



#### Introduction

This technical manual presents a collection of representative details for light gauge steel construction in typical medium rise multi occupancy buildings. The details included are intended to serve as general guidelines and indicative examples for designing and constructing with the Remagin Medium-Rise System.

It is important to note that these details are representative in nature and are Remagin's recommended approach to common typical interfaces.

The performance of any construction detail can be influenced by a variety of factors including site conditions, material variations, and specific project requirements. Therefore, while these details provide a useful reference point, they should be adapted and verified by the project Principal Design team to ensure they meet the unique demands of each project.

By using this manual, users acknowledge that the provided details are typical and indicative, and it is their responsibility to conduct the necessary evaluations and modifications to suit their specific project needs.

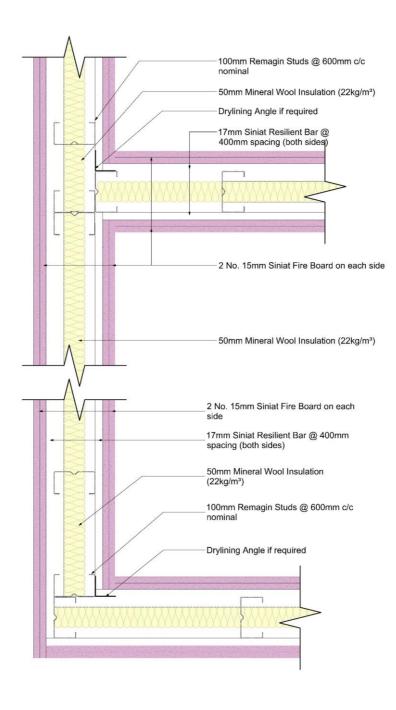
The systems and their various interfaces shown in this Manual are:

- SWR-015 Typical Single Stud Loadbearing Separating Wall
- IW-001 Typical Single Stud Internal Loadbearing Wall
- EW-001 Typical Single Stud External Loadbearing Wall
- SigDeck100 Composite Floor System

These systems are representative of a typical ≤REI6O structure and are generally suitable for buildings up to 6-7 storeys in height, subject to confirmation by the Principal Design team.

Summaries of each system's individual components and performance is included within the Appendix.



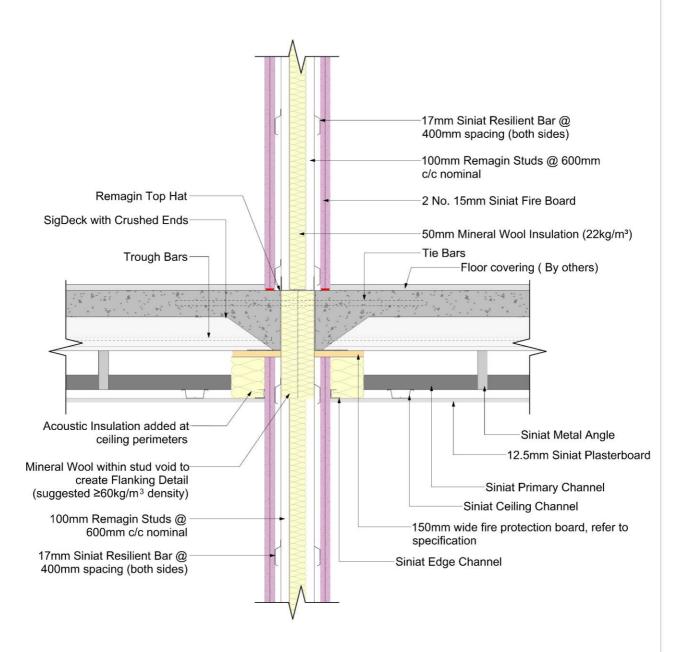


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SWR-015 SEPARATING WALL SYSTEM SIGDECK INTERFACE



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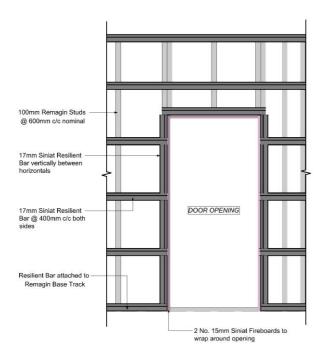
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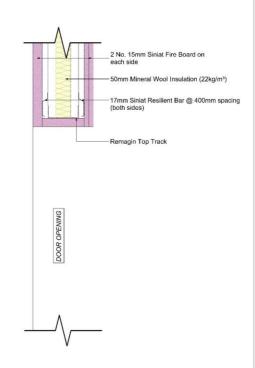
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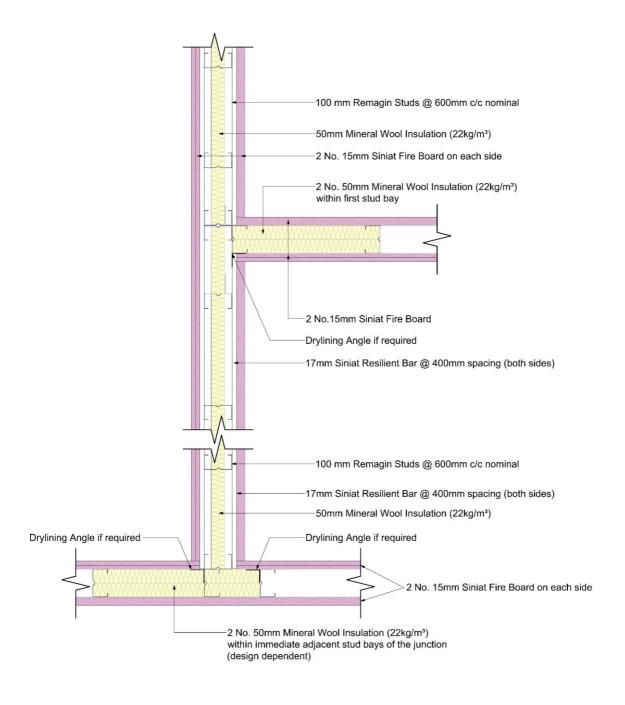


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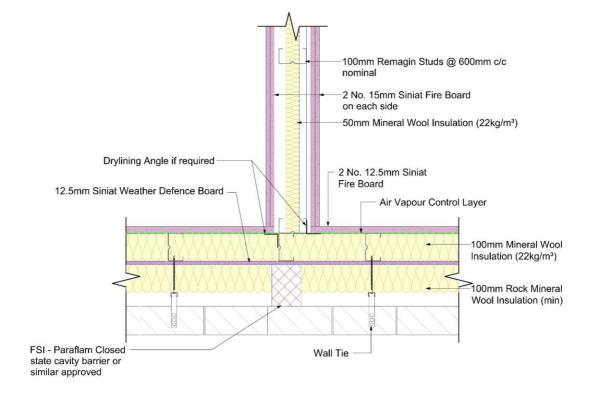
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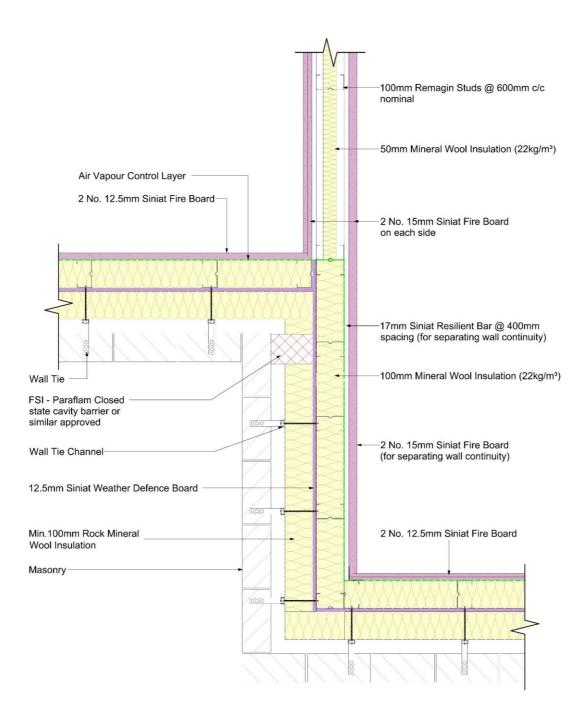


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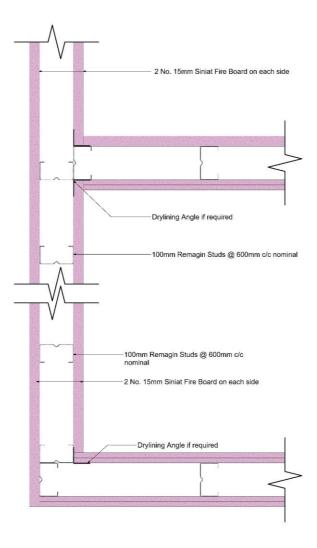
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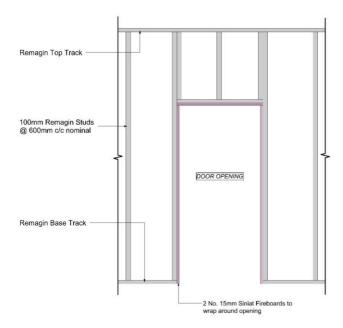
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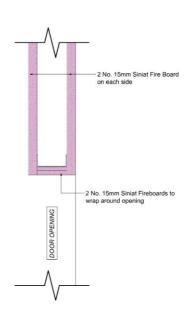
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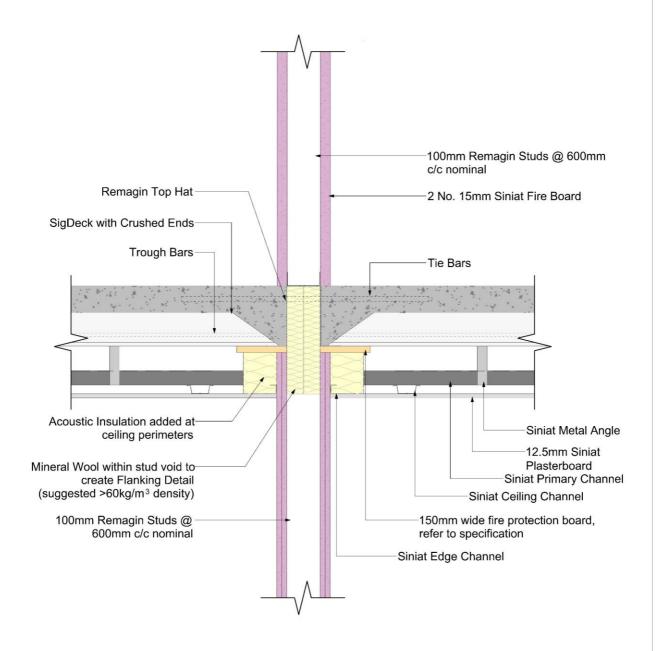


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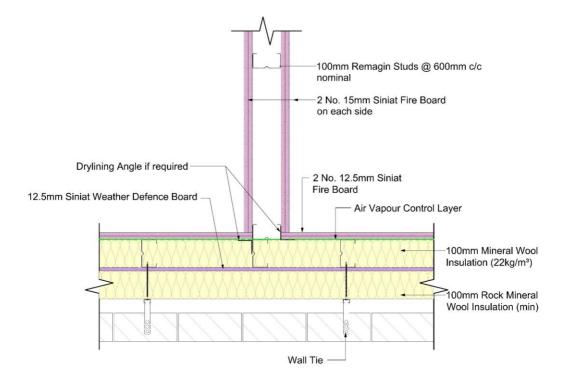
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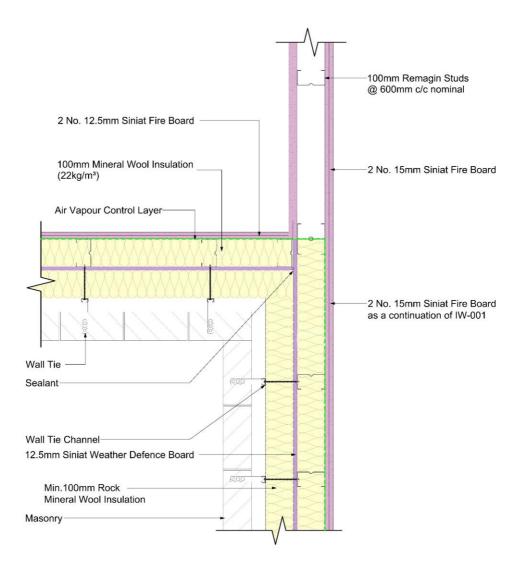




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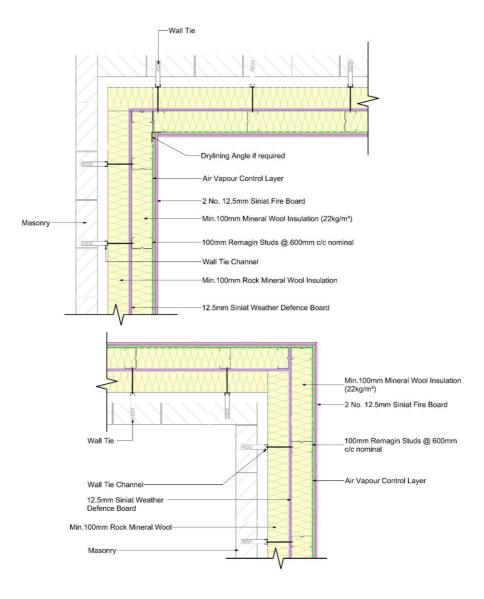


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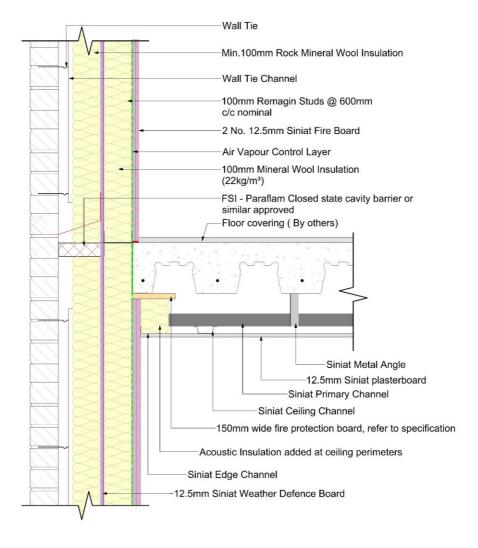
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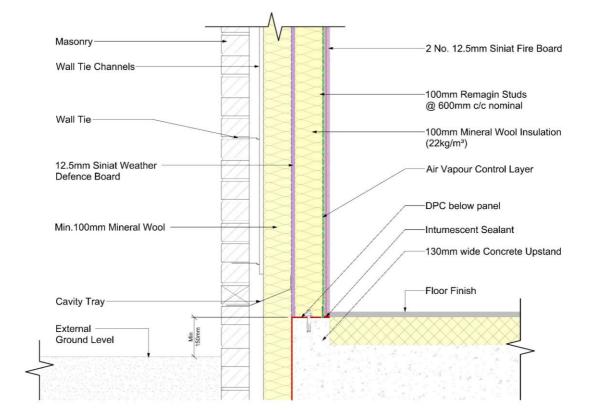
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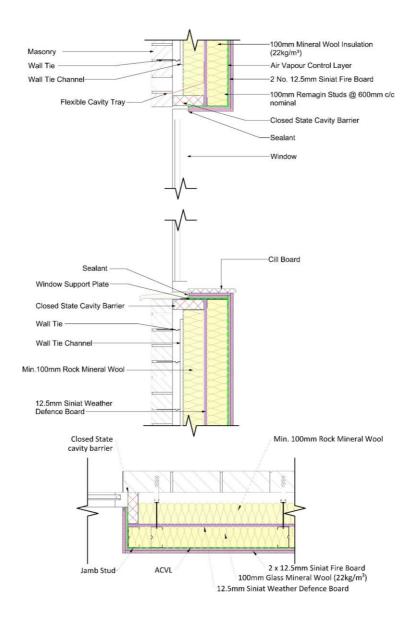
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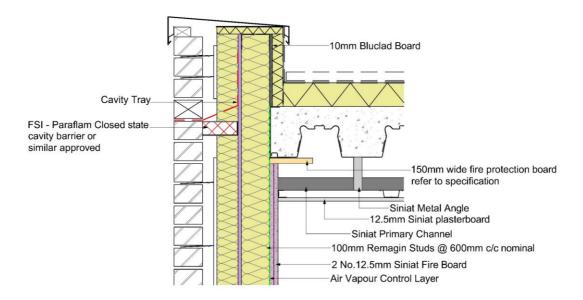




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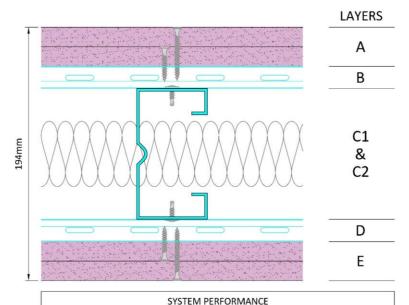
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# Appendix A System Substantiation Sheets



#### SYSTEM SUBSTANTIATION SHEET



	STSTEIVI PERFORIVIANCE			
Fire Resistance (EN 1365-1:2012)	REI 90			
Sound Insulation (R <sub>w</sub> (C <sub>tr</sub> ) dB)	59(-6) dB (Estimated, +/-3dB)			
Thermal Performance (W/m²K)	NA			
	FIRE INFORMATION			
Test Reference	TR20240322-004508			
Test Lab & Date	UKTC 13/06/2024			
Tested Load (kN/stud)	16.7			
Θ <sub>ref</sub> (°C)	C) @60 minutes: 244, @90 minutes: 577			
	SYSTEM LAYERS			
Layer A	2 x 15mm Siniat Fire Board			
Layer B	Siniat RBD3000 Resilient Bars at 400mm c/c			
Layer C1	100x53x1.2mm C Stud (100SN12) at 600mm c/c			
Layer C2	50mm Mineral Wool (~22kg/m³)			
Layer D	Siniat RBD3000 Resilient Bars at 400mm c/c			
	2 x 15mm Siniat Fire Board			

12mm Wafer Head Self-Drilling Screws

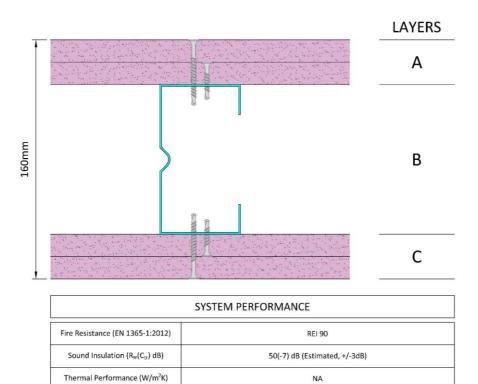
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Plasterboard Fixings

Resilient Bar Fixings



#### SYSTEM SUBSTANTIATION SHEET



	FIRE INFORMATION
Test Reference	TR20240603-000809
Test Lab & Date	UKTC 05/09/2024
Tested Load (kN/stud)	16.7
Θ <sub>ref</sub> (°C)	@60 minutes: 243, @90 minutes: 402
	SYSTEM LAYERS
Layer A	2 x 15mm Siniat Fire Board

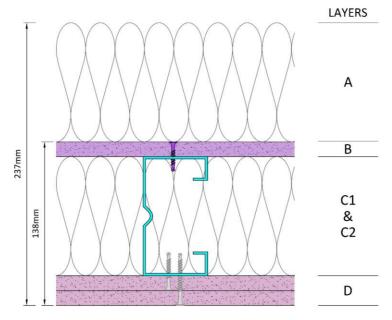
100x53x1.2mm C Stud (100SN12) at 600mm c/c
2 x 15mm Siniat Fire Board

Plasterboard Fixings	25mm Self-Drilling Screws at 600mm c/c (1st layer) 42mm Self-Drilling Screws at 300mm c/c (2nd layer)
Horizontal Board Joints	No additional joint reinforcement required

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## SYSTEM SUBSTANTIATION SHEET



	SYSTEM PERFORMANCE		
Fire Resistance (EN 1365-1:2012)	REI 60 (I→O) & REI 120 (O→I)		
Sound Insulation (R <sub>w</sub> (C <sub>tr</sub> ) dB)	48(-7) dB (Estimated, +/-3dB) - excl. facade finishes		
Thermal Performance (W/m²K)	0.21 (excl. facade fixings or external cladding/bracketry)		
*	FIRE INFORMATION		
Test Reference	22757A (I→O) & EUI-23-000593 (O→I)		
Test Lab & Date	Warringtonfire (Tisselt) 07/04/2023 & Efectis (Belfast) 01/12/2023		
Tested Load (kN/stud) 18 & 20			
Θ <sub>ref</sub> (°C)	@60 minutes: <220		
170	SYSTEM LAYERS		
Layer A	[min.] 100mm Mineral Wool (~120kg/m³)		
Layer B	1 x 12.5mm Siniat Weather Defence Board		
Layer C1	100x53x1.2mm C Stud (100SN12) at 600mm c/c		
Layer C2	100mm Mineral Wool (~22kg/m³)		
Layer D	2 x 12.5mm Siniat Fire Board		
	FIXINGS & ACCESSORIES		
Plasterboard Fixings	25mm & 42mm Self-Drilling Screws at 300mm c/c (both layers)		
Sheathing Board Fixings	25mm Wet Area Self-Drilling Screws at 200mm c/c		
Horizontal Board Joints	No additional joint reinforcement required		

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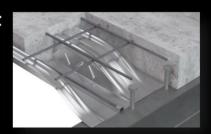
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# SigDeck100 - Technical Datasheet

## Description

SigDeck is a unique composite floor system from Remagin. The S450 crushed end trapezoidal deck is 100mm deep and available in 0.8mm, 0.9mm, 1.1mm, and 1.4mm gauges.

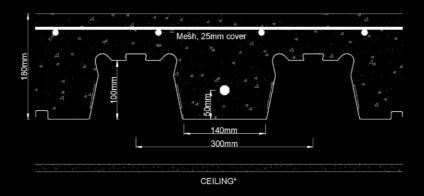


SigDeck has an outstanding unpropped capacity for up to 5.5m spans and uses 180mm deep concrete, which provides excellent flexibility during construction for other trades below the floors. SigDeck can be designed for up to 2-hour fire resistance with varying load types and spans.

Slab Depth	Volume of Concrete	Weight of	Weight of Decking and reinforcement	
(mm)	(m³/m²)	Wet (kN/m²)	Dry (kN/m²)	(kN/m²)
180 (excl ponding)	0.127	3.23	3.1	0.185-0.239
180 (max span incl ponding)	0.142	3.63	3.49	0.185-0.239

#### **Profile Properties**

Nominal Gauge (mm)	Design Gauge (mm)	Steel Grade (N/mm²)	Profile Weight kN/m <sup>2</sup> (kg/m <sup>2</sup> )	Height of neutral axis (mm)	Area of Steel (mm²/m)	Moment of Inertia (cm <sup>4</sup> /m)
0.8	0.76	450	0.112 (11.42)	53.9	1418	266
0.9	0.86	450	0.127 (12.95)	54.8	1604	281
1.1	1.06	450	0.156 (15.92)	54.9	1977	347
1.4	1.36	450	0.20 (20.42)	55.05	2537	445



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Decking Type	Construction stage slab depth at mid span (deflection mm)						
	3.5m	4m	4.5m	5m			
180SIG10008	180.5 (0.5)	188 (8)	N/A	N/A			
180SIG10009	180 (0)	187 (7)	199 (19)	N/A			
180SIG10011	180 (0)	183 (3)	189 (9)	203 (23)(4.9m)			
180SIG10014	180 (0)	180 (0)	186 (6)	197 (17)			

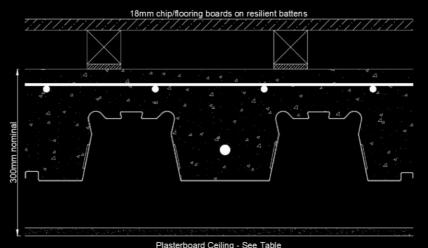
## SigDeck100 Loading Tables (Eurocode)

180mm depth - Single unpropped span - S450 - Normal Weight Concrete

Fire Resistance (minutes)	**Min mesh &	Total unfactored applied load (kN/m²) Max permissible span (m)							
	Reinforcement	0.8mm	gauge	0.9mm	gauge	1.1mm	gauge	1.4mm	gauge
		3.5	5.0	3.5	5.0	3.5	5.0	3.5	5.0
60	A142+H12	4.2	4.2	4.6	4.6	5.0	5.0	5.0	5.0
90	A142+H12	4.2	4.2	4.6	4.6	5.0	4.6	5.0	4.6
	A142+H16	4.2	4.2	4.6	4.6	5.0	5.0	5.0	5.0
120*	A142+H12	3.9	3.5	4.1	3.5	3.8	3.5	3.8	3.5
	A142+H16	4.2	4.2	4.6	4.6	5.0	4.8	5.0	4.8

<sup>\*</sup>Minimum 12.5mm Type F (EN520) plasterboard ceiling required to achieve 120 minutes fire resistance in combination with the floor. Any penetrations through the ceiling must be appropriately treated. \*\*Project specific design is required.

### SigDeck100 Acoustic Information



Slab Type	Ceiling Board Density (kg/m²)	R <sub>w</sub> (C; C <sub>tr</sub> ) dB	L <sub>n, w</sub> dB	STC
180SIGDECK100	1 x 9.8	61 (-3; -9)	53	62
180SIGDECK100	2 x 12.6	62 (-2; -7)	49	62

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# Get in Touch

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