

WINDLOAD CALCULATION

IS EN 1991-1-4/NA:2013

Created by: MAK IE Technical - MAK Fastener Specialists Ltd
20 May 2026

CUSTOMER

LAYDEX LTD.

CONTACT PERSON

DECLAN MURPHY

PROJECT

OLIVER PLUNKET

Disclaimer

These calculations and possible advice are based upon the project information provided to MAK Fastener Specialists Ltd by the customer mentioned above. These calculations and possible advice are based on Eurocode EN 1991-1-4 and the technology known to us at the date here of in relation to wind-uplift. MAK Fastener Specialists Ltd does not accept any liability for any kind of damage as a result of these calculations or possible advice.

Windload calculation

IS EN 1991-1-4/NA:2013

Date:	20 May 2026		
Customer:	Laydex Ltd.		
Project:	Oliver plunket		
Building height (m):	5.7	Building length (m):	20.4
Building width (m):	52		
Type of roof:	Flat roofs $\leq 5^\circ$, Normal or parapet, Parapet height (mm): 320		
Type of roof deck:	OSB (EUR class 3) 18mm		
Pressure coefficient (Cpi):	Air open roof deck, building with normal openings (Cpi=0,2)		
Type of terrain:	Sea		
Site location:	Choose..., Ireland (F26 YX95, Co.Mayo)	Wind speed at site (m/s):	26.5
Site related load factors:	Altitude: 11m Calt: 1.011 Co: 1.0 Cdir: 1.0 Cseason: 1.0 Cprob: 1		
Characteristic wind pressure (Qp):	1.11 kN/m ²		
Safety coefficient:	Main construction element (YQ=1,5)		

Insulation board fixing

Insulation board type:	Xtratherm FR / ALU Foil (4x4)
Insulation board size (m):	1.2x1.2
Insulation thickness (mm):	250
Insulation old build up (mm):	0
Fastener methodology:	Producer guideline

	Corner	Perimeter	Field
Total area (sqm)	38	139	103
Wtot (kN/sqm)	3.50	2.51	1.50
Plate/Tube	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)
Fastener	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)
Design load (N/pc):	450N	450N	450N
Fasteners/sqm (pcs)	3.47	3.47	3.47
Fasteners/board (pcs)	5	5	5
Number of fixings (pcs)	132	483	358

Fixings summary (pcs): 973

Roof membrane fixing

	Corner	Perimeter	Field
Total area / Est. membrane area (sqm)	38 / 43	139 / 157	103 / 116
Cpe	1.89	1.30	0.70
Wtot (kN/m ²)	3.50	2.51	1.50
Membrane:	Alkorplan 35176 1,05m	Alkorplan 35176 1,05m	Alkorplan 35176 1,05m
Plate/Tube:	SP-8240-D3E (22-DR8040) (500N, 0mm)	SP-8240-D3E (22-DR8040) (500N, 0mm)	SP-8240-D3E (22-DR8040) (500N, 0mm)
Fastener:	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)
Design load (N/pc):	500N	500N	500N
Fasteners/sqm (pcs):	7.00	5.02	3.01
Distance between fastener rows (mm):	465(1 centre lines)	930	930
Fastener CC dist. (mm):	307	214	357
Number of fixings (pcs):	267	698	310

Fixings summary (pcs): 1275

Linear perimeter and upstand fixing

Method:	-
Total perimeter length (m):	157
Total number of fixings (pcs):	0

Date: 20/05/2026
Customer: Laydex Ltd.
Project: Oliver plunket
Created by: MAK IE Technical - MAK Fastener Specialists Ltd
Phone: +35314519900, E-mail: sales@makfasteners.com

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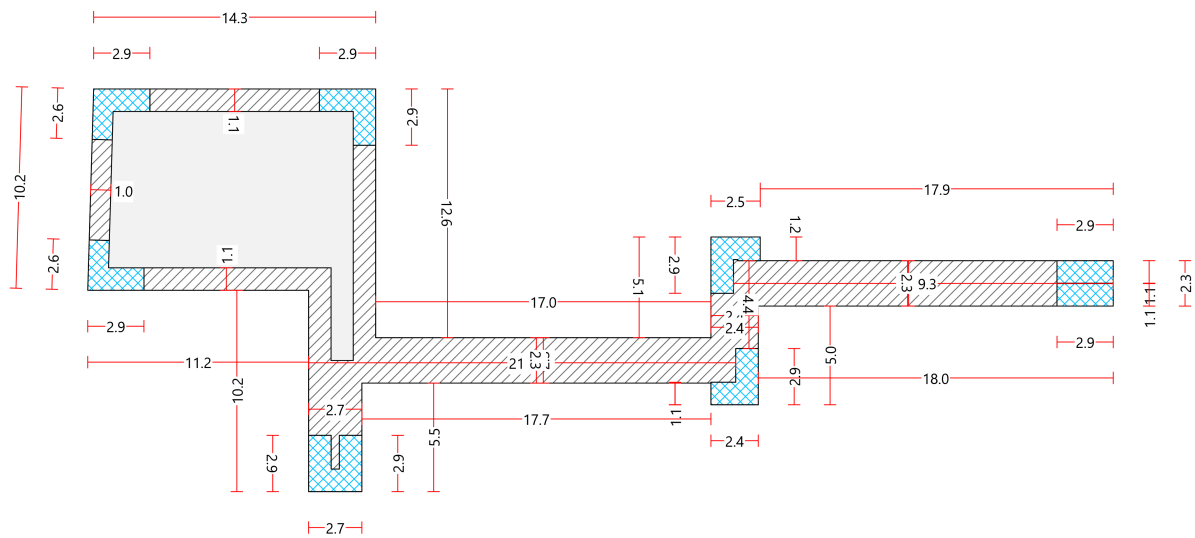


Roof plan - Membrane fixing pattern

Date:	20 May 2026
Customer:	Laydex Ltd.
Project:	Oliver plunket

	Corner	Perimeter	Field
Total area / Est. membrane area (sqm)	38 / 43	139 / 157	103 / 116
Cpe	1.89	1.30	0.70
Wtot (kN/m²)	3.50	2.51	1.50
Membrane:	Alkorplan 35176 1,05m	Alkorplan 35176 1,05m	Alkorplan 35176 1,05m
Plate/Tube:	SP-8240-D3E (22-DR8040) (500N, 0mm)	SP-8240-D3E (22-DR8040) (500N, 0mm)	SP-8240-D3E (22-DR8040) (500N, 0mm)
Fastener:	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)
Design load (N/pc):	500N	500N	500N
Fasteners/sqm (pcs):	7.00	5.02	3.01
Distance between fastener rows (mm):	465(1 centre lines)	930	930
Fastener CC dist. (mm):	307	214	357
Number of fixings (pcs):	267	698	310

 Corner zone
 Perimeter zone
 Field zone
 Building height: 5.7
 Unit: Meter (m)



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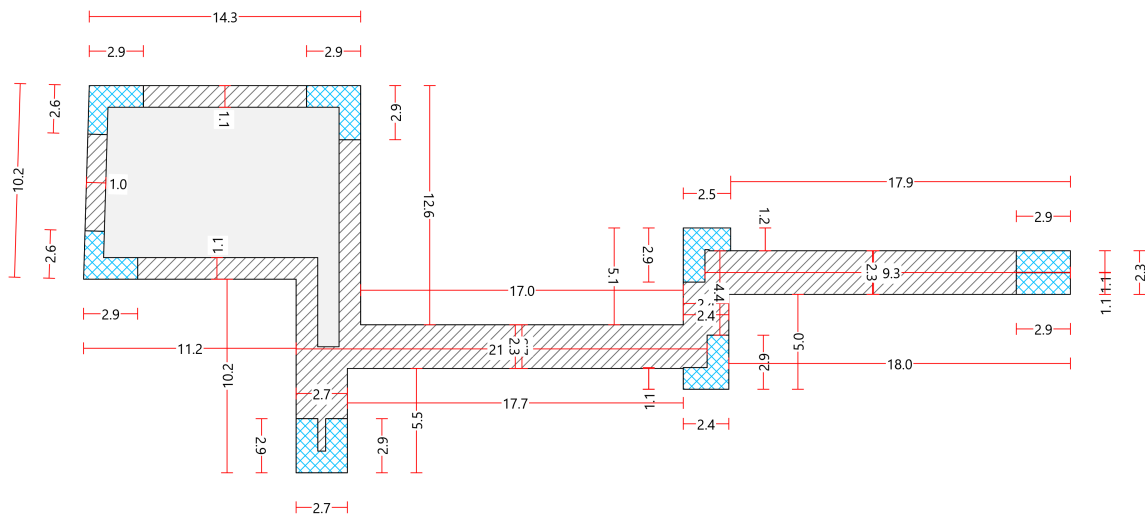
Roof plan - Separate fixing of insulation

Date:	20 May 2026
Customer:	Laydex Ltd.
Project:	Oliver plunket

Insulation board type:	Xtratherm FR / ALU Foil (4x4)
Insulation board size (m):	1.2x1.2
Insulation thickness (mm):	250
Insulation old build up (mm):	0
Fastener methodology:	Producer guideline

	Corner	Perimeter	Field
Total area (sqm)	38	139	103
Wtot (kN/sqm)	3.50	2.51	1.50
Plate/Tube	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)	75mm OMG Round Plate (22-SP75-ST) (450N, 0mm)
Fastener	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)	OMG HD-6,3mm (650N, 300mm)
Design load (N/pc):	450N	450N	450N
Fasteners/sqm (pcs)	3.47	3.47	3.47
Fasteners/board (pcs)	5	5	5
Number of fixings (pcs)	132	483	358

 Corner zone
 Perimeter zone
 Field zone
 Building height: 5.7
 Unit: Meter (m)



Scale: 10.0m

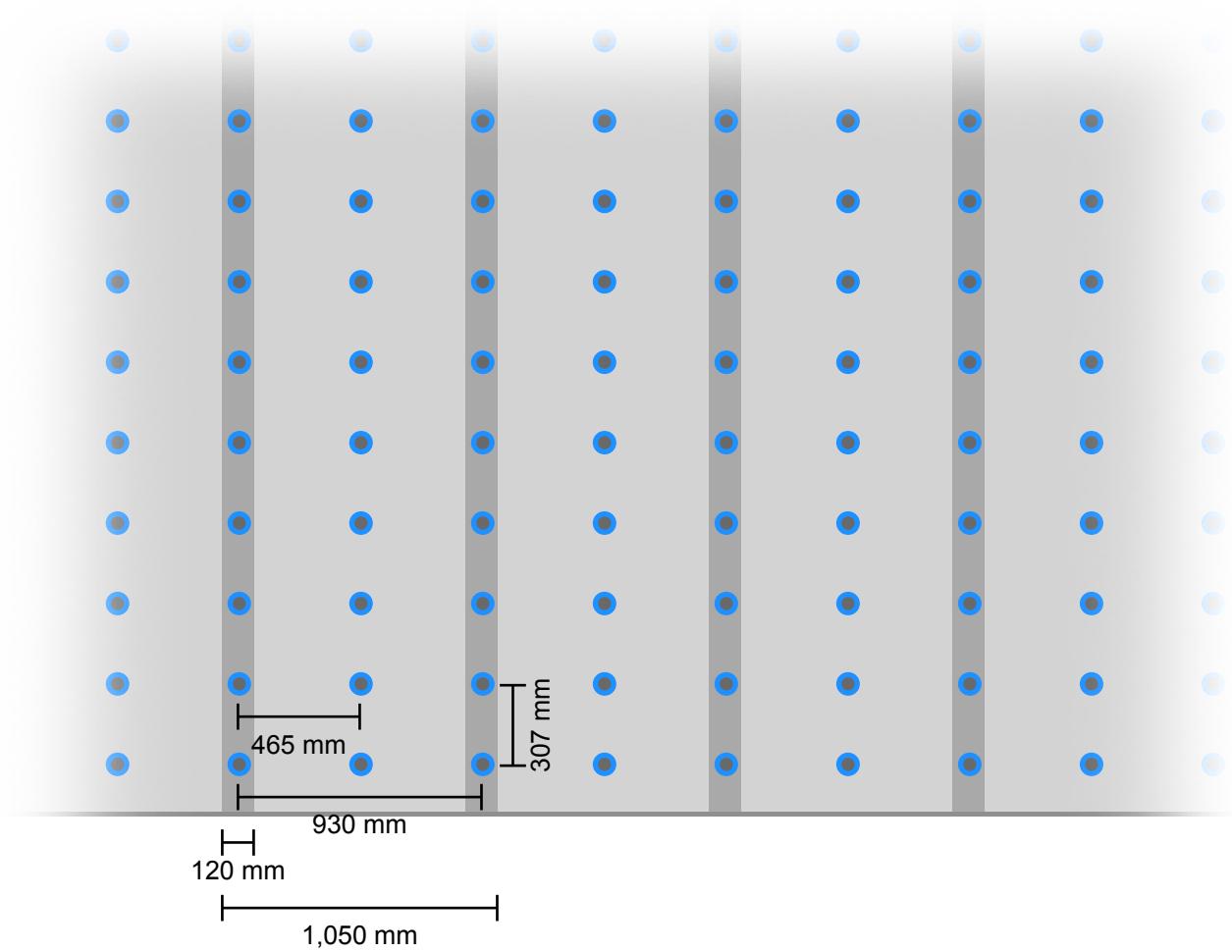
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Fixing pattern - Corner

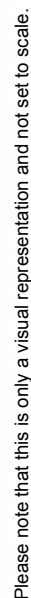
- Overlap
- Fastener



Please note that this is only a visual representation and not set to scale.



Fixing pattern - Perimeter



Date:	20 May 2026
Customer:	Laydex Ltd.
Project:	Oliver plunket

Fixing pattern - Field

