# DIN EN 12186:2026-02 (E)

## Gas infrastructure - Gas pressure control stations for transmission and distribution - Functional requirements

## Contents

Page


European foreword ..... 5

Introduction ..... 6

1 Scope ..... 7

2 Normative references ..... 7

3 Terms, definitions, symbols and abbreviations ..... 8
3.1 General ..... 9
3.2 Station ..... 9
3.3 Pressure, design and testing ..... 12
3.4 Pressure control ..... 13
3.5 Smart technologies ..... 15

4 Quality and safety management system ..... 15

5 Environmental interaction ..... 15
5.1 General requirements ..... 15
5.2 Waste ..... 15
5.3 Greenhouse gas emissions ..... 16
5.4 Adaptation to the effects of climate change ..... 17
5.4.1 General ..... 17
5.4.2 Design phase ..... 17
5.4.3 Construction, commissioning and decommissioning ..... 17
5.4.4 Operation and maintenance ..... 17
5.5 Mitigation of the impact of earthquakes ..... 18

6 Layout of the gas pressure control station ..... 18
6.1 General ..... 18
6.2 Layout of the site ..... 18
6.3 Site security ..... 18

7 Housings ..... 19
7.1 General ..... 19
7.2 Requirements for housings ..... 19
7.3 Underground stations ..... 20
7.3.1 General ..... 20
7.3.2 Stations in a pit ..... 20
7.3.3 Buried vessel type stations ..... 21

8 Design of the station and its systems ..... 21
8.1 General ..... 21
8.2 Continuity of supply ..... 22
8.3 Filters, separators ..... 22
8.4 Gas pre-heating system ..... 22
8.5 Noise control ..... 23
8.5.1 General ..... 23
8.5.2 Environmental acceptance ..... 23
8.5.3 Work area noise ..... 23
8.6 Apertures and vent lines ..... 23

8.6.1 Apertures in pressure control equipment ..... 23
8.6.2 Vent lines ..... 24
8.7 Connections for purging, recompression or flaring ..... 24
8.8 Hazardous areas ..... 24
8.9 Cathodic protection and electrical isolation system ..... 24
8.10 Lightning protection, electric continuity and earthing ..... 25
8.11 Pressure control system ..... 25
8.12 Flow-rate control system ..... 25
8.13 Pipework system ..... 26
8.14 Welding ..... 26
8.15 Instrumentation pipework ..... 26
8.16 Stress analysis ..... 27
8.16.1 Design pressure ..... 27
8.16.2 Design factor ..... 27
8.16.3 Supports ..... 27
8.16.4 Flexibility ..... 28
8.16.5 Temperature ..... 28
8.16.6 Gas velocity ..... 28
8.17 Standard pressure equipment strength ..... 28
8.18 Isolating valves ..... 28
8.19 Smart systems and equipment ..... 29
8.19.1 General ..... 29
8.19.2 Fail safe conditions (safety and continuity of supply) ..... 29
8.20 Electromagnetic compatibility, electrostatic phenomena and personal protection ..... 29
8.21 Information security ..... 29

9 Pressure control requirements ..... 30
9.1 General ..... 30
9.2 Pressure regulating system ..... 31
9.3 Pressure safety system ..... 31
9.3.1 General ..... 31
9.3.2 Operating principles of pressure safety systems ..... 31
9.3.3 Applications ..... 31
9.3.4 Safety shut-off devices ..... 32
9.3.5 Monitors ..... 33
9.3.6 Safety-related electrical/electronic solutions ..... 33
9.3.7 Venting devices ..... 34
9.4 Pressure alarm system ..... 34
9.5 Instrumentation ..... 34
9.6 Bypasses ..... 35
9.6.1 Bypasses for equalization or testing of components ..... 35
9.6.2 Bypasses of the pressure control system ..... 35

10 Testing ..... 35
10.1 General ..... 35
10.2 Pressure testing ..... 35
10.2.1 General ..... 35
10.2.2 Strength test ..... 35
10.2.3 Tightness test ..... 36
10.3 Reporting ..... 36

11 Commissioning ..... 37

12 Operation and maintenance ..... 37
12.1 General ..... 37
12.2 Documentation ..... 38
12.3 Maintenance requirements ..... 38
12.4 Training ..... 39
12.5 Work undertaken ..... 39
12.6 Fire fighting ..... 40
12.7 Cyber security ..... 40

13 Decommissioning and disposal ..... 40
13.1 Decommissioning ..... 40
13.2 Disposal ..... 40

Annex A (informative) Glossary ..... 41

Annex B (informative) Categories of greenhouse gas emissions in the scope of this document ..... 43

Annex C (informative) Mitigation of the impact of earthquakes ..... 44

Annex D (informative) Stations in operation - Changing of the type of gas ..... 45

Annex E (informative) Significant technical changes from the last edition of this document, Bibliography ..... 48