G-TECH 385B

SMAW

SUPERAUSTENITIC STEELS
904L

DESCRIPTION

Basic coated electrode to match fully austenitic alloy 904L

This electrode is used for welding of 904L alloy and gives fully austenitic weld metal with good resistance to corrosion in inorganic and organic acids. Typical applications include tanks and vessels, piping, cast pumps, valves and other components used in fertiliser, phosphoric, sulphuric and acetic plants, and in salt and seawater environments. It also used in some offshore applications. Ease of slag removal reduces post-welding cleaning operations to a minimum.

SPECIFICATIONS

ISO 3581-A	E 20 25 5 Cu N LB 62	**AWS A5.4**	E385-15
DIN	-	**Werkstoff Number**	-
Certifications	-	**Shielding**	-
Positions	PA, PB, PC, PD, PE, PF	**Current**	DC+;

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	-

FERRITE

-

PREN

38.12

HARDNESS

-

CHEM. COMP. %

	DEFAULT
C	0.03
Mn	2
Ni	25
Cr	21
N	0.08
Nb	0.05
P	0.02
S	0.005
Mo	4.8
Si	0.4
Cu	1.8

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R_m MPa	510	660
Yield strength $R_{p0.2}$ MPa	320	410
Elongation A (L_0=5d_0) %	25	35
Impact Charpy ISO-V	-	50J @ -196°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.5 mm	3.2 mm	4 mm	
Ampere	50A - 80A	80A - 110A	110A - 150A	150A -
Voltage	-	-	-	
Packaging	56 pcs/kg	29 pcs/kg	19 pcs/kg	12 p
Packaging Type	Carton box	Carton box	Carton box	Carto

DAIKO

904L

DESCRIPTION

APPLICATION

Known for delivering a fully austenitic, low-carbon weld metal enriched with Mo and Cu, these consumables exhibit exceptional resistance to corrosion in sulphuric, phosphoric, and various inorganic and organic acids. Not the typical choice for environments demanding resistance to concentrated nitric acid, they excel in scenarios involving severe chloride pitting media, where opting for overmatching nickel base weld metal, such as alloy 625, is recommended. Noteworthy as the preferred weld metal for certain lower alloy austenitics like Creusot UHB 34L and UHB 734L, especially in wet process phosphoric acid service, these consumables find versatile applications. Their usage spans tanks, process vessels, piping systems, agitators, rotors, and cast pumps and valves, catering to the needs of fertilizer, phosphoric, sulphuric, and acetic acid plants. Additionally, they prove invaluable in salt and seawater environments and are enlisted in select offshore applications, including overlays on mild and low alloy steels. The welding process mandates no preheat or post-weld heat treatment (PWHT), with interpass temperatures carefully regulated to a maximum of 150°C. It's crucial to exercise control over heat input, especially when utilizing larger diameter shielded metal arc welding (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).