DIN EN ISO 27509:2021-05 (E)

Petroleum and natural gas industries - Compact flanged connections with IX seal ring (ISO 27509:2020); English version EN ISO 27509:2020, only on CD-ROM

Contents

Page

Foreword ..... **v**

Introduction ..... **vii**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Abbreviations and symbols **2**
4.1 Abbreviated terms 2
4.2 Symbols 3

5 Design **5**
5.1 General 5
5.2 Design principles 6
5.3 Assembly requirements 8
5.4 Standard components 8
5.5 Units of measurements 9
5.6 Rounding 9
5.7 Conformance with piping design codes 9
5.8 Conformance with this document 10

6 Designation **10**
6.1 Designation of flanges 10
6.2 Designation of seal rings 10

7 Materials **11**
7.1 General 11
7.2 Flange materials 11
7.3 Bolting materials 11
7.4 Seal ring materials 12

8 Strength, pressure/temperature ratings and leak tightness **13**
8.1 General 13
8.2 Pressure/temperature ratings 13
8.3 Pressure testing and leak tightness 14

9 Dimensions of flanges **14**
9.1 General 14
9.2 Weld neck dimensions 15
9.3 Blind flange (BL) dimensions 23
9.4 Integral flange (IF) dimensions 26
9.5 Rigid interface dimensions 37
9.6 Dimensions of paddle blanks (PB) and paddle spacers (PS) 39
9.7 Handle and lifting lugs 41
9.8 Dimensions of orifice spacers (OS) 42
9.9 Dimensions of reducing threaded flanges 44
9.10 Auxiliary connections 45
9.11 Flange tolerances 45
9.12 Surface finish 47

10 Marking of flanges **48**
10.1 Flanges other than integral flanges 48
10.2 Manufacturer's name or trademark 48
10.3 Nominal size 48
10.4 Pressure class designation 48
10.5 Pipe dimensions 48
10.6 Material identification 48
10.7 Identification of internally threaded flanges 49
10.8 Material traceability 49
10.9 Marking examples 49
10.10 Stamping 49
11 Dimensions of seal rings **49**
12 Manufacture, testing and inspection of IX seal rings **53**
13 Coating and colour coding **53**
14 Marking of seal rings **54**
15 Quality management systems **54**
16 Bolt dimensions and masses **54**
Annex A (normative) **Pressure temperature ratings and load capacity** **55**
Annex B (normative) **Integral flange angle selection** **59**
Annex C (normative) **Bolt dimensions and masses** **70**
Annex D (normative) **Handling, installation, assembly and repair of flanges** **77**
Annex E (informative) **Mass of flanges** **90**
Annex F (informative) **Metric bolting** **100**
Annex G (informative) **Additional information on bibliographical references** **102**
Bibliography **104**