

CLASSIFICATION

| | | | | | |
|-------------------------|-----------------|---------|---|--------|--------|
| AWS A5.4 | E307-16* | A-Nr | 8 | Mat-Nr | 1.4370 |
| ISO 3581-A | E 18 8 Mn R 1 2 | F-Nr | 5 | | |
| *:Deviation,see remarks | | 9606 FM | 5 | | |

TEMPERATURE RANGE

Pressurized parts :-60...+350°C
Oxidation resistance : n.a

GENERAL DESCRIPTION

A rutile- basic all position 5%Mn-alloyed stainless steel electrode
Especially developed for steels difficult to weld, such as armour lates and austenitic high Mn-steels
Often used as a buffer layer in hardfacing applications
Weldable on AC and DC+ polarity

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G



PH/5Gu

CURRENT TYPE

AC/DC +

APPROVALS

TÜV

DB

+

+

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

| C | Mn | Si | Cr | Ni | FN (acc.WRC 1992) |
|------|-----|-----|------|-----|-------------------|
| 0.09 | 5.0 | 0.6 | 18.5 | 8.5 | 0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Condition | 0.2% Proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V[J] | |
|--|--|---------------------------------------|--------------------------|-------------------------------------|--------------|
| | | | | +20°C | -60°C |
| Required: AWS A5.4 ISO 3581-A Typical values | not required min. 350 450 | min. 590 min. 500 650 | min. 30 min. 25 35 | not required not required 110 | - - 75 |

PACKAGING AND AVAILABLE SIZES

| Carton + PE foil | Diameter (mm) | 2.5 | 3.2 | 4.0 |
|------------------|----------------------|-----|-----|-----|
| | Length (mm) | 350 | 350 | 350 |
| Pieces / unit | Pieces / unit | 125 | 135 | 85 |
| | Net weight/unit (kg) | 2.6 | 4.7 | 4.6 |

Identification Imprint: AROSTA 307

Tip Color: dark blue

Arosta®307: rev. C-EN23-01/02/16

Arosta[®] 307

EXAMPLES OF MATERIALS TO BE WELDED

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic austenitic steels
- Work hardening austenitic manganese steels
- Dissimilar joints
- Problem steels

CALCULATION DATA

| Sizes Diam. x length (mm) | Current range (A) | Current type | Arc time | Energy | Dep. rate | Weight/ 1000 pcs (kg) | Electrodes/ kg weldmetal B | kg electrodes/ kg weldmetal 1/N |
|---------------------------------|----------------------|-----------------|---|--------|-----------|-----------------------------|----------------------------------|---------------------------------------|
| | | | - per electrode at max. current - (S)* | E(kJ) | H(kg/h) | | | |
| 2.5 x 350 | 70-80 | DC+ | 52 | 108 | 0.74 | 20.4 | 94 | 1.92 |
| 3.2 x 350 | 90-120 | DC+ | 56 | 148 | 1.2 | 34.7 | 54 | 1.87 |
| 4.0 x 350 | 110-140 | DC+ | 84 | 251 | 1.3 | 53.6 | 33 | 1.77 |

*Stub end 35mm

WELDING PARAMETERS, OPTIMUM FILL PASSES

| Diameter (mm) | Welding positions | | | | | |
|------------------|-------------------|-------|-------|---------|-------|---------|
| | PA/1G | PB/2F | PC/2G | PF/3Gup | PE/4G | PH/5Gup |
| 2.5 | 80A | 80A | 80A | 80A | 80A | 80A |
| 3.2 | 100A | 100A | 100A | 90A | | |
| 4.0 | 140A | 115A | 130A | 110A | | |

REMARKS / APPLICATION ADVICE

Deviations: chemical composition

Mn = 4.5 - 6.0%

AWS: Mn = 3.30 - 4.75%