



DAIKO C276

SMAW

NICKEL ALLOYS
C276

DESCRIPTION

Basic coated electrode for nickel based C276 alloy

It is designed to match the composition and properties of alloy C276. It is also used for surfacing of steel. The weld metal has high resistance in a wide range of media and exceptional resistant to pitting and crevice corrosion. Applications include pumps, valves, pipework and vessels in chemical process plant, equipment for flue gas desulphurisation and for offshore in oil & gas field. Ease of slag removal reduces post-welding cleaning operations to a minimum.

SPECIFICATIONS

EN ISO 14172	E Ni 6276	AWS A5.11	ENiCrMo-4
Shielding	-	Positions	PA, PB, PC, PD, PE, PF
Current	DC+	Packaging Type	Carton box and tube.

ASME QUALIFICATIONS

		PREN
F-No (QW432)	43	74.41
A-No (QW442)	-	

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
C	0.005	Tensile strength R_m MPa	690	710
Mn	0.2	Yield strength $R_{p0.2}$ MPa	400	420
Ni	59	Elongation A ($L_0=5d_0$) %	22	25
Cr	16	Impact Charpy ISO-V	-	80J @ -196°C
V	0.02	Impact Charpy ISO-V	-	-
P	0.008			
S	0.002			
Mo	16			
Si	0.18			
Cu	0.01			
Fe	5.2			
W	3.4			

WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm	4.8 mm
Ampere	40A - 65A	60A - 90A	90A - 125A	125A - 150A
Voltage	-	-	-	-
Packaging	60 pcs/kg	29 pcs/kg	19 pcs/kg	13 pcs/kg
Packaging Type	Carton box and tube.	Carton box and tube.	Carton box and tube.	Carton box and tube.

NOTES

Pcs/kg is indicative, actual number may vary \pm 5%.



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DESCRIPTION

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APPLICATION

The weld deposit perfectly matches the C276 base alloy, composed of Ni-15%Cr-16%Mo-4%W-5%Fe. The carbon (C) and silicon (Si) content is carefully controlled to minimize the formation of carbide precipitates and intermetallic phases. Cast alloy variants generally present higher levels of carbon and silicon, but repair welds are typically heat-treated for solutionizing to ensure optimal corrosion resistance. The C276 alloy offers excellent corrosion resistance in a wide range of acids and salts, under both oxidizing and reducing conditions. These include hydrochloric acid, hydrofluoric acid, hypochlorites, chlorides, wet chlorine gas, sulfuric acid, phosphoric acid, and numerous organic acids. It demonstrates exceptional pitting and crevice corrosion resistance in saltwater and shows high resistance to chloride-induced stress corrosion cracking, superior to alloy 62. Its excellent mechanical properties at temperatures down to -196 °C make it ideal for welding cryogenic plants with a Ni content between 5-9%. Typical applications include use in **pumps, valves, piping, and vessels** for aggressive environments in chemical processing plants, as well as in flue gas desulfurization equipment and the offshore oil and gas sector. No preheat is necessary; the interpass temperature should preferably be maintained below 100 °C, and the heat input must be limited to 1.5 kJ/mm.

ALLOY TYPE

Alloy C276 is a Ni-15%Cr-16%Mo-4%W-5%Fe nickel base alloy.

MICROSTRUCTURE

In the as-welded condition the weld metal consists of austenite with some carbides.

MATERIALS

EN W.Nr.: 2.4819 (NiMo16Cr15W), 2.4883 (G-NiMo16Cr)

ASTM: A494 CW-12MW, A743/A744 CW-12M

UNS: N10276

PROPRIETARY: Hastelloy® Alloy C-276 (Haynes International Inc), Inconel® Alloy C-276 (Special Metals), Nicrofer 5716hMoW (VDM)

