

TO: Atlanta Sales, Commercial Field Sales, Regional Managers, Plant Managers and Account Executives**NUMBER** TB-9**FROM:** Director Technical Services Commercial Products Division**ISSUED** 09.11.2013***UPDATED** 01.29.2021**SUBJECT:** Atlas Polyisocyanurate Insulation Classifications**PAGES** 04

*SUPERSEDES EXISTING DOCUMENTS

There are two standards for polyisocyanurate thermal insulation, ASTM C1289 and CAN/ULC S704. This bulletin is intended to help clarify the differences between ASTM C1289 and CAN/ULC S704 as they relate to Atlas Polyisocyanurate Insulations.

ASTM C1289-17: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board (Most often referenced in the United States).

ASTM C1289 recognizes **Type** as a result of the facer, **Class** is based on physical properties and **Grade** is related to the compressive strength (see page 3).

Type I: (Faced with aluminum foil on both major surfaces of the core foam)

- **Class 1:** Non-reinforced core foam
- **Class 2:** Glass fiber reinforced or non-reinforced core foam
 - **Grade 1:** 16 psi (110 kPa) min. compressive strength

Type II:

- **Class 1:** Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of the core foam
 - **Grade 1:** 16 psi (110 kPa) min. compressive strength
 - **Grade 2:** 20 psi (138 kPa) min. compressive strength
 - **Grade 3:** 25 psi (140 kPa) min. compressive strength
- **Class 2:** Faced with coated polymer-bonded glass fiber mat facers on both major surfaces of the core foam
 - **Grade 1:** 16 psi (110 kPa) min. compressive strength
 - **Grade 2:** 20 psi (138 kPa) min. compressive strength
 - **Grade 3:** 25 psi (140 kPa) min. compressive strength
- **Class 4:** Faced with coated or uncoated polymer bonded glass fiber mat facers on both major surfaces of the core foam. This product is used at a maximum thickness of ½" (12.7mm)
 - **Grade 1:** 80 psi (551 kPa) min. compressive strength
 - **Grade 2:** 110 psi (758 kPa) min. compressive strength
 - **Grade 3:** 140 psi (965 kPa) min. compressive strength

Type III: Faced with a perlite insulation board on one major surface of the core foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam.

Type IV: Faced with a cellulosic fiber insulating board on one major surface of the core foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded fiber mat facer on the other major surface of the core foam.

Type V: Faced with oriented strand board (OSB) or plywood on one major surface of the foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer bonded glass fiber mat facer on the other major surface of the core foam.

Type VII: Faced with glass mat faced gypsum board on one major surface and glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam.

CAN/ULC S704-11: Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced (Most often referenced in Canada)

CAN/ULC S704 recognizes **Type** as a result of physical properties, and the **Class** is based on water vapor permeance (see page 4).

ASTM C1289 STANDARD CLASSIFICATION ATLAS POLYISO ROOF AND WALL INSULATION



PHYSICAL PROPERTIES		ATLAS PRODUCTS
TYPE I Faced with aluminum foil on both major surfaces of the core foam	CLASS 1 (Non-reinforced core foam) (16 psi min. compressive strength)	ACFoam® Supreme, EnergyShield® & EnergyShield® Pro
	CLASS 2 (Reinforced or non-reinforced core foam) (16 psi min. compressive strength)	EnergyShield® Pro
TYPE II Faced with a non-asphaltic, glass fiber reinforced cellulosic organic felt or inorganic uncoated or coated polymer-bonded glass fiber mat facer on both major surfaces of the core foam	CLASS 1 Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of the core foam	GRADE 1 (16 psi min. compressive strength) N/A
		GRADE 2 (20 psi min. compressive strength) ACFoam®-II
		GRADE 3 (25 psi min. compressive strength) ACFoam®-II
	CLASS 2 Faced with coated polymer-bonded glass fiber mat facers on both major surfaces of the core foam	GRADE 1 (16 psi min. compressive strength) N/A
		GRADE 2 (20 psi min. compressive strength) ACFoam® Recover Board, ACFoam®-III, EnergyShield® CGF, & Stucco-Shield®
		GRADE 3 (25 psi min. compressive strength) ACFoam®-III, ACFoam® Recover Board, EnergyShield® CGF Pro, & EnergyShield® PanelCast®
	CLASS 3 Faced with uncoated polymer-bonded glass fiber mat facers on both major surfaces of the core foam (AGF)	GRADE 1 (16 psi min. compressive strength) N/A
		GRADE 2 (20 psi min. compressive strength) N/A
		GRADE 3 (25 psi min. compressive strength) N/A
	CLASS 4 Faced with coated or uncoated polymer-bonded glass fiber mat facers on both major surfaces of the core foam. This product is used at a maximum thickness of 1/2" (12.7mm)	GRADE 1 (80 psi min. compressive strength) ACFoam®-HD CoverBoard
		GRADE 2 (110 psi min. compressive strength) N/A
		GRADE 3 (140 psi min. compressive strength) N/A
TYPE III	Faced with a perlite insulation board on one major surface of the core foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam	N/A
TYPE IV	Faced with a cellulosic fiber insulating board on one major surface of the core foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam	N/A
TYPE V	Faced with oriented strand board (OSB) or plywood on one major surface of the foam and a glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam	ACFoam® Nail Base & ACFoam® CrossVent®
TYPE VII	Faced with glass mat faced gypsum board on one major surface and glass fiber reinforced cellulosic felt or uncoated or coated polymer-bonded glass fiber mat facer on the other major surface of the core foam	ACFoam® Composite/GB



CAN/ULC S704 STANDARD CLASSIFICATION ATLAS POLYISO ROOF AND WALL INSULATION



PHYSICAL PROPERTIES		ATLAS PRODUCTS
TYPE 1 Compressive strength: min, kPa=110 Flexural Strength: min., kPa=170 Tensile Strength: min., kPa=24	CLASS 1 Water Vapour Permeance $\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	EnergyShield®
	CLASS 2 Water Vapour Permeance $\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	N/A
	CLASS 3 Water Vapour Permeance $> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	EnergyShield® CGF
TYPE 2 Compressive strength: min, kPa=140 Flexural Strength: min., kPa=275 Tensile Strength: min., kPa=35	CLASS 1 Water Vapour Permeance $\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	ACFoam® Supreme & EnergyShield®
	CLASS 2 Water Vapour Permeance $\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	N/A
	CLASS 3 Water Vapour Permeance $> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	ACFoam®-II, ACFoam®-III, ACFoam® Recover Board, EnergyShield® CGF & Stucco-Shield®
TYPE 3 Compressive strength: min, kPa=170 Flexural Strength: min., kPa=275 Tensile Strength: min., kPa=35	CLASS 1 Water Vapour Permeance $\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	ACFoam® Supreme
	CLASS 2 Water Vapour Permeance $\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	N/A
	CLASS 3 Water Vapour Permeance $> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$, for 25.4 mm product	ACFoam®-II & ACFoam®-III

