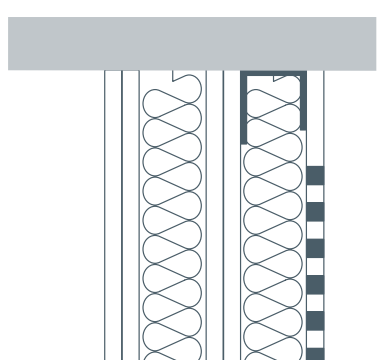




# Gyptone<sup>®</sup> acoustic wall solutions

Lower reverberation times, less flutter echo  
and improved speech intelligibility



## Acoustic regulation of new and existing rooms.

Gyptone acoustic wall solutions are used for the acoustic regulation of rooms where lower reverberation times and improved speech intelligibility are desired.

Gyptone acoustic walls are easy to install and have a robust surface with high impact resistance. Naturally they are paintable in any colour.

The acoustic boards are made from predominantly recycled gypsum and reused cardboard. Used Gyptone ceilings can be completely reused in the production of new gypsum products.



**Gyproc**  
SAINT-GOBAIN

# Improved acoustic indoor environment

By using wall absorbers a significantly improved acoustic feeling of comfort in the room can be achieved, without continuous sound waves between perpendicular walls (flutter echo) plus a lower reverberation time in the room.

This specification consists of four acoustic wall solutions for existing rooms which need to be acoustically improved. Furthermore, it describes Gyptone integrated acoustic walls which are used in new partition walls or external walls where the sound absorbing capability is fully integrated into the wall surface.

## Guidelines for placing and dimensioning of Gyptone wall absorbers

### Acoustic legal requirements and recommendations

Concerning room acoustics the Danish Building Code BR10 refers to SBI specification 218 which stipulates: "To achieve the desired absorption distribution in a room it is recommended to put at least 10-15% of the total absorption area on walls or vertical surfaces."

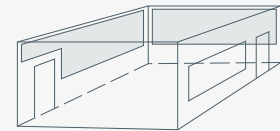
### Placing of wall absorbers

In order to avoid flutter echo the wall absorbers should be placed on 2 perpendicular wall surfaces in order to reduce sound waves in the room both longitudinal and latitudinal. The area of wall absorbers needed is determined by the requirement for reverberation time in the room.

See the example below for the approximate placing and size of Gyptone wall absorbers.



### Example of good positioning and the effect of Gyptone acoustic wall solutions



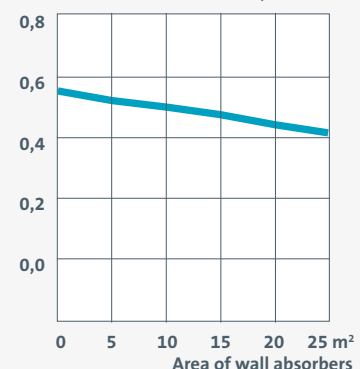
### Materials/structures used in the modular room

- Ceiling: Gyptone Sixto 60, Edge E15 -200 mm suspended
- Walls: 2 x 13 mm plasterboard with underlying mineral wool
- Floor: Linoleum or vinyl glued to concrete
- Windows: double glazed thermal panes
- Exterior door: Glass door with double glazed thermal panes
- Interior door: Solid BD 30 door
- Wall absorbent: Gyptone Sixto 60, Edge B
- Furnishing: Standard lay-out of classroom

## Acoustics

Reduction in the average reverberation time by increasing the area of wall absorbers in the model room.

Calculated reverberation time, sec.





## Absorption values

| Gyptone wall absorbers installed on a 45 mm steel backing with 45 mm of underlying mineral wool | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz |
|---|--------|--------|--------|---------|---------|---------|
| Gyptone Sixto 60, Edge B  | 0.35   | 0.65   | 0.85   | 0.85    | 0.75    | 0.75    |
| Gyptone Line 4, Edge B  | 0.30   | 0.65   | 0.90   | 0.85    | 0.65    | 0.60    |
| Gyptone Quattro 20, Edge B  | 0.25   | 0.65   | 1.00   | 0.95    | 0.65    | 0.65    |
| Gyptone Quattro 50, Edge B  | 0.25   | 0.65   | 1.00   | 0.95    | 0.65    | 0.65    |
| Gyptone Point 11, Edge B  | 0.30   | 0.65   | 1.00   | 0.85    | 0.60    | 0.55    |
| Gyptone BIG Sixto 63, Edge B1   | 0.40   | 0.60   | 0.70   | 0.70    | 0.60    | 0.60    |
| Gyptone BIG Sixto 65, Edge B1   | 0.35   | 0.65   | 0.75   | 0.75    | 0.65    | 0.70    |
| Gyptone BIG Line 5, Edge B1   | 0.35   | 0.65   | 0.75   | 0.65    | 0.45    | 0.40    |
| Gyptone BIG Line 6, Edge B1   | 0.35   | 0.65   | 0.75   | 0.65    | 0.45    | 0.40    |
| Gyptone BIG Quattro 41, Edge B1   | 0.40   | 0.75   | 0.85   | 0.75    | 0.65    | 0.65    |
| Gyptone BIG Quattro 42, Edge B1   | 0.40   | 0.65   | 0.70   | 0.60    | 0.45    | 0.40    |
| Gyptone BIG Quattro 43, Edge B1   | 0.40   | 0.75   | 0.85   | 0.75    | 0.65    | 0.65    |
| Gyptone BIG Quattro 46, Edge B1   | 0.40   | 0.70   | 0.65   | 0.55    | 0.45    | 0.40    |
| Gyptone BIG Quattro 47, Edge B1   | 0.50   | 0.55   | 0.50   | 0.40    | 0.30    | 0.30    |

The measurements meet the requirements of ISO 354. All measurements are done on standard tiles with acoustic tissue laminated on the backside and 45 mm mineral wool between the backside and the wall.

# Acoustic walls – new partitions

## Gyptone BIG integrated acoustic wall – complete floor to ceiling wall with invisible joints

### Installation (for carpenters/dry-liners):

- A suitable wall structure is chosen based on meeting the necessary requirements for fire, light, sound insulation and wall height. See the Gyproc Handbook. The chosen wall is built and used as a base for the acoustic wall cladding.
- Shape the AVU 45 steel section and fix it to the wall at a maximum screw distance of 300 mm.
- Shape and fix horizontally the AVZ 45 sections at a maximum screw distance of 300 mm. The distance between the horizontal AVZ 45 sections is 300 mm.
- Shape the 45 mm mineral wool between the steel sections.
- Fix Gyptone BIG standing vertically, so that any short board edges are connected over the horizontal AVZ 45 sections.
- Fix Gyproc Robust to the lowest part of the wall where greater mechanical impact might occur.
- Screw distance is max. 200 mm along all board edges and 30 mm on other steel sections

- Screws for Gyptone BIG and Gyproc Robust = QSTR 25

### Finishing (for painters/finishers):

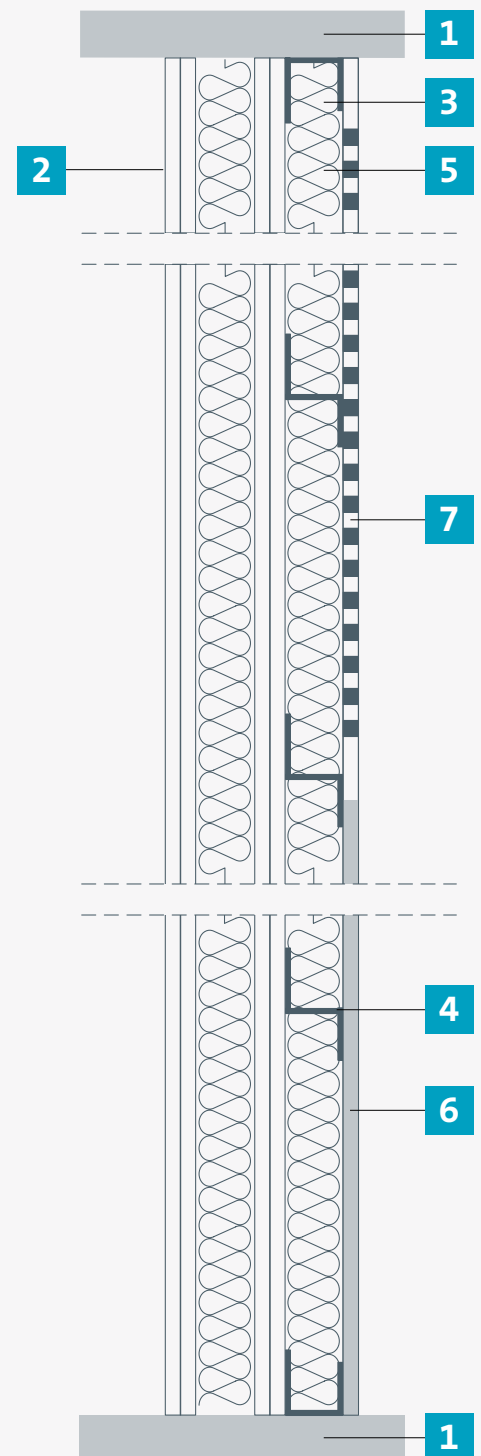
- Use Gyproc ProMix filling system and Gyproc G93 paper strips for all joints.
- All joints, screw holes and edges are plastered until a smooth and even surface is achieved.
- Painting is done by priming plus two coats of finish with a smooth mohair roller.

**NB.** Perforated Gyptone products must not be spray-painted as this reduces the acoustic effect.

- 1 Ceiling structure / floor structure
- 2 Wall structure chosen from Gyproc handbook – set up according to accompanying mounting instructions
- 3 AVU 45 steel profile
- 4 AVZ 45 steel profile
- 5 45 mm mineral wool
- 6 12.5 mm Gyproc Robust
- 7 Gyptone BIG, Edge B1 perforated plasterboard



# 1



# Acoustic wall for acoustic improvement in existing rooms

## Gyptone BIG – complete floor to ceiling wall with invisible joints

# 2



### Installation (for carpenters/dry-liners):

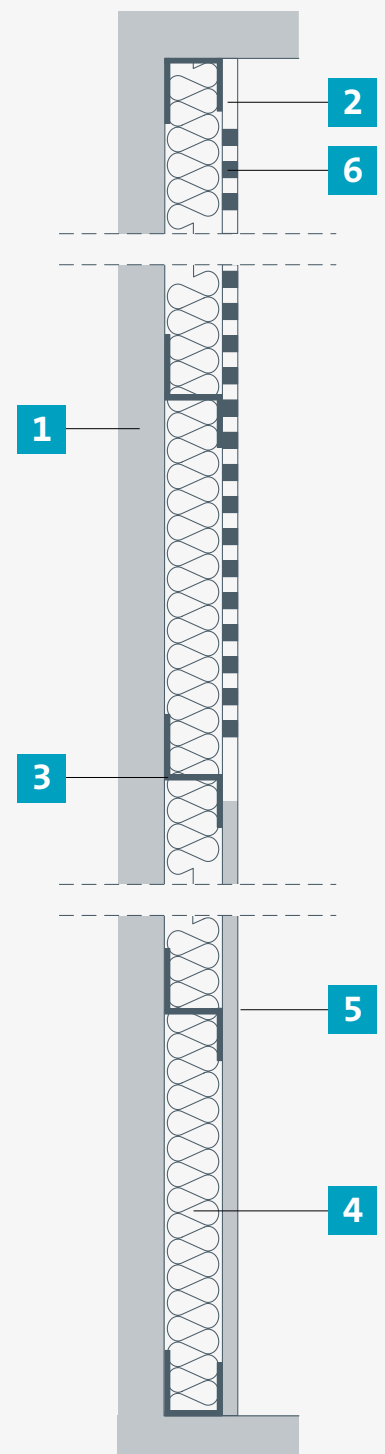
- Shape AVU 45 steel section and fix it to the wall at a maximum screw distance of 300 mm.
- Shape and horizontally fix AVZ 45 sections at a maximum screw distance of 300 mm. The distance between the horizontal AVZ 45 sections is 300 mm.
- Shape 45 mm mineral wool between the steel sections.
- Fix Gyptone BIG standing vertically, so that any short board edges are connected over the horizontal AVZ 45 sections.
- Fix Gyproc Robust to the lowest part of the wall where greater mechanical impact might occur.
- Screw distance is max. 200 mm along all board edges and 30 mm on other steel sections.
- Screws for Gyptone BIG and Gyproc Robust = QSTR 25.

### Finishing (for painters/finishers):

- Use Gyproc ProMix filling system and Gyproc G93 paper strips for all joints.
- All joints, screw holes and edges are plastered until a smooth and even surface is achieved.
- Painting is done by priming plus two coats of finish with a smooth mohair roller.

**NB.** Perforated Gyptone products must not be spray-painted as this reduces the acoustic effect.

- 1 Existing wall, ceiling structure, floor structure
- 2 AVU 45 steel section
- 3 AVZ 45 steel section
- 4 45 mm Mineral wool
- 5 12.5 mm Gyproc Robust
- 6 Gyptone BIG, Edge B1 perforated plasterboard



# Wall mounted absorber solution for acoustic improvement of existing rooms

## Gyptone BIG mounted on an existing wall – invisible joints

### Installation (for carpenters/dry-liners):

- Mark out for the positioning of AVU 45 and AVZ 45 steel sections.
- Shape AVU 45 and fasten it to the underlying layer at a maximum screw distance of 300 mm.
- Shape and horizontally fix the AVZ 45 sections at a maximum screw distance of 300 mm. The distance between the horizontal AVZ 45 sections is 300 mm.
- Shape the 45 mm mineral wool between the steel sections.
- Fix Gyptone BIG, so that any short board edges are connected over the horizontal AVZ 45 sections.
- The screw distance is max. 200 mm along the board edges and 300 mm on the other steel sections.
- Shape narrow plaster strips and fasten to AVU 45.
- Screws for Gyptone BIG plus plaster strips = QSTR 25.

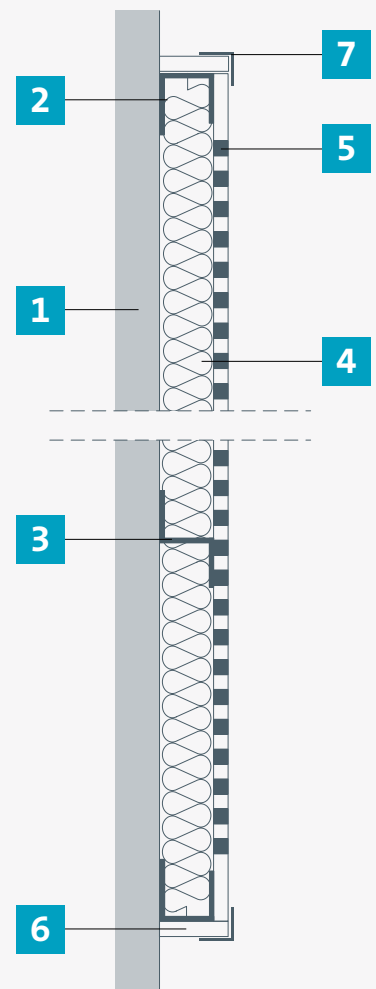
### Finishing (for painters/finishers):

- Use Gyproc ProMix filling system and Gyproc G93 paper strips for all joints.
- The corners must be done with Gyproc No-coat UltraFlex which is added to the filler.
- All joints, screw holes and edges are plastered until a smooth and even surface is achieved.
- Painting is done by priming plus two coats of finish with a smooth mohair roller.

**NB.** Perforated Gyptone products must not be spray-painted as this reduces the acoustic effect.

- 1 Existing wall structure
- 2 AVU 45 steel section
- 3 AVZ 45 steel section
- 4 45 mm mineral wool
- 5 Gyptone BIG, Edge B1 perforated plasterboard
- 6 Shaped plaster strips
- 7 Gyproc No-coat UltraFlex

# 3



# Wall panel for acoustic improvement of existing room.

## Gyptone® INSTANT acoustic panel for wall



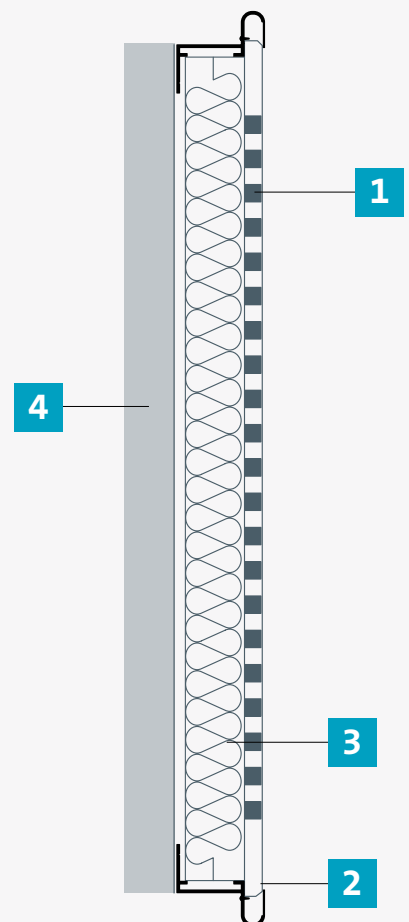
### Product description

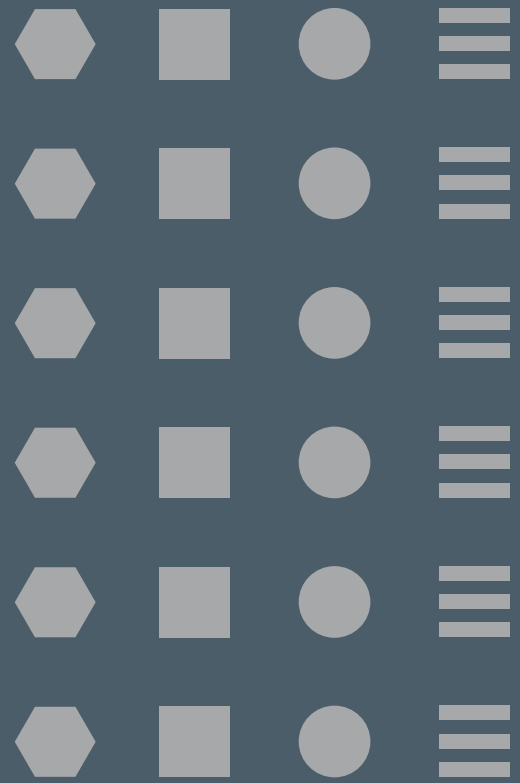
Gyptone INSTANT acoustic panel is a very robust and flexible wall panel solution for acoustic regulation in existing rooms. The panel is suitable for class rooms or office rooms and will reduce reverberation time and increase speech intelligibility. The panel is available in two sizes: 600x2400 mm and 600x3600 mm.

The panel comes with pre-painted frame and tiles and can be mounted on the wall in 20 minutes.

- Very easy and fast to install
- Frame ready made and pre-painted
- No filling and no painting.
- Can be used in all existing rooms to reduce reverberation time.
- Durable robust surfaces – Hard and washable.
- Decorative – tiles can be painted in colors.

- 1 Gyptone perforated tile
- 2 Painted alu-frame
- 3 Mineral wool – 45 mm thickness
- 4 Existing construction





## Design and technical information

### Product description

Gyptone products are robust acoustic boards for ceilings and walls. Perforations in the acoustic boards are made with great precision. The boards are backed with acoustic felt.

### Surface

Gyptone products are supplied untreated. Surface treatment is done on the building site after plastering is finished. The boards must be painted with a short-haired mohair roller. The boards must not be spray-painted as this significantly impairs sound absorption.

### Format of assembled wall absorbers

#### – general information

The different solutions give complete freedom to decide the right format which suits the actual building project.

### Strained zones

In zones where moderate static strain can occur AVZ 45 sections must always be fixed so that the distance between the steel

base is 300 mm cc. Normally such an area can be defined as being under the top edge of a door.

### Fire

All Gyptone products are classified as A2-s1, d0.

### Dimensional stability

Gyptone products should be installed and used in rooms with a relative humidity not exceeding 70% for prolonged periods.

### Weight

Perforated Gyptone products, approx. 8 kg/m<sup>2</sup>

### Cleaning

Dependent on the chosen surface treatment.

### Maintenance

Repainting should be done with a short haired roller. The boards must not be spray-painted.



Gyptone acoustic ceilings are tested by the Danish Indoor Climate Labelling Association. Discarded acoustic ceilings can be completely reused in the production of new gypsum products.

More information can be found on

[www.gyptone.com](http://www.gyptone.com)

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