



# DAIKOWT 309L



AUSTENITIC STAINLESS STEELS  
309L

## DESCRIPTION

### Rod for dissimilar joints and buffer layers

These rods are primarily used in high dilution conditions, particularly for dissimilar welding between stainless steels and carbon-manganese steels. The low carbon content of the filler metal (max 0.03%) reduces the possibility of intergranular carbide precipitation, improving resistance to intergranular corrosion without the need for stabilizers like niobium or titanium. They are ideal for homogeneous welding of stainless steels or heterogeneous welding with carbon or low-alloy steels, and can be used at operating temperatures up to 380 °C. They are also used for cladding carbon-manganese steels and for joining clad plates.

## SPECIFICATIONS

|                |                        |           |        |
|----------------|------------------------|-----------|--------|
| EN ISO 14343-A | W 23 12 L              | AWS A5.9  | ER309L |
| Certifications | CE                     | Shielding | 11     |
| Positions      | PA, PB, PC, PD, PE, PF | Current   | DC-    |
| Packaging Type | 5kg carton tube        |           |        |

## ASME QUALIFICATIONS

|              |   |
|--------------|---|
| F-No (QW432) | 6 |
| A-No (QW442) | 8 |

## FERRITE

8-15 FN

## PREN

23.83

## HARDNESS

85HRB

## CHEM. COMP. %

### DEFAULT

|    |       |
|----|-------|
| C  | 0.015 |
| Mn | 1.7   |
| Ni | 13    |
| Cr | 23.5  |
| P  | 0.015 |
| S  | 0.005 |
| Mo | 0.1   |
| Si | 0.5   |
| Cu | 0.15  |

## MECHANICAL PROPERTIES

|                               | MIN. PER STANDARD | PRODUCT     |
|-------------------------------|-------------------|-------------|
| Tensile strength $R_m$ MPa    | 550               | 590         |
| Yield strength $R_{p0.2}$ MPa | 350               | 450         |
| Elongation A ( $L_0=5d_0$ ) % | 25                | 43          |
| Impact Charpy ISO-V           | -                 | 150J @ 20°C |
| Impact Charpy ISO-V           | -                 | -           |

## WELDING PARAMETERS

|                | 1.6 mm          | 2.4 mm          |
|----------------|-----------------|-----------------|
| Ampere         | 80A - 100A      | 110A - 160A     |
| Voltage        | -               | -               |
| Packaging      | Ø 1,0÷4,0 mm    | Ø 1,0÷4,0 mm    |
| Packaging Type | 5kg carton tube | 5kg carton tube |





# 309L

DESCRIPTION

AUSTENITIC STAINLESS STEELS  
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## APPLICATION

**\*\*Bearing layers and claddings on steels\*\***: Ideal for overlays on carbon-manganese steels, mild or low alloy steels, and for joining clad plates in 304L/321. Successive layers are applied with electrodes selected to match the cladding, such as 308L or 347. **\*\*Dissimilar connections\*\***: Thanks to its tolerance to dilution, it is used to join stainless steels like 410, 304L, 321, and 316L with mild and low alloy steels for reinforcements, brackets, and other accessories. Not suitable for service temperatures above 400 °C. It is also suitable for welding 12% Cr ferritic steels, such as Cromwell 3CR12, both among themselves and with other steels. **\*\*Similar metal joints\*\***: Wrought and cast steels, type 23Cr-12Ni (e.g., ASTM 309 and CH8, BS 309S24 and 309C30), can be welded when corrosion resistance below 400 °C is required. For high-temperature structural applications, a welding metal with a higher carbon content and reduced ferrite is necessary. Preheating and interpass temperatures depend on the hardenability of the base material. As a guide, no preheating is necessary for mild steels; on hardenable ones, the temperature can reach up to 250 °C.

## ALLOY TYPE

24%Cr-13%Ni (309L) austenitic stainless for dissimilar joint buffer layers etc.

## MICROSTRUCTURE

Austenite with ferrite in the range 8-20FN. GMAW tends to have lower ferrite (8-15 FN) than the MMA and FCW consumables.

## MATERIALS

Mainly used under high dilution conditions, particularly dissimilar welds between stainless and CMn steels.

