

DIN EN 12732:2022-01 (E)

Gas infrastructure - Welding steel pipework - Functional requirements

Contents		Page
European foreword		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	8
4	General requirements	11
4.1	General	11
4.2	Quality system requirements	13
4.3	Welding contractors	15
4.4	Welding procedure requirements	15
4.5	Welders	16
4.6	Welding supervisory and coordination personnel	17
4.7	Non destructive testing (NDT)	17
4.8	Destructive testing (DT)	17
5	Production welding	17
5.1	General	17
5.2	Working area	17
5.3	Layout of weld joints	17
5.4	Types of weld joints	17
5.5	Joint preparation	18
5.6	Preheating	20
5.7	Tacking	20
5.8	Welding	20
5.9	Actions after welding	21
5.10	Repair of weld defects	21
5.11	Destructive testing of production welds for DP over 16 bar	21
6	Attachment-, and in-service welding	22
6.1	General	22
6.2	Attachment of structural parts	22
6.3	Attachment of cathodic protection connections	22
6.4	Hot-tapping and other welding work on in-service pipelines	22
7	Inspection of the weld joint	23
7.1	General	23
7.2	Scope of inspection	23
7.3	Non-destructive testing, assessment levels and acceptance criteria	25
7.4	Time of inspection	25
7.5	Tie in welds for DP over 16 bar	25
7.6	Recording of test results	25
7.7	Requirements for records and documentation	27
8	Metering, regulating and compressor stations	28
Annex A (normative) Qualification of pipeline welders and operators of mechanized welding equipment for steel pipelines		29
A.1	General	29

A.2	Additional requirements to EN ISO 9606-1:2017 and EN ISO 14732:2013	29
A.3	Additional requirements for operators of mechanized welding equipment	30
Annex B (informative) Testing on lamination defects		31
Annex C (informative) Time-of-flight diffraction technique (TOFD)		32
C.1	General	32
C.2	Additional and substitutional requirements to EN ISO 10863:2011	32
Annex D (normative) Critical aspects for hot-tap welding or welding on in-service pipelines		41
D.1	General	41
D.2	procedural requirements	41
D.3	Supervision	42
D.4	Safety precautions	42
D.5	Welding consumables	42
D.6	Welding procedure specification (WPS)	43
D.7	Welding procedure qualification for in-service welding	43
D.8	Qualification of the welder	43
D.9	Weld preparation long seam	43
D.10	Weld preparation circular seam	43
D.11	Repairs	44
D.12	Non-destructive testing	44
D.13	Pressure test	44
D.14	Documentation	44
Annex E (normative) AUT examination of joints		45
E.1	Extent of this annex	45
E.2	General Requirements	45
E.3	Field Inspection	52
E.4	Adjustments of the AUT system	54
E.5	Acceptance criteria tier 1	54
E.6	Acceptance criteria tier 2	56
Annex F (informative) Manual ultrasonic testing of weld joints for wall thickness between approximately 6 mm and 8 mm		60
F.1	General	60
F.2	Setting of range	60
F.3	Sensitivity adjustment when using the Distance Gain Size method	60
Annex G (normative) EPRG acceptance criteria		64
G.1	General	64
G.2	EPRG defect acceptance levels and defect limits	64
G.3	Requirements	65
Annex H (normative) Visual acceptance criteria according to EN ISO 5817:2014		71
Annex I (normative) RT acceptance criteria according to EN ISO 10675 and EN ISO 5817:2014		73
Annex J (normative) Alternative method and acceptance criteria for UT inspection		75
J.1	Distance Gain Size method	75
J.2	Comparative Element method	75
J.3	General	75
Annex K (informative) Brazing and stud welding of connections for cathodic protection systems ...		77
K.1	Joining techniques	77

K.2	Procedure qualification	77
K.3	Operation qualification	78
K.4	Production joints	78
Annex L (informative) Significant technical changes between this European Standard and the previous edition		79
Bibliography		80