ISO 14692-4:2017-08 (E)

Petroleum and natural gas industries - Glass-reinforced plastics (GRP) piping - Part 4: Fabrication, installation and operation

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms,definitions,symbolsandabbreviatedterms 1

4 Fabrication and installation 2
4.1 Delivery, inspection and documentation of GRP piping 2
4.2 Handling and storage 2
4.3 System design documentation 2
4.4 Installer requirements 3
4.4.1 Personnel qualification 3
4.4.2 Health and safety 3
4.5 Installation 3
4.5.1 General requirements 3
4.5.2 Components fabricated on-site 4
4.5.3 Cutting 4
4.5.4 Above ground application -- Supports 4
4.5.5 Buried piping 5
4.5.6 Tolerances 5
4.5.7 Jointing 7
4.5.8 Application of fire-protective coating 8
4.5.9 Electrical conductivity and electrostatic dissipative properties 9
4.5.10 Earthing 9
4.5.11 Quality programme for installation 9
4.6 System testing 10
4.6.1 Flushing 10
4.6.2 Pressure testing 10
4.7 Certification and documentation 13
4.7.1 Flushing certificate 13
4.7.2 Pressure test certificate 13
4.8 Inspection 13
4.9 Repair after installation 13
4.9.1 General 13
4.9.2 Repair methods 13

5 Maintenance and repair 14
5.1 Maintenance 14
5.1.1 General 14
5.1.2 Removal of scale and blockages 14
5.1.3 Earthing requirements 14
5.1.4 Surface and mechanical damage 14
5.1.5 Fitter and inspector qualification 14
5.2 Repair 14
5.2.1 General 14
5.2.2 Replacement 15
5.2.3 Minor repairs 15

5.2.4 Temporary repair 15
5.2.5 Quality programme for repair and maintenance 15
5.3 Modifications and tie-ins 15
5.4 Requirements for testing and re-certification 15

Annex A (normative)Defecttypes--Acceptancecriteriaandcorrectiveactions 16

Annex B (normative) Handling and storage 26

Annex C (normative)Minimumtrainingrequirementsforbonder,pipefitter,spoolbuilder, supervisor and inspector 29

Annex D (informative) Guidance for use of jointing methods 59

Annex E (normative)Electricalconductivityandelectrostaticdissipativeproperties 68

Annex F (informative) Guidance on inspection and NDE methods 70

Bibliography 75