

ISO 15712-4:2005-02 (E)

Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 4: Transmission of indoor sound to the outside

Contents		Page
Foreword		iv
1	Scope	1
2	Normative references	1
3	Relevant quantities	1
3.1	Quantities to express building performance	1
3.1.1	Sound power level L_w	1
3.1.2	Directivity correction D_c	1
3.2	Quantities to express element performance	2
3.2.1	Sound reduction index R	2
3.2.2	Element normalized level difference $D_{n,e}$	2
3.2.3	Insertion loss D (of an element)	2
3.2.4	Other relevant data	2
3.3	Other terms and quantities	2
3.3.1	Sound pressure level L_p	2
3.3.2	Total attenuation due to propagation A_{tot}	2
3.3.3	Diffusivity term C_d	2
3.3.4	Inside sound pressure level $L_{p,in}$	2
3.3.5	Substitute point source	3
4	Calculation model	3
4.1	General principles	3
4.2	Determination of substitute point sound sources	4
4.3	Determination of the sound power level for a substitute point source	4
4.4	Determination of the directivity correction for a substitute point source	6
4.5	Limitations	6
5	Accuracy	7
Annex A (normative) List of symbols		8
Annex B (informative) Interior sound field		9
Annex C (informative) Sound reduction index		10
Annex D (informative) Directivity of sound radiation		11
D.1	Plane radiator	11
D.2	Openings	11
Annex E (informative) Simplified model to predict exterior sound pressure levels		12
Annex F (informative) Application of the model to single number ratings		15
F.1	General	15
F.2	Input data	15
F.3	Model for single number ratings	15
F.4	Limitations	16

Annex G (informative) Calculation example	17
G.1 Situation	17
G.2 Results complete model	18
G.2.1 Substitute point sources	18
G.3 Results from simplified model	21