DIN EN ISO 10438-1:2010-08 (E)

Petroleum, petrochemical and natural gas industries_- Lubrication, shaft-sealing and control-oil systems and auxiliaries_- Part_1: General requirements (ISO_10438-1:2007); English version EN_ISO_10438-1:2007, with CD-ROM

Contents

Page

Foreword 4
Introduction 5
1 Scope 6
2 Normative references 6
3 Terms, abbreviated terms and definitions 7
3.1 Terms and definitions 7
3.2 Abbreviated terms 12
4 General 15
4.1 Dimensions and units 15
4.2 Design 15
4.3 System selection 15
4.4 Pressure design code 15
4.5 Basic design 15
4.6 Welding 16
4.7 Statutory requirements 16
4.8 Documentation requirements 16
5 Piping 16
5.1 General 16
5.2 Oil piping 23
5.3 Instrument piping and tubing 23
5.4 Process piping 23
5.5 Intercoolers and aftercoolers 24
6 Instrumentation, control and electrical systems 25
6.1 General 25
6.2 Alarm, shutdown and control systems 25
6.2.1 General 25
6.2.2 Alarm and shutdown systems 26
6.2.3 Alarm and shutdown arrangements 27
6.2.4 Annunciators 27
6.3 Instrumentation 28
6.3.1 Instrument installation and gauge boards 28
6.3.2 Switches 29
6.3.3 Transmitters 29
6.3.4 Temperature indicators 30
6.3.5 Thermowells 30
6.3.6 Thermocouples and resistance temperature detectors 30
6.3.7 Level instruments 30
6.3.8 Pressure indicators 30
6.3.9 Oil sight flow indicators 31
6.3.10 Solenoid valves 32
6.3.11 Pressure-limiting valves and pressure safety relief valves 32
6.3.12 Control valves and regulators 32
6.4 Electrical systems 33
7 Inspection testing, and preparation for shipment 34
7.1 General 34
7.2 Inspection 35
7.2.1 General 35
7.2.2 Material inspection of pressure vessels and piping systems 35
7.2.3 Mechanical inspection 36
7.3 Testing 37
7.3.1 General 37
7.3.2 Hydrostatic test 37
7.4 Preparation for shipment 38

Page

8 Vendor's data **39**
8.1 General **39**
8.2 Proposals **40**
8.2.1 General **40**
8.2.2 Drawings **40**
8.2.3 Technical data **40**
8.2.4 Optional tests **41**
8.3 Contract data **41**
8.3.1 General **41**
8.3.2 Drawings **41**
8.3.3 Technical data **41**
8.3.4 Progress reports **42**
8.3.5 Parts lists and recommended spares **42**
8.3.6 Installation, operation, maintenance and technical data manuals **42**

Annex A (informative) **Datasheets** **43**

Annex B (informative) **Symbols** **44**

Annex C (informative) **Vendor drawing and data requirements (VDDR)** **46**

Annex D (informative) **Oil or gas filter performance and oil-system cleanliness testing** **50**
D.1 General considerations **50**
D.2 Filter specifications **50**
D.2.1 General characteristics **50**
D.2.2 Filter element reliability **50**
D.2.3 Water contamination **50**
D.2.4 Beta ratio **51**
D.2.5 Relative size of particles **52**
D.2.6 Dry gas seal filtration **53**
D.2.7 Filter-holding capacity **54**
D.2.8 Standards **54**
D.3 System cleanliness testing **58**
D.3.1 General **58**
D.3.2 Special-purpose systems **58**
D.3.3 General purpose **59**
D.3.4 Dry gas seal console testing **59**

Annex E (informative) **International materials specifications** **60**

Annex F (informative) **Explanation of reservoir levels** **61**

Bibliography **63**