

## Product Evaluation

RC687 | 0122

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

**Evaluation ID:** RC-687

**Effective Date:** January 1, 2022

**Re-evaluation Date:** January 2026

**Product name:** IKO Single-Ply TPO Roofing Systems Installed over Steel Roof Decks

**Manufacturer:** IKO Industries Ltd.  
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Brampton, ON L6W 3H4  
Canada  
(416) 529-3606

### General Description:

- **IKO Innovi TPO** is a TPO membrane with a nominal thickness range of 0.045" to 0.080".
- **IKO MVP** is a vapor retarder composed if a modified SBS asphalt with a top surface of high density cross laminated polyethylene film
- **IKOTherm** is a rigid, polyisocyanurate foam insulation with high thermal properties
- **IKOTherm CoverShield** is a rigid, polyisocyanurate foam insulation with high thermal properties and high compressive strength
- **IKOTherm III** is a rigid, moisture resistant polyisocyanurate foam insulation.
- **IKO Millennium Adhesive** is a 2-part, solvent-free low rise foam urethane adhesive

- **InnoviBond Membrane Adhesive SPR** is a low-VOC sprayable adhesive

**Limitations and Installation:**

**Roof Framing:** The maximum allowable spacing of the roof framing must be as specified in this evaluation report.

**Roof Deck:** For new applications, the roof deck must be secured to the roof framing to resist the required uplift loads.

**Positive Drainage of Roof Deck:** Roof decks, in which this product is to be installed upon, must be provided with positive drainage. A minimum roof slope after construction of 1/4" per foot is recommended.

**Design Wind Pressures:** The design wind uplift pressures must be specified in the assemblies listed in this evaluation report.

**Installation Over an Existing Roof Covering (Roof Recover):**

**Acceptable Applications:** The TPO roofing system may be installed over an existing built-up roof covering or an existing TPO roof covering based on the requirements set forth in this product evaluation report.

- **Inspection of Roof Covering Recover Installation:** Inspection of the roof covering recover installation must be by a Texas Department of Insurance appointed engineer. The Texas Department of Insurance appointed engineer must determine if the roof framing can support the com

**Roof Covering Replacement Versus Roof Covering Recover:** All existing roof coverings must be completely removed and a new roof covering installed if any of the following conditions occur:

- The existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for the additional roof covering.
- The existing roof has two or more applications of any type of roof covering.

**Positive Drainage:** The roof covering recover application must not be required to meet the minimum roof slope of 1/4" per foot if positive drainage is provided.

**Roof Framing:** The maximum allowable spacing of the roof framing must be as specified in this evaluation report.

**Roof Deck:** The existing roof deck must be as specified in each assembly listed in this evaluation report. The underside of the roof deck must be examined by the Texas Department of Insurance appointed engineer for corrosion or deterioration. If corrosion exists, then it must be treated with a rust inhibitor. A fastener withdrawal resistance test must be conducted in the corroded or deteriorated area to determine if the withdrawal resistance of the fastener complies with the

minimum fastener requirements for the roof covering recover application. If the tested fastener fails to comply, then the deteriorated roof deck must be replaced.

**Fastener Withdrawal Resistance:** The fastener withdrawal resistance must be conducted in accordance with ANSI/SPRI FX-1-2006 and this evaluation report. Fasteners used for the installation of the roof covering recover to the existing roof deck must be as specified in the Installation Instructions section of this evaluation report. For the withdrawal test, the fasteners must be installed in the existing roof deck as required for the roof covering recover installation. A Texas Department of Insurance appointed engineer must review the data to verify the integrity of the existing roof deck and to compare results of the withdrawal tests with the minimum fastener requirements for the roof covering recover application.

The Texas Department of Insurance appointed engineer must document all test results, including the locations on the roof surface where the tests are performed. A minimum of 10 withdrawal resistance tests are required for a roof area up to 50,000 square feet (a minimum of 50 percent of the tests must be conducted at the perimeter and the corners). Five additional tests are required for each additional 5,000 square feet of roof area or portion thereof (a minimum of 50 percent of the tests must be conducted at the perimeter and the corners). The tests must be located evenly spread across the surface of the roof. At least one withdrawal test must be performed on each roof level if the roof consists of multiple levels.

The withdrawal resistance of each tested fastener must comply with the minimum fastener requirements for the roof covering recover application. If a tested fastener fails to comply, then the Texas Department of Insurance appointed engineer must examine that area for deterioration of the roof deck by removing the existing roof covering in that area. If that area of the roof deck has deteriorated, then the deteriorated roof deck must be replaced.

**Existing Roof Covering Preparation:** The existing roof covering must be prepared to receive the roof covering recover as specified in the Firestone installation instructions.

- The existing roof covering surface must be dry and free of dirt and debris.
- If the existing roof covering is gravel surfaced, then the loose gravel must be completely removed. The surface of the existing roof covering must be relatively smooth.
- If the existing roof covering has blisters, buckles, ridges, folds, or other deformations, then they must be removed, and the surface patched to provide a smooth surface.
- If the existing roof covering has loose fasteners, then the existing membrane must be cut open, the loose fasteners removed, and the surface patched to provide a smooth surface.

**Roof Covering Recover Installation:** Installation of the roof covering recover must be specified in the Installation Instructions section of this evaluation report.

**General installation Requirements:**

All International Residential Code (IRC) and the International Building Code (IBC) requirements must be satisfied, and manufacturer's installation instructions followed, unless otherwise specified by this product evaluation.

**Membrane Attachment:** The membrane must be either mechanically attached or fully adhered to the roof deck using the fasteners, plates, and adhesives specified in this evaluation report.

**Fasteners:** Fasteners must be of sufficient length to penetrate through the steel roof deck a minimum of 3 threads beyond the bottom of the steel deck.

**Note:** Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.

**Installation:** Installation must be in accordance with the following assemblies:

Table	Assembly	Deck	Description	Page
Table 1A	1	Steel	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	6
Table 1B	2	Steel	Mech. Attached Thermal Barrier, Self-Adhered Vapor Retarder, Bonded Bottom Insulation, Bonded Top Insulation, Bonded Roof Cover	6
Table 1C	3	Steel	Mech. Attached Thermal Barrier, Self-Adhered Vapor Retarder, Bonded Bottom Insulation, Bonded Top Insulation, Bonded Coverboard, Bonded Roof Cover	7
Table 2A	4-5	Steel	Loose-laid base insulation, Mech. Attached Top Insulation, Mech. Attached Roof Cover	7-8
Table 2B	6	Steel	Loose-Laid Base Insulation, Loose-Laid Top Insulation, Mech. Attached Coverboard, Bonded Roof Cover	9

**Limitations and Installation:**

TABLE 1A: IKO INNOVI TPO ROOF SYSTEMS– NEW CONSTRUCTION							
STEEL DECK, MECH. ATTACHED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER							
Assembly No.	Substrate	Base Insulation		Top Insulation		Roof Cover	
		Type	Attachment	Type	Attachment	Type	Attachment
#1 (IKO-B4)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6" o.c. and Tek 1 screws, 24" o.c. in the lap seam	2" IKOTherm	TRUFAST 3" Metal Insulation Plate with TRUFAST #12 DP Fasteners	2" IKOTherm	IKO Millennium Adhesive, ribbons 12" o.c.	IKO Innovi TPO	InnoviBond Membrane Adhesive SPR, contact application, 0.21-0.24 gal/square per surface
<b>Design Pressure:</b>		<b>Base Insulation Attachment</b>					
		<b>Density (ft<sup>2</sup>/fastener)</b>			<b>Parts per 4x8 ft board</b>		
-45.0 psf		2.3			14		

TABLE 1B: IKO INNOVI TPO ROOF SYSTEMS– NEW CONSTRUCTION										
STEEL DECK, MECH. ATTACHED THERMAL BARRIER, SELF-ADHERED VAPOR RETARDER, BONDED BASE INSULATION, BONDED TOP INSULATION, BONDED ROOF COVER										
Assembly No.	Substrate	Thermal Barrier		Vapor Retarder	Base Insulation		Top Insulation		Roof Cover	
		Type	Attachment		Type	Attachment	Type	Attachment	Type	Attachment
#2 (IKO-B5)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6 in. o.c. and Tek 1 screws, 24" o.c. in the lap seam	0.5" SECUROCK Gypsum-Fiber Roof Board	OMG 3" Galvalume Steel Plate (Flat) with OMG #14 HD Fasteners	IKO MVP, Self-Adhered	1.5" IKOTherm	IKO Millennium Adhesive, ribbons 12" o.c.	1.5" IKOTherm	IKO Millennium Adhesive, ribbons 12" o.c.	IKO Innovi TPO	InnoviBond Membrane Adhesive SPR, contact application, 0.21-0.24 gal/square per surface
<b>Design Pressure:</b>		<b>Thermal Barrier Attachment</b>								
		<b>Density (ft<sup>2</sup>/fastener)</b>				<b>Parts per 4x8 ft board</b>				
-45.0 psf		2.7				12				

**Limitations and Installation:**

<b>TABLE 1C: IKO INNOVI TPO ROOF SYSTEMS– NEW CONSTRUCTION</b>												
<b>STEEL DECK, MECH. ATTACHED THERMAL BARRIER, SELF-ADHERED VAPOR RETARDER, BONDED BASE INSULATION, BONDED TOP INSULATION, BONDED COVERBOARD, BONDED ROOF COVER</b>												
Assembly No.	Substrate	Thermal Barrier		Vapor Retarder	Base Insulation		Top Insulation		Coverboard		Roof Cover	
		Type	Attachment		Type	Attachment	Type	Attachment	Type	Attach	Type	Attachment
#3 (IKO-B6)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6 in. o.c. and Tek 1 screws, 24 in o.c. in the lap seam	0.5" SECUROCK Gypsum-Fiber Roof Board	OMG 3" Galvalume Steel Plate (Flat) with OMG #14 HD Fasteners	IKO MVP, Self-Adhered	1.5" IKOTherm	IKO Millennium Adhesive, ribbons 12" o.c.	1.5" IKOTherm	IKO Millennium Adhesive, ribbons 12" o.c.	0.5" IKOTherm CoverShield	IKO Millennium Adhesive, ribbons 12" o.c.	IKO Innovi TPO	InnoviBond Membrane Adhesive SPR, contact application, 0.21-0.24 gal/square per surface
<b>Design Pressure:</b>		<b>Thermal Barrier Attachment</b>										
		<b>Density (ft<sup>2</sup>/fastener)</b>					<b>Parts per 4x8 ft board</b>					
-45.0 psf		2.7					12					

<b>TABLE 2A: IKO INNOVI TPO ROOF SYSTEMS– NEW CONSTRUCTION OR REROOF</b>							
<b>STEEL DECK, LOOSE-LAID BASE INSULATION, MECH. FASTENED TOP INSULATION, MECH. FASTENED ROOF COVER</b>							
Assembly No.	Substrate	Base Insulation		Top Insulation		Roof Cover	
		Type	Attachment	Type	Attachment	Type	Attachment
#4 (IKO-C1)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6" o.c. and Tek 1 screws, 24" o.c. in the lap seam	1.5". IKOTherm	Loose Laid	1.5" IKOTherm	InnoviFast Insulation Plate with InnoviFast All Purpose (AP) Fasteners	IKO Innovi TPO	InnoviFast 2-3/8" HD Seam Plate with InnoviFast Heavy Duty (HD) Fastener, 12" o.c. within 6" wide laps spaced 114" o.c. Laps sealed with 1.5" heat weld
<b>Design Pressure:</b>		<b>Top Insulation Attachment</b>					
		<b>Density (ft<sup>2</sup>/fastener)</b>			<b>Parts per 4x8 ft board</b>		
-30.0 psf		4			8		

**Limitations and Installation:**

<b>TABLE 2A (CONTINUED): IKO INNOVI TPO ROOF SYSTEMS-- NEW CONSTRUCTION OR REROOF STEEL DECK, LOOSE-LAID TOP INSULATION, MECH. FASTENED TOP INSULATION, MECH. FASTENED ROOF COVER</b>							
<b>Assembly No.</b>	<b>Substrate</b>	<b>Base Insulation</b>		<b>Top Insulation</b>		<b>Roof Cover</b>	
		<b>Type</b>	<b>Attachment</b>	<b>Type</b>	<b>Attachment</b>	<b>Type</b>	<b>Attachment</b>
#5 (IKO-C2)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6" o.c. and Tek 1 screws, 24" o.c. in the lap seam	1.5" IKOTherm	Loose laid	1.5" IKOTherm	InnoviFast Insulation Plate with InnoviFast All Purpose (AP) Fastener	IKO Innovi TPO	InnoviFast 2-3/8" HD Seam Plate with InnoviFast Heavy Duty (HD) Fastener, 6" o.c. within 6" wide laps spaced 114" o.c. Laps sealed with 1.5" heat weld
<b>Design Pressure:</b>		<b>Top Insulation Attachment</b>					
		<b>Density (ft<sup>2</sup>/fastener)</b>			<b>Parts per 4x8 ft board</b>		
-52.5 psf		4			8		



**Limitations and Installation:**

<b>TABLE 2B: IKO INNOVI TPO ROOF SYSTEMS– NEW CONSTRUCTION OR REROOF</b> <b>STEEL DECK, LOOSE-LAID BASE INSULATION, LOOSE-LAID TOP INSULATION, MECH. ATTACHED COVERBOARD, BONDED ROOF COVER</b>									
Assembly No.	Substrate	Base Insulation		Top Insulation		Coverboard		Roof Cover	
		Type	Attachment	Type	Attachment	Type	Attachment	Type	Attachment
#6 (IKO-C3)	22 ga., Type B, Grade 40 steel, 6-ft. Span secured with Tek/5 screws, 6" o.c. and Tek 1 screws, 24" o.c. in the lap seam	1.5" IKOTerm	Loose Laid	1.5" IKOTerm	Loose Laid	0.5" DensDeck Prime	OMG 3" Galvalume Steel Plate (Flat) with OMG #14 HD Fastener	IKO Innovati TPO	InnoviBond Membrane Adhesive SPR, contact application, 0.21-0.24 gal/square per surface
<b>Design Pressure:</b>		<b>Coverboard Attachment</b>							
		<b>Density (ft<sup>2</sup>/fastener)</b>				<b>Parts per 4x8 ft board</b>			
-60.0 psf		2				16			