

Technical Bulletin: Type I, Class 1 vs. Type I, Class 2

The ASTM material specification for polyiso, ASTM C1289, designates Types by the facing material laminated to the two major surfaces of the polyiso foam core. Type I refers to foil faced polyiso.

Historically, ASTM had further classified foil faced material by whether or not it had glass fiber reinforcement in the foam core. The only other difference between the two classes was the performance requirements for dimensional stability. **Recently, ASTM recognized that how a product is made, with or without glass fiber reinforcement, is irrelevant if it can meet the performance requirements.**

The 2016a edition of ASTM C1289 now classifies foil faced polyiso as noted below with the corresponding performance requirements shown in the table:

- Type I, Class 1 – non-reinforced core foam
- Type I, Class 2 – glass fiber reinforced or non-reinforced core foam

ASTM C1289 Requirements	Test Method	Type I, Class 1	Type I, Class 2	Rmax (Foil Faced Polyiso)
Compressive Strength, psi (min)	ASTM D1621	16	16	16, 20 or 25
Dimensional Stability, Percent Linear Change, Thickness (max)	ASTM D2126 (all conditions)	4.0	4.0	4.0
Dimensional Stability, Percent Linear Change, Length and Width (max)	ASTM D2126 -40F/amb RH	2.0	1.5	1.0
	158F/97% RH	2.0	1.5	1.0
	200F/amb RH	4.0	1.5	1.0
Flexural Strength, psi (min)	ASTM C203	40	40	60
Tensile Strength, psf (min)	ASTM C209	500	500	1000
Water Absorption, Percent by Volume (max)	ASTM C209	1.0	1.0	0.2
Water Vapor Permeance, perm (max)	ASTM E96	0.3	0.3	0.03

Rmax foil faced polyiso performs significantly better than the requirements of both ASTM C1289 Type I classifications. It can now be recognized as either Type I, Class 1 or Type I, Class 2 to meet architectural and design specifications for building performance.