



CRYOGENIC STEEL PIPES

ERNDTEBRÜCKER
EISENWERK





EEW's extensive experience and dedication to producing high quality longitudinally welded steel pipes allows us to serve a wide variety of industries and applications.

Due to their lower coefficient of linear expansion and much higher nominal yield strength than standard stainless steels, 9% Nickel steels are being used worldwide more and more for the fabrication of Liquid Natural Gas storage tanks and welded pressure vessels designed for extreme low temperature service. To meet the demand for suitable welded pipes to match these products, 9% Ni longitudinally welded pipes have now been introduced into EEW's extensive production programme.

With EEW's capabilities the cold forming of this steel grade with nominal yield strength of 585 N/mm² is no problem. Not only can the standard line pipe sizes of 18" up to 48" be formed in 12 metre lengths but also client's specific intermediate sizes.

Equivalent Base Material Standards

EN 10028-4	1.5663 / X7 Ni9
EN 10028-4	1.5662 / X8 Ni9+QT680
ASTM	A 553 Type I
ASME II Part A	SA 553 Type I
JIS G 3 127	SL 9N 590

Multiple certification is possible.

Chemistry

	C %	Mn %	P %	S %	Si %	Ni %	Cu %	Cr %
Heat	0,06	0,3-0,8	0,005	0,002	0,30	8,7-9,3	0,15	0,10
Product	0,08	0,25-0,85	0,007	0,003	0,35	8,6-9,4	0,18	0,13

	Mo %	Al %	Nb %	V %
Heat	0,05	0,020	0,010	0,010
Product	0,08	0,015	0,013	0,013

individual values are maximum values



Mechanical Characteristics (at room temperature)

	Rp 0,2 (MPa)	Rm (MPa)	A Lo = 50mm	A Lo = 5,65√So
Base Metal	min. 585	680 - 820	min. 20%	min. 18%
All Weld Metal	min. 420	min. 680	min. 20%	min. 18%

Charpy - Vee Impact Tests

Specimen Size (mm)	Test Temperature	Base metal		Weld and HAZ	
		average	min. value	average	min. value
10 x 10	- 196°C	100	75	55	42
10 x 7,5	- 196°C	75	56	37	28
10 x 5	- 196°C	50	38	27	21

Lateral expansion minimum 0,38 mm.

Surface Condition

EEW's 9% Ni pipes are supplied in the shot blasted condition.

Welding

Circumferential welding can be performed using all common welding processes such as GMAW, GTAW and SMAW. Preheating is not necessary. Interpass temperature should be limited to 150°C maximum. EEW can supply multiple lengths or prefabricated spools joined by using the submerged arc welding process if required. Please contact our sales team for more information.

Post Weld Heat Treatment

Post weld heat treatment is not necessary.

Residual Magnetism

EEW's 9% Ni pipes are guaranteed to be shipped free of residual magnetism exceeding 50 Gauss.



APPROVALS

EEW has the following company approvals:

- ISO 9001
- API 5L
- API 5LC
- API 5LD
- API 2B
- ASME U - Stamp
- ASME U2 - Stamp
- ASME S - Stamp
- TÜV AD HP-0
- Pressure Equipment Directive, Annex I, 3.1



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