EXATON Product Data Sheet — Exaton Ni60

G 'Gas-shielded metal-arc welding'

Prepared by	Qualified by	Approved by	Reg no	Cancelling	Reg date	Page
Per-Ake Bjornstedt	P-O Oskarsson	Per-Ake Bjornstedt	EN009144	EN009122	2020-04-16	1 (2)

REASON FOR ISSUE

DNV-GL disconnected.

GENERAL

Exaton Ni60 welding wire is suitable for joining nickel-chromium-molybdenum nickel alloys and chromiumnickel-molybdenum steels with very high corrosion resistance in oxidizing, aqueous and high temperature environments such as 6Mo-steels, UNS N06625 (2.4856) and corresponding grades. It is also suitable for joining stainless steels and nickel alloys for high-temperature service.

Exaton Ni60 can also be used for dissimilar joining of stainless steels to nickel alloys, for overlay welding and it is used for MIG/MAG welding.

Applications for Exaton Ni60 are found in cryogenics, components subject to high temperature service up to 980°C (1800°F) such as aircraft ducting, engine exhaust systems, power boilers and recovery boilers and a diversity of seawater applications. The combination of strength and corrosion resistance over a wide range of temperatures is utilized in reaction vessels, line pipe distillation columns and heat exchangers.

CLASSIFICATIONS Wire Electrode

SFA/AWS A5.14	ERNiCrMo-3
EN ISO 18274	S Ni 6625 (NiCr22Mo9Nb)
Werkstoffnummer	2.4856

APPROVALS

CE	EN 13479
VdTÜV	19483

CHEMICAL COMPOSITION

	All Weld Metal (%)			Wire/Strip (%)
	Nom	Min	Max	Nom
C	≤0.03		0.04	0.02
Si	0.1		0.25	0.1
Mn	0.05		0.30	0.02
P	≤0.015		0.02	0.003
S	0.010		0.015	0.002
Cr	22	21.0	23.0	22
Ni	≥60	58.0		65
Mo	9	8.0	10.0	9
Nb		3.2	4.1	3.4
Cu	0.01		0.40	0.03
Al	0.1	0.01	0.40	0.1
Ti	0.2		0.40	0.2
Fe	≤1		1.0	0.3
Nb+Ta	3.6		4.15	3.5
Others tot			0.50	

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MECHANICAL PROPERTIES OF WELD METAL

All Weld Metal

Properties	As welded Min	Typ
Rp0.2 (MPa)		650
Rm (MPa)	760	840
A5 (%)		34
Z (%)		50
Charpy V at 20°C (J)		150
Charpy V at -40°C (J)		120
Charpy V at -196°C (J)		100

Comments:

Hardness, HV10 220

ECONOMICS & CURRENT DATA

Dimension (mm)	Current (A)		W	η	H		Feed		U	
Ø	Min	Max	Nom	Nom	Min	Max	Min	Max	Min	Max
0.8	40	120	12.0				4	8	15	19
1.0	60	220	12-18				4	12	15	28
1.2	150	260	18.0				3	10	24	29
1.6	200	350	22		4.3	8.6	4	8	25	32
1.6	230	350	18.0				3	5	25	30

W = Gas consumption (l / min)

η = Recovery, g weld metal / 100g wire (%)

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

Feed = Feeding rate (m/min)

U = Arc voltage (V)

OTHER DATA

CORROSION RESISTANCE: Exaton Ni60 shows very good resistance to pitting corrosion, intergranular corrosion (corrosion rate <0.4 mm/year when tested acc. to ASTM G28 A) and is almost immune to stress corrosion cracking in chloride-containing environments.

RECOMMENDED WELDING DATA:

Electrode positive is used to give good penetration in all types of welded joint.

Exaton can provide recommendations for shielding gases.

Short-arc welding is used with light gauge material of less than about 3 mm, in depositing root runs, and in welding out-of-flat positions.

The higher the inductance in short-arc welding, the higher the fluidity of the molten pool.

Spray-arc welding is normally used for heavier gauge material.