# IKOTHERM POLYISOCYANURATE

IKOTherm is a rigid, polyisocyanurate foam insulation with high thermal properties. It is constructed from a closed cell polyisocyanurate foam core that is bonded on each side to fibre-reinforced facers during the manufacturing process. IKOTherm is designed to be part of a modified bitumen, built-up or single-ply roof system.

IKOTherm insulation is dimensionally stable and can be sized with ease. It is also lightweight and easy to handle. Its high R-value thermal resistance provides outstanding insulation protection, which helps to reduce energy costs.

IKOTherm is available in standard 1220 mm x 2440 mm (4' x 8') or 1220 mm x 1220 mm (4' x 4') sizes. IKOTherm Tapered is available in 1220 mm x 1220 mm (4' x 4') size. The top surface of IKOTherm Tapered is manufactured with a slope of 1/16", 1/8", 3/16", 1/4" or 1/2" per foot to provide for positive roof drainage.

## FEATURES AND BENEFITS

- Cost-effective.
- Compatible with all types of roofing systems.
- Dimensionally stable.
- Excellent compressive strength.
- Excellent thermal R-value.
- Excellent performance in fire tests.
- High-temperature resistance for hot mopping applications.
- Approved for direct installation on the roof deck without a thermal barrier (CAN/ULC S126M compliance).
- Meets U.S. (ASTM C1289) and Canadian (CAN/ULC S704) product standards.
- ISO 9001:2008 Registered Facilities.

## BUR & MODIFIED BITUMEN SYSTEMS

IKOTherm is applied by fastening each panel to the roof deck with Factory Mutual approved fasteners (appropriate to the deck type) and plates. IKOTherm panels of up to a maximum 1220 mm x 1220 mm (4' x 4') may be adhered to a suitably prepared concrete roof deck and vapour barrier with a full mopping of hot Type II or Type III asphalt or approved cold adhesive. The edges of the board must butt up against each other and the joints of adjacent panels must be staggered. IKO, NRCA and the CRCA recommend the installation of an overlayment board prior to the application of built-up roofing, such as 3 mm (1/8") IKO Protectoboard. For best roof system performance, an overlayment board should be installed under the roof membrane. The roof covering can then be installed according to the membrane manufacturer's specifications.

## BALLASTED SINGLE-PLY SYSTEMS

IKOTherm panels are loosely laid on the roof deck. The edges of the board must butt up against each other and the joints of adjacent panels must be staggered. The roof covering can then be installed according to the membrane manufacturer's specifications.

## FULLY ADHERED SINGLE-PLY SYSTEM

IKOTherm panels are securely fastened to the roof deck with Factory Mutual approved fasteners (appropriate to the deck type) and plates. IKOTherm panels of up to 1220 mm x 1220 mm (4' x 4') may also be adhered to a suitably prepared concrete roof deck and vapour barrier with a full mopping of hot Type II or Type III asphalt. The edges of the board must butt up against each other and the joints of adjacent panels must be staggered. The roof covering can then be installed according to the membrane manufacturer's specifications.

## IKOTHERM - THERMAL VALUES

| Nominal Thickness* | | RSI Units** LTTR[1] | R-Value** LTTR[1] |
|---|---|---|---|
| mm | inches | | |
| 25 | 1.0 | .99 | 5.6 |
| 38 | 1.5 | 1.50 | 8.5 |
| 45 | 1.8 | 1.80 | 10.2 |
| 50 | 2.0 | 2.01 | 11.4 |
| 63 | 2.5 | 2.54 | 14.4 |
| 68 | 2.7 | 2.75 | 15.6 |
| 75 | 3.0 | 3.06 | 17.4 |
| 83 | 3.3 | 3.38 | 20.4 |
| 85 | 3.5 | 3.61 | 21.7 |
| 100 | 4.0 | 4.16 | 23.6 |

* Additional thicknesses available upon request. ** Typical Values.[1] The long term thermal resistance (LTTR) values of IKOTherm Roof Insulation were determined in accordance with CAN/ULC S704 using CAN/ULC S770. These values can be used as design R-Values that more closely represent the anticipated thermal performance over the life of isocyanurate foam insulation products. Note: The IKOTherm product is produced to "inch" thicknesses, so the R-values shown should be regarded as more accurate than the RSI values, which have been calculated from the rounded mm equivalents.

## TEST RESULTS

| Property | Test Method | Typical Value |
|---|---|---|
| Thermal Performance | CAN/ULC S770 | See Thermal charts |
| Commercial Strength | ASTM D 1621 | 140 kPA (20 psi)[2] |
| Under Deck Flame Spread | CAN/ULC S126 | PASS |
| Dimensional Stability | ASTM D 2126 | all conditions MD and XD: ±2.0% |
| Water Vapour Permeance | ASTM E 96 | >60 ng/(Pa·s·m²) (1 perm) |
| Water Absorption | ASTM D 2842 | Max 3.5% volume |
| Service Temperature | CAN/ULC S704 | -73°C to 121°C (-100°F to 250°F) |

[2] 172 kPA (25 psi) product available by special request. Above IKOTherm III test results were produced according to CAN/ULC S704, and ASTM C1289.

## IKOTHERM TAPERED - THERMAL VALUES

| | Panel Label | Nominal Thickness | | RSI Units** LTTR[1] | R-Value** LTTR[1] |
|---|---|---|---|---|---|
| | | mm | inches | | |
| 1/16" Taper per Foot | 7 | 12 - 19 | 0.5 - 0.75 | 0.62 | 3.5 |
| | 8 | 19 - 25 | 0.75 - 1.0 | 0.86 | 4.9 |
| | 1 | 25 - 32 | 1.0 - 1.25 | 1.11 | 6.3 |
| | 2 | 32 - 38 | 1.25 - 1.5 | 1.36 | 7.7 |
| | 3 | 38 - 44 | 1.5 - 1.75 | 1.60 | 9.1 |
| | 4 | 44 - 50 | 1.75 - 2.0 | 1.87 | 10.6 |
| | 5 | 50 - 57 | 2.0 - 2.25 | 2.13 | 12.1 |
| | 6 | 57 - 63 | 2.25 - 2.5 | 2.40 | 13.6 |
| 1/8" Taper per Foot | AA | 12 - 25 | 0.5 - 1.0 | 0.74 | 4.2 |
| | A | 25 - 38 | 1.0 - 1.5 | 1.23 | 7.0 |
| | B | 38 - 50 | 1.5 - 2.0 | 1.74 | 9.9 |
| | C | 50 - 63 | 2.0 - 2.5 | 2.27 | 12.9 |
| 3/16" Taper per Foot | JJ | 12 - 32 | 0.5 - 1.25 | 0.86 | 4.9 |
| | KK | 32 - 50 | 1.25 - 2.0 | 1.62 | 9.2 |
| 1/4"Taper per Foot | X | 12 - 38 | 0.5 - 1.5 | 0.99 | 5.6 |
| | Y | 38 - 63 | 1.5 - 2.5 | 2.01 | 11.4 |
| | G | 25 - 50 | 1.0 - 2.0 | 1.50 | 8.5 |
| | H | 50 - 76 | 2.0 - 3.0 | 2.54 | 14.4 |
| 1/2" Taper per Foot | Q | 12 - 63 | 0.5 - 2.5 | 1.50 | 8.5 |

Thermal values for tapered products are not an average or linear correlation. The Thermal Resistance is proportional to the inverse of the heat loss, and the effective thermal resistance for the section is proportional to the overall heat loss of the section.

### MECHANICALLY ATTACHED SINGLE-PLY SYSTEMS

IKOTherm panels are securely fastened to the roof deck with Factory Mutual approved fasteners (appropriate to the deck type) and plates. The edges of the board must butt up against each other and the joints of adjacent panels must be staggered. The roof covering can then be installed according to the membrane manufacturer's specifications.

### VAPOUR RETARDER

1. In applications where high interior humidity is a factor, a vapour retarder may be necessary to protect roofing components.

2. The need for a vapour retarder, as well as the type, placement and location of a retarder should be determined by a specification authority or a designer and may need to be considered in the following situations:
   a. Applications on buildings with high humidity interiors, such as:
      · Indoor swimming pools.
      · Textile manufacturing operations.
      · Food, paper plants and other wet-process industrial plants.
   b. Applications with construction elements that may release moisture after the roof is installed, such as:
      · Interior concrete and masonry–Fuel burning heaters.
      · Plaster and paint finishes–Cementitious roof fills.
3. IKOTherm by itself cannot be considered a vapour retarder.

### WARNING AND LIMITATIONS

· IKOTherm, as with all foam plastics products, will burn.
· Do not leave exposed.
· Store IKOTherm on pallets elevated above the floor, ground or standing water.

· IKOTherm is bagged at the factory to protect the insulation from direct weather exposure when in transport. It is not intended to be used as a protective barrier for long term storage outside. Shipping packaging shall be slit to minimize the formation of condensation and covered with a waterproof breathable tarpaulin when it reaches its final destination.

IKO will not be responsible for specific building designs by others, for deficiencies in construction or workmanship, for dangerous conditions on the job site or improper storage and handling.

### HCFC-FREE

IKOTherm is constructed HCFC-free, exceeding the Environmental Protection Agency's timetable for the elimination of HCFCs (hydrochlorofluorocarbons), three years ahead of time. IKOTherm is manufactured at IKO's state-of-the-art facilities, which have been designed completely around IKO's HCFC-free manufacturing process, using a Pentane blowing agent. ISO 9001:2008 Registered Facilities.