

NiCrMo 686

CATEGORY GMAW-GTAW Solid wires

TYPE Nickel-Chromium-Molybdenum based alloy for gas metal arc welding

APPLICATIONS NiCrMo 686 is of great value for service environments requiring general corrosion-resistance in HCl or sulfuric acid; for resistance to crevice corrosion in hot, concentrated acid chloride solutions such as sulfur dioxide saturated NaCl solutions and oxidizing chloride solutions; and for resistance to intergranular attack, and for resistance to intergranular attack, after sensitization, in highly oxidizing environments.

PROPERTIES NiCrMo 686 (UNS N06686/W.Nr. 2.4606) is a single-phase, austenitic Ni-Cr-Mo-W alloy offering outstanding corrosion-resistance in a range of severe environments. Its high nickel (Ni) and molybdenum (Mo) provide good resistance in reducing conditions, and high chromium (Cr) offers resistance to oxidizing media. Molybdenum (Mo) and tungsten (W) aid resistance to localized corrosion such as pitting. Iron (Fe) is closely controlled to enhance properties. Low carbon (C) helps minimize grain boundary precipitation to maintain corrosion-resistance in the heat-affected zones of welded joints. Resistance to general, pitting and crevice corrosion increases with the alloying (Cr+Mo+W) content, and NiCrMo 686 scores higher than competitive materials.

CLASSIFICATION

AWS	A 5.14: ER NiCrMo-14
EN ISO	18274: S Ni 6686
DIN: W.Nr.	2.4606
DIN	1736:

SUITABLE FOR Duplex, super-duplex and super-austenitic stainless steels, nickel alloys such as UNS N06059 and N06022, INCONEL alloy C-276, and INCONEL alloys 622, C22, 625, and 686 CPT, Alloy 31, 1.4562, alloy 59, alloy C4, C2000, W86026

WELDING POSITIONS:



PURE WELD METAL ANALYSIS

Ni+Co	C	Mn	Fe	Al	Si	Ti	Cr	Mo	W
Rem	<0.01	<1.0	<5	<0.5	<0.08	<0.25	19-23	15-17	3.0-4.4

MECHANICAL PROPERTIES

Heat Treatment	R _{p0,2} (N/mm ²)	R _m (N/mm ²)	A ₅ (4d) (%)	Impact Energy (J) ISO-V			Hardness HRC / HV
				-20°C	-40°C	-60°C	
AW	770		35				

AW: as welded

WELDING PARAMETERS / PACKING

Welding Parameters			Packing		
D (mm)	Volt (V)	Current (A)	Spool type	kg / spool	Lbs / spool
0,9	26-29	150-190	D-300	13.6	30
1,14	28-32	180-220	D-300	13.6	30

REDRYING TEMPERATURE not required

GAS ACC. EN ISO 14175: I1, I3, (Ar-He/70-30%)