Avesta Welding

# 16-8-2

| For welding steels such as Outokumpu | EN | ASTM | BS | NF | SS |
|---|---|---|---|---|---|
| 4948 | 1.4948 | 304H | 304S51 | Z6 CNT 18-10 | 2333 |
| 4541 | 1.4541 | 321 | 321S31 | Z6 CNT 18-10 | 2337 |
| – | 1.4941 | 321H | 321S51 | – | – |
| – | 1.4550 | 347 | 347S31 | Z6 CNNb 18-10 | 2338 |
| – | 1.4961 | 347H | 347S51 | – | – |
| – | – | 316H | 316S51/316S53 | – | – |

## Standard designations

AWS A5.4 E16-8-2-17

## Characteristics

AVESTA 16-8-2 has a rutile-acid coating, which ensures good weldability when working with both positive pole DC and AC.

AVESTA 16-8-2 has a controlled composition, optimised for performance in structural service at temperatures up to around 800°C. Rather than matching any single parent metal, it has applications for welding all the "3XXH series" of stainless steels with 0.40–0.10 % carbon. The optimised composition gives good creep, oxidation and general corrosion resistance.

## Welding data

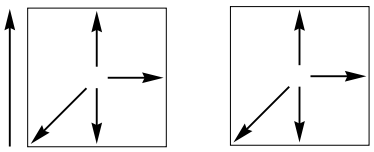
| DC+ or AC | Diam., mm | Current, A |
|---|---|---|
| | 3.25 | 70 – 110 |
| | 4.0 | 100 – 150 |

## Weld deposit data

Metal recovery approx. 100 %.

## Welding positions

Ø 3.25 Ø 4.0



## Typical analysis % (All weld metal)

| C | Si | Mn | Cr | Ni | Mo |
|---|---|---|---|---|---|
| 0.05 | 0.45 | 1.6 | 15.5 | 8.0 | 1.2 |

Ferrite 3 FN DeLong

| Mechanical Properties | Typical values (IIW) | Min. values EN 1600 |
|---|---|---|
| Yield strength $R_{p0.2}$ | 470 N/mm² | – |
| Tensile strength $R_m$ | 740 N/mm² | 550 N/mm² |
| Elongation $A_5$ | 40 % | 35 % |
| Impact strength KV | | |
| +20°C | 80 J | |
| –40°C | 50 J | |

**Interpass temperature:** Max 150°C.

**Heat input:** Max. 2.0 kJ/mm.

**Heat treatment:** Generally none. For constructions that include low-alloy steels in mixed joints, a stress-relieveing annealing stage may be advisable. However, this type of alloy may be susceptible to embrittlement inducing precipitation in the temperature range 550–950°C. Always consult the supplier of the parent metal or seek other expert advice to ensure that the correct heat treatment proces is carried out.

**Structure:** Austenite with 1–6 % ferrite. Hot cracking is not reported at low ferrite content.

**Scaling temperature:** Approx. 850°C (air).

**Corrosion resistance:** Primarily designed for high temperature service or applications that should be heat treated. However, the corrosion resistance is superior to that of 308L.

## Approvals

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