ISO 16961:2024-05 (E)

Oil and gas industries including lower carbon energy - Internal coating and lining of steel storage tanks

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms,definitionsandabbreviatedterms 3
3.1 Terms and definitions 3
3.2 Abbreviated terms 5

4 Conformance 6
4.1 Rounding 6
4.2 Conformance to this document 6

5 Pre-work requirements 6
5.1 General 6
5.2 Safety precautions in flammable atmosphere 7
5.3 Qualification of coating/lining application and inspection personnel 7
5.4 Positive isolation and ventilation 7

6 Coating/lining materials 7
6.1 General 7
6.2 Approvals 8
6.3 Prequalification of coating/lining system 8
6.4 Holding (blast) primer 9
6.5 Caulking (putty) and filler compounds 9
6.6 Fibreglass lining materials 9
6.6.1 Fibreglass resin compound 9
6.6.2 Glass fibre reinforcement 9
6.7 Glass flake filled coating/lining system 10
6.8 Epoxy coating/lining systems 10
6.9 Material approvals -- Fibreglass lining system 11
6.10 Material approvals -- Glass flake filled coating/lining system 14
6.11 Material approvals -- Thin film epoxy coating/lining systems 14
6.12 Pre-production trial 14

7 Surface preparation 15
7.1 General 15
7.2 Tank pre-cleaning and residue removal (for rehabilitation work) 15
7.3 Preparatory patching and grinding (for new and rehabilitation work) 16
7.4 Dry abrasive blast cleaning 16
7.5 Humidity control 17
7.6 After blast cleaning 18
7.7 Removal of existing laminate linings prior to abrasive blasting 18
7.8 Striker plates, steel legs, risers, down comers and supports 18
7.9 Safety precautions 19

8 Coating/lining application 19
8.1 General requirements 19

8.2 Safety precautions 20
8.3 Fibreglass lining 20
8.4 Weather conditions 21
8.5 Primer application 21
8.6 Caulking (putty) application 21
8.7 Fibreglass laminate application 22
8.8 Coating/lining thickness 22
8.9 Glass flake filled coating application 23
8.10 Thin film coating application 24

9 Inspection and testing 25

9.1 General requirements 25
9.2 Environmental conditions testing 26
9.3 Materials and equipment inspection 26
9.4 Compressed air and abrasive 26
9.5 Surface preparation inspection 26
9.6 Coating/lining inspection and testing 27
9.7 Coating/lining film thickness 27
9.8 Holiday detection test 27
9.9 Curing hardness test 27
9.10 Defects and pinhole repair 28
9.11 Adhesion test 28

10 Quality requirements 28

11 Documentation 29
11.1 General 29
11.2 Work proposal 29
11.3 Work records/reports 29
11.4 Inspection and testing reports and certificates of conformance 29
11.5 Final report 29

Annex A (informative) Dew point calculation chart 30

Annex B (informative) Caulking (putty) application 31

Annex C (informative) Example of coating/lining work record/data sheet 32

Annex D (informative) Example of coating/lining inspection and testing data sheet 33

Bibliography 34