



ARCHITECT'S PACK

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ABBREVIATIONS USED IN THIS DOCUMENT:

LSF	Light Steel Frame
c/c	Centre to Centre
OSB	Oriented Strand Board
SFH	Steel Frame Home
FC	Fibre Cement
ICF	Insulated Concrete Form
OPC	Ordinary Portland Cement
EPS	Expanded Polystyrene
UBS	Ultra Building System
DPC	Damp Proof Course
IBR	Inverted Box Rib

A large, teal-colored swoosh graphic that curves around the text "EXTERNAL WALLS".

EXTERNAL WALLS



EXTERNAL WALL OPTIONS

Examples Of Finished Walls



STANDARD EXTERNAL WALL PLASTER



SOLID PLASTERED WALLS



HANDY PLANKS CLADDED WALLS

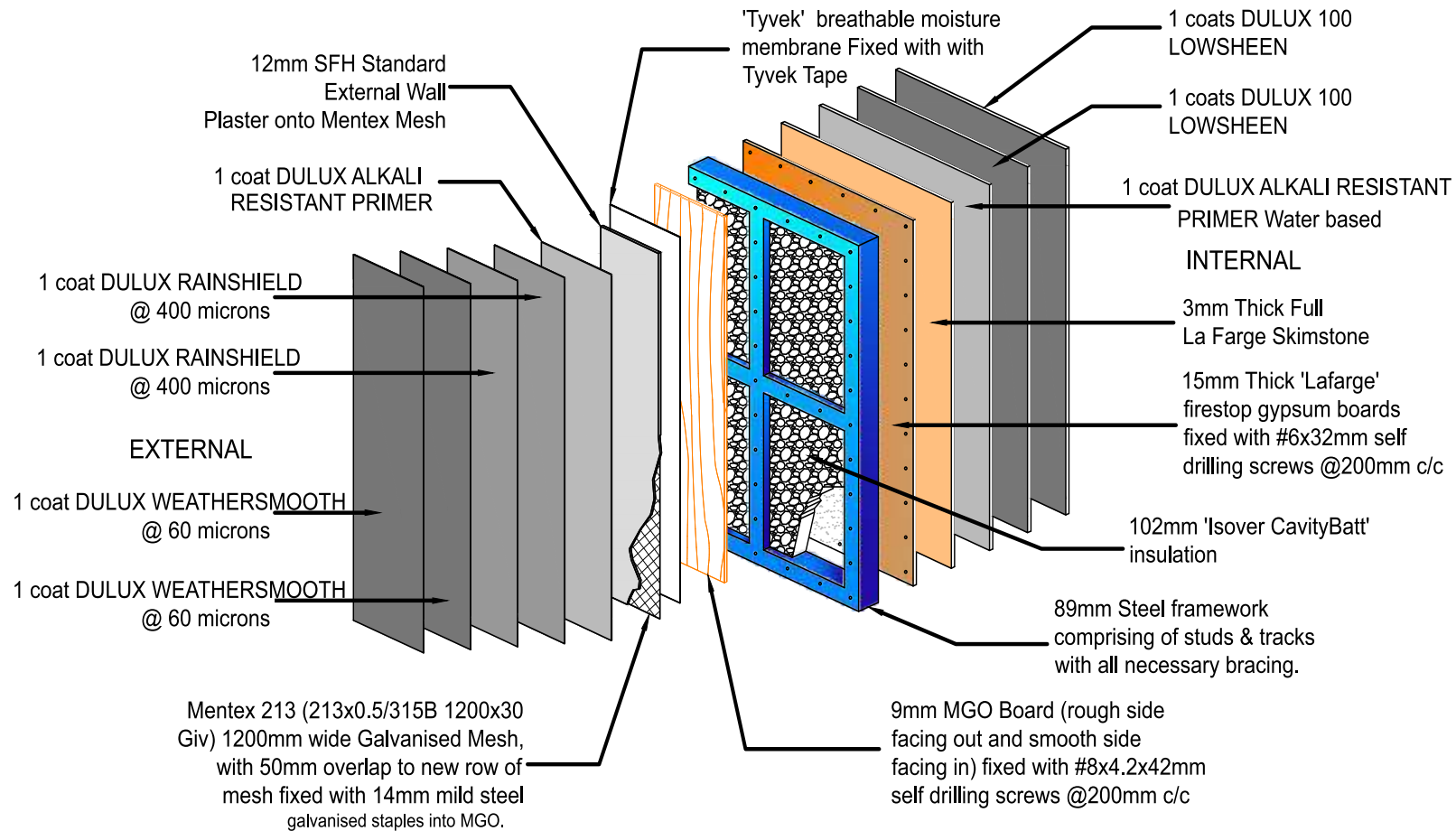
PLASTERED EXTERNAL WALLS

Standard External Wall Plaster



STANDARD EXTERNAL WALL PLASTER

Wall Construction Details



Fixture C
MGO to LSF Panel
Strongtie Cement Sheet Screws
CBSDG158SA – #8 x 4.2x42 mm



Fixture B
Gypsum to LSF Panel
Plasterboard Screws
DWFSGD114PS – #6 x 32 mm



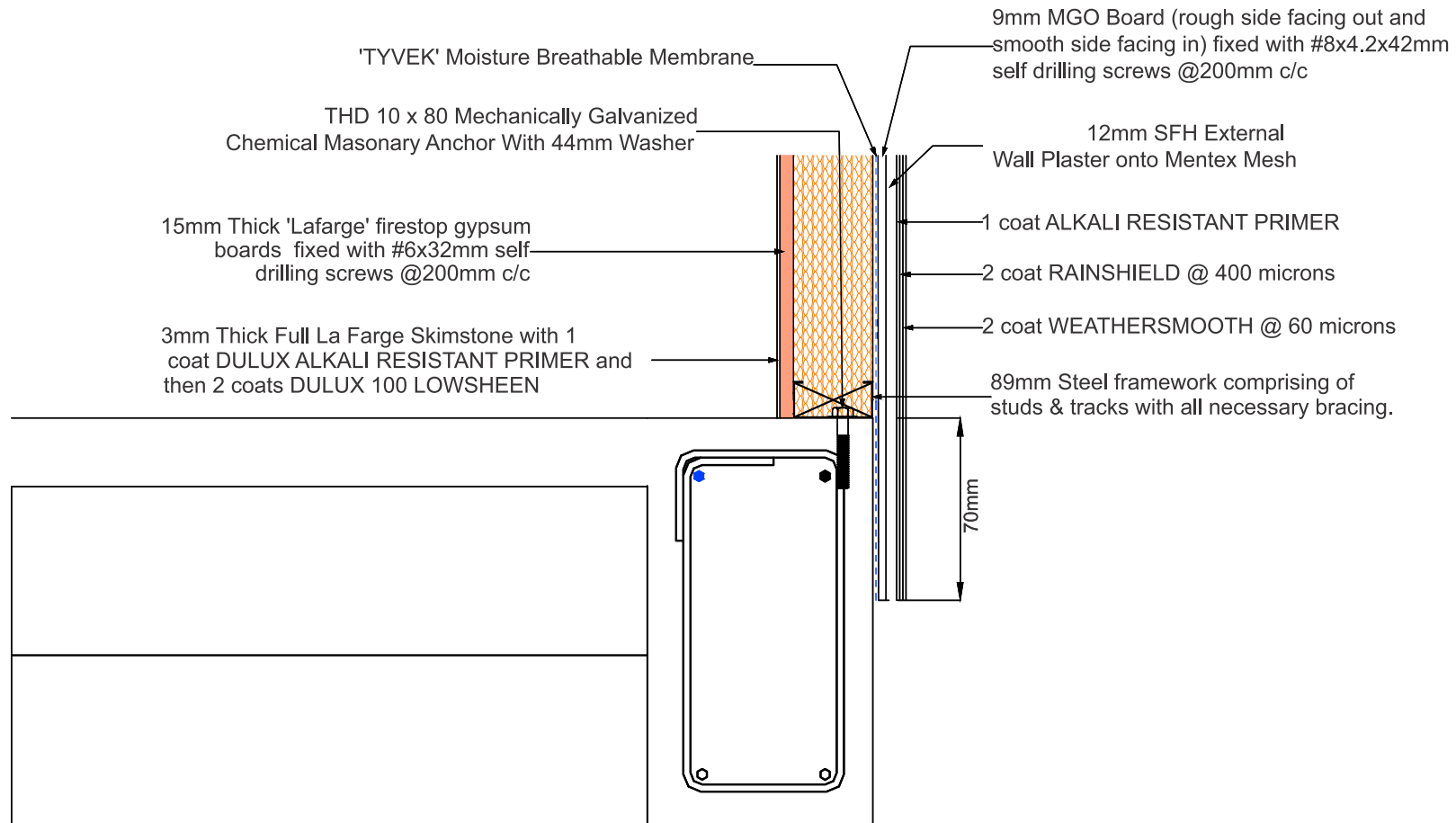
Fixture C
Mentex Mesh to MGO
Mild Steel Galvanised Staples
14 mm x 12.8 mm



Overall Thickness:	133 mm
Approximate Weight:	33 kg/m ²
R-Value:	3.69
Fire Rating:	60 Minutes
Sound Insulation:	52dB

STANDARD EXTERNAL WALL PLASTER

Wall Construction Details



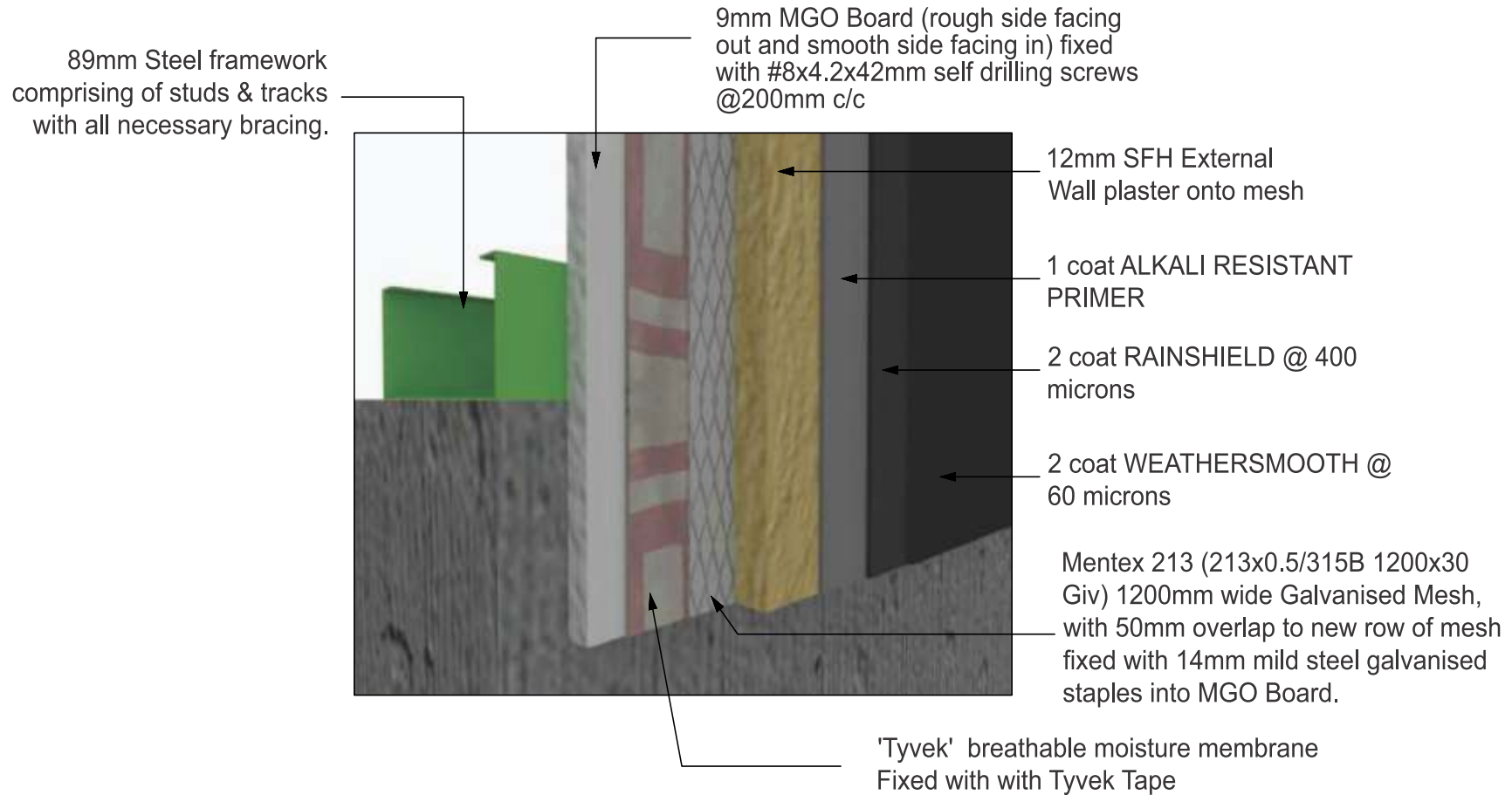
Fixture C
MGO to LSF Panel
Strongtie Cement Sheet Screws
CBSDG158SA – #8 x 4.2x42 mm



Fixture B
Gypsum to LSF Panel
Silver Plasterboard Screws
DWFSDG114PS – #6 x 32 mm

Reference: SGE-FN-001

STANDARD EXTERNAL WALL PLASTER Wall Construction Details

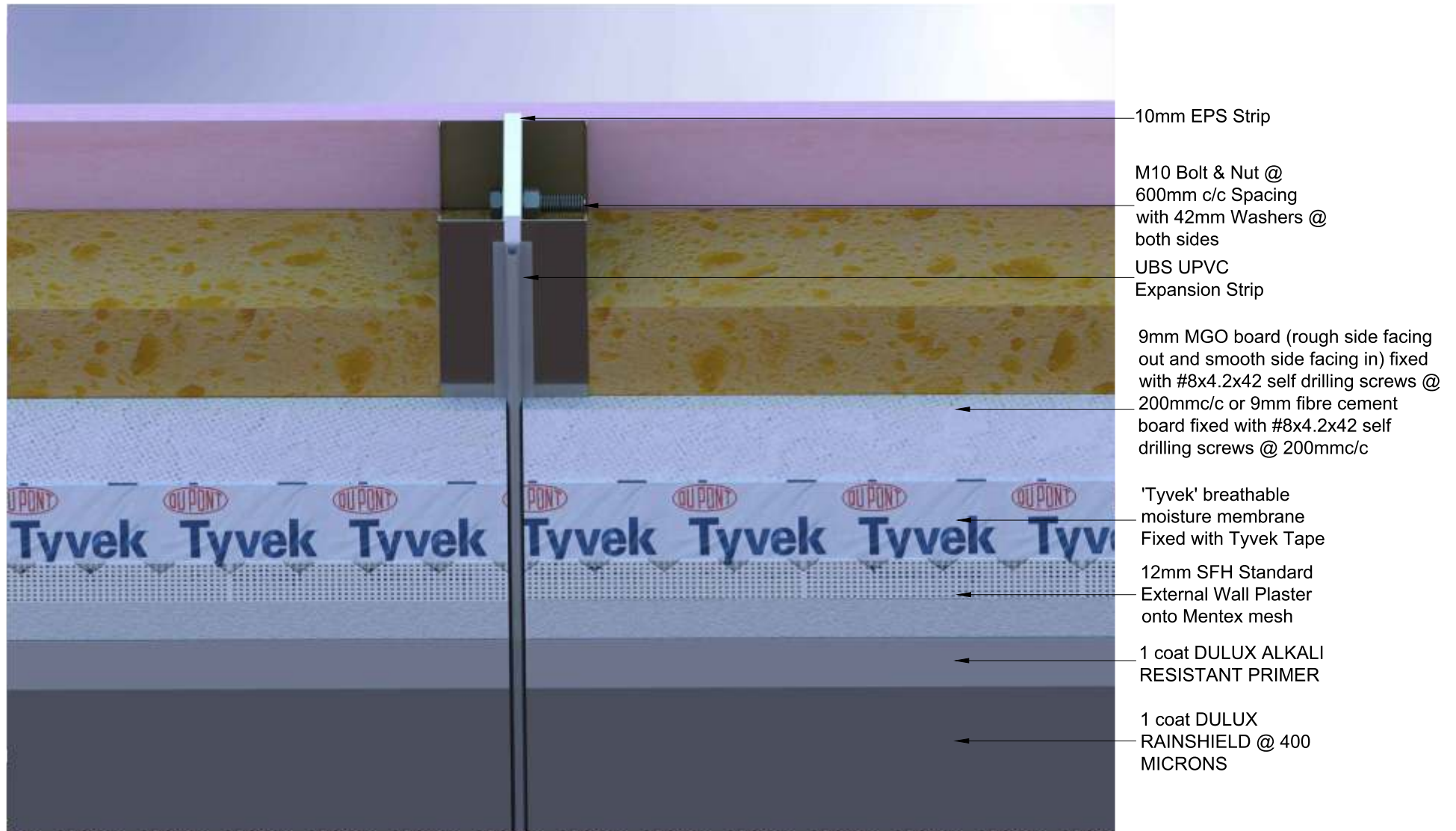


Fixture C
MGO to LSF Panel
Strongtie Cement Sheet Screws
CBSDG158SA – #8 x 4.2x42 mm



Fixture C
Mentex Mesh to MGO
Mild Steel Galvanised Staples
14 mm x 12.8 mm

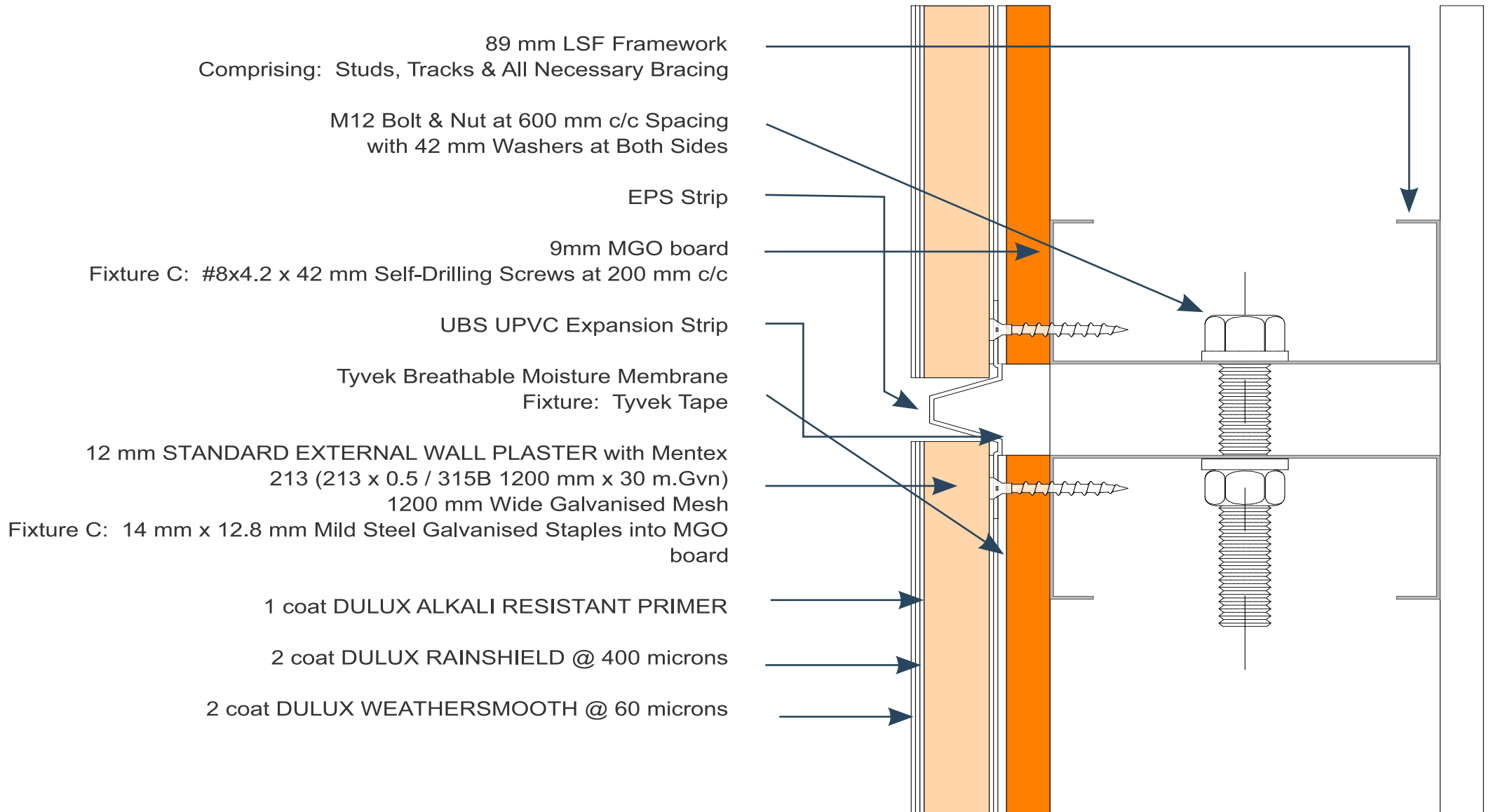
STANDARD EXTERNAL WALL PLASTER Expansion Joints



EXPANSION JOINT

NOTE: Vertical expansion position not to exceed 7 m Expansion to be installed horizontal at each new storey

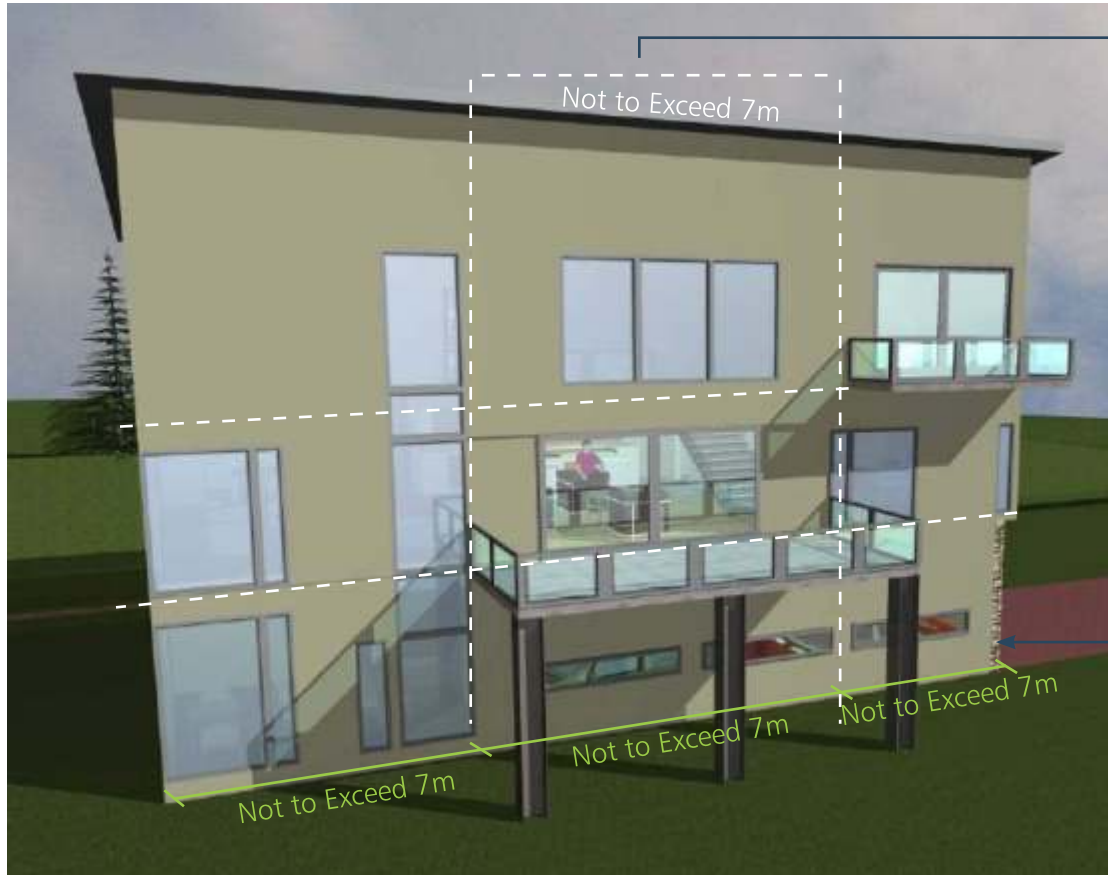
STANDARD EXTERNAL WALL PLASTER Expansion Joints



NOTE: Vertical expansion position not to exceed 7 m Expansion to be installed horizontal at each new storey

STANDARD EXTERNAL WALL PLASTER

Expansion Joints • Corner Details • Plaster Stops

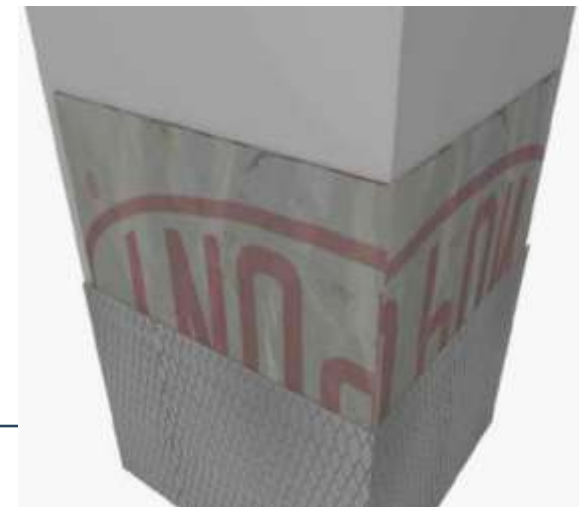


EXPANSIONS:

- Vertical Expansion Position not to Exceed 7 m
- Expansion to be Installed Horizontally at Each New Storey
- UBS UPVC Expansion Strip to be Installed as per Instructions (page 19)

MENTEX CORNER LAPPING

- Mentex Application to Start at Corners of Structure with a 175 mm Lap
- Mentex to be Lapped at Corners of Structure Instead of Mid-Panel



STANDARD EXTERNAL WALL PLASTER Waterproofing Doors



12mm OSB Board fixed with #8x4.2x42mm self drilling screws @200mm c/c

'Tyvek' breathable moisture membrane Fixed with Tyvek Tape

12mm SFH Standard External Wall Plaster onto Mentex mesh

1 coat DULUX ALKALI RESISTANT PRIMER

1 coat DULUX RAINSHIELD @ 400 MICRONS

10mm PVC Angle(UBS)

Den Braven Acryl-W Sealant



Fixture C

MGO to LSF Panel

Strongtie Cement Sheet Screws

CBSDG158SA – #8 x 4.2x42 mm

DOOR WATERPROOFING

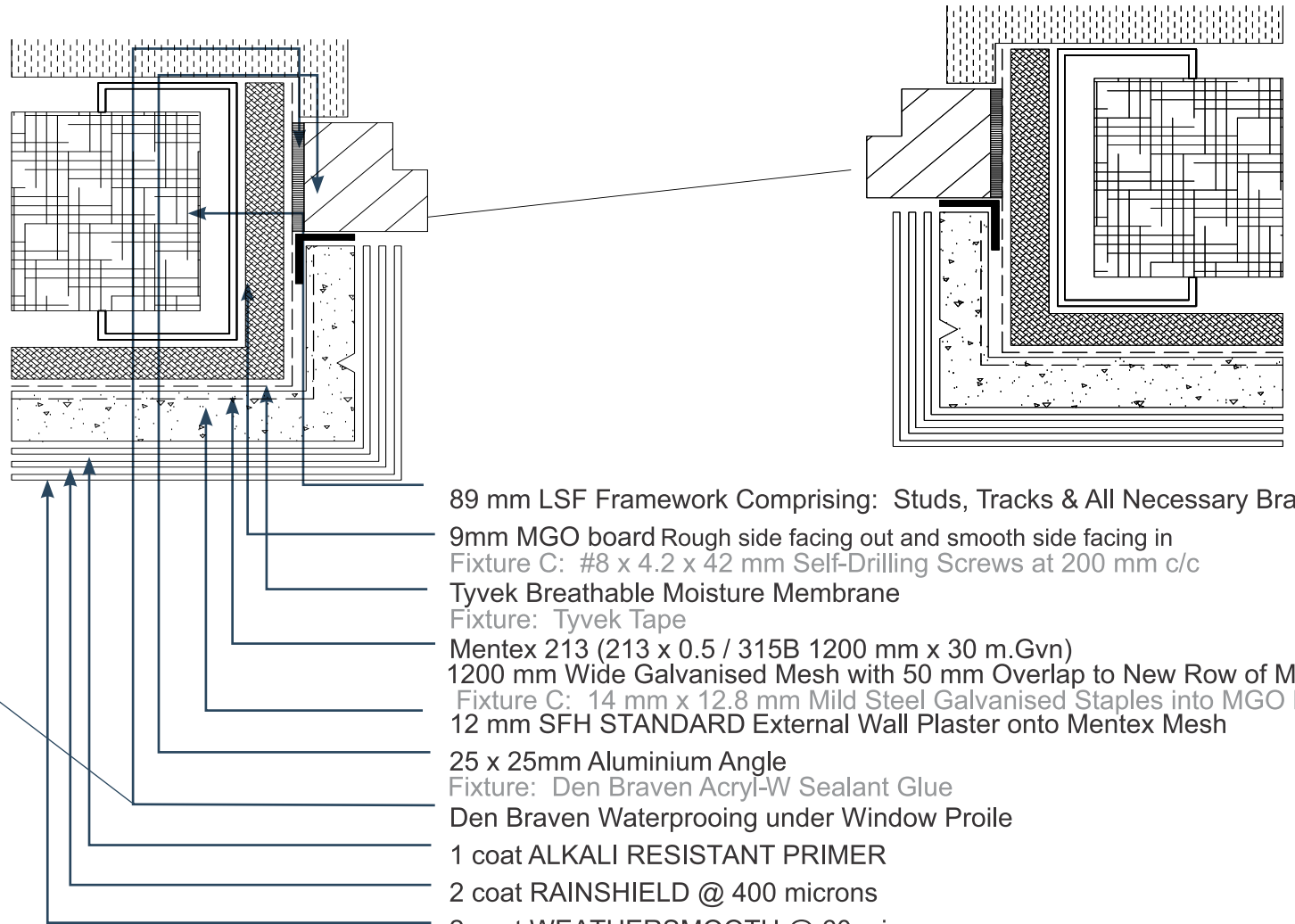
STANDARD EXTERNAL WALL PLASTER

Waterproofing Windows



INSTALLATION SEQUENCE:

- Install Tyvek House Wrap using Tyvek Tape
- Install MGO board to LSF
- Install Mentex 99 Galvanised Mesh using 14 mm Galvanised Mild Steel Staples
- Install Windows & Doors before External Plaster can commence
- Waterproof Windows with Den Braven Waterproofing before Installing Aluminium Angle
- Install 25 x 25mm Aluminium Angle
- Apply 12 mm Silverline External Plaster



STANDARD EXTERNAL WALL PLASTER Waterproofing Windows

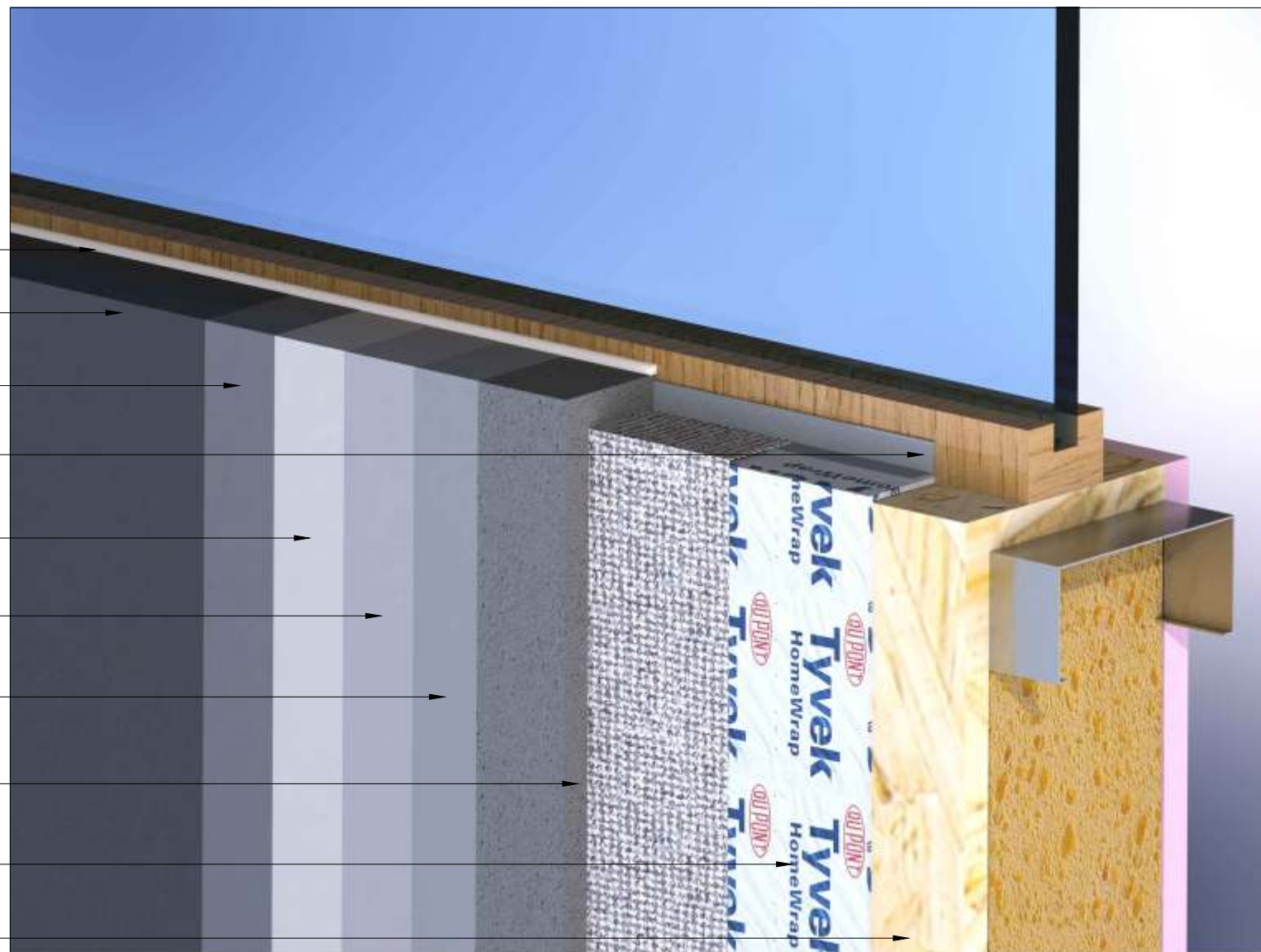


Fixture C
MGO to LSF Panel
Strongtie Cement Sheet Screws
CBSDG158SA – #8 x 4.2x42 mm





Fixture C
Mentex Mesh to MGO
Mild Steel Galvanised Staples
14 mm x 12.8 mm

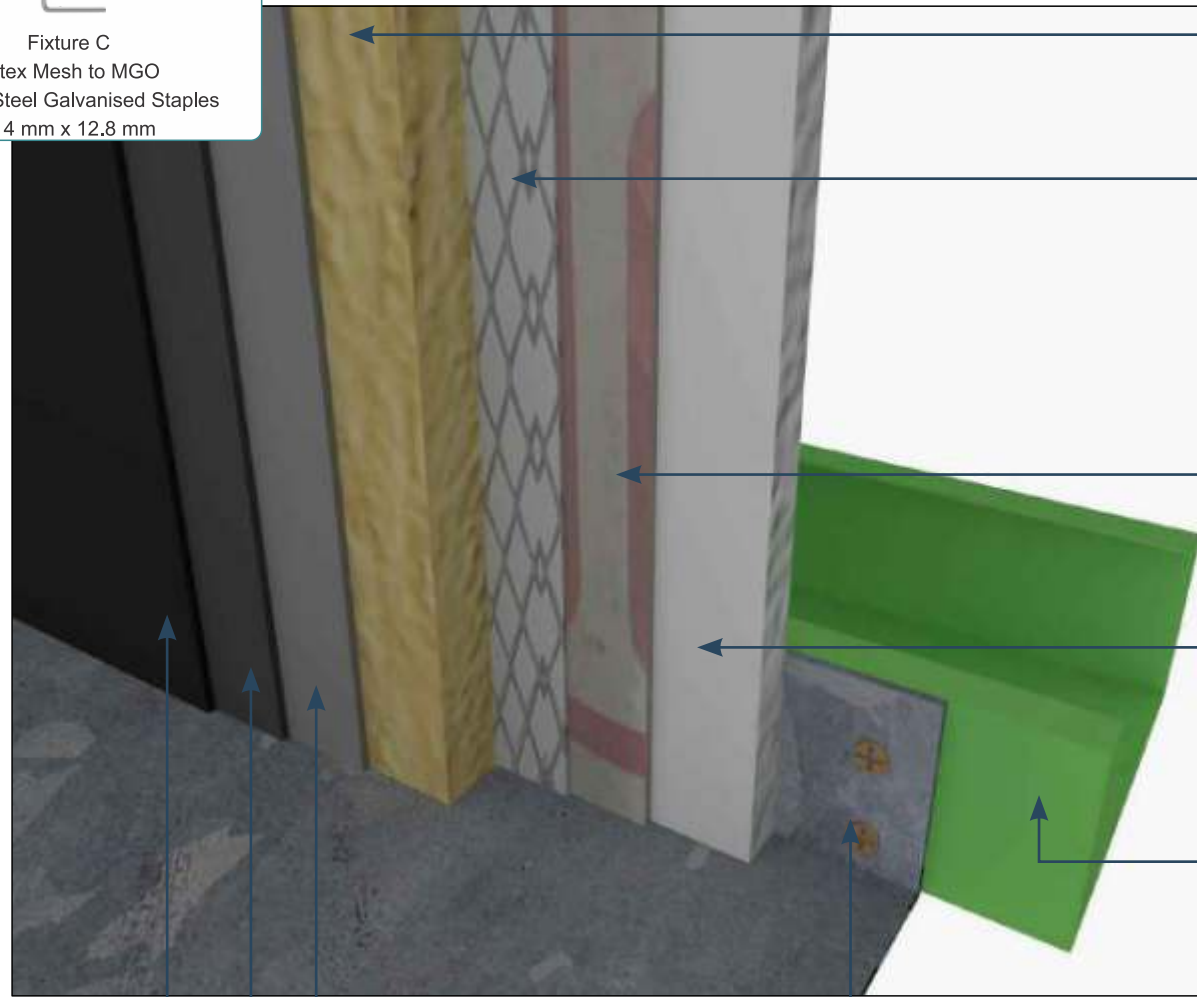
- Den Braven Acryl-W Sealant
- 1 coat DULUX WEATHER SMOOTH @ 60 microns
- 1 coat DULUX WEATHER SMOOTH @ 60 microns
- 10mm PVC Angle(UBS)
- 1 coat DULUX RAINSHIELD @ 400 MICRONS
- 1 coat DULUX RAINSHIELD @ 400 MICRONS
- 1 coat DULUX ALKALI RESISTANT PRIMER
- 12mm SFH Standard External Wall Plaster onto Mentex mesh
- 'Tyvek' breathable moisture membrane Fixed with Tyvek Tape
- 12mm OSB Board fixed with #8x4.2x42mm self drilling screws @200mm c/c



STANDARD EXTERNAL WALL PLASTER Waterproofing: Parapet Flashing

 Fixture C
 MGO to LSF Panel
 Strongtie Cement Sheet Screws
 CBSDG158SA – #8 x 4.2x42 mm

 Fixture C
 Mentex Mesh to MGO
 Mild Steel Galvanised Staples
 14 mm x 12.8 mm



12mm SFH External Wall plaster onto mesh

Mentex 213 (213x0.5/315B 1200x30 Giv) 1200mm wide Galvanised Mesh, with 50mm overlap to new row of mesh fixed with 14mm mild steel galvanised staples into MGO Board.

'Tyvek' breathable moisture membrane Fixed with with Tyvek Tape

9mm MGO Board (rough side facing out and smooth side facing in) fixed with #8x4.2x 42mm self drilling screws @200mm c/c

89mm Steel framework comprising of studs & tracks with all necessary bracing.

Galvanised Flashing Fixed Underneath Tyvek House Wrap to LFS panel.

1 coat ALKALI RESISTANT PRIMER
 2 coat RAINSHIELD @ 400 microns
 2 coat WEATHERSMOOTH @ 60 microns

STANDARD EXTERNAL WALL PLASTER

APPLICATION PROCEDURE The surface must be clean, dry and even

1 STEP ONE:

Mix the Standard External Wall Plaster strictly in accordance with the specification sheet

2 STEPTWO:

Attach the Tyvek Moisture membrane and then mix the Mentis Expanded Metal with 14mm steel staples to board.

3 STEPTHREE:

Mix the plaster batch in a pan or concrete mixer strictly in accordance with the specification above.

4 STEPFOUR:

Firstly dilute the 6 litres of BASF Master Cast 111 in the 25 Litres of water in mixer and then add the sand and cement. Mix content to obtain correct soft texture.

5 STEPFIVE:

Apply ONE COAT plaster by smearing it onto the prepared service with a steel plaster trowel. Once the plaster has dried sufficiently and become workable, level service with a straight-edge.

6 STEPSIX:

Work off the plaster neatly with a wood loat to obtain a 12mm thick inish. Allow the plaster to dry slowly whilst keeping it damp for 3 days. See step 7

7 STEPSEVEN:

Keep plaster damp by spraying the plastered wall with hosepipe, for 3 days, 3 times a day (morning, afternoon, evening) for a duration of 1 minute per wall m² until a sufficient moisture level (less than 12%) is reached.

8 STEPEIGHT:

A Dulux technical personal has to inspect walls with a moisture meter or the franchise should use its own moisture meter on the external plaster to ensure that less than 12% moisture is inside the plaster already applied on walls.



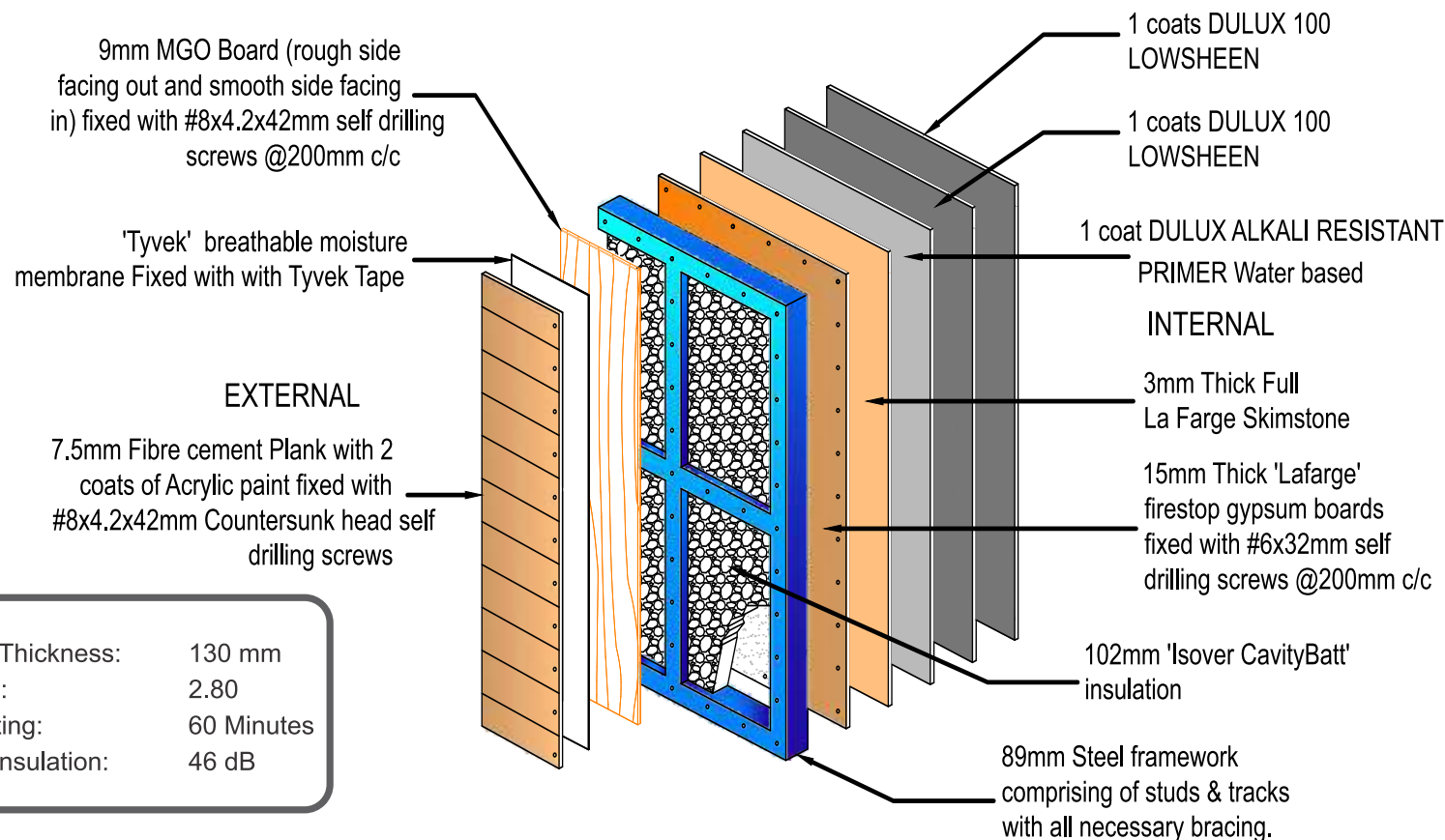
CLADDED EXTERNAL WALLS Handy Plank

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HANDY PLANK CLADD

Wall Construction Details



Overall Thickness: 130 mm
 R-Value: 2.80
 Fire Rating: 60 Minutes
 Sound Insulation: 46 dB



Fixture C
 MGO to LSF Panel
 Strongtie Cement Sheet Screws
 CBSDG158SA – #8 x 4.2x42 mm



Fixture C
 Handy Plank to LSF Panel
 Strongtie Cement Sheet Screws
 CBSDG158SA – #8 x 4.2x42 mm



Fixture B
 Gypsum to LSF Panel
 Plasterboard Screws
 DWFS DG114PS – #6 x 32 mm



INTERNAL WALLS



ONE HOUR FIRE RATING WALL

Wall Construction Details

- 1 coats DULUX TRADE 100 LOWSHEEN
- 1 coats DULUX TRADE 100 LOWSHEEN
- 1 coat DULUX ALKALI RESISTANT PRIMER Water based
- 3mm Thick Full skim Crete stone
- 15mm Thick 'Lafarge' firestop gypsum boards fixed with #6x32mm self drilling screws @200mm c/c
- 15mm Thick 'Lafarge' firestop gypsum boards fixed with #6x32mm self drilling screws @200mm c/c
- 3mm Thick Full skim Crete stone
- 1 coat DULUX ALKALI RESISTANT PRIMER Water based
- 1 coats DULUX TRADE 100 LOWSHEEN
- 1 coats DULUX TRADE 100 LOWSHEEN



80mm M12 Chemical anchor with 1No. of 45mmx1.2mm steel washer @ 600mm/c



Fixture B
Gypsum to LSF Panel
Plasterboard Screws
DWFSDG114PS – #6 x 32 mm

ONE HOUR FIRE RATING WALL

Technical Specifications

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60 MINUTE FIRE RATED INTERNAL PARTITION SYSTEM:

- Non-Load Bearing Drywall System
- 15 mm Technical Fire Check Plasterboard – One Layer Each Side

APPLICATION:

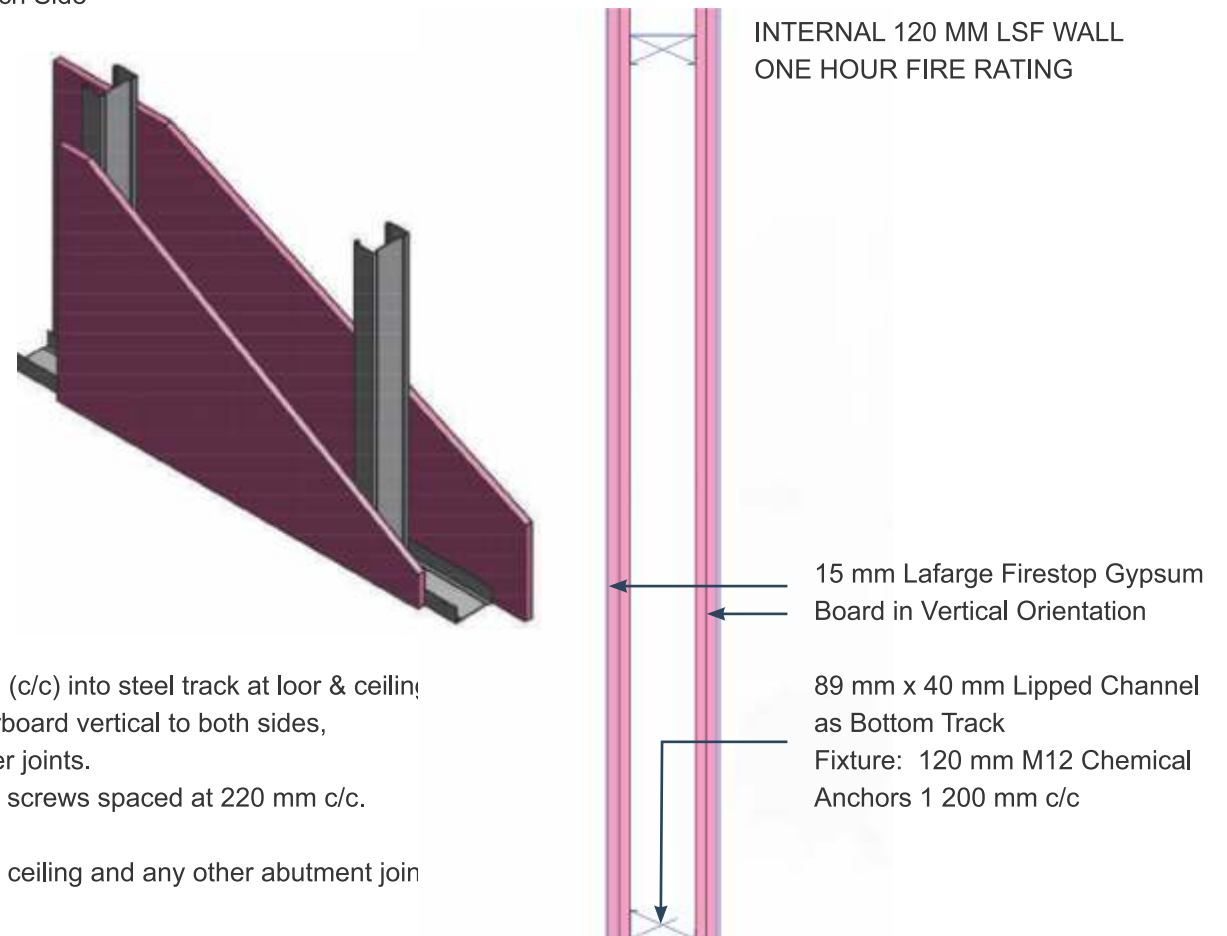
Commercial & Residential

MATERIAL USED:

A: 89 mm LSF Steel Stud
B: 89 mm LSF Steel Track
C: 15mm Fire Check Plaster Board
32 mm Drywall Screws
Lafarge Drywall Jointing System
Floor & Ceiling Finishes as per Specification

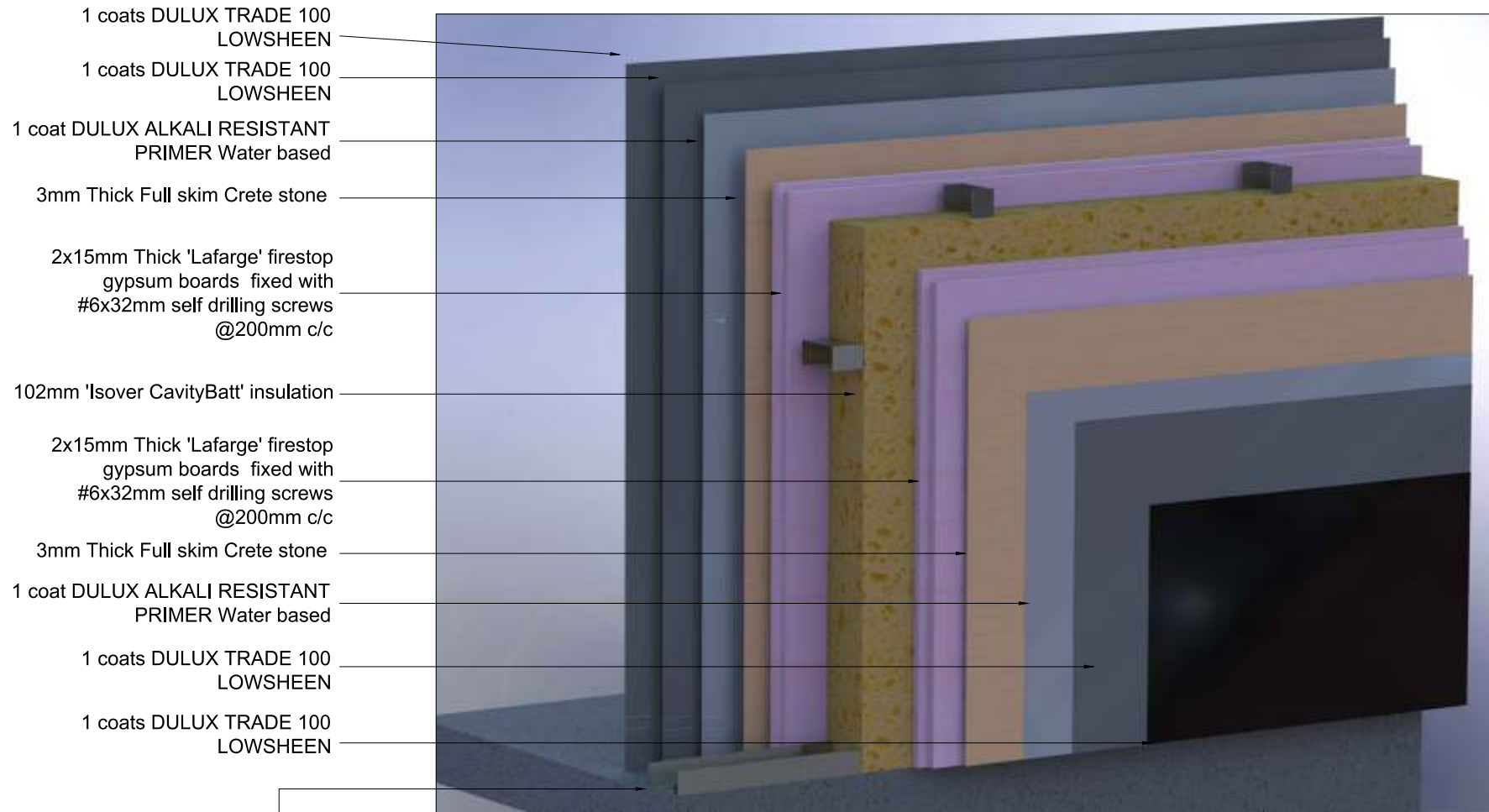
APPLICATION DETAILS:

1. Set Lafarge steel studs spaced at 600 mm centre to centre (c/c) into steel track at floor & ceiling
2. Apply a single layer of 15 mm Technical Fire Check plasterboard vertical to both sides, using 32 mm drywall screws spaced at 200 mm c/c, stagger joints. Taper edge plasterboard to each side using 32 mm drywall screws spaced at 220 mm c/c.
3. Apply tape & joint according to specification.
4. Acoustic performance requires sealing between track, floor, ceiling and any other abutment joint
5. Stagger the plasterboard joints in the system.



TWO HOUR FIRE RATING WALL

Wall Construction Details



80mm M12 Chemical anchor with 1No. of 45mmx1.2mm steel washer @ 600mm/c



Fixture B
Gypsum to LSF Panel
Plasterboard Screws
DWFSDG114PS – #6 x 32 mm

TWO HOUR FIRE RATING WALL

Technical Specifications

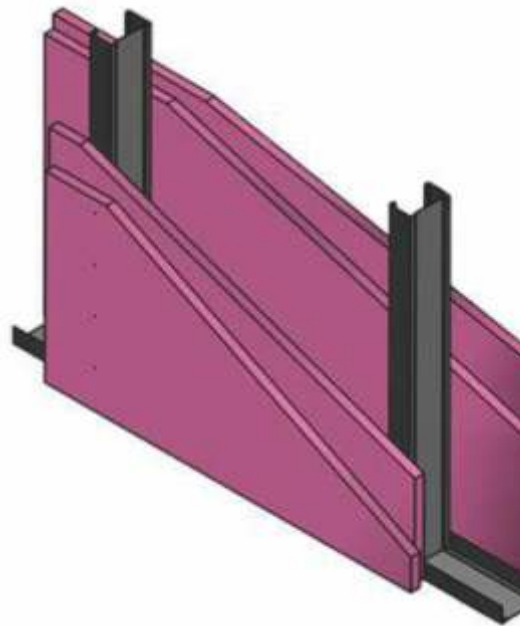
22

120 MINUTE FIRE RATED INTERNAL PARTITION SYSTEM:

- Non-Load Bearing Drywall System
- 15 mm Technical Fire Check Plasterboard – Double Layer Each Side

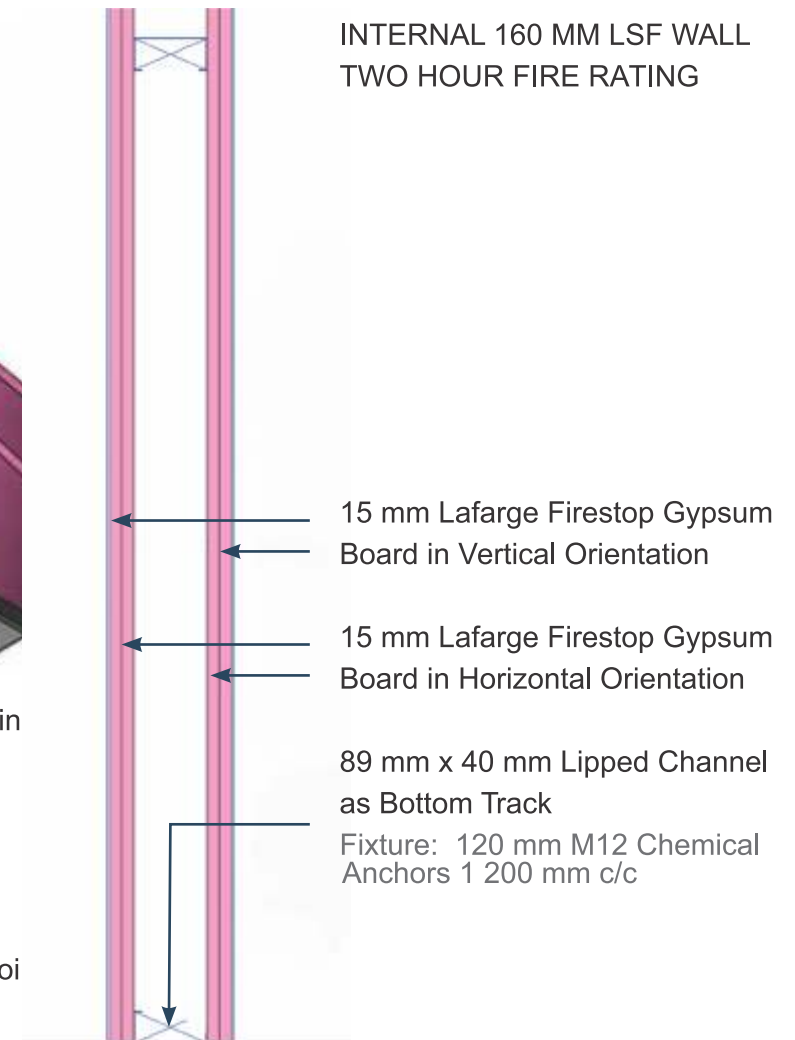
MATERIAL USED:

- A: 89 mm LSF Steel Stud
- B: 89 mm LSF Steel Track
- C: 15mm Fire Check Plaster Board
- 32 mm & 42 mm Drywall Screws
- Lafarge Drywall Jointing System
- Floor & Ceiling Finishes as per Specification



APPLICATION DETAILS:

1. Set Lafarge steel studs spaced at 600 mm centre to centre (c/c) into steel track at floor & ceiling
2. Apply a single layer of 15 mm Technical Fire Check plasterboard vertical to both sides, using 32 mm drywall screws spaced at 200 mm c/c, stagger joints.
3. Apply a face layer of 15 mm Technical Fire Check plasterboard horizontal to both sides, using 42 mm drywall screws spaced at 200 mm c/c, stagger joints.
4. Apply tape & joint according to specification.
5. Acoustic performance requires sealing between track, floor, ceiling and any other abutment joint
6. Stagger the plasterboard joints in the system.
7. Maximum partition height is 4.5 m.



FLOORS



JOIST FLOORS

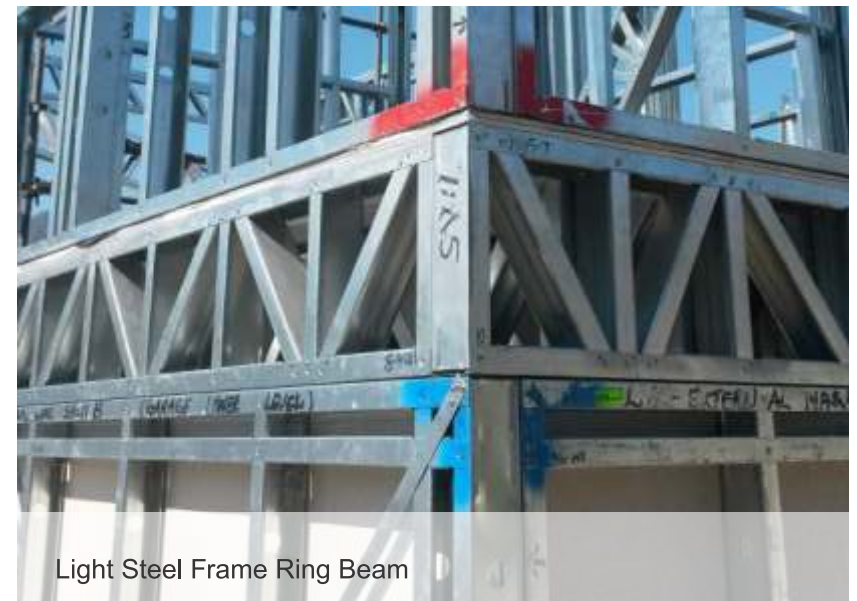
Construction Samples



Completed Suspended Light Steel Frame Joist Floor



Light Steel Frame Joist Floor Anchored to Light Steel Frame Ring Beam



Light Steel Frame Ring Beam

JOIST FLOORS Construction Samples



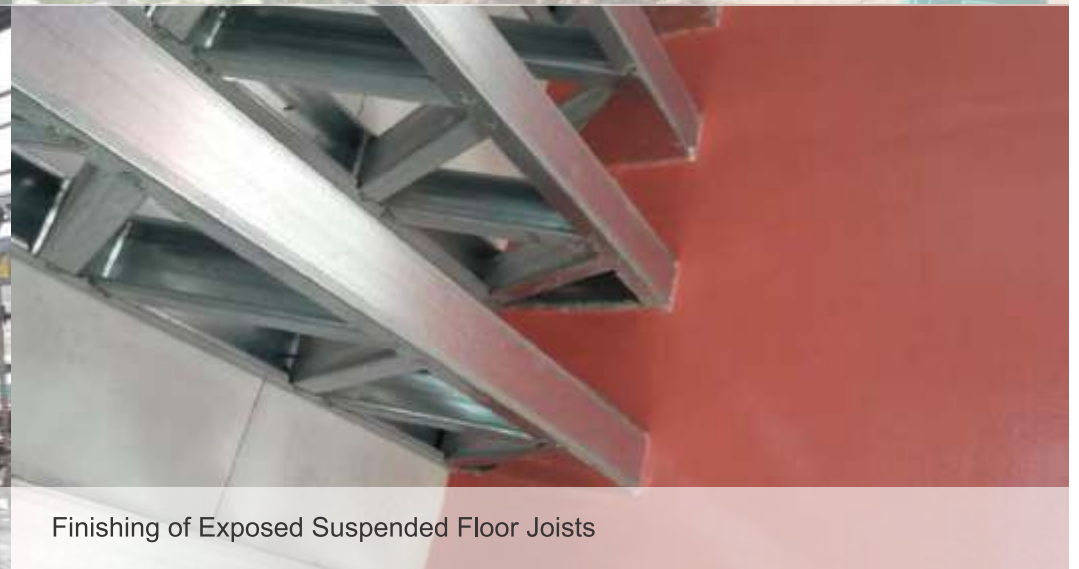
Installation of MGO Boards



Installation of LSF Wall on LSF Joist Floor

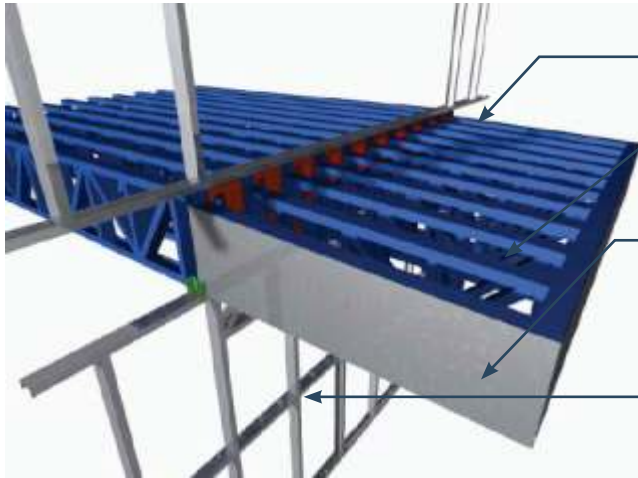


Suspended Joist Floor with Internal Cantilever



Finishing of Exposed Suspended Floor Joists

JOIST FLOORS Cantilevers



Light Steel Frame Joist Floor Balcony Cantilever

Light Steel Frame Filler Box

Fixture: #10 x 4.8x16 mm Wafer Head Screws

1.2 mm Galvanised Plate

Fixture: #10 x 4.8x16 mm Wafer Head Screws

Stitched to Light Steel Frame Joist Cantilever

Light Steel Frame Wall Panel

NOTE:

- External Cantilevers Minimum Step: 75 mm
- External Cantilevers Minimum Slope: 1°
- Cantilevers Maximum Supported Span: 1 500 mm



Anchoring a LSF Cantilever to a LSF Wall Panel using Hurricane Bracket



To prevent any toppling & water penetrating the structure, filler panels must be installed.
Filler panels to be installed using FrameCAD Tri-Fix Brackets.

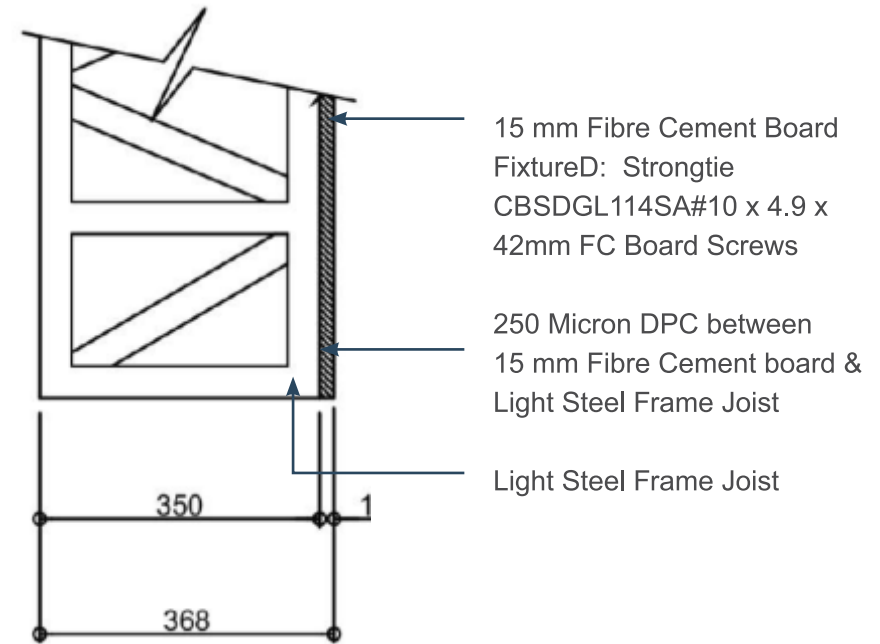
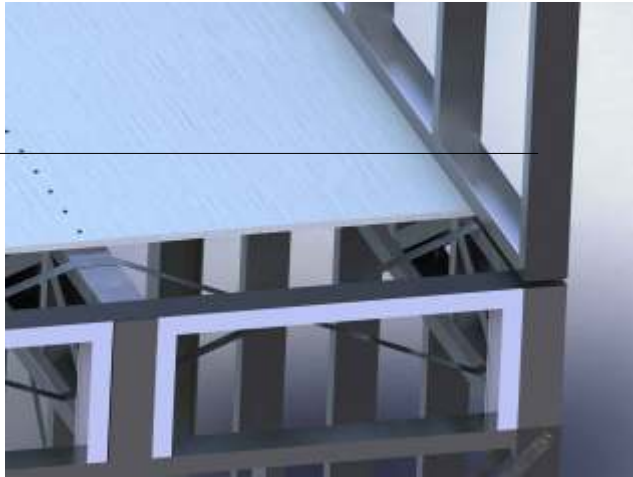


Internal Joist Floor

External Cantilever Joist Floor with 75 mm Step
for Waterproofing Purposes

JOIST FLOORS: FIBRE CEMENT BOARDS

Construction Details

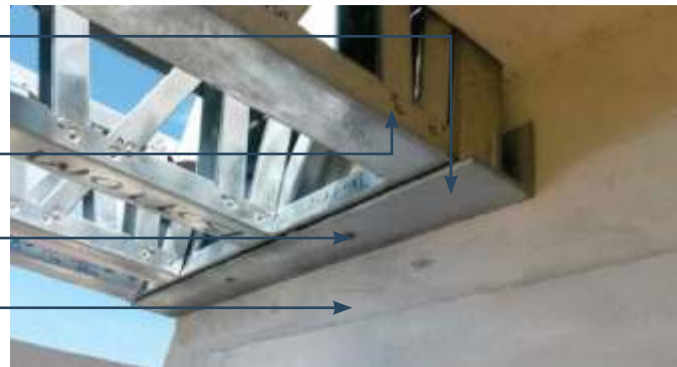


Light Steel Frame Joist at 300 mm c/c
CBSDGL114SA – #10 x 4.9x42 mm
Light Steel Frame Joist



2x 102mm layers Isover CavityBatt
Insulation &
Sound Seal

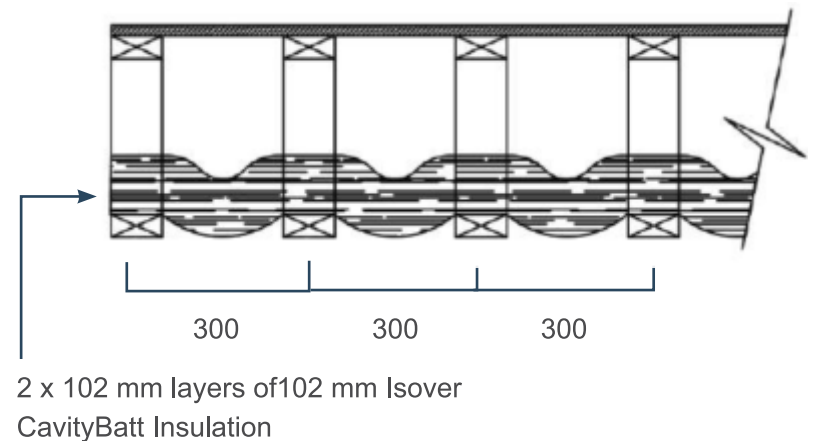
100 mm x 100 mm x 8 mm
Galvanised Angle



Light Steel Frame Joist

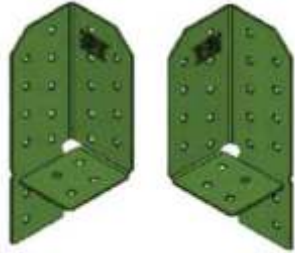
M12 Bolt Through

Existing Masonry Wall

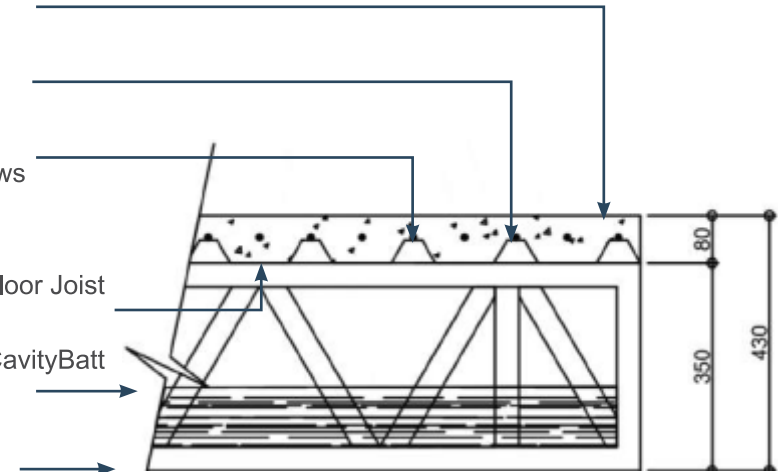


JOIST FLOORS: STRUCTURAL CONCRETE Construction Details

Total Thickness of Floor: 430 mm
FRAMECAD TRI-FIX BRACKET



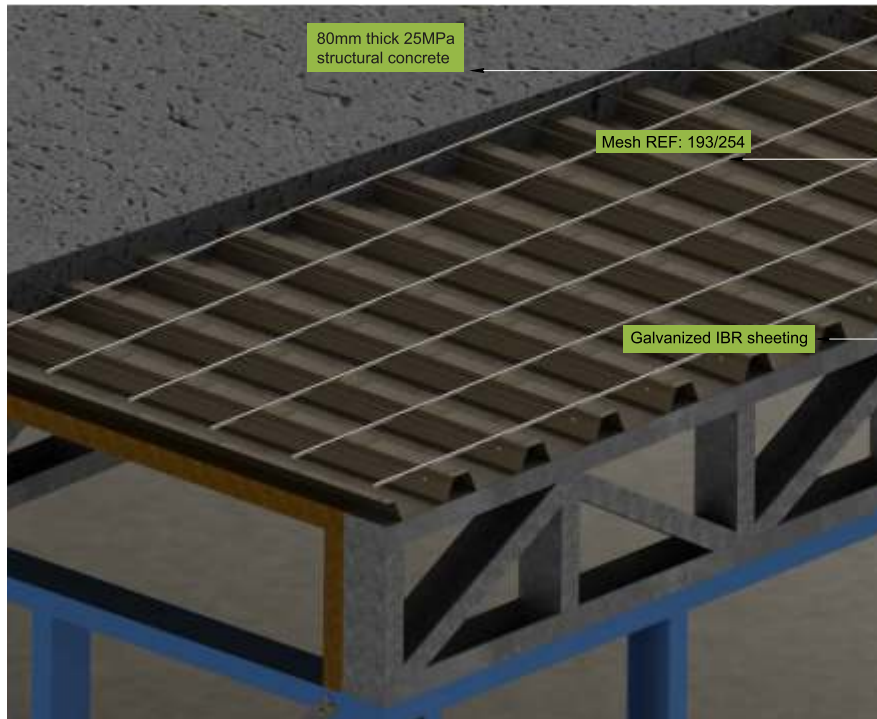
80 mm 25 Mpa Structural Concrete
Reference 193 Reinforcing Mesh
0.5 mm Galvanised IBR Sheeting
Fixture: 4.8x16 mm Wafer Head Screws to the LSF Joist
250 micron DPC between IBR Sheeting & Floor Joist
2x 2 x layer of 102mm layers 102 mm Isover CavityBatt Insulation



Light Steel Frame Floor Joist
Fixture: 4.8x16 mm Wafer Head Screw & Hurricane bracket to the LSF Wall Panel

Light Steel Frame Wall Panel

Kare Industries Wafer Head Screws
SD1016W3CL2 4.8x16 mm



Joist to Wall Panel
Kare Industries Wafer Head Screws
SD1016W2Z3FP 4.8x16 mm



IBR to Joist
Kare Industries Wafer Head Screws
SD1016W2Z3FP 4.8x16 mm



Suspended Light Steel Frame Joist Floor with Structural Concrete



JOIST FLOORS: VOIDCON CONCRETE SLABS

Voidcon Steel Decking System

The Voidcon Steel Decking System is a composite suspended slab system, which is suitable for industrial, business and private structures.

Galvanized steel proiles are laid in position, whereafter concrete is poured inside the proiles.

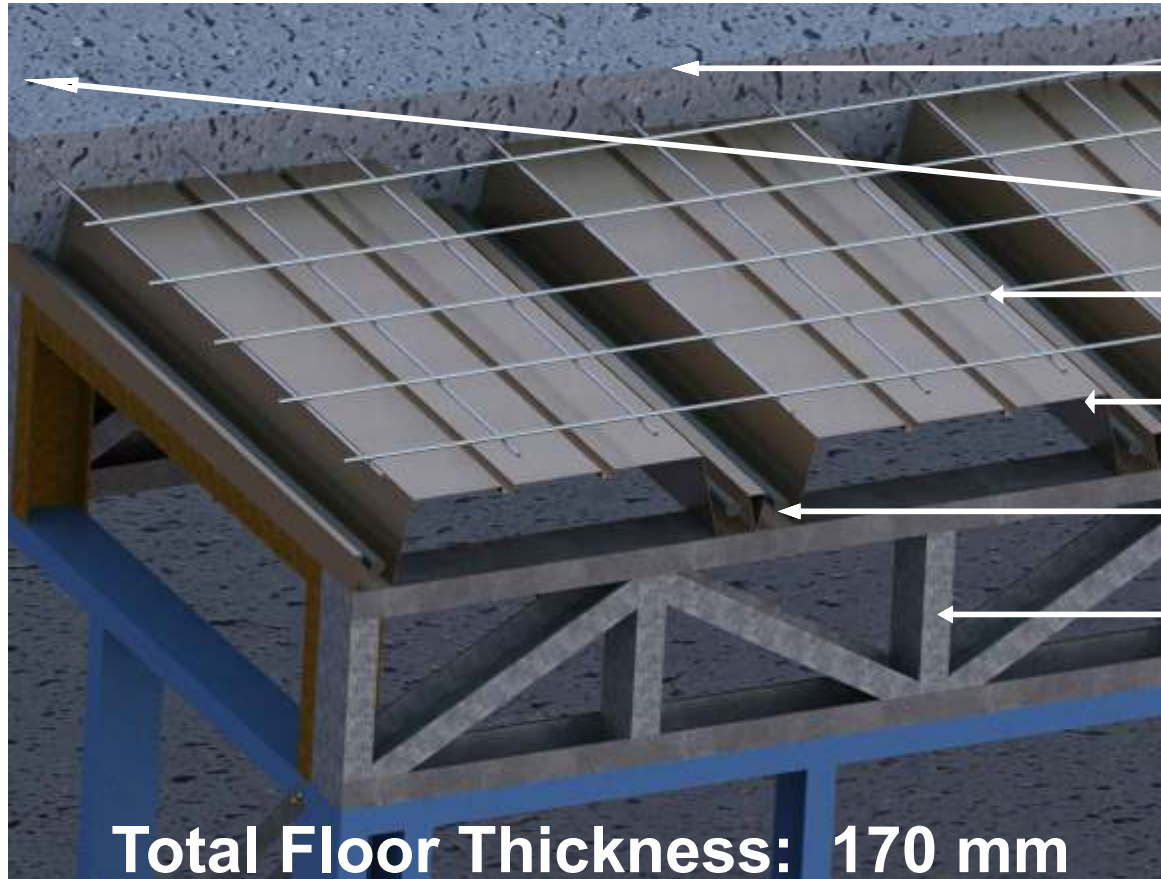
- Concrete Provides Strength
- Steel Provides Stability
- Less Concrete than Customary Decking Systems
- Substantial Cost Savings

Three Outstanding Features:

- **Permanent Decking:** Provides a straightforward interlocking deck to help mass wet concrete & other construction loads
- **Composite Action:** Not only acts as permanent shuttering, but serves as tensile support, bringing about a composite activity with the concrete
- **T-Beam System:** The proile is based on a T-Beam System that gives beams & voids a large reduction in in-situ concrete volumes



JOIST FLOORS: VOIDCON CONCRETE SLABS: Construction Details



Depth of concrete to be between 170mm & 300mm as per engineers specifications

25 Mpa Fibre Reinforced Concrete

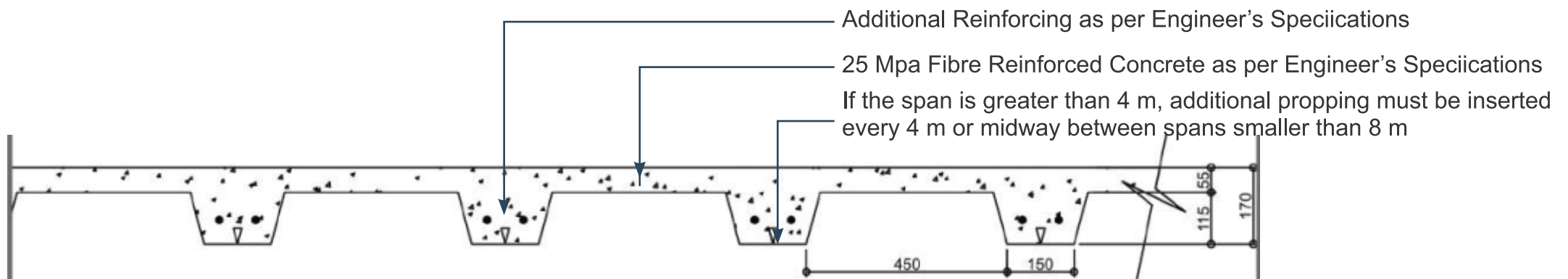
Mesh REF: 193/254

Galvanized Voidcon sheeting

Additional reinforcement as per engineers specifications

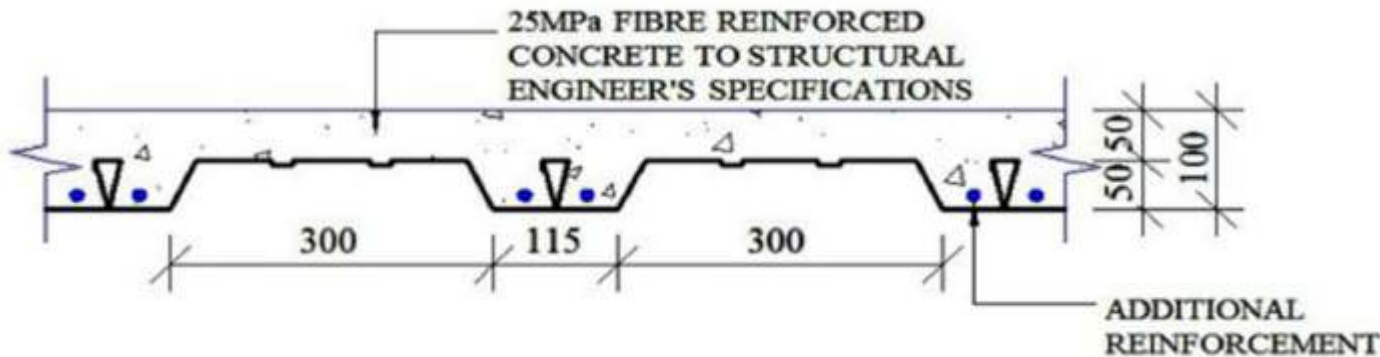
Integrated Ring Beam

Total Floor Thickness: 170 mm



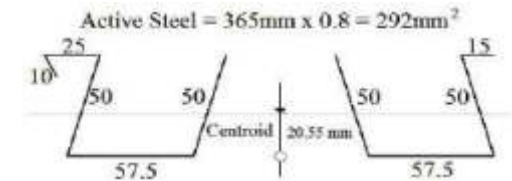
JOIST FLOORS: VOIDCON CONCRETE SLABS

Design Tables: 100mm SLAB



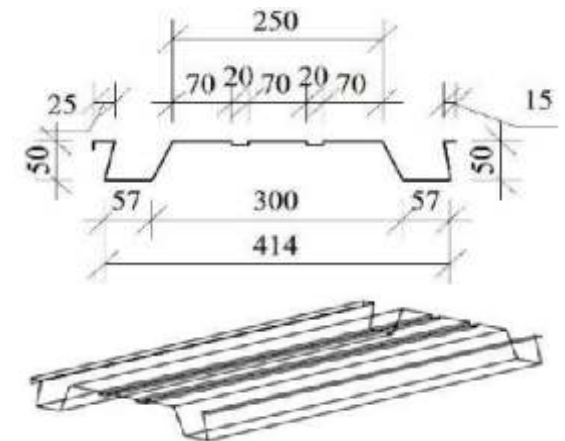
Design Parameters and Assumptions

- Steel : 0.8mm ISQ230 (Galv. Z275)



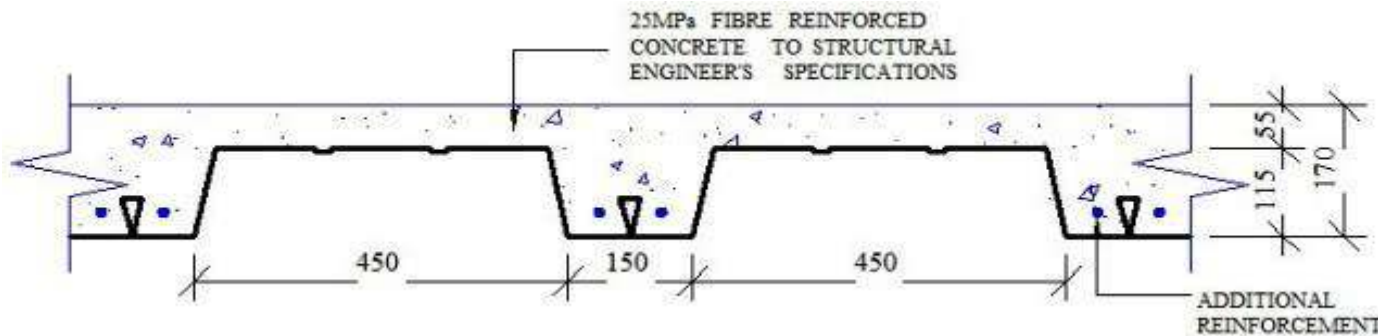
- Concrete volume : $0.07\text{m}^3/\text{m}^2$
- Temporary propping to be at 2m centers.
- Deflections are not calculated but are controlled by restricting the span to effective depth ratios in accordance with the Code of Practice.
- **N.B.** All tabulated values serve as a guide only, and should be certified and approved by a civil/structural engineer.

	Area of Reinforcement	Moment of Resistance	Total Factored Uniformly Distributed Superimposed Load					
			1.5kN/m ²	2.5kN/m ²	3.0kN/m ²	4.0kN/m ²	5.0kN/m ²	7.5kN/m ²
	$f_y = 230\text{N/mm}^2$	$M_r =$	$W_u =$	$W_u =$	$W_u =$	$W_u =$	$W_u =$	$W_u =$
	$f_y = 450\text{N/mm}^2$	$0.87 \times f_y \times A_{s_x}$	5.41	7.01	7.81	9.41	11.01	15.01
VP 50 only	292	10.278	3.90	3.43	3.25	2.96	2.73	2.34
+ 1xY8	50.3	14.727			3.89	3.54	3.27	2.80
+ 1xY10	78.5	16.669					3.48	2.98
+ 2xY8	101	18.219						3.12
+ 1xY12	113	19.045						3.19
+ 2xY10	157	22.075						3.43
			Maximum Span (L) in m					



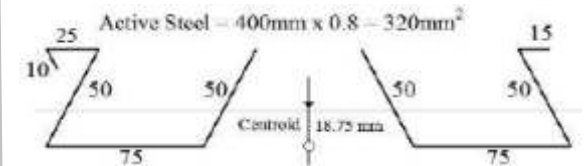
JOIST FLOORS: VOIDCON CONCRETE SLABS

Design Tables: 170mm SLAB



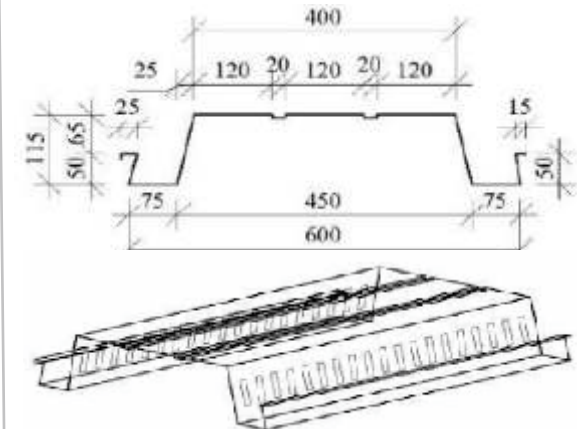
Design Parameters and Assumptions

- Steel : 0.8mm ISQ230 (Galv. Z275)



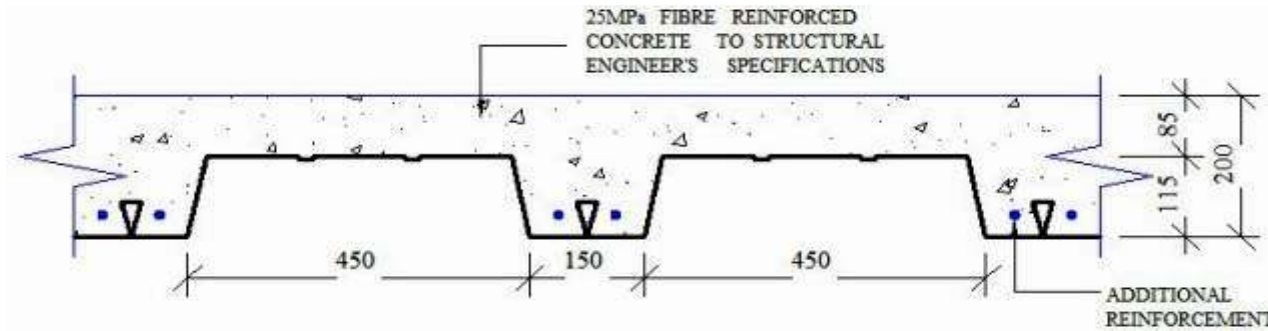
- Concrete volume : 0.09m³/m²
- Temporary propping to be at 2m centers.
- Deflections are not calculated but are controlled by restricting the span to effective depth ratios in accordance with the Code of Practice.
- N.B.** All tabulated values serve as a guide only, and should be certified and approved by a civil/structural engineer.

	Area of Reinforcement fy = 230N/mm ² fy = 450N/mm ²	Moment of Resistance Mr = 0.87xfyAsxz	Total Factored Uniformly Distributed Superimposed Load					
			1.5kN/m ² Wu = 6.03	2.5kN/m ² Wu = 7.63	3.0kN/m ² Wu = 8.43	4.0kN/m ² Wu = 10.03	5.0kN/m ² Wu = 11.63	7.5kN/m ² Wu = 15.63
VP 115 only	320	15.261	4.50	4.00	3.81	3.49	3.24	2.79
+ 1xY8	50.3	19.954	5.15	4.57	4.35	3.99	3.70	3.20
+ 1xY10	78.5	22.586	5.47	4.87	4.63	4.24	3.94	3.40
+ 2xY8	101	24.685		5.09	4.84	4.44	4.12	3.55
+ 1xY12	113	25.805		5.20	4.95	4.54	4.21	3.63
+ 2xY10	157	29.910			5.33	4.88	4.54	3.91
+ 1xY16	201	34.016				5.21	4.84	4.17
+ 2xY12	226	36.348				5.38	5.00	4.31
+ 3xY10	236	37.282					5.06	4.37
+ 3xY12	339	46.892						4.90
+ 2xY16	402	52.771						5.20
Maximum Span (L) in m								



JOIST FLOORS: VOIDCON CONCRETE SLABS

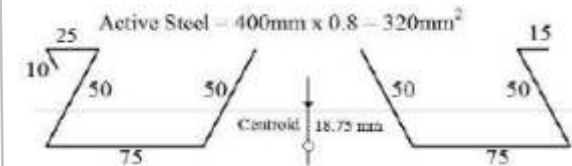
Design Tables: 200mm SLAB



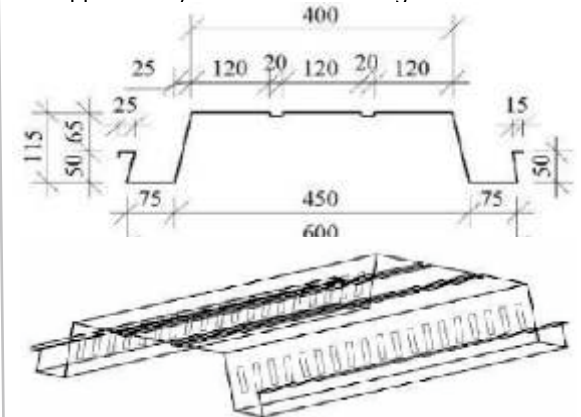
	Area of Reinforcement $f_y = 230\text{N/mm}^2$ $f_y = 450\text{N/mm}^2$	Moment of Resistance $M_r = 0.87f_yxAs_xz$	Total Factored Uniformly Distributed Superimposed Load					
			1.5kN/m ² $W_u = 6.89$	2.5kN/m ² $W_u = 8.49$	3.0kN/m ² $W_u = 9.29$	4.0kN/m ² $W_u = 10.89$	5.0kN/m ² $W_u = 11.63$	7.5kN/m ² $W_u = 15.63$
VP 115 only	320	18.356	4.62	4.16	3.97	3.67	3.55	3.07
+ 1xY8	50.3	24.001	5.28	4.75	4.55	4.20	4.06	3.50
+ 1xY10	78.5	27.166	5.61	5.06	4.84	4.47	4.32	3.73
+ 2xY8	101	29.691	5.87	5.29	5.06	4.67	4.52	3.90
+ 1xY12	113	31.038	6.00	5.41	5.17	4.77	4.62	3.99
+ 2xY10	157	35.976	6.46	5.82	5.56	5.14	4.97	4.29
+ 1xY16	201	40.914		6.21	5.93	5.48	5.31	4.58
+ 2xY12	226	43.720		6.42	6.13	5.67	5.48	4.73
+ 3xY10	236	44.842			6.21	5.74	5.55	4.79
+ 3xY12	339	56.402				6.44	6.23	5.37
+ 2xY16	402	63.472					6.61	5.70
+ 4xY12	452	69.084						5.95
			Maximum Span (L) in m					

Design Parameters and Assumptions

- Steel : 0.8mm ISQ230 (Galv. Z275)

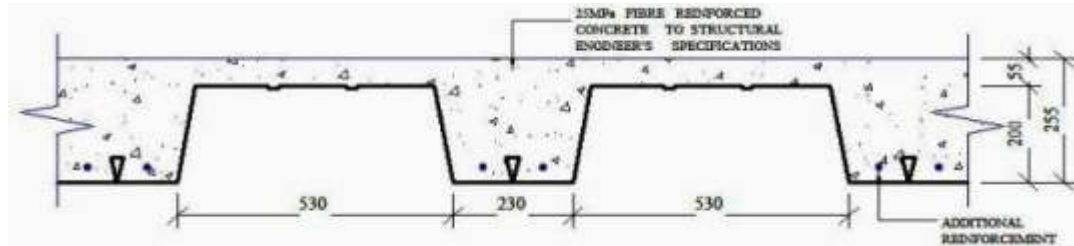


- Concrete volume : 0.12m³/m²
- Temporary propping to be at 1,75m centers.
- Deflections are not calculated but are controlled by restricting the span to effective depth ratios in accordance with the Code of Practice.
- N.B.** All tabulated values serve as a guide only, and should be certified and approved by a civil/structural engineer.



JOIST FLOORS: VOIDCON CONCRETE SLABS

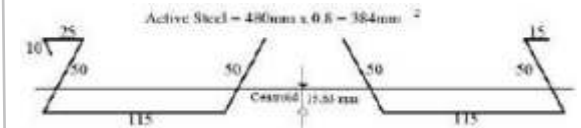
Design Tables: 255mm SLAB



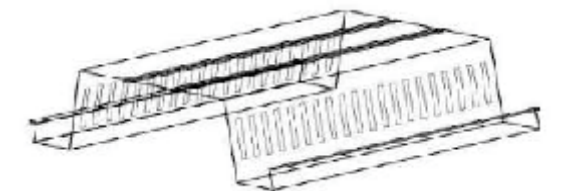
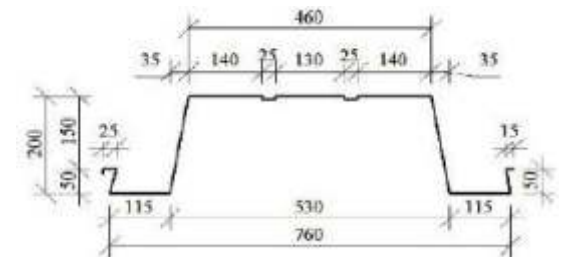
	Area of Reinforcement $f_y = 230\text{N/mm}^2$ $f_y = 450\text{N/mm}^2$	Moment of Resistance $M_r = 0.87x f_y x A_s x z$	Total Factored Uniformly Distributed Superimposed Load					
			1.5kN/m ²	2.5kN/m ²	3.0kN/m ²	4.0kN/m ²	5.0kN/m ²	7.5kN/m ²
			$W_u = 7.07$	$W_u = 8.67$	$W_u = 9.47$	$W_u = 11.07$	$W_u = 12.67$	$W_u = 16.67$
VP 200 only	384	22.950	5.09	4.60	4.40	4.07	3.81	3.32
+ 1xY8	50.3	28.832	5.71	5.16	4.93	4.56	4.27	3.72
+ 1xY10	78.5	32.130	6.03	5.44	5.21	4.82	4.50	3.93
+ 2xY8	101	34.761	6.27	5.66	5.42	5.01	4.68	4.08
+ 1xY12	113	36.164	6.40	5.78	5.53	5.11	4.78	4.17
+ 2xY10	157	41.309	6.84	6.17	5.91	5.46	5.11	4.45
+ 1xY16	201	46.454	7.25	6.55	6.26	5.79	5.42	4.72
+ 2xY12	226	49.378	7.47	6.75	6.46	5.97	5.58	4.87
+ 3xY10	236	50.547	7.56	6.83	6.53	6.04	5.65	4.92
+ 3xY12	339	62.591	8.41	7.60	7.27	6.72	6.29	5.48
+ 2xY16	402	69.958		8.03	7.69	7.11	6.65	5.79
+ 4xY12	452	75.805			8.00	7.40	6.92	6.03
+ 3xY16	603	93.462				8.22	7.68	6.70
+ 2xY20	628	96.386					7.80	6.80
Maximum Span (L) in m								

Design Parameters and Assumptions

- Steel : 0.8mm ISQ230 (Galv. Z275)

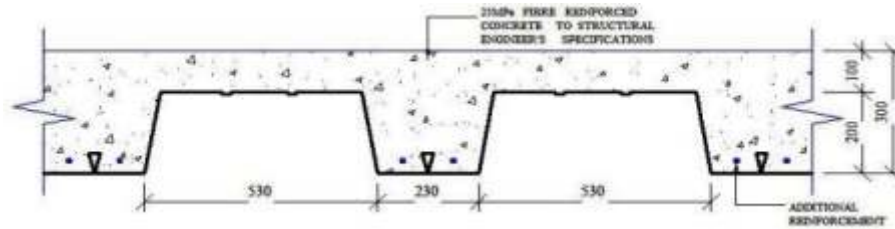


- Concrete volume : $0.12\text{m}^3/\text{m}^2$
- Temporary propping to be at 2m centers.
- Deflections are not calculated but are controlled by restricting the span to effective depth ratios in accordance with the Code of Practice.
- N.B.** All tabulated values serve as a guide only, and should be certified and approved by a civil/structural engineer.



JOIST FLOORS: VOIDCON CONCRETE SLABS

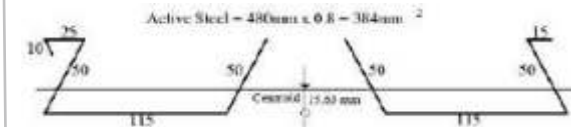
Design Tables: 300mm SLAB



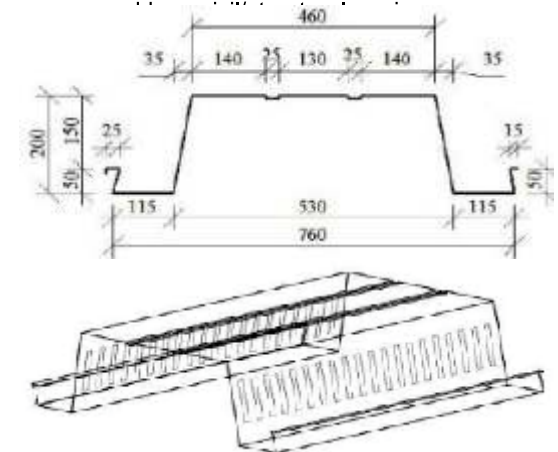
	Area of Reinforcement $f_y = 230\text{N/mm}^2$ $f_y = 450\text{N/mm}^2$	Moment of Resistance $M_r = 0.87 \times f_y \times A_s \times z$	Total Factored Uniformly Distributed Superimposed Load					
			1.5kN/m ² $W_u =$ 8.37	2.5kN/m ² $W_u =$ 9.97	3.0kN/m ² $W_u =$ 10.77	4.0kN/m ² $W_u =$ 12.37	5.0kN/m ² $W_u =$ 13.97	7.5kN/m ² $W_u =$ 17.97
VP 200	384	27.298	5.11	4.68	4.50	4.20	3.95	3.49
+ 1xY8	50.3	34.294	5.73	5.25	5.05	4.71	4.43	3.91
+ 1xY10	78.5	38.216	6.04	5.54	5.33	4.97	4.68	4.12
+ 1xY12	113	43.015	6.41	5.88	5.65	5.27	4.96	4.38
+ 2xY10	157	49.134	6.85	6.28	6.04	5.64	5.30	4.68
+ 1xY16	201	55.254	7.27	6.66	6.41	5.98	5.63	4.96
+ 2xY12	226	58.731	7.49	6.87	6.61	6.16	5.80	5.11
+ 3xY10	236	60.122	7.58	6.95	6.68	6.24	5.87	5.17
+ 3xY12	339	74.448	8.44	7.73	7.44	6.94	6.53	5.76
+ 2xY16	402	83.210	8.92	8.17	7.86	7.34	6.90	6.09
+ 4xY12	452	90.165		8.51	8.18	7.64	7.19	6.34
+ 3xY16	603	111.166			9.09	8.48	7.98	7.04
+ 2xY20	628	114.644				8.61	8.10	7.14
+ 4xY16	804	139.123					8.93	7.87
			Maximum Span (L) in m					

Design Parameters and Assumptions

- Steel : 0.8mm ISQ230 (Galv. Z275)



- Concrete volume : 0.17m³/m²
- Temporary propping to be at 1.5m centers.
- Deflections are not calculated but are controlled by restricting the span to effective depth ratios in accordance with the Code of Practice.
- N.B.** All tabulated values serve as a guide only, and should be certified and



ROOFS

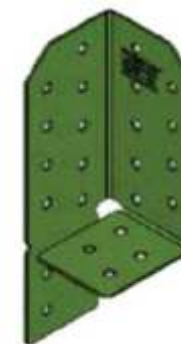


ROOF SHEETING Construction Details

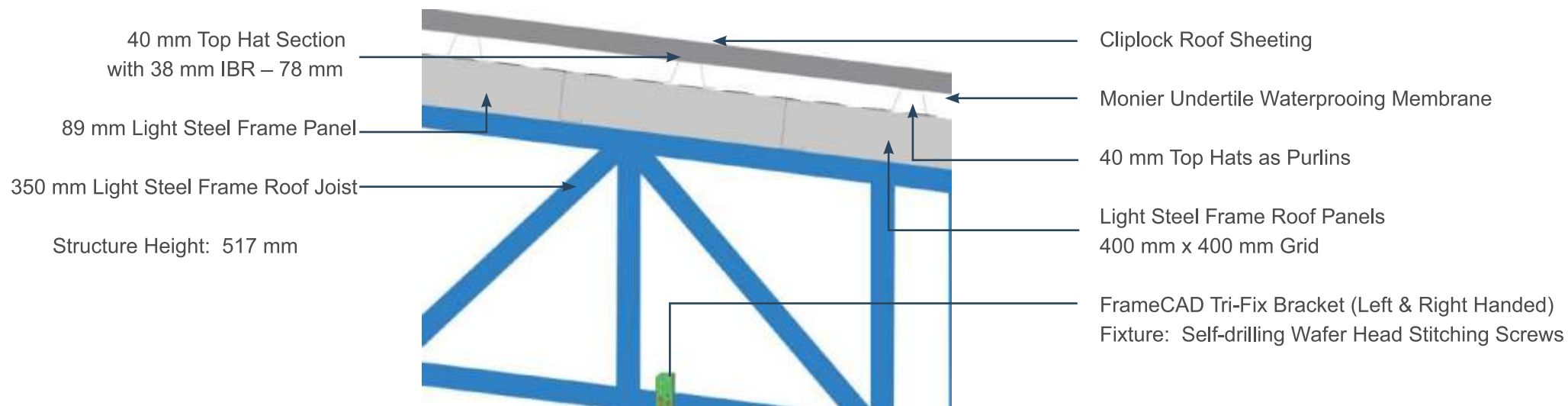
TYPICAL JOIST ROOF ON A LIGHT STEEL FRAME PANEL



FRAMECAD TRI-FIX BRACKET

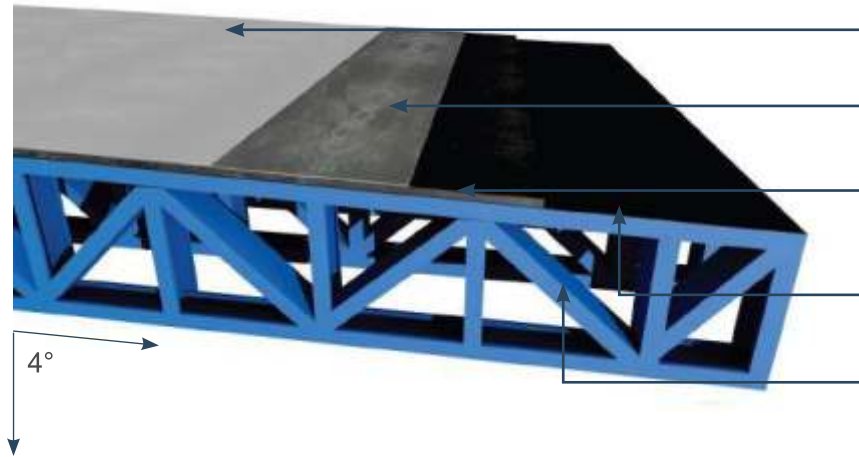


Tri-Fix Bracket to Roof Panel
Kare Industries Wafer Head Screws
SD1016W2Z3FP 4.8x16 mm



ROOFS: FIBRE CEMENT BOARDS SHEETING Construction Details

TYPICAL JOIST ROOF ON A LIGHT STEEL FRAME PANEL WITH 18 MM FIBRE CEMENT BOARDS



ABE Silvakote Bituminous Aluminium Protective Coating

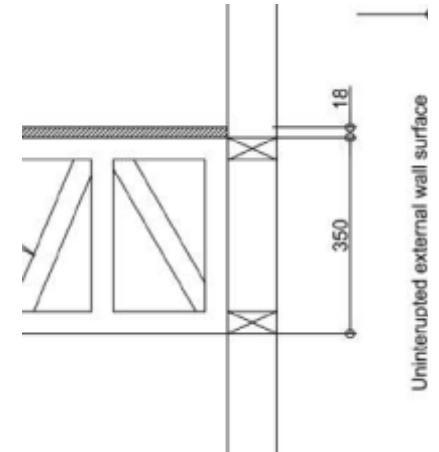
ABE Index 4 mm Torch on Waterproofing

15 mm Fibre Cement Boards
Fixture: 4.9x42 mm Strongtie Self-Drilling Screws

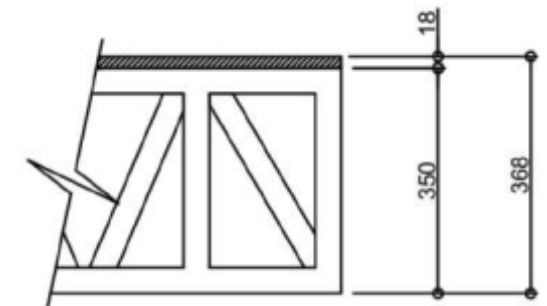
250 micron DPC

350 mm Light Steel Frame Roof Joists

Structure Height: 355 mm
Maximum Pitch: 4°



Light Steel Frame Floor Joist Fixed on Top of a Light Steel Frame Wall Panel



Light Steel Frame Floor Joist Fixed on the Internal Face of a Light Steel Frame Wall Panel



STEPS FOR PLAN APPROVALS



STEPS FOR PLAN APPROVALS

New Light Steel Frame Architectural Plans



STEP 1:

Architect does SANS 10400 XA Calculations on the received R-Values



STEP 2:

Architect e-mails Architectural Plans to our Engineering for Rational Design



STEP 3:

The Engineering e-mails Rational Design back to Architect



STEP 4:

Architect takes Rational Design with Completed Architectural Plans to Council for Submission

STEPS FOR PLAN APPROVALS

Already Approved Brick & Mortar Architectural Plans

OPTION 1: Some municipalities accept only rational designs with architectural plans.

OPTION 2: Some municipalities require that the brick & mortar plans are redrawn on light steel frame plans.



STEP 1:

Architect to E-Mail Existing Brick & Mortar Plans in DWG Format



STEP 2:

Our Engineering Department E-Mails Rational Design to Architect



STEP 3:

Architect redoes the SANS 10400 XA Calculations



STEP 4:

Fire rating to be handed in at the council's Fire department to confirm fire rating for the chosen wall sub-assembly – requested by the Architect



STEP 5:

Hand in all of the above at the council again – usually 7-10 days for final approval



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