

E DIN EN ISO 17782:2016-12 (E)

Erscheinungsdatum: 2016-11-18

Petroleum, petrochemical and natural gas industries - Qualification of manufacturers of special materials (ISO/DIS 17782.2:2016); English version prEN ISO 17782:2016

Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references.....	1
3 Terms, definitions and abbreviated terms.....	2
3.1 Terms and definitions	2
3.2 Abbreviated terms.....	4
4 Responsibilities	5
4.1 Purchaser's responsibilities	5
4.2 Manufacturer's responsibilities.....	5
4.3 Qualifying Company's responsibilities	6
5 Qualification of manufacturers.....	6
5.1 Basis for qualification of manufacturers.....	6
5.2 Evaluation for acceptance	6
5.3 Acceptance of qualification	7
5.4 Proof of acceptance	7
6 Validity of qualification	7
6.1 Term of validity	7
6.2 Renewal of qualification	7
6.3 Transitional requirements	8
7 General requirements	8
7.1 Knowledge and relevant experience	8
7.1.1 Knowledge	8
7.1.2 Relevant experience	8
7.2 Manufacturing facilities and equipment	8
7.3 Subcontractors	8
7.4 Quality requirements for test laboratories and Manufacturers of welded products.....	9
7.4.1 Test laboratories	9
7.4.2 Manufacturers of welded products	9
8 Manufacturing procedure summary (MPS).....	9
8.1 General.....	9
8.2 Content of the MPS.....	9
8.2.1 Scope of the MPS	9
8.2.2 MPS requirements	10
9 Heat treatment	12
9.1 Facilities and equipment.....	12
9.1.1 General.....	12
9.1.2 Foundries.....	12
9.1.3 Heat-treatment furnaces.....	12
9.1.4 Thermocouples and pyrometers	12
9.1.5 Quenching baths	13
9.1.6 Loading of components	13
9.1.7 Transfer time between furnace and quenching bath	13
9.1.8 Continuous, semi-continuous and induction furnaces	13
9.2 Heat-treatment procedure.....	13
9.2.1 General.....	13
9.2.2 Heat-treatment facilities and equipment	13
9.2.3 Loading and unloading of components and transfer between furnace and quenching bath.....	14

9.2.4	Description of heat-treatment cycle	14
9.2.5	Production testing and traceability	15
9.2.6	Documentation of heat treatments	15
9.3	Verification of heat-treatment procedures	15
9.3.1	General	15
9.3.2	Objective	15
9.3.3	Extent of verification	16
9.3.4	Procedure for verification	16
9.3.5	Reporting	17
9.3.6	Witnessing.....	18
10	Qualification of the manufacturing process	18
10.1	Objective of qualification testing	18
10.2	Essential variables	18
10.2.1	General	18
10.2.2	Castings	18
10.2.3	Cold bending of pipe	18
10.2.4	Fittings	19
10.2.5	Forgings.....	19
10.2.6	Heat treatment.....	19
10.2.7	Hot forming.....	20
10.2.8	Hot isostatic pressed (HIP) products	20
10.2.9	Induction bending.....	21
10.2.10	Manufacture at different plants and/or locations	21
10.2.11	Manufacturing equipment.....	21
10.2.12	Material grade.....	21
10.2.13	Melting and refining process.....	21
10.2.14	Start materials	21
10.2.15	Strain hardening	23
10.2.16	Thickness and mass limitations	23
10.2.17	Welded products.....	24
10.3	Qualification testing	25
10.3.1	Selection of components for testing.....	25
10.3.2	Testing.....	25
10.3.3	Additional testing	30
10.4	Welding procedure qualifications	30
11	Manufacturing procedure qualification record (MPQR)	31
11.1	General	31
11.2	Content of MPQR	31
11.3	Required copies and distribution of MPQR	32
Annex A	(informative)_Manufacturing Procedure Summary front page and examples	33
A.1	Example of information to be included on the front page:	33
A.2	Example of Manufacturing Procedure Summary (4 pages)	34
Annex B	(normative) Temperature Uniformity Survey — Additional requirements to Annex M of ISO 10423:2009 and ASTM A991-10.....	38
B.1	General requirements	38
B.2	Batch type furnaces	38
B.3	Continuous and semi-continuous conveyance furnaces	39
Annex C	(informative) Verification of the heat treatment procedure — Example.....	40
Annex D	(normative) Fasteners	41
Annex E	(normative) Induction bending — Testing for qualification of bends without post-bend heat treatment	44
Annex F	(normative) Assessment of testing laboratories – Requirements of ISO/IEC 17025	46
Annex G	(normative) Manufacturing Procedure Qualification Record (MPQR) front page.....	50
Bibliography		51