

DIN ISO 15665:2026-04 (E)

Acoustics - Acoustic insulation for pipes, valves and flanges (ISO 15665:2023)

Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classes of acoustic insulation	3
5 Guidance to the reduction of noise from pipes	6
5.1 Required insertion loss: design phase steps	6
5.1.1 Determination of sound pressure levels	6
5.1.2 Evaluation of sound pressure levels against limits	7
5.1.3 Determination of sound power levels	7
5.1.4 Contribution to noise in reverberant spaces or environmental noise	8
5.2 Required insertion loss: operating plants	8
5.3 Length of acoustic insulation	9
5.4 Implications for piping design	10
5.5 Derivation of overall noise reduction	11
5.6 Typical noise reduction values	13
6 Construction of typical acoustic insulation systems	14
6.1 General	14
6.2 Cladding	14
6.2.1 General	14
6.2.2 Materials for the outer layer	14
6.2.3 Materials for an additional layer	15
6.2.4 Vibro-acoustic seals	15
6.3 Porous layer	16
6.4 Support of the cladding	16
6.5 Vibration isolation material at pipe supports	17
7 Installation	17
7.1 General	17
7.2 Extent of insulation	17
7.3 End caps	18
7.4 Acoustic enclosures and jackets	18
7.5 Prevention of mechanical damage	18
8 Combined thermal and acoustic insulation	18
8.1 General	18
8.2 Hot services	19
8.3 Cold services	19
9 Testing of acoustic insulation systems	19
9.1 General	19
9.2 Measurement method: Field measurement	19
9.2.1 Sound power insulation, D_W	19
9.2.2 Sound pressure insulation, D_p	19
9.3 Measurement method: reverberation room	21
9.4 Test facility	21
9.4.1 Test room	21
9.4.2 Installation	21
9.4.3 Pipe dimensions	22

9.5	Sound source	23
9.6	Test specimen	23
9.7	Measurements	23
9.8	Results	24
9.9	Information to be reported	24
Annex A (informative) Acoustic insulation constructions that can meet the insulation class requirements		26
Annex B (informative) Equations for the calculation of the minimum required insertion loss $D_{W,min}$ of the insulation classes		29
Annex C (informative) General construction of acoustic insulation		30
Annex D (informative) Examples of typical construction details		31
Bibliography		42