

HIBOND 55 ACOUSTIC PERFORMANCE

SCOPE

This section provides guidelines for specifiers and constructors who require noise control systems for residential applications such as separate multi-unit dwellings or single dwellings, commercial applications such as retail spaces, offices and institutional buildings. It is not intended that these guidelines replace the need for specialist acoustic design to meet the specified sound insulation performance for the building.

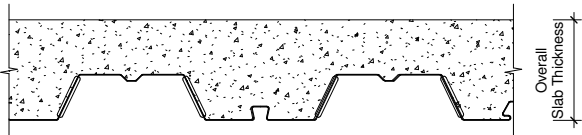
A Dimond Structural Noise Control System consists of a Hibond 55 composite floor slab with a selected USG ceiling system, GIB® standard plasterboard ceiling linings, selected floor coverings and the specific inclusion of a cavity absorber. It must be noted that the floor covering is an essential aspect of the performance of the system.

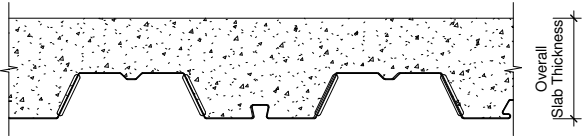
The information in this section is based on laboratory testing of a 120mm Hibond 55 composite floor slab carried out by the University of Auckland, Acoustics Testing Service and opinions on expected acoustic performance by Marshall Day Acoustics Limited Report Rp002 R00_2006476. More information is available on request.

The systems set out in this section provide the expected sound transmission performance under laboratory conditions. However in practical applications on site there is a significant element of subjectivity to interpreting noise levels within rooms. No matter how low a sound level might be, if it is intrusive upon a person's privacy, then it is likely to cause annoyance. No practical system can guarantee complete sound insulation and completely satisfy everyone.

Introduction of light fittings, vents or other floor or ceiling penetrations will reduce the acoustic performance of the system, requiring specific assessment in each case.

Hibond 55 Composite Floor Slab - Bare Composite Floor Slab

System Description: Steel Decking: 0.75, 0.95mm Hibond 55 Composite Floor Slab: Overall thickness (mm)	
Overall Composite Floor Slab Thickness (mm)	STC
120	42
140	44
160	47
180	49
200	51

System Description: Steel Decking: 0.75, 0.95mm Hibond 55 Composite Floor Slab: 120mm overall thickness		
Floor Surface Treatment	STC	IIC
No Covering	42	23
15mm strip timber on Bostic Ultraset adhesive	42	40
15mm strip timber on 1mm polyethylene foam	42	44
6mm Cork flooring	42	42
Gerfloor Taralay Comfort Vinyl, 3.1mm thick	42	43
Carpet, nylon or wool 40oz without underlay	42	66
Carpet, wool 60oz without underlay	42	67
Carpet, wool or nylon on 8mm foam underlay	42	71

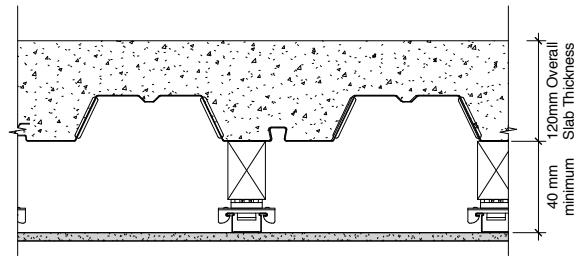
Notes:

- The acoustic opinion has a margin of error of +/- 3 STC/IIC points
- IIC result depends on the quality of the floor covering material and installation
- All adhesives must be applied to manufacturers instructions, and Bostic Ultraset adhesive dry film thickness must not be less than 1.9mm
- It is prudent to allow a 5 point reduction for expected field STC and IIC when compared to the above performance expected in laboratory conditions. This is considered a reasonable compensation to allow for flanking paths at junctions and construction variations.

Hibond 55 Composite Floor Slab with Direct Fix Ceiling System - Non-Insulated

System Description:

Steel Decking: 0.75, 0.95mm Hibond 55
 Composite Floor Slab: 120mm overall thickness
 Ceiling System: Potters Direct Fix with sound isolation clips
 USG furring channel at maximum 600mm centres
 Ceiling Lining: 13mm GIB standard plasterboard in one or two layers

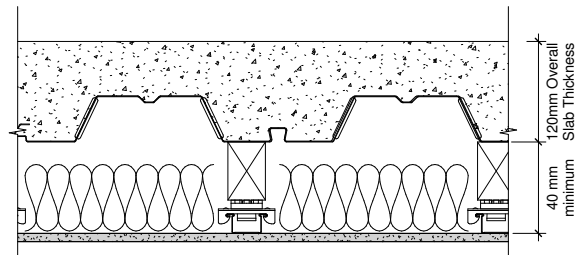


Floor Surface Treatment	Ceiling Lining			
	One Layer 13mm GIB		Two Layers 13mm GIB	
	STC	IIC	STC	IIC
No Covering	54	39	57	41
15mm strip timber on Bostic Ultraset adhesive	54	46	57	48
15mm strip timber on 1mm polyethylene foam	54	47	57	49
6mm Cork flooring	54	47	57	49
Gerfloor Taralay Comfort Vinyl, 3.1mm thick	54	49	57	51
Carpet, nylon or wool 40oz without underlay	54	60	57	62
Carpet, wool 60oz without underlay	54	62	57	64
Carpet, wool or nylon on 8mm foam underlay	54	66	57	68

Hibond 55 Composite Floor Slab with Direct Fix Ceiling System - Insulated

System Description:

Steel Decking: 0.75, 0.95mm Hibond 55
 Composite Floor Slab: 120mm overall thickness
 Insulation Blanket: 75mm thick R1.8 Pink Batts
 Ceiling System: Potters Direct Fix with sound isolation clips
 USG furring channel at maximum 600mm centres
 Ceiling Lining: 13mm GIB standard plasterboard in one or two layers



Floor Surface Treatment	Ceiling Lining			
	One Layer 13mm GIB		Two Layers 13mm GIB	
	STC	IIC	STC	IIC
No Covering	61	42	64	44
15mm strip timber on Bostic Ultraset adhesive	61	54	64	56
15mm strip timber on 1mm polyethylene foam	61	57	64	59
6mm Cork flooring	61	56	64	58
Gerfloor Taralay Comfort Vinyl, 3.1mm thick	61	56	64	58
Carpet, nylon or wool 40oz without underlay	61	67	64	69
Carpet, wool 60oz without underlay	61	69	64	71
Carpet, wool or nylon on 8mm foam underlay	61	73	64	75

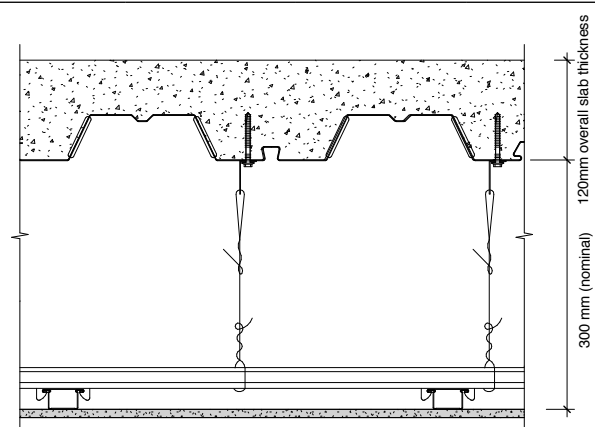
Notes:

1. The acoustic opinion has a margin of error of +/- 3 STC/IIC points
2. IIC result depends on the quality of the floor covering material and installation
3. All adhesives must be applied to manufacturers instructions, and Bostic Ultraset adhesive dry film thickness must not be less than 1.9mm
4. It is prudent to allow a 5 point reduction for expected field STC and IIC when compared to the above performance expected in laboratory conditions. This is considered a reasonable compensation to allow for flanking paths at junctions and construction variations.

Hibond 55 Composite Floor Slab with Suspended Ceiling System - Non-Insulated

System Description:

Steel Decking: 0.75, 0.95mm Hibond 55
 Composite Floor Slab: 120mm overall thickness
 Ceiling System: Don suspended ceiling system
 USG furring channel at maximum 600mm centres
 Ceiling Lining: 13mm GIB standard plasterboard in one or two layers

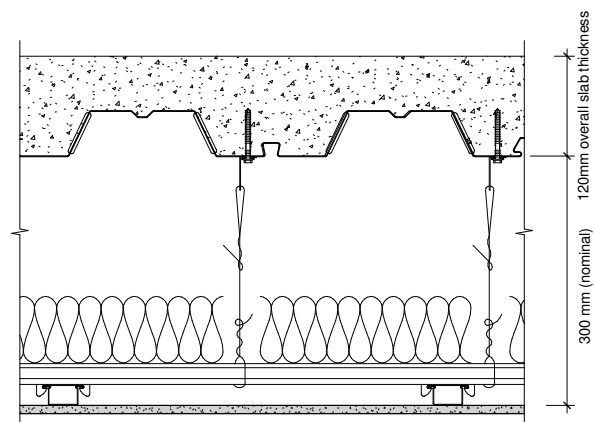


Floor Surface Treatment	Ceiling Lining			
	One Layer 13mm GIB		Two Layers 13mm GIB	
	STC	IIC	STC	IIC
No Covering	59	35	62	37
15mm strip timber on Bostic Ultraset adhesive	59	50	62	52
Ceramic tile on Bostic Ultraset adhesive	59	51	62	53
6mm Cork flooring	59	53	62	55
Gerfloor Taralay Comfort Vinyl, 3.1mm thick	59	52	62	54
Carpet, nylon or wool 40oz without underlay	59	63	62	65
Carpet, wool 60oz without underlay	59	65	62	67
Carpet, wool or nylon on 8mm foam underlay	59	69	62	71

Hibond 55 Composite Floor Slab with Suspended Ceiling System - Insulated

System Description:

Steel Decking: 0.75, 0.95mm Hibond 55
 Composite Floor Slab: 120mm overall thickness
 Insulation Blanket: 75mm thick R1.8 Pink Batts
 Ceiling System: Don suspended ceiling system
 USG furring channel at maximum 600mm centres
 Ceiling Lining: 13mm GIB standard plasterboard in one or two layers



Floor Surface Treatment	Ceiling Lining			
	One Layer 13mm GIB		Two Layers 13mm GIB	
	STC	IIC	STC	IIC
No Covering	61	43	64	45
15mm strip timber on Bostic Ultraset adhesive	61	62	64	64
Ceramic tile on Bostic Ultraset adhesive	61	55	64	57
6mm Cork flooring	61	64	64	66
Gerfloor Taralay Comfor Vinyl, 3.1mm thick	61	66	64	68
Carpet, nylon or wool 40oz without underlay	61	75+	64	75+
Carpet, wool 60oz without underlay	61	75+	64	75+
Carpet, wool or nylon on 8mm foam underlay	61	75+	64	75+

Notes:

1. The acoustic opinion has a margin of error of +/- 3 STC/IIC points
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