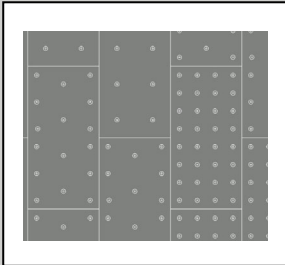


Technical Information Sheet



Insulation Attachment Patterns

Item Description

Fastening Patterns

Description

The diagrams below show the required patterns for proper placement of approved fasteners and plates for insulation on Standard Elevate 55 mph Roofing Systems.

The most common fastener density and pattern requirements are shown on this technical information sheet. Certain specifications may call for increased densities of fasteners in the perimeters and corners of roofs. For non-standard fastener densities, contact Elevate Technical Services at 800-428-4511 or visit the Elevate Website at www.holcimelevate.com.

Fastening Rates for Insulation in Adhered Membrane Single-Ply Systems ¹			
Red Shield Warranty	Thickness	Insulation	Insulation/Substrate Attachment ²
			Min. # of Fasteners per 4' x 8' boards
55 mph (25 Year Max.) ³	1/4"	DensDeck® Prime	12
	1/2"		8
	5/8"		8
	1/4"	Securock®	10
	1/2"		8
	5/8"		8
	1/4"	DEXcell FA™ Glass Mat	12
	1/2"		8
	5/8"		8
	7/16"	DEXcell Cement Board	10
	5/8"		8
	5/8"	DEXcell FA VSH™ Glass Mat	8
	1/2"	ISOGARD HD	12
	1/2" – 1.4"	ISOGARD GL/ISO 95+ GL Resista/ISOGARD CG	16
	1.5" – 1.9"		12
	≥ 2"		8
	1.5"	ISOGARD HD Composite	12
	2"		8

	1.5"	HailGard/ISOGARD HG	12
	2"		8
	5/8"	DensDeck® StormX™ Prime ¹	8
55 mph (30 Year Max.)	Any Listed Above		16

NOTE:

1. Uplift requirements for the project may require increased fastening rates than those listed above. The rates listed in these tables are for warranty purposes only. Contact an Elevate representative for rates related to special warranty terms or conditions.
2. Applications where adhesives are used to adhere insulations directly to the steel deck require that the deck be clean, smooth, dry, and free of all processing oils or other contaminants. Bead spacing in this type of application may be increased from those listed above. Contact an Elevate representative for further information.

Fastening Rates for Insulation in Mechanically Attached Single-Ply Systems¹

Maximum Warranty Term	Top Layer of Insulation		Number of Fasteners per Insulation Board ³			
	Insulation	Thickness	No Air Retarder		With an Air Retarder ²	
			4' x 4' Board	4' x 8' Board	4' x 4' Board	4' x 8' Board
Up to 25-Year	ISOGARD GL / ISO 95+ GL or Resista /ISOGARD CG	1.0" - 1.4"	4	5	8	16
		1.5" - 1.9"	4	5	6	12
		2.0" - 4"	4	5	4	8
	Dens Deck/ Dens Deck Prime Securock	1/4"	4	5	8	16
		1/2"	4	5	6	12
		5/8"	4	5	4	8
	DensDeck StormX Prime ⁴	5/8"	4	5	4	8
	DEXcell™ Glass Mat	1/4"	4	5	8	16
		1/2"	4	5	6	12
		5/8"	4	5	4	8
	DEXcell FA Glass Mat	1/4"	4	5	8	16
		1/2"	4	5	6	12
		5/8"	4	5	4	8
	DEXcell Cement Board	7/16"	4	5	5	10
		5/8"	4	5	4	8
	DEXcell FA VSH Glass Mat	5/8"	4	5	4	8
	HailGard / ISOGARD HG	1.5" min.	4	5	8	16
	ISOGARD HD	1/2"	4	5	6	12
	ISOGARD HD Comp.	1" min.	4	5	8	16
	APA Rated OSB	7/16" min.	4	5	8	16
Up to 20-Year	Structodek	1/2" - 1"	4	5	8	16

NOTE:

1. Rates in this table may differ from tested assemblies. In such a case the more stringent rate should be used. Rates in this table refer to minimum warranty requirements for a standard Red Shield 20 Year Warranty unless noted.
2. The use of an Air Retarder requires that the cover board/insulation pre-securement be increased to accommodate the added uplift the system may experience due to the retarder. Proper application details for the air retarder should be followed.
3. Uplift requirements for the project may require increased fastening rates than those listed above. The rates listed in these tables are for warranty purposes only. Contact an Elevate representative for rates related to special warranty terms or conditions.

Fastening Rates for Insulation in Metal Panel Roofing Systems¹

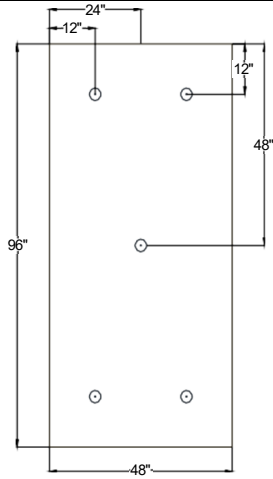
Maximum Warranty Term	Top Layer of Insulation		Number of Fasteners per 4' x 8' Insulation Board ³	
	Insulation	Thickness	Immediate Panel Installation	Delayed Panel Installation with Underlayment ²
Up to 30-Year	ISOGARD GL / ISO 95+ GL or Resista /ISOGARD CG	1.0" - 1.4"	5	16
		1.5" - 1.9"	5	16
		2.0" - 4"	5	16
	Dens Deck/ Dens Deck Prime Securock	1/4"	5	16
		1/2"	5	16
		5/8"	5	16
	DensDeck StormX Prime ⁴	5/8"	5	16
	DEXcell™ Glass Mat	1/4"	5	16
		1/2"	5	16
		5/8"	5	16
	DEXcell FA Glass Mat	1/4"	5	16
		1/2"	5	16
		5/8"	5	16
	DEXcell Cement Board	7/16"	5	16
		5/8"	5	16
	DEXcell FA VSH Glass Mat	5/8"	5	16
	HailGard / ISOGARD HG	1.5" min.	5	16
	ISOGARD HD	1/2"	5	16
	ISOGARD HD Comp.	1" min.	5	16
	APA Rated OSB	7/16" min.	5	16
	Plywood	1/2"	5	16

NOTE:

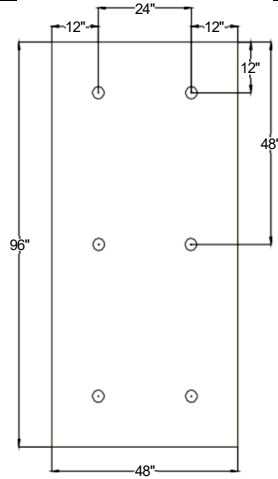
1. Rates in this table may differ from tested assemblies. In such a case the more stringent rate should be used. Rates in this table refer to minimum warranty requirements for a standard Red Shield Warranty up to 30 Year unless noted.
2. The use of an approved underlayment requires that the cover board/insulation pre-securement be increased to accommodate the added uplift the system may experience due to the underlayment. Proper application details for the underlayment should be followed.
3. Uplift requirements for the project may require increased fastening rates than those listed above. The rates listed in these tables are for warranty purposes only. Contact an Elevate representative for rates related to special warranty terms or conditions.
4. Exposure times vary based on approved Clad-Gard underlayment. Clad-Gard MA (mechanically attached) and Clad-Gard SA (self-adhered) may be exposed up to 90 days. Clad-Gard R may be exposed up to 60 days.
5. When delayed installation occurs, Clad-Gard underlayment must be inspected and repaired to like new condition prior to installation of metal panel system.
6. See Elevate Metal Roofing System Design Guide, Application Guide and appropriate installation details for additional information.

Fastening Patterns: Representing 4' x 8' insulation boards

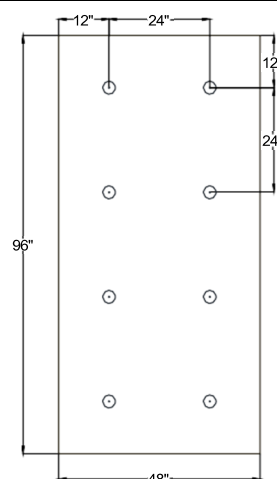
Please refer to the above-mentioned attachment patterns for a specific board attachment rate.



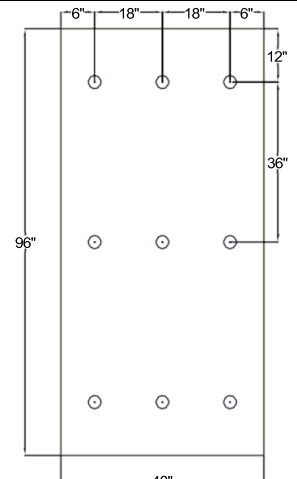
5 FASTENERS



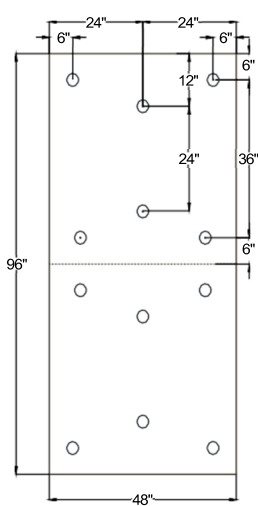
6 FASTENERS



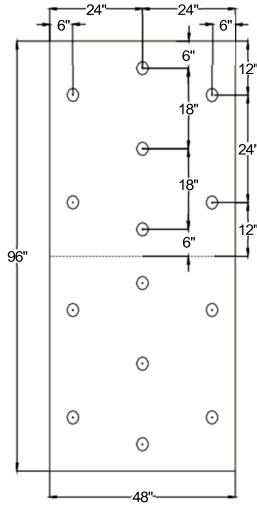
8 FASTENERS



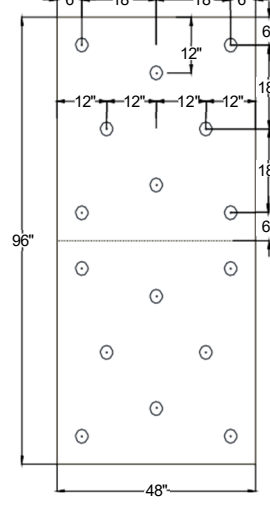
9 FASTENERS



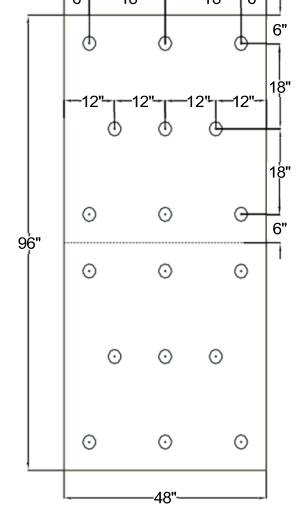
12 FASTENERS



14 FASTENERS



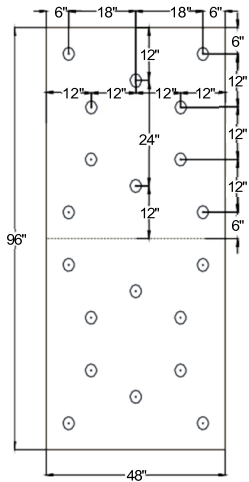
16 FASTENERS



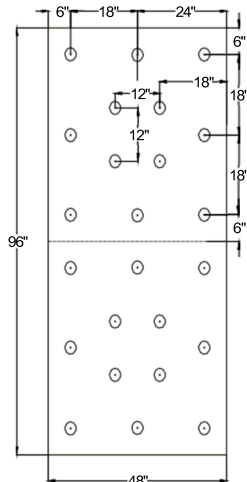
18 FASTENERS

Fastening Patterns Continued: Representing 4' x 8' insulation boards

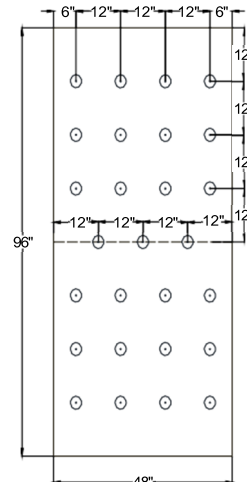
Please refer to the above-mentioned attachment patterns for a specific board attachment rate.



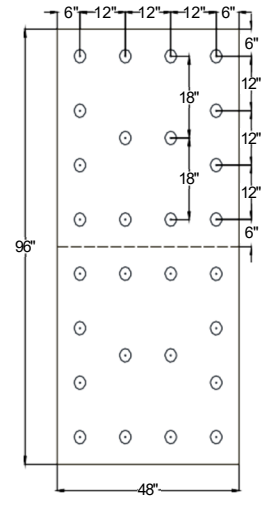
20 FASTENERS
FASTENERS



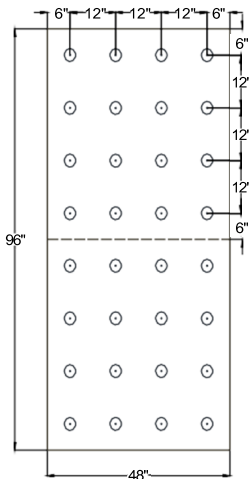
24 FASTENERS



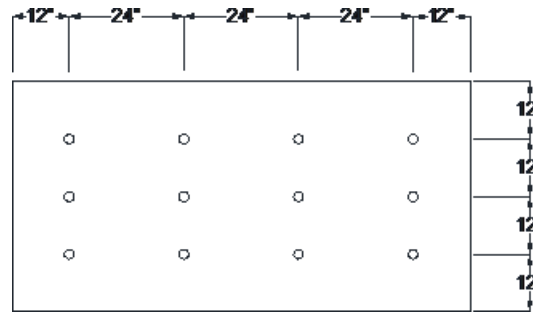
27 FASTENERS



28



32 FASTENERS



FM Global Fastening Pattern for 1-90
Attachment of ISOGARD HD Cover Board

Please contact Holcim Technical Services at 800-428-4511 for further information.

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