785 ACOUSTICS

General

785 .1.00 The design and construction should address acoustic aspects of the work environment. The major design issues to be considered include:

- Workplaces should be designed to minimize the occupant's exposure to noise; noisy machines and activities should be remote or isolated from other work areas.
- Noisy equipment should be acoustically enclosed where practicable
- Noisy work areas such as workshops should have acoustically absorbent ceilings to reduce the amount of noise other staff working nearby are exposed to
- Noise levels of equipment should be an integral part of equipment selection /purchasing procedures
- Consideration should be given to the impact of ultrasonic noise generation. (Refer to AS 2243 - Part 5)

Specialist advice from a qualified Acoustic Engineer is recommended.

Minimum Standards

785 .2.00 The Engineering Services and the building components should be selected to achieve an acceptable noise level. Unless other requirements are stated in other parts of these Guidelines, the ambient sound levels should not exceed those stated in AS/NZS 2107 'Acoustics - Recommended design sound levels and reverberation times for building interiors', and AS 1055 - 'Acoustics - Description and measurement of environmental noise'.

Duct work is to be designed to maintain the sound transfer coefficient (STC) levels as identified in Technical Standard 12 - Internal Walling Systems for health Care Buildings, available from NSW Health.

785 .3.00 REQUIRED MINIMUM CONSTRUCTION STC RATINGS:

AREA	Minimum STC	Recomm'd STC	Recomm'd Wall Types
CENTRAL STERILE SUPPLY UNIT	50	55	Type 5
CONSULT ROOM	40	45	Type 3
CORRIDORS / LOBBIES	40	50	Type 4
DENTAL SURGERY	40	45	Type 3
EMERGENCY UNIT	40	45	Type 3
ICU / SPECIAL CARE	35	40	Type 2
INPATIENT BED ROOMS	35	45	Type 3
INTERVIEW ROOM		45	Type 3
KITCHEN	50	55	Type 5
LABORATORIES	45	50	Type 4

LOUNGES		40	Type 2
MEETING / CONFERENCE ROOMS		45	Type 3
OFFICES - EXECUTIVE	40	45	Type 3
OFFICE - GENERAL	35	40	Type 2
OBSTETRIC UNIT	45	50	Type 4
OPERATING UNIT	40	45	Type 3
OPERATING UNIT STERILISING AREA	40	45	Type 3
PHARMACY UNIT	45	50	Type 4
QUIET ROOMS		45	Type 3
RECEPTION	40	50	Type 4
RECOVERY AREAS		45	Type 3
REHABILITATION UNIT	40	45	Type 3
SPEECH THERAPY		45	Type 3
STAFF STATIONS	40	45	Type 3
TREATMENT ROOMS	40	45	Type 3
TUTORIAL ROOMS		45	Type 3
WAITING AREAS	40	50	Type 4

Typical Wall Types

785 .4.00 Typical dry wall types capable of achieving the above ratings are listed below; these are not mandatory and are subject to correct detailing and construction.

785 .5.00 TYPE 1 STC RATING - 35

Standard grade plasterboard 13 mm thick (minimum mass); 8.5 g/ m2 each side of 92 mm steel studs.

785 .6.00 TYPE 2 STC RATING - 40

Two options are available:
- Two layers of 13 mm thick standard grade plasterboard one side of 92 mm steel studs, one layer of 13 mm thick standard grade plasterboard on the other side
- One layer 13 mm thick standard grade plasterboard on each side of 92 mm steel stud. Cavity infill of:
  - 60 mm (500 g/ m2) polyester
  - 50 mm (10 kg /m3) glasswool

785 .7.00 TYPE 3 STC RATING - 45

Two layers of 13 mm thick standard grade plasterboard on one side of 92 mm steel studs, one layer of 13 mm thick standard grade plasterboard on the other

side. Cavity fill of:
- 60 mm (500 g/m2) polyester
- 50 mm (10 kg/ m3) glasswool, or
- Light or heavy Masonry.

785 .8.00 TYPE 4 STC RATING - 50

Two layers of 13 mm thick standard grade plasterboard each side of 92 mm steel studs. Cavity fill of:
- 70 mm (600 g/m2) polyester
- 75 mm (10 kg/ m3) glasswool.

785 .9.00 TYPE 5 STC RATING - 55

Staggered stud system using two layers thickness of standard grade plasterboard each side of 92 mm studs and 92 mm tracks. Cavity infill of:
- 70 mm (600 g/m2) polyester
- 75 mm (10kg/ m3) glasswool.

785 .10.00 Where a high degree of impact / abrasion resistance is required, eg. Hospital corridors, 9 mm thick fibrous cement sheeting may be substituted for 13 mm thick standard grade plasterboard. The acoustical performance for 9 mm fibrous cement sheet approximates that of 16 mm thick fire grade plasterboard.

785 .11.00 The maximum sound rating achievable for partition construction to the underside of a continuous plasterboard ceiling in STC 40. If a layer of 75 mm thick polyester or glass wool 2400 mm wide is provided over the ceiling on the partition below, a sound rating of STC 45 is achievable.

Partitions with sound ratings above STC 45 must be constructed full height from floor slab to underside of floor slab.