

**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** 03.15.2018**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  |
|---|---|---|
| <b>TYPE I</b><br>Faced with aluminum foil on both major surfaces of the core foam   | <b>CLASS 1</b><br>(Non-reinforced core foam)<br>(16 psi min. compressive strength)  | ACFoam® Supreme,<br>EnergyShield® & EnergyShield® Pro   |
|   | <b>CLASS 2</b><br>(Reinforced or non-reinforced core foam)<br>(16 psi min. compressive strength)  | EnergyShield® Pro   |
| <b>TYPE II</b><br>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 | <b>CLASS 1</b><br>Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of the core foam<br><b>GRADE 1</b><br>(16 psi min. compressive strength)  | N/A   |
|   | <b>GRADE 2</b><br>(20 psi min. compressive strength)  | ACFoam®-II  |
|   | <b>GRADE 3</b><br>(25 psi min. compressive strength)  | ACFoam®-II  |
|   | <b>CLASS 2</b><br>Faced with coated polymer-bonded glass fiber mat facers on both major surfaces of the core foam<br><b>GRADE 1</b><br>(16 psi min. compressive strength)   | N/A   |
|   | <b>GRADE 2</b><br>(20 psi min. compressive strength)  | ACFoam® Recover Board, ACFoam®-III, EnergyShield® CGF, EnergyShield® CGF Pro & Stucco-Shield® |
|   | <b>GRADE 3</b><br>(25 psi min. compressive strength)  | ACFoam®-III, ACFoam® Recover Board & EnergyShield® PanelCast®                                 |
|   | <b>CLASS 3</b><br>Faced with uncoated polymer-bonded glass fiber mat facers on both major surfaces of the core foam (AGF)<br><b>GRADE 1</b><br>(16 psi min. compressive strength)   | N/A   |
|   | <b>GRADE 2</b><br>(20 psi min. compressive strength)  | N/A   |
|   | <b>GRADE 3</b><br>(25 psi min. compressive strength)  | N/A   |
|   | <b>CLASS 4</b><br>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)<br><b>GRADE 1</b><br>(80 psi min. compressive strength) | ACFoam®-HD CoverBoard   |
|   | <b>GRADE 2</b><br>(110 psi min. compressive strength)   | N/A   |
|   | <b>GRADE 3</b><br>(140 psi min. compressive strength)   | N/A   |
| <b>TYPE III</b>   | 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   |
| <b>TYPE IV</b>  | 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   |
| <b>TYPE V</b>   | 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®  |
| <b>TYPE VII</b>   | 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  |
|---|--|---|
| <b>TYPE 1</b><br>Compressive strength: min, kPa=110<br>Flexural Strength: min., kPa=170<br>Tensile Strength: min., kPa=24 | <b>CLASS 1</b><br>Water Vapour Permeance<br>$\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product         | EnergyShield®   |
|   | <b>CLASS 2</b><br>Water Vapour Permeance<br>$\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product | N/A   |
|   | <b>CLASS 3</b><br>Water Vapour Permeance<br>$> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product            | EnergyShield® CGF   |
| <b>TYPE 2</b><br>Compressive strength: min, kPa=140<br>Flexural Strength: min., kPa=275<br>Tensile Strength: min., kPa=35 | <b>CLASS 1</b><br>Water Vapour Permeance<br>$\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product         | ACFoam® Supreme & EnergyShield®   |
|   | <b>CLASS 2</b><br>Water Vapour Permeance<br>$\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product | N/A   |
|   | <b>CLASS 3</b><br>Water Vapour Permeance<br>$> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product            | ACFoam®-II, ACFoam®-III, ACFoam® Recover Board,<br>EnergyShield® CGF & Stucco-Shield® |
| <b>TYPE 3</b><br>Compressive strength: min, kPa=170<br>Flexural Strength: min., kPa=275<br>Tensile Strength: min., kPa=35 | <b>CLASS 1</b><br>Water Vapour Permeance<br>$\leq 15 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product         | ACFoam® Supreme   |
|   | <b>CLASS 2</b><br>Water Vapour Permeance<br>$\geq 15 \leq 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product | N/A   |
|   | <b>CLASS 3</b><br>Water Vapour Permeance<br>$> 60 \text{ ng}/(\text{Pa}\cdot\text{s}\cdot\text{m}^2)$ , for 25.4 mm product            | ACFoam®-II & ACFoam®-III  |

