# DAIKOFCW 904LP

FCAW

**SUPERAUSTENITIC STEELS**
904L

## DESCRIPTION

**Rutile all position flux cored wire for 904L steel**

Rutile flux-cored wire with fast-freezing slag for welding and cladding in all positions austenitic stainless alloys of the 20% Cr, 25% Ni, 5% Mo, 1.5% Cu, low C types. Its weld metal has good resistance to stress corrosion and intergranular corrosion and shows very good resistance to attack in non-oxidising acids. The resistance to crevice corrosion is better than that of ordinary 18% Cr, 8% Ni, Mo steels. The alloy is widely used in many applications related to the process industry.

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| **EN ISO 17633-A** | T 20 25 5 Cu N L P M21 2 | **Shielding** | M21 |
| **Positions** | PA, PB, PC, PD, PE, PF, PG | **Current** | DC+ |
| **Packaging Type** | BS300 spool | | |

## PREN

38.81

| CHEM. COMP. % | DEFAULT |
|---|---|
| C | 0.03 |
| Mn | 1.6 |
| Ni | 25.3 |
| Cr | 20.9 |
| N | 0.15 |
| P | 0.024 |
| S | 0.005 |
| Mo | 4.7 |
| Si | 0.65 |
| Cu | 1.5 |

| MECHANICAL PROPERTIES | PRODUCT |
|---|---|
| Tensile strength $R_m$ MPa | 660 |
| Yield strength $R_{p0.2}$ MPa | 420 |
| Elongation A ($L_0$=5$d_0$) % | 35 |
| Impact Charpy ISO-V | 60J @ -196°C |

| WELDING PARAMETERS | 1.2 mm | 1.6 mm |
|---|---|---|
| Ampere | 130A - 280A | 200A - 350A |
| Voltage | 22V - 30V | 28V - 32V |
| Packaging | Ø 1,2÷1,6mm | Ø 1,2÷1,6mm |
| Packaging Type | BS300 spool | BS300 spool |

## NOTES

D200 spool and Ø 1,0 mm available upon request.





DAIKO

# 904L

DESCRIPTION



## APPLICATION

This consumable is designed to provide a fully austenitic low-carbon weld metal, enriched with molybdenum and copper. It is renowned for its excellent corrosion resistance in acidic environments, such as sulfuric and phosphoric, as well as in other types of both inorganic and organic acids. However, it is not the ideal choice for environments with concentrated nitric acid. For applications requiring chloride pitting resistance, the use of nickel-based over-alloyed weld metals, such as Alloy 625, is recommended. It is the preferred weld metal for certain low-alloy austenitics, such as Creusot UHB 34L and UHB 734L, especially when used with wet-process phosphoric acid. Typical applications include tanks and process vessels, piping systems, agitators, and rotors, as well as cast pumps and valves used for the production of fertilizers, phosphoric, sulfuric, and acetic acid. It is also suitable for brackish and marine environments and in some offshore applications, such as overlays on mild and low-alloy steels. No preheat or post-weld heat treatment (PWHT) is necessary; however, it is essential to control the interpass temperature up to a maximum of 150 °C, paying particular attention to the heat input, especially when using large diameter SMAW electrodes.

## ALLOY TYPE

904L is a nominally 20%Cr-25%Ni-5%Mo-2%Cu alloy with good corrosion resistance.

## MICROSTRUCTURE

In the as-welded condition the weld metal microstructure is fully austenitic.

## MATERIALS

Suitable for copper-free variants of the listed alloys and also to overmatch leaner alloys such as 317L, 317LN, 317LM, 317LMN, 1.4439, 1.4440 and S31726.
**EN W.Nr.**: 1.4505 (X4NiCrMoCuNb20-18-2), 1.4506 (X5NiCrMoCuTi 20-18), 1.4536 (GX2NiCrMoCuN25-20), 1.4539 (X1CrNiMoCuN25-20-5), 1.4585 (G-X7CrNiMoCuNb1818), 1.4500 (G-X7NiCrMoCuNb2520)
**ASTM**: N08904
**PROPRIETARY**: Uddelholm 904L (voestalpine), 2RK65 (Sandvik), Cronifer 1925LC (VDM), 254SLX (Outokumpu), Uranus® B6, B6M (Industeel)