

**Gyptone®**

ACTIV  
air

# Acoustic Wall Solutions

Get the perfect feeling

  
SAINT-GOBAIN

# Enhanced Acoustic Indoor Environment

The use of wall absorbers can significantly enhance the acoustic comfort of a room by eliminating flutter echoes - those repetitive sound waves bouncing between perpendicular walls - and reducing the overall reverberation time.

This specification presents three acoustic wall solutions designed to improve the acoustics of existing spaces. Gyptone® integrated acoustic walls seamlessly incorporate sound-absorbing properties into new partition or exterior walls, ensuring optimal acoustic performance directly within the wall surface.

## Guidelines for Positioning and Dimensioning

### Recommendations

Gyptone® offers both integrated and add-on solutions to meet specific room requirements. **Solutions 1 and 2** feature integrated wall absorbers in two different thicknesses, ideal for new builds or spaces with room to add an acoustic wall, with performance improving as mineral wool thickness increases. **Solution 3**, designed as an add-on for existing rooms with limited space, enhances acoustics without needing an additional wall.

Gyptone® acoustic walls provide high design value and come in a range

of perforations that affect sound absorption performance. Generally, 10-15% of a room's absorptive material should be placed on walls for balanced sound distribution.

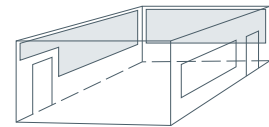
### Positioning of Wall Absorbers

To eliminate flutter echoes, wall absorbers should be installed on two perpendicular wall surfaces to effectively reduce sound reflections in both longitudinal and latitudinal directions. The required surface area of wall absorbers is determined by the specific reverberation time requirements of the space.

Refer to the example below for guidance on the optimal placement.

## Example

### Optimum Positioning of Gyptone® Acoustic Wall Solutions



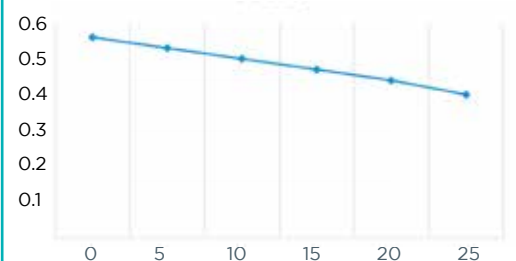
### Materials and structures used in a regular room of 56 m<sup>2</sup> (7x8x3 m):

- *Ceiling:* Gyptone® BIG™ Quattro 41, 200 mm suspended
- *Walls:* 2 x 13 mm plasterboard with underlying mineral wool
- *Floor:* Linoleum or vinyl glued to concrete
- *Windows:* double-pane glass
- *Doors:* Heavy wooden doors
- *Wall absorber:* Gyptone® BIG™ Quattro 41 in Solution 2 with 45-mm mineral wool
- *Furnishing:* Standard layout of classroom

### Acoustic Effect

Reduction in the average reverberation time by increasing the area of wall absorbers in above example:

Reverberation time, sec.



Area of wall absorbers, m<sup>2</sup>



## ABSORPTION VALUES

The measurements meet the requirements of ISO 354

Gyptone® wall absorbers installed on steel backing with underlying mineral wool	125 Hz	250 Hz	500 Hz	1,000 Hz	2,000 Hz	4,000 Hz	NRC	$\alpha_w$
BIG™ Line 5 - 25 mm mineral wool	0.47	0.54	0.71	0.70	0.64	0.61	0.65	0.70
BIG™ Line 5 - 45 mm mineral wool	0.60	0.57	0.68	0.67	0.63	0.56	0.65	0.65
BIG™ Line 6 - 25 mm mineral wool	0.45	0.57	0.66	0.60	0.51	0.44	0.60	0.55
BIG™ Line 6 - 45 mm mineral wool	0.64	0.61	0.63	0.59	0.51	0.47	0.55	0.55
BIG™ Quattro 40 - 25 mm mineral wool	0.38	0.59	0.85	0.85	0.77	0.65	0.75	0.80
BIG™ Quattro 40 - 45 mm mineral wool	0.55	0.72	0.83	0.83	0.78	0.72	0.80	0.85
BIG™ Quattro 41 - 25 mm mineral wool	0.40	0.58	0.76	0.75	0.69	0.60	0.70	0.75
BIG™ Quattro 41 - 45 mm mineral wool	0.58	0.66	0.74	0.72	0.69	0.62	0.70	0.70
BIG™ Quattro 42 - 25 mm mineral wool	0.49	0.53	0.58	0.54	0.50	0.45	0.55	0.55
BIG™ Quattro 42 - 45 mm mineral wool	0.63	0.54	0.55	0.52	0.50	0.47	0.50	0.55
BIG™ Quattro 43 - 25 mm mineral wool	0.45	0.53	0.71	0.74	0.75	0.73	0.70	0.75
BIG™ Quattro 43 - 45 mm mineral wool	0.59	0.56	0.69	0.72	0.74	0.69	0.70	0.75
BIG™ Quattro 44 - 25 mm mineral wool	0.44	0.58	0.74	0.78	0.81	0.80	0.70	0.80
BIG™ Quattro 44 - 45 mm mineral wool	0.60	0.64	0.75	0.78	0.79	0.76	0.75	0.80
BIG™ Quattro 46 - 25 mm mineral wool	0.47	0.59	0.60	0.54	0.48	0.40	0.55	0.55
BIG™ Quattro 46 - 45 mm mineral wool	0.63	0.61	0.59	0.53	0.47	0.43	0.55	0.55
BIG™ Quattro 47 - 25 mm mineral wool	0.56	0.37	0.35	0.34	0.36	0.32	0.35	0.35
BIG™ Quattro 47 - 45 mm mineral wool	0.56	0.35	0.33	0.33	0.36	0.33	0.35	0.35
BIG™ Sixto 63 - 25 mm mineral wool	0.49	0.57	0.67	0.64	0.62	0.59	0.65	0.65
BIG™ Sixto 63 - 45 mm mineral wool	0.59	0.61	0.66	0.63	0.60	0.60	0.65	0.65

# ACOUSTIC WALLS

## New Partitions, 30 mm

Gyptone® BIG™ Integrated Acoustic Wall

*Complete floor-to-ceiling wall  
with invisible joints*

### Installation For Carpenters/Dry-Liners

- **Choose an appropriate wall structure**, considering fire safety, load, sound insulation, and height requirements. This forms the foundation for the acoustic wall cladding.
- **Shape and secure GK-C profiles** to the top and bottom of the construction, ensuring maximum screw spacing of 400 mm.
- **Attach GK 24** direct fixing brackets horizontally to the existing wall using suitable fixings, with a maximum center distance of 300 mm.
- **Install GK 1 sections** horizontally by clicking them into the GK 24 brackets. Maintain horizontal spacing of 300 mm between the sections.
- **Insert 25 mm mineral wool** between the steel sections for sound insulation.
- **Install Gyptone® BIG™ boards**: Position vertically or horizontally, ensuring full support along the short edges of the boards.
- **Install Gyproc Robust boards**: Apply to lower wall sections that are more prone to mechanical impact.
- **Fastening guidelines**: Use screws with a maximum spacing of 200 mm along the board edges and 300 mm elsewhere. Secure with QSTR 25 screws for both Gyptone® BIG™ and Gyproc Robust boards.

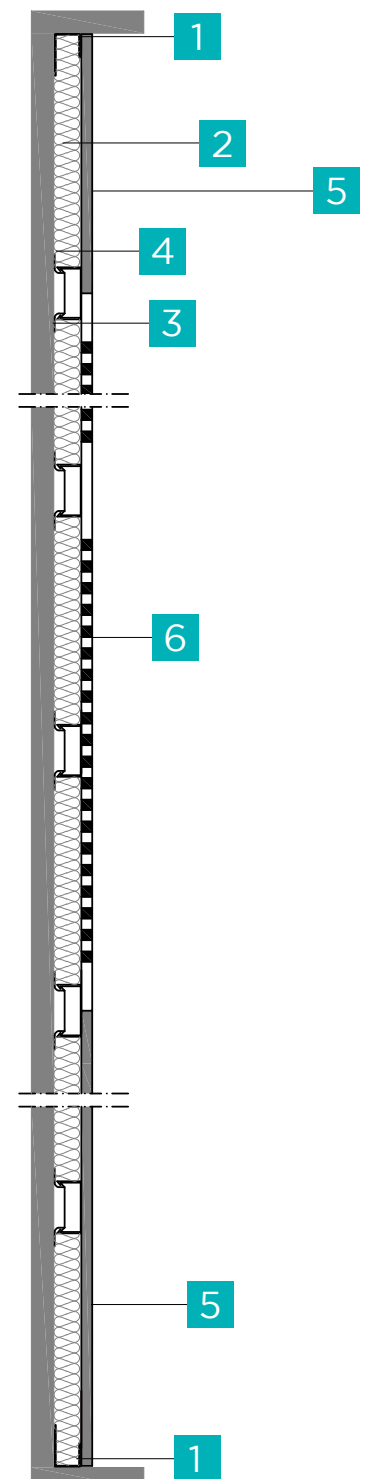
### Finishing For Painters/Finishers

- **Joint Treatment**: Use the Gyproc ProMix filling system or similar. Reinforce all joints with Gyproc G93 paper strips.
- **Surface Preparation**: Plaster all joints, screw holes, and edges to ensure a smooth and even surface.
- **Painting**: Prime the surface, then apply two coats of finish paint using a smooth, short-haired mohair roller.

**Note.** Perforated Gyptone® products must not be spray-painted as this compromises their acoustic performance.

- 1 Profile GK-C
- 2 25-mm mineral wool
- 3 GK 24 bracket
- 4 GK1 metal profile
- 5 Drywall or Gyproc Robust
- 6 Gyptone® BIG™, perforated plasterboard

30-mm partition w/ 25-mm mineral wool



# ACOUSTIC WALLS

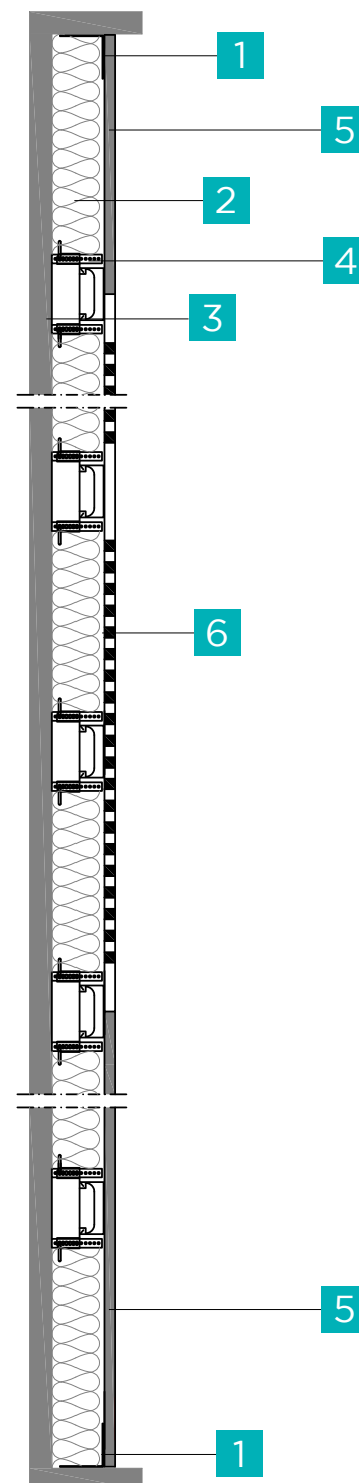
## New Partitions, 55 mm

### Gyptone® BIG™ Integrated Acoustic Wall

*Complete floor-to-ceiling wall  
with invisible joints*



55-mm partition w/ 45-mm mineral wool



#### Installation For Carpenters/Dry-Liners

- **Wall Structure:** Select a suitable wall structure, considering fire safety, load-bearing capacity, sound insulation, and height requirements. This structure forms the foundation for the acoustic wall cladding.
- **Profile Installation:** Shape and secure H 50/50 profiles to the top and bottom constructions, ensuring a maximum screw spacing of 400 mm.
- **Bracket Placement:** Attach GK 23 adjustable brackets horizontally to the existing wall using appropriate fixings, maintaining a center distance no greater than 300 mm.
- **Section Installation:** Install GK 1 sections horizontally by clicking them into the GK 23 brackets, with a horizontal spacing of 300 mm between sections.
- **Insulation:** Insert 45 mm mineral wool between the steel sections for optimal sound absorption.
- **Install the Gyptone® BIG™ boards** either vertically or horizontally, ensuring full support along the short edges.
- **Apply Gyproc Robust** boards to the lower sections of the wall, where increased mechanical impact is expected.
- **Fastening Guidelines:** Use screws with a maximum spacing of 200 mm along the edges of all boards and 300 mm on other steel sections. Use QSTR 25 screws for both Gyptone® BIG™ and Gyproc Robust boards.

#### Finishing For Painters/Finishers

- **Joint Treatment:** Apply Gyproc ProMix filling system or similar. Reinforce with Gyproc G93 paper strips on all joints.
- **Surface Preparation:** Plaster all joints, screw holes, and edges. Achieve a smooth and even surface throughout.
- **Painting:** Apply primer. Follow with two coats of finish paint. Use a smooth, short-haired mohair roller for application

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

- 1 Profile H 50/50
- 2 45-mm mineral wool
- 3 Adjustable bracket GK 23
- 4 Metal profile GK 1
- 5 Drywall or Gyproc Robust
- 6 Gyptone® BIG™ perforated plasterboard

# WALL-MOUNTED ABSORBER SOLUTIONS

## Acoustic Improvement in Existing Rooms

Gyptone® BIG™

*Visible or invisible joints*

### Installation

#### For Carpenters/Dry-Liners

- **Wall Structure:** Choose a suitable wall structure that meets fire safety, load-bearing, sound insulation, and height requirements. This will serve as the foundation for the acoustic wall cladding.
- **Profile Installation:** Secure GK-C profiles along all sides of the designated acoustic wall, ensuring a maximum screw spacing of 400 mm.
- **Bracket Placement:** Attach GK 24 direct fixing brackets horizontally to the existing wall with appropriate fixings, maintaining a center distance of no more than 300 mm.
- **Section Installation:** Install GK 1 sections horizontally, securing them by clicking the sections into the GK 24 brackets. Maintain a horizontal spacing of 300 mm between sections.
- **Insulation:** Insert 25 mm mineral wool between the steel sections for sound absorption.
- **Install Gyptone® BIG™ boards** either vertically or horizontally, ensuring full support along the short edges of the BIG™ boards.
- **Fastening Guidelines:** Screw spacing should not exceed 200 mm along board edges and 300 mm on other steel sections. Use QSTR 25 screws for Gyptone® BIG™ boards.

### Finishing

#### For Painters/Finishers

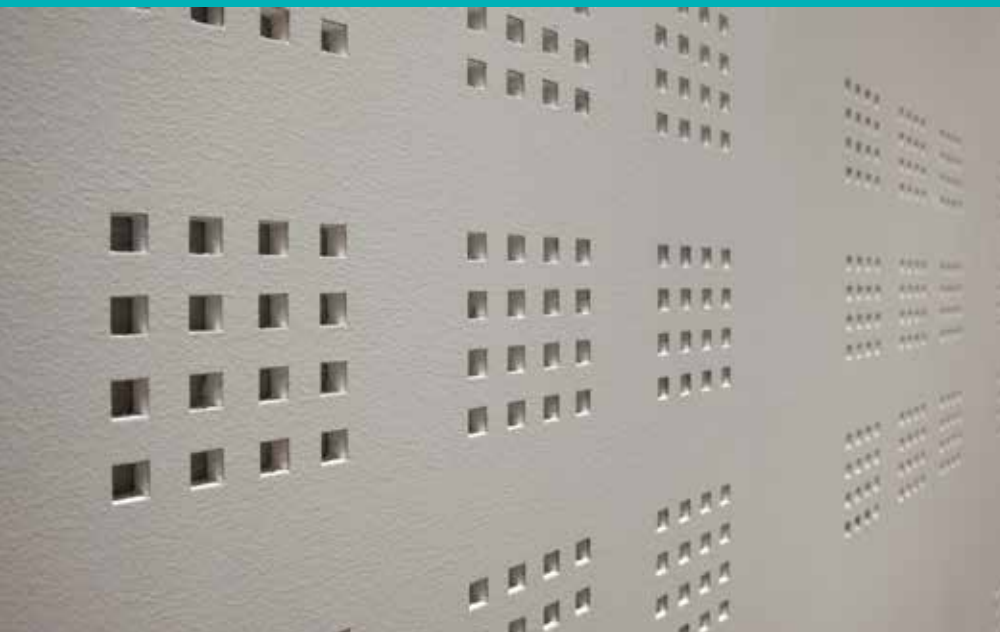
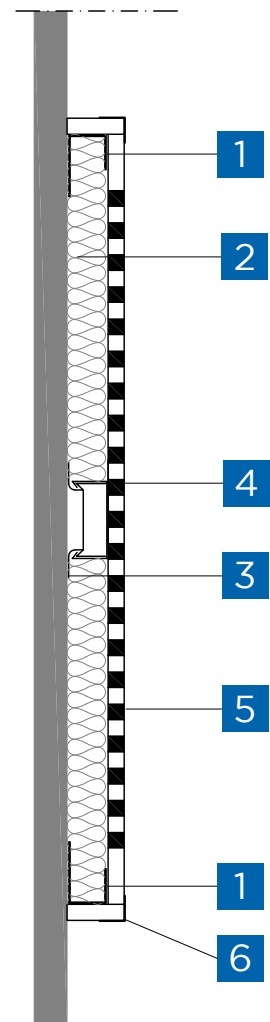
- **Joint Treatment:** When using Gyptone® BIG™ boards, apply the Gyproc ProMix filling system or similar and reinforce all joints with Gyproc G93 paper strips.
- **Surface Preparation:** Plaster all joints, screw holes, and edges for Gyptone® BIG™ boards. Ensure a smooth and even surface throughout.
- **Painting:** Prime the surface, then apply two coats of finish paint using a smooth short-haired mohair roller.

**Note.** Perforated Gyptone® products should not be spray-painted, as this will diminish their acoustic performance.

- 1 Profile GK-C
- 2 25-mm mineral wool
- 3 Bracket GK 24
- 4 Profile GK 1
- 5 Gyptone® BIG™ perforated plasterboard
- 6 Shaped plaster stips
- 7 Gyproc No-Coat Flex or similar corner filler profile



30-mm partition w/ 25-mm mineral wool





### **Acoustic Optimization for New and Existing Spaces**

Gyptone® acoustic wall solutions provide an effective means of acoustic regulation, ideal for spaces where reduced reverberation times and enhanced speech intelligibility are essential.

Designed for ease of installation, Gyptone® acoustic walls feature a durable, impact-resistant surface and can be painted in any color to suit your design needs.



Get in touch today  
to find out more  
about Gypsum Wall  
& Ceilings Solutions.

Gyptone® ceilings and wall solutions can be used in nearly any room that requires excellent acoustics and design. Our systems provide a good indoor air quality and strong surfaces with a very long lifespan based on sustainable manufacturing.

Gyptone® is produced and marketed by Saint-Gobain.

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