

PART VIII**Appendix E****STC, Aural Field and Proportion of Space****Table 8.E.1: Typical STC Ratings for Building Elements**

(Source: Stein, t al. 2006. *Mechanical and Electrical Equipment for Buildings*. John Willey & Sons, New Jersey)

Improvements in STC Ratings of Stud ^a Partitions ^b		STC Ratings of Masonry Walls	
Description	STC	Description	STC
Basic partition: single wood studs,	35	100 mm light weight hollow block	36
400 mm on centres, 13 mm gypsum board on both sides, air cavity		100 mm dense hollow block	38
Add to basic partition		150 mm lightweight hollow block	41
Double gypsum board, one side	+2	150 mm dense hollow block	43
Double gypsum board, both sides	+4	200 mm lightweight hollow block	46
Single thickness absorbent material in air cavity	+3	200 mm dense hollow block	48
Double-thickness insulation	+6	300 mm lightweight hollow block	51
Resilient channel supports for gypsum board	+5	300 mm dense hollow block	53
Staggered studs	+9	100 mm brick	41
Double studs	+13	150 mm brick	45
		200 mm brick	49
^a For application to metal stud partition, use adders as in note b, but begin with STC=40 for a 90mm basic partition.		300 mm brick	54
^b When using two improvements, add an additional +2; for three improvements, add +3.		150 solid concrete	47
^c The STC figures are conservative. Other sources list the same constructions with 1 to 5 points higher STC.		200 solid concrete	50
		250 solid concrete	53
		300 solid concrete	56
Typical STC Value for Doors		^a The STC figures are conservative. Other sources list the same constructions with 1 to 5 points higher STC.	
Door Construction	STC	^b All ratings of lightweight block assume sealing with paint. Note that this reduces absorption.	
Louvered door	15	Modifications	
Any door, 50 mm undercut	17	Add sand to core of hollow blocks	+3
38 mm hollow core door, no gasket	22	Add plaster to one side	+2
38 mm hollow core door, gaskets and drop closure	25	Add plaster to both side	+4
44 mm solid wood door, no gasket	30	Add furring strip, lath and plaster:	
44 mm solid wood door, gaskets and drop closure	35	One side	+6
Two hollow core doors, gasket all around, with sound lock	45	Two sides	+10
Two solid core doors, gasket all around, with sound lock	55	Add plaster via resilient mounting:	
Special commercial construction, with lead lining and full sealing	45-65	One side	+10
		Two sides	+15

Typical STC Ratings of Interior Partitions		Typical STC Value for Windows	
Type of Partition	STC	Window Construction	STC
Demountable partition	20-30	Operable wood sash, 3 mm glass unsealed	23
Drywall partition up to acoustical ceiling	30	Operable wood sash, 6 mm glass unsealed	25
Drywall partition extending 300 mm above acoustical ceiling tile system into ceiling plenum	35	Operable wood sash, 6 mm glass, with gasket	30
Drywall partition with cavity insulation, full height to the underside of slab above	40-45	Operable wood sash, laminated glass, unsealed	28
Two-layer drywall partition with insulation, erected full height to underside of slab above	50	Operable wood sash, double-glazed, 3mm panes, 10 mm air space, with gasket	29
		Fixed sash, double 3 mm panes, 75 mm air space, with gasket	44
		Fixed sash, double 3 mm panes, 100 mm air space, with gasket	48

Appendix E (Contd.)

Table 8.E.2: Recommended STC for Partitions for Specific Occupancies
(Source: Stein, B. et al., 2006. *Mechanical and Electrical Equipment for Buildings*.
John Wiley & Sons, New Jersey)

Type of Occupancy	Wall, Partition, or Panel Between		Sound Isolation Requirement: Background Level in Room Being Considered	
	Room Being Considered	and Adjacent Area	Quiet	Normal
Normal school buildings without extraordinary or unusual activities or requirements	Classrooms	Adjacent classrooms	STC 42	STC 40
		Corridor or public areas	STC 40	STC 38
		Kitchen and dining areas	STC 50	STC 47
		Shops	STC 50	STC 47
		Recreation areas	STC 45	STC 42
		Music rooms	STC 55	STC 50
		Mechanical equipment rooms	STC 50	STC 45
		Toilet areas	STC 45	STC 42
	Music practice rooms	Adjacent practice rooms	STC 55	STC 50
		Corridor and public areas	STC 45	STC 42
Executive areas, doctors suites; confidential privacy requirements	Office	Adjacent offices	STC 50	STC 45
		General office areas	STC 48	STC 45
		Corridor or lobby	STC 45	STC 42
		Washrooms and toilet areas	STC 50	STC 47
Normal office; normal privacy requirements; any occupancy using rooms for group meetings	Office	Adjacent offices	STC 40	STC 38
		Corridor, lobby, exterior	STC 40	STC 38
		Washrooms, kitchen, dining	STC 42	STC 40
	Conference rooms	Other conference rooms	STC 45	STC 42
		Adjacent offices	STC 45	STC 42
		Corridor or lobby	STC 42	STC 40
		Exterior of building	STC 40	STC 38
		Kitchen and dining areas	STC 45	STC 42
Large offices, drafting areas, banking floors, etc.	Large general office areas	Corridors, lobby, exterior	STC 38	STC 35
		Data-processing area	STC 40	STC 38
		Kitchen and dining areas	STC 40	STC 38
Motels and urban hotels, Hospitals and dormitories	Bedrooms	Adjacent bedrooms ^a	STC 52	STC 50
		Bathroom ^a	STC 50	STC 45
		Living rooms ^a	STC 45	STC 42
		Dining areas	STC 45	STC 42
		Corridor, lobby, or public spaces	STC 45	STC 42

^a Separate occupancy

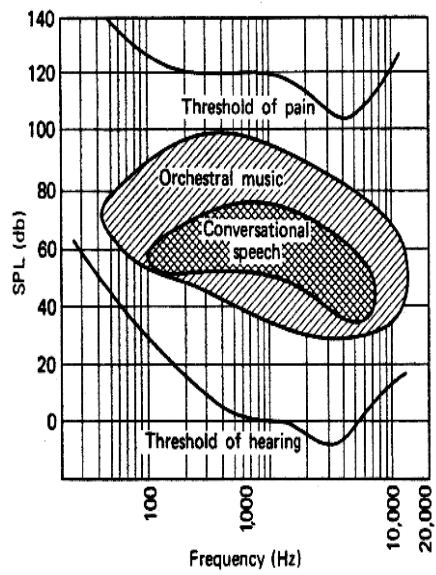


Figure 8.E.1 Speech and Music in Aural Field

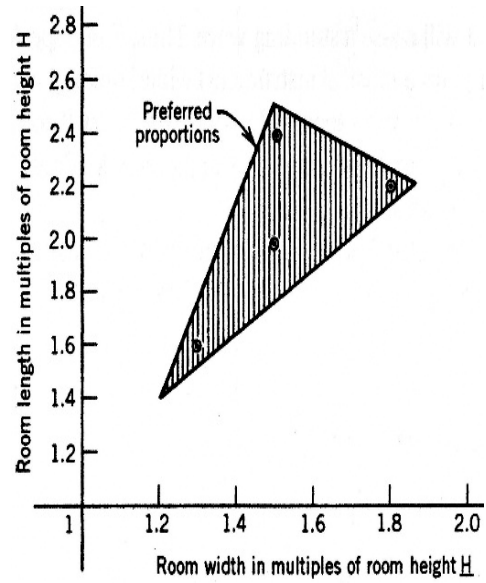


Figure 8.E.2 Recommended proportion of a space

PART VIII

Appendix F

Activity Flow Diagram: Planning, Design, Assessment and Construction in Building Acoustics

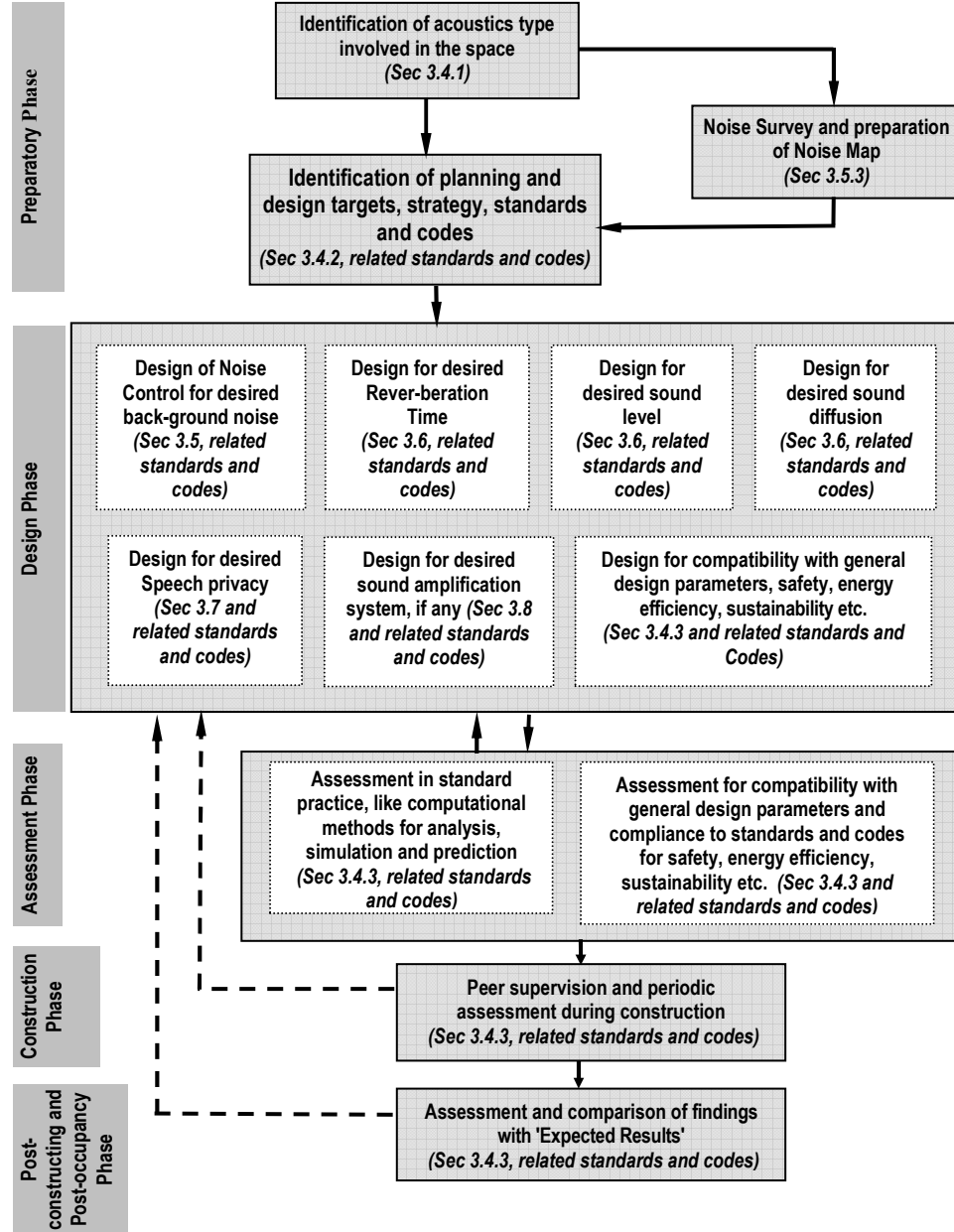


Figure 8.F.1 Activity Flow Diagram: Planning, Design, Assessment and Construction in Building Acoustics