EXATON Product Data Sheet

W 'Tungsten inert gas arc welding'

Exaton Ni55

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Per-Ake Bjornstedt	Tero Borg	Per-Ake Bjornstedt	EN010172	EN009116	2022-09-12	1 (2)

REASON FOR ISSUE

General amended. Shielding gas and Alloy Type added. CE approval deleted. All weld metal added. Wire/ Strip amended.

GENERAL

Exaton Ni55 is a nickel-chrome-molybdenum alloy of type alloy 686 and is the highest alloyed of all Ni-Cr-Mo alloys. Exaton Ni55 is used for joining nickel alloy such as UNS N06022 (2.4602), UNS N06059 (2.4605), UNS N10276 (2.4819) and super duplex.

The material is thermally unstable at temperatures above 1200°C (2192°F) resulting in great risk for intermetallic phases after welding.

Exaton Ni55 provides the best corrosion resistance in most applications and is particularly useful for weld overlay surfacing of boiler tubes in waste-to-energy boilers. Also, the material can be used in the petrochemical, chemical, oil and gas and marine industries. Exaton Ni55 can also be used for dissimilar joining of stainless steels to nickel alloys and for overlay welding.

Shielding Gas: I1, I3 (EN ISO 14175)

Alloy Type: Alloyed nickel (Ni + 21.5 % Cr + 16 % Mo + 3.5 % W)

CLASSIFICATIONS Wire Electrode

SFA/AWS A5.14	ERNiCrMo-14
EN ISO 18274	S Ni 6686 (NiCr21Mo16W4)

APPROVALS

Not applicable

CHEMICAL COMPOSITION

	All Weld Metal (%)	Wire/Strip (%)		
	Nom	Min	Max	Nom
C	0.008		0.01	0.004
Si	0.04		0.08	0.06
Mn	0.3		1.0	0.26
P	0.005		0.020	0.002
S	0.001		0.02	0.001
Cr	20.5	19.0	23.0	21.4
Ni	57.5	49.0		58
Mo	15.5	15.0	17.0	16.0
W	3.5	3.0	4.4	3.4
Cu	0.04		0.5	0.013
Al	0.24		0.5	0.23
Ti	0.07		0.25	0.10
Fe	0.5		5.0	0.35
Others tot			0.5	

MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Condition	Rp0.2 [MPa/ksi]		Rm [MPa/ksi]			A4 [%]	
	Min	Typ	Min	Max	Typ	Min	Typ
As welded		565/82			815/118		45

Comments:
Z=41%

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MECHANICAL PROPERTIES OF WELD METAL

Condition	Temp [°C/°F]	Charpy V [J/ft-lb]	
		Min	Typ
As welded	20/68 -196/-321		110/81 75/56

Comments:

ECONOMICS & CURRENT DATA

Dimension	Current (A)		W	η	H			Feed			U		
Ø	Min	Max	Nom	Nom	Min	Max	Nom	Min	Max	Nom	Min	Max	Nom
2.0 mm (5/64 in.)													

W = Gas consumption (l/min)

η = Filler metal efficiency (g weld metal x 100 / g wire)(%)

H = Deposition rate (kg weld metal/hour arc time)

Feed = Wire feed speed (m/min)

U = Arc voltage (V)

OTHER DATA

CORROSION RESISTANCE:

Resistant to intergranular corrosion according to ASTM G28 A and ASTM G28 B respectively and according to ASTM G48 C at 85°C. Highly resistant to pitting, crevice and stress corrosion cracking in chloridebearing media.

RECOMMENDED WELDING DATA:

The parameters for TIG welding depend largely upon the base metal thickness and the welding application.

Electrode negative and a shielding gas of argon or helium should be used to prevent oxidation of the weld metal.

WELD METAL CHARACTERISTICS:

The microstructure is fully austenitic.