

NAP SILENTFLO



# *Dyna Doors*

Acoustic Doors

**NAP SILENTFLO**   
THE EXPERTS IN NOISE CONTROL

# Dyna Doors

## Acoustic Doors

### Introduction

NAP Silentflo makes an extensive range of acoustic doors custom built to suit individual requirements. Selections are made according to the degree of sound isolation required, space available, fire rating requirements and the environment in which the door will be located.

A typical example of this professional approach can be seen in the doors supplied and installed at the Victorian Arts Centre. This project involved acoustic ratings from STC 40 to STC 55. The largest doors, cover openings of 9m x 6m and weigh in excess of 8 tonnes. These doors run on purpose designed tracks utilising motorised opening and closing facilities. As well as conventional absorptive acoustic seals, a pneumatically actuated perimeter seal was included to further increase performance. The seal automatically inflates when the door reaches its closed position and deflates prior to the door opening.

Equally large doors have also been supplied to the Tsim Sha Tsui Cultural Centre in Hong Kong.

### Door Types & Applications

NAP Silentflo Dyna Doors are custom built to suit a variety of applications where it is necessary to separate quiet and noisy areas.

#### Hinged Doors

These are used for conventional doorway situations requiring effective sound isolation between occupied areas and also in large doorways to provide equipment access to sound isolation areas.

#### Sliding Doors

These are commonly used where the swing path of the door leaf is too great for the available space. They are particularly well suited to motorised operation. Space availability is a major factor in determining the selection of a sliding door, which may have either vertical or horizontal movement.

#### Bi-fold Doors

These are commonly used when the leaf sweep area is too great for the available area.

#### Applications

- Reduction of interference from externally generated noises in Cinemas, Concert Halls, Opera Houses, Radio and Television Studios.
- Reduction of plant noise intrusion from Generator Rooms, Air-Conditioning Plant Rooms, Compressor and Boiler Houses, Pumping Stations and Electricity Sub-Station.
- Reduction of external noise to provide a suitable acoustic environment in Outside Broadcast Announcing Booths, Airport Control Towers and Power Station Control Rooms.
- Provide noise reduction for other technical facilities such as Audiometric Rooms, Anechoic or Reverberation Chambers and Laboratories.



An example of a typical NAP Biparting and Bifolding Dyna door.



## Fire Rating

A fire-rated version of the hinged Dyna Door is available for plant rooms and other applications, and has been granted a three hour rating when tested with Australian Standard AS 1530, Part 4 - 1975, "Methods for fire tests on building materials and structures."

NAP Silentflo have manufactured CSIRO approved fire rated Dyna Doors as large as 3.6m wide x 4.4m high in a double leaf configuration. These doors carry compliance with the Australian Standard AS 1905, Part 1 - 1984, "Fire Resistant Door Sets."

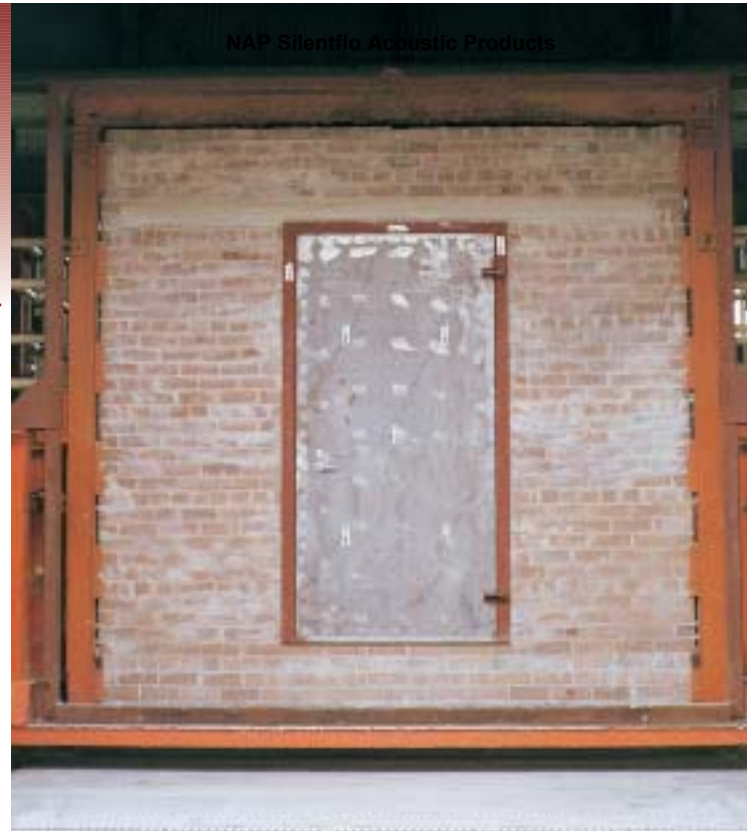
Fire-rated Dyna Doors differ from standard doors in their internal construction and hardware, these details should be discussed with a NAP Silentflo Representative prior to placing an order.

All Dyna Doors are constructed using non-combustible materials, so that they present no early fire hazard.

## Acoustic Performance

The standard 100mm thick Dyna Door has a Sound Transmission Class STC 40 and the 150mm thick Dyna Door has a rating of STC 45. The Sound Transmission Loss of these two doors is represented in the following graph and tables.

Single-leaf and double-leaf doors rated up to STC 45 are readily available, while special doors rated up to STC 60 are available for purpose designed applications. Higher acoustic performance requirements will however increase door thickness and weight. Therefore the building design must be adjusted to withstand the additional loads.



The NAP Dyna door undergoing fire rating tests at the Experimental Building Station, North Ryde, NSW.

## Acoustic Performance

### 100mm Dyna Door

Octave Band Centre Frequency (Hz)

125	250	500	1k	2k	3k
24	29	34	43	46	46

Sound Transmission Loss (dB)

### 150mm Dyna Door

Octave Band Centre Frequency (Hz)

125	250	500	1k	2k	3k
36	39	47	55	54	50

Sound Transmission Loss (dB)

