p1.0}$ | Tensile strength<br>$R_m$ | Elongation<br>A ( $L_0=5d_0$ ) | Impact work<br>ISO-V KV J |
|----------------|------------------------------|------------------------------|---------------------------|--------------------------------|---------------------------|
|                | MPa                          | MPa                          | MPa                       | %                              | +20 °C                    |
| aw             | 380                          | 420                          | 620                       | 35                             | 90                        |

**Creep rupture properties:** According to matching / similar high temperature resistant metals up to  $900\text{ }^{\circ}\text{C}$  ( $1652\text{ }^{\circ}\text{F}$ ).

| Operating data   |   |   |        |
|--|---|---|--------|
| Polarity:<br>DC ( + )  | Shielding gas:<br>(EN ISO 14175) I1, Z (ArHeHC-30/2/~0,1) | ø (mm)  | Spool: |
|  |   | 0.8   | BS300  |
|  |   | 1.0   | BS300  |
|  |   | 1.2   | BS300  |
|  |   | 1.6   | BS300  |
| Welding instruction  |   |   |        |
| Materials  | Preheating  | Postweld heat treatment   |        |
| Unalloyed/low-alloy steels to austenitic CrNi(Mo,N) steels / cast steel grades | Ferritic side: according to parent metal                  | According to parent metal. Attention must be paid to intercrystalline corrosion resistance and embrittlement in the case of stainless austenitic steels / cast steel grades |        |
| Heat resistant Cr steels   | According to parent metal                                 | According to parent metal   |        |
| Heat resistant CrNi steels, Ni base alloys                                     | None  | None  |        |
| Cryogenic Ni steels  | According to parent metal                                 | According to parent metal   |        |
| Approvals  |   |   |        |
| TÜV (03089) DNV, GL, CE  |   |   |        |