

# DIN EN ISO 12354-1:2017-11 (E)

## Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 1: Airborne sound insulation between rooms (ISO 12354-1:2017)

---

<b>Contents</b>		Page
<b>European foreword</b>		3
<b>Foreword</b>		4
<b>Introduction</b>		5
<b>1 Scope</b>		6
<b>2 Normative references</b>		6
<b>3 Terms and definitions</b>		7
3.1	Quantities to express building performance	7
3.2	Quantities to express element performance	8
3.3	Other terms and quantities	11
<b>4 Calculation models</b>		12
4.1	General principles	12
4.2	Detailed model for structure-borne transmission	15
4.2.1	Input data	15
4.2.2	Transfer of input data to <i>in situ</i> values	16
4.2.3	Determination of direct and flanking transmission <i>in situ</i>	18
4.2.4	Limitations	19
4.3	Detailed model for airborne transmission	20
4.3.1	Determination from measured airborne direct transmission for small technical elements	20
4.3.2	Determination from measured total indirect transmission	20
4.3.3	Determination from the performance of the separate elements of a system	20
4.4	Simplified model	20
4.4.1	General	20
4.4.2	Calculation procedure	20
4.4.3	Input data	23
4.4.4	Limitations	24
<b>5 Accuracy</b>		24
<b>Annex A (normative) Symbols</b>		25
<b>Annex B (informative) Sound reduction index</b>		30
<b>Annex C (informative) Structural reverberation time: Type A elements</b>		39
<b>Annex D (informative) Sound reduction index improvement of additional layers</b>		42
<b>Annex E (informative) Vibration transmission over junctions: case of heavy buildings</b>		47
<b>Annex F (informative) Vibration transmission over junctions: case of lightweight buildings</b>		56
<b>Annex G (informative) Determination of normalized flanking level difference</b>		64
<b>Annex H (informative) Determination of indirect airborne transmission from performance of system elements</b>		67
<b>Annex I (informative) Sound insulation in the low frequency range</b>		69
<b>Annex J (informative) Guidelines for practical use</b>		71
<b>Annex K (informative) Estimation of uncertainty</b>		79
<b>Annex L (informative) Calculation examples</b>		82
<b>Bibliography</b>		97