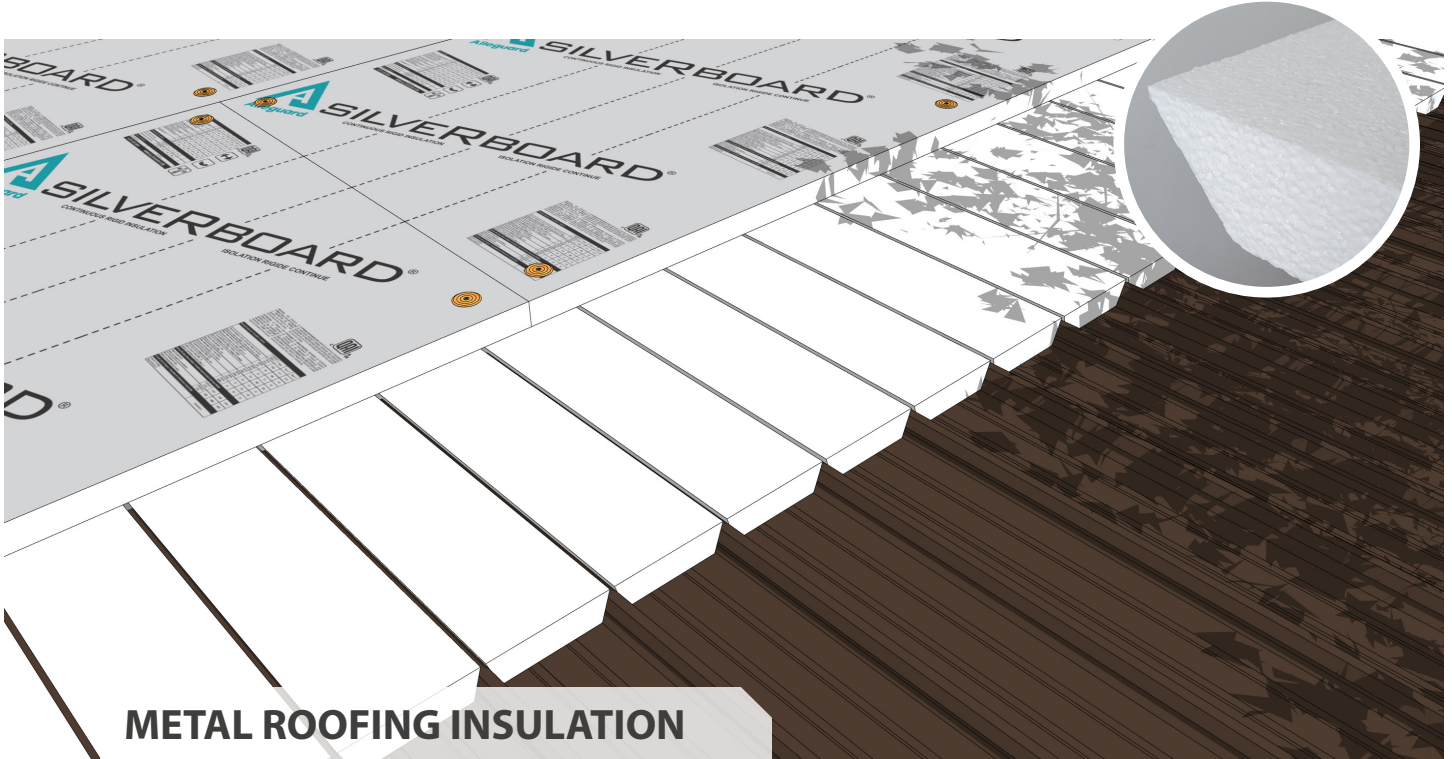
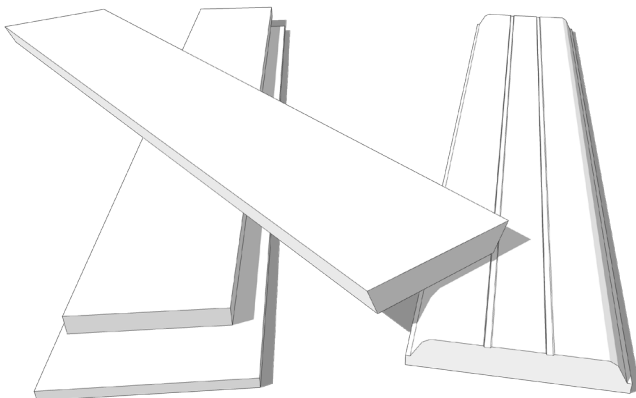


# Flute Fill Rigid Insulation



## METAL ROOFING INSULATION

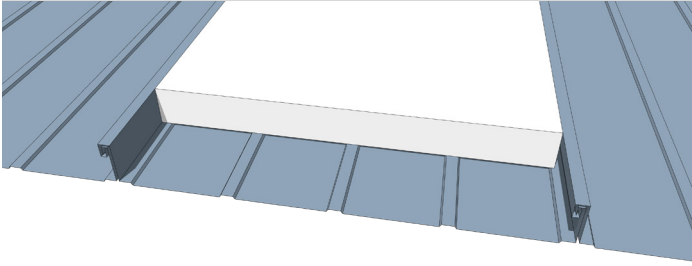
Flute Fill (FL) is custom cut foam used for retrofit applications for metal roofs that are being covered with a new roofing system. The flute fillers are made from rigid, closed cell Expanded Polystyrene (EPS) insulation offering cost effective performance. Adding flute fill insulation in between metal roof's standing seams provides additional rigidity and R-value to the new roof, reducing the amount of insulation needed above the flutes. Shape and size of foam is custom manufactured for the specifics of each project for virtually limitless possibilities.



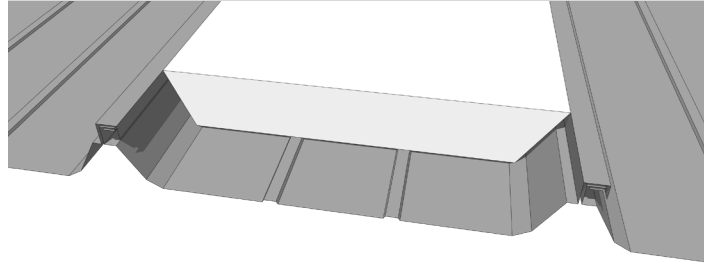
## Alleguard Advantage

- Stable long term thermal resistance.
- Does not promote growth of mold and mildew.
- Each panel is easy to handle due to the low weight and can be easily cut.
- The availability of larger panels help improve job site efficiency and reduce labor costs.
- Increased thermal resistance in lower temperatures.
- No off-gassing and does not contain HFCs, CFCs or HCFCs.
- Product may contain reprocessed (regrind) material for improved sustainability.

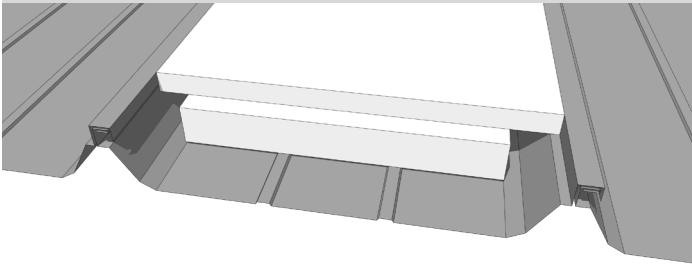
Square Cut



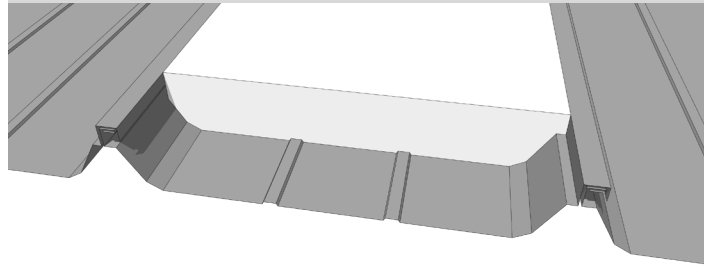
Taper Cut



Square Cut



Profile Cut



Physical Properties Table

	Standard	Units	FL10	FL13	FL15 (HD)	FL20 (HD)	FL25 (HD)
Specification for Rigid Polystyrene Insulation	ASTM C578		Type I	Type VIII	Type II	Type II	Type IX
	CAN/ULC-S701		Type 1	Type 1	Type 2	Type 2	Type 3
Thermal Resistance <sup>1</sup>	ASTM C518	F.ft <sup>2</sup> .hr/Btu	3.9	3.9	4.0	4.2	4.3
	@ 75°F (24°C)	(m <sup>2</sup> K/W)	(0.69)	(0.69)	(0.70)	(0.74)	(0.76)
Compressive Strength	ASTM D1621	psi	10	13	15	20	25
	@ 10% Strain	(kPa)	(69)	(90)	(104)	(138)	(172)
Water Absorption (Max.)	ASTM D2842	%	4.0	3.0	3.0	3.0	2.0
Water Vapor Permeance (Max.) <sup>1</sup>	ASTM E96	US perms	5.00	3.50	3.50	3.5	2.27
		(ng/Pa.s.m <sup>2</sup> )	(287)	(200)	(200)	(200)	(130)
Flexural Strength (Min.)	ASTM C203	psi	25	30	35	35	50
		(kPa)	(173)	(208)	(242)	(242)	(345)
Dimensional Stability (Max.)	ASTM D2126	%	1.5	1.5	1.5	1.5	1.5
Limiting Oxygen Index (Min.)	ASTM D2863	%	24	24	24	24	24
Density	ASTM D1622	lb/ft <sup>3</sup>	1.00	1.25	1.35	1.5	1.80
		(kg/m <sup>3</sup> )	(16)	(20)	(22)	(24)	(29)
Surface Burning Characteristics	ASTM E84 <sup>2</sup>						
	Flame Spread Index (FSI)		≤25	≤25	≤25	≤25	≤25
	Smoke Developed Index (SDI)		≤450	≤450	≤450	≤450	≤450
	CAN/ULC-S102 <sup>3</sup>						
	Flame Spread Index (FSI)		≤210	≤210	≤210	≤210	≤210
	Smoke Developed Index (SDI)		≥500	≥500	≥500	≥500	≥500

<sup>1</sup> Measurement per 1" (25mm) of thickness

<sup>2</sup> For thicknesses up to 4"

<sup>3</sup> For thicknesses up to 100mm