TECHNICAL BULLETIN: 15-01
REVISED 23-03

Cleaning IB PVC Roof Membranes

Cleaning an installed IB PVC Single Ply roof membrane is not generally needed for the longevity of the roof system but can be a part of routine Owner Maintenance to enhance a roof's appearance. Most IB membranes are manufactured with an acrylic finish that helps the roof remain cleaner for a longer period after installation. Dust and dirt may settle on the roof making it appear dirty. In humid, wet climates algae, bacteria, or other biologic growth can occur as local environmental contaminants and organic materials are deposited. Periodic cleaning will improve the appearance and assist the Owner in addressing normal exposure and weathering conditions that diminish a roof's aesthetics and desired reflectivity benefits.

Membrane cleaning during roof construction is typically unnecessary when laps and seams are completed before the close of each day, and the work area is kept clean and free of debris. Dust, tear-off debris, trafficked surface contaminants and adhesive residues should be kept from the membrane surface and particularly avoided within critical lap and seam areas. Laps which cannot be completed by the close of day or that exhibit evidence of moisture or condensation must be cleaned and prepared in accordance with the Pre-Welding procedure below prior to final welding.

Contamination of the roof surface and within seam areas can be encountered during installation, repair, and long-term maintenance of the roof. The following guidelines are intended as general recommendations for various IB membranes. Cleaning operations must be undertaken in a safe manner in compliance with applicable regulations and should avoid disruption or harm to the roofing assembly, building occupants, structure, and grounds.

CAUTION: Cleaning a roof can involve the use of cleaning compounds, detergents, solvents and / or water therefore safety must be a top priority. Roof surfaces can contain a variety of hazardous conditions and can be slippery particularly when wet. IB recommends strict adherence to safe roofing practices and following applicable governmental and OSHA guidelines including recommended Personal Protective Equipment (PPE) when necessary. Care must be taken to guard against falls or injury due to slips while using cleaning materials and equipment; and to avoid conditions that could result in fire, electrical shock, unsafe handling or personnel exposure and the uncontrolled run-off of cleaning materials.

CLEANING IB PVC MEMBRANES:		PROCEDURES:	MATERIALS:
Light Cleaning: In-Seam / Lap Area - (Loose Dust, Dirt, Debris)	Contaminants such as loose dirt and debris located within lap can often be removed with only basic cleaning and seam preparation.	• Remove loose contaminant, debris, or dirt from between laps. • Wipe lap areas down with a wet rag (water only). • Where needed, use a small amount of detergent and carefully clean with wet rags to remove all soap residues. • Finish with a dry clean cloth	• Clean water • Cotton rags • Powdered, plain soap detergent (e.g., Tide®) • Acetone • Denatured Alcohol
Pre-Welding: In-Seam / Lap Area - (Light Cleaning / Moisture Removal)	Laps not completed by close of day or that exhibit any evidence of moisture must be dried and prepared in accordance with this procedure before welding and completion.	• Wipe all surfaces within lap areas with a clean dry cloth to remove any loose dirt, debris, or moisture. • Follow with lightly dampened cloth using a small amount of Acetone applied to rag only. • Do not use solvent outside of lap area as it can remove membrane finish or result in discoloration. • Use of degreasers are **NOT RECOMMENED** (e.g., Simple Green) which can leave a film residue. Where used, wipe all lap surfaces with a clean rag lightly dampened with Acetone or Denatured Alcohol. • Finish with a dry clean cloth and allow to completely dry	• Clean water • Cotton rags • Acetone • Denatured Alcohol
General Surface Cleaning: Roof Maintenance - (Dirt, Stains, Light Algae)	Solvents and harsh cleaning compounds are NOT RECOMMENDED and should not be used for general cleaning of the roof membrane surface. Solvents may remove membrane finishes and result in discoloration or damage.	• Sweep up and remove loose dirt, debris, and contaminants. • Where heavy dirt and deposits exist use a mild soap detergent or cleaning compound with soft bristle brush or push broom. • Follow manufacturer directions for prepared cleaners such as IB Roof Cleaner Concentrate. • Fully rinse roof surface with a garden hose equipped with a spray nozzle to remove cleaning detergents and residue. Avoid damage to roof membrane and flashings from use of high-pressure power washers. • Contact IB Technical Services for information on cleaning compounds and refer to the published IB Chemical Resistance Chart for additional information. • IB Roof Systems assumes no responsibility for damage resulting from efforts related to cleaning operations.	• Clean water • Cotton rags • Soft bristle broom/brush • Powdered, plain soap detergent (e.g. Tide®) • IB Roof Cleaner Concentrate

CLEANING IB PVC MEMBRANES:		PROCEDURES:	MATERIALS:

Heavy Cleaning: In-Seam / Lap and General Surface Areas - (Bitumen, Acids, Caustics, Oils)	Contaminants such as asphalt, adhesives, primers, sealants, and similar materials require immediate removal before they set up, cure or dry in place.
	Certain contaminants can penetrate the membrane, become irremovable after drying, or require complete removal due to incompatibility. Contact IB Technical Services for membrane exposures to acids, caustics, refrigerant oils, masonry cleaners, solvents / fuels, and similar compounds.
		• Wipe-up immediately with a clean dry rag.
		• Depending on contaminant type:
		  • Clean the remaining deposit with water and a mild detergent.
		  • Use a light wipe of Acetone or Denatured Alcohol on heavier deposit.
		  • Remove asphalt with Mineral Spirits; apply a small amount to a clean rag and dab or carefully wipe to remove deposit. Do not pour on membrane; use sparingly and avoid spreading contaminant.
		  • Follow with a thorough cleaning to remove all residues using a clean rag lightly dampened with Acetone or MEK.
		  • Change or turn rags frequently to ensure cleanliness, finish with a dry clean cloth and allow to dry.
		• Areas which cannot be effectively cleaned or that adversely affect welding quality must be replaced.
		• When solvents and cleaning compounds are used in the field of roof or on exposed surfaces it can result in membrane damage, discoloration, or loss of factory finish.
		• Consult IBRS Chemical Resistance Chart for additional information on cleaning materials.
			• Clean water
			• Cotton rags
			• Soft bristle broom/brush
			• Powdered, plain soap detergent (e.g. Tide®)
			• Acetone
			• MEK
			• Mineral Spirits
			• Denatured Alcohol

Membrane Repair Cleaning: (Dirt, Debris, Weathered Membrane)	Existing IB membranes typically remain weldable and repairable after careful cleaning and preparation. Where surface cleaning and preparation of weathered or aged membrane areas do not facilitate a suitable weld, new materials may often be welded to the nonexposed underside of the existing membrane after preparation.	• Clean existing IB membrane with clean wet rag and detergent as needed to remove dirt and other contaminants. Remove residue with clean wet rags. • Follow with lightly dampened clean cloth using a small amount of Acetone applied to • rag only to remove heavier contaminant and to prepare weld areas for seaming. • Do not pour solvent onto membrane, use sparingly, and pour a small amount onto a clean rag. Wipe the upper and lower lap surfaces changing rags frequently to ensure cleanliness. • Clean only the area needed for welding new materials to the existing and avoid use solvent outside of lap area as it can remove membrane finish or result in discoloration. • Use of degreasers are **NOT RECOMMENDED** (e.g., Simple Green®) which can leave a film residue. Where used, wipe all lap surfaces with a clean rag lightly dampened with Acetone or Denatured Alcohol. • Finish with a dry clean cloth and allow to completely dry.	• Clean water • Cotton rags • Soft bristle broom/brush • Powdered, plain soap detergent (e.g. Tide®) • Acetone • MEK • Denatured Alcohol

TECHNICAL BULLETIN: 20-01

Gloss Variations in IB PVC Roof Membranes

IB membranes are manufactured with an acrylic finish (gloss) that helps the roof remain cleaner for a longer period after installation. Recently, we have noticed slight variations in our acrylic finish which are related to acrylic component tolerances and or the amount of the acrylic finish itself. Although the acrylic finish is within our manufacturing specification tolerances, it is possible that the variation of the acrylic finish may result in a slight sheen appearance when membrane rolls of different lot numbers are installed side by side.

These variations do not affect membrane integrity or performance. This is strictly an aesthetic sheen variation from differences between manufactured dates and/or lots.

Normal exposure and weathering conditions will, over time, diminish the acrylic finish and sheen variations should either dissipate or stabilize to a negligible amount.

To avoid recurring variations in our acrylic finish, IB has taken steps to enforce a stricter manufacturing tolerance so that future sheen variations will be less noticeable. However, materials produced this year, prior to August 2020, may have sheen variations from lot to lot.

If you should have any questions, please do not hesitate to contact your local representative.

TECHNICAL BULLETIN: 20-02

Cold Weather Considerations for Water-Based Adhesives and Coatings

We would like to remind our customers of the shipping policy for our water-based adhesives and roof coatings during this time of year. To reduce the opportunity for water-based adhesives and coatings to freeze, we may limit when these products can be shipped or require insulated packaging to ship product. At this time of year and in the coming months, water-based adhesives and coatings cannot be exposed to temperatures at or below freezing at any time during shipping, storage, or installation. If water-based adhesives and/or coatings become frozen, the product will be visually and physically affected - even when it returns to room temperatures (75°F [23°C]), because the adhesive will separate and have residual solid formations present in the container. The adhesive will not be able to be mixed or reconstituted back to a uniform mixture. If this occurs, do not use water-based adhesive or water-based coating, and dispose of following your local and state disposal guidelines.

Keep in mind that water-based adhesives and water-based coatings become thicker during colder temperatures. This typically results in heavier applications than intended (more material used than anticipated). It will also take longer to dry in cool and high humidity conditions. This can present a shorter window of application opportunity during the workday, as dew points and/or freezing temperatures can be reached at night prior to the curing window which can adversely affect its performance.

Water-based adhesives should not be used in situations when the ambient temperature is expected to fall below the dew point* at any point during application. Typically, the situation when ambient temperature will fall below the dew point is in the cooler months of the year. As a result, IB Roof Systems may restrict shipments of water-based single ply adhesives and roof coatings from October 31 through March 15. Water-based adhesives and coatings should be stored in a dry, protected area between 50°F and 80°F (10°C and 27°C). Water-based adhesives and coatings should NOT be applied:

- At temperatures >40°F (5°C).
- At very high relative humidity (>90%) or when rain is expected.
- When the dew point* and the ambient temperature separation is not greater than 5 degrees F during time of application.
- When ambient temperatures are expected to fall below the dew point* during application and/or up to 6 hours after application.
- When temperatures are expected to fall below freezing within 48 hours of application.

When placing an order, please consult your IB Inside Sales Representative or IB Territory Sales Manager to consider the shipping conditions and location. Please visit www.ibroof.com to view the latest specifications and system requirements or contact IB Technical Services at (800) 426-1626.

*Dew point definition - the temperature below which the water vapor in a volume of humid air at a given constant barometric pressure will condense into liquid water at the same rate at which it evaporates. Condensed water is called dew when it forms on a solid surface. The dew point is a water-to-air saturation temperature.

TECHNICAL BULLETIN: 20-03

IB PVC Single Ply Contact with Asphalt Based Materials and Self Adhered Membranes

IB PVC Single Ply membrane and associated roof flashing accessories are constructed from high-quality, flexible polyvinyl chloride formulations. During new, reroofing, or recover roof installations, care must be taken to provide proper separation between IB PVC Single Ply products and bitumen-based materials such as asphalt, coal-tar, or rubberized asphalt; butyl rubber based, and other non-compatible materials. These materials are often present on existing surfaces, exposed during reroofing/recover replacements, or used for transition or other flashing and barrier purposes within the building envelope or roof construction.

Adverse interaction can occur leading to diminished performance, failure and/or loss of warranty coverage for the IB PVC membrane and other material. High performance plasticizers formulated within IB PVC membrane materials if directly exposed to asphalts, rubberized asphalts and similar compounds commonly used in self-adhered air/vapor/moisture underlayment, can react with these materials. While many underlayment and barrier type products utilize surface films such as HDPE, metallic foils, coated fiberglass mats or other materials which are in themselves compatible with the IB PVC membrane, exposure to non-compatible compounds can still occur at underlying seams, joints, end laps, fastener penetrations, sealants and adhesives used with those products.

Common conditions which may result include:

- Staining / discoloration of IB PVC membrane
- Changes in physical properties of the PVC membrane material
- Premature deterioration, aging (loss of flexibility / stiffening)
- Adverse interaction with PVC membrane adhesives and sealants / reduced or failed membrane adhesion
- Liquification or deterioration of asphalt or self-adhered compounds, loss of adhesion, staining, delamination, and changes in other properties or performance of the incompatible materials

Proper detailing of flashing, transition and other potential contact areas between materials is critical to successful installation and long-term performance. Many common intersections can be successfully separated with metal flashing or other materials. During reroof and recover operations, adequate protection of exposed IB PVC membrane materials can avoid or minimize exposure to asphalts or non-compatible products. Contact IB Technical Services for more information on product compatibility, IB specifications and construction details involving installations of IB PVC Single Ply with these materials and products.

TECHNICAL BULLETIN: 20-04

PVC Spray Contact Adhesive for Vertical Applications

For more than 40 years, IB Roof Systems has been one of the leading producers and pioneers in the PVC Single Ply Industry. During the last four decades innovative technologies and applications have presented new opportunities that require IB to examine and determine if the proposed technology or application meets the high standards that our customers have grown accustomed to. We believe we are ready to announce a new adhesive product that achieves this goal.

IB Roof Systems has determined that ICP® Polyset® PVC Spray Contact Adhesive is compatible for use with the following IB PVC Membranes for vertical wall and curb flashing applications:

- IB PVC Single Ply (50,60, 80 mil)
- IB PVC Single Ply FB (50, 60, 80 mil)
- IB PVC Single Ply ChemGuard (50, 80 mil)

ICP Polyset® PVC Spray Contact Adhesive is formulated as a single component spray adhesive that is self-contained for use with a compatible spray hose & gun in a portable pressurized 22L cannister.

Properties	Features & Benefits
Open Time: 10-20 minutes**	High adhesive output reduces labor time
Set-Up Time (Tack Free): 3-5 minutes**	Coverage Rate: 1,000 sq. ft. net applied coverage (both surfaces)
Full Cure Time: 1-3 days**	VOC content = 0 g/L
Spray Pattern: Web	Re-usable spray gun and hose
Temperature Guidelines	
Ambient Application & Substrate Temperature:	25°F (-3°C) & rising
Material Storage Temperature Guidelines:	60-120°F (15-50°C)
Optimal Material Temperature:	60-100°F (15-38°C)

**Times may be affected by temperature, weather conditions, and humidity level.

Only the following substrates are acceptable for use to receive the ICP® Polyset® PVC Spray Adhesive:

- Minimum ½" Plywood
- Minimum 7/16" OSB
- Wood blocking curb
- Concrete
- Brick/Masonry/CMU
- Securock Gypsum-Fiber Roof Board
- DensDeck Prime

Follow manufacturer's guidelines and application instructions for use. The following are basic instructions when using the ICP® Polyset® PVC Spray Adhesive:

Preparation for use	The substrate must be clean, dry, firm, free of loose particles, and free of dust, grease, and mold release agents. Protect surfaces not to be adhered. Read SDS, Operating Instructions, and Product Stewardship Guidelines. For additional information go to www.polysetadhesives.com
PPE	Wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure. Recommend dispensing product in a well-ventilated area with certified respiratory protection; however, well-ventilated exterior applications may not need respiratory protection. It is the responsibility of the employer to complete a PPE evaluation and/or exposure assessment to determine if respiratory protection is required. Read all instructions, ICP Product Stewardship Guidelines, and SDS (Section 8) prior to use of any product.
Application	Optum application is achieved by spraying each surface (wall and membrane) with an adhesive pattern at 90 angles (opposite direction) to each other. (Example: Spray one substrate vertically and spray the other substrate horizontally). Apply a consistent and thorough coat of adhesive. Extra coverage is recommended at substrate edge. Follow IB Flashing Details and procedures for all wall and curb flashings substituting ICP Polyset Spray Contact Adhesive in lieu of IB Vertibond Contact Adhesive or IB Vertibond 432 Bonding Adhesive in applicable conditions.

Limitations	Do not use when ambient substrate temperatures are below 25°F (-3°C). Do not use during inclement weather, on wet surfaces or on any roof deck showing signs of deterioration or loss of structural integrity. Do not use after the expiration date. Please note, the ICP Polyset® PVC Spray Adhesive should not be used and is not compatible for use with Expanded (EPS) and Extruded (XPS) Polystyrene board substrates.

When placing an order, please consult your IB Inside Sales Representative or IB Territory Sales Manager.

Order Information

Part #	Description
7-PVCSPRAY	Polyset PVC Spray Contact Adhesive 22L Kit
7-SEELH	12’ Stainless Steel Braided Hose (PVC)
7-GUNV	Adjustable Spray Gun (with Spray Tip)
7-GUNF	Adjustable Spray Gun – 18” Wand (with Spray Tip)
7-BTIP	Brass Spray Tip (1)
7-POLYSOLV	Polysolv 12 oz. Multipurpose Cleaner (12 Pack)

TECHNICAL BULLETIN: 21-01

PHOTOVOLTAIC INSTALLATION/WARRANTY REINSTATEMENT POLICY

The following are IB Roof Systems recommendations and general policies concerning the installation of Photovoltaic (PV) solar array systems over an IB Roof System. The determination of the most suitable PV technology, racking, and installation method is the responsibility of the Building Owner or its designated representative. IB Roof Systems does not recommend self-adhered amorphous PV systems as many self-adhesive components are not compatible with PVC membranes.

Roof assemblies that incorporate overburden applications such as PV solar array components above the completed roof installation are permissible with various IB Roof Systems. PV solar array materials which are approved for use over IB Roof Systems assemblies remain the sole responsibility of their manufacturer or other parties. The mounted PV solar array in and of itself does not present a physical or material compatibility issue and will not nullify a new or existing IB Roof System Warranty. However, the PV solar array is considered an “overburden” per the terms and conditions of the IB Warranty and as such, overburden materials may require removal during the service life of the roof to permit roof inspection, repair, maintenance, or additions to the assembly. The responsibility for removal and replacement of overburden materials installed above IB roof membranes for inspection, repair, maintenance, or alteration remains with the building owner or other parties.

The following guidelines and recommendations apply to all PV solar array systems installed over an IB Roof System:

- The structural integrity of the building must be such that it will safely support the additional weight of the PV solar array.
- The substrate beneath the membrane must be in sound condition and capable of supporting the PV solar array and all anticipated construction and in-place service loads.
- Consideration should be given to the use of thermal insulation materials with compressive strengths equal to or greater than 25 psi, along with use of High-Density Polyisocyanurate or gypsum cover boards directly below the roof membrane.
- The PV solar array must be designed and installed by a licensed authorized integrator.

General Considerations

- Care should be taken to protect the IB membrane during installation of the PV solar array system to prevent damage.
- Racks should have enough clearance above the membrane to permit safe access and service of the roof. Failure to do so may result in requiring removal of the PV solar array to facilitate inspections and/or repairs in the future.
- PV solar arrays should be positioned to that all field seams and penetrations are accessible. Failure to do so may result in requiring removal of the PV solar array to facilitate inspections and/or repairs in the future.
- High traffic areas and access points shall be protected with IB Walk Tread or an additional layer of IB PVC membrane used as a protection layer and placed between the membrane seams and welded to the prepared roof membrane.
- It is the responsibility of the building owner to ensure compliance with local building codes.
- For penetrating photovoltaic installations, IB recommends the U-Anchor by Anchor Products, which is designed to be welded to the IB membrane with compatible IB membrane and is considered a universal receiver for mounted system connection points. To determine the most appropriate U-Anchor unit and placement – contact Anchor Products at 888-575-2131 or www.anchorp.com. When U-Anchors are not utilized, penetrations must be flashed in accordance with the appropriate IB Flashing detail. All flashing details must be completed by an IB Authorized Applicator.
- For ballast style and non-penetrating racking systems, the array’s supports must be installed over a protective layer of IB Walk Tread or additional layer of IB PVC membrane.
- IB Walk Tread shall be installed at all access points within and around the array.
- IB must be notified prior to any additions, alterations, or modifications or other substantial work is to be performed on or through the IB Roof System. Notice must be given to the IB Roof Systems Technical Department at warranty@ibroof.com prior to the commencement of the work. Alterations performed or undertaken without prior IBRS approval; or that is not in compliance with IBRS specifications and installation instructions may result in cancelation of the IB Warranty.

- Any incidental roof modifications, including penetrating the IB membrane, required or performed as a result of the PV installation must be performed by an IB Authorized Applicator.
- IB Roof Systems may, at its option, recommend or require specific roof detailing consistent with our IB Roof System Warranty Requirements.

The following table lists the roofing inspections during the PV system installation to ensure continuation of the IB Roof System Warranty. Upon completion of the roof alteration, an inspection must be scheduled and performed by an IB Authorized Applicator Field Services Representative.

Inspection fees must be pre-paid via credit card prior to being scheduled. Fees for inspections shall be payable in advance prior to issuance or reinstatement of the Roofing Warranty.

Inspection	Required	Fee
Pre-installation inspection (pre-PV array system staging, examination of roof system)	Not required by highly recommended	$750
Post installation inspection after PV system installation	Required	$750 Half Day $1500 Full Day
Re-inspection(s)	Required if post inspection(s) are rejected	$750 Half Day $1500 Full Day

TECHNICAL BULLETIN: 21-02

EPS as an Alternative Insulation Option

Currently, the roofing industry has been faced with raw material shortages that adversely affect the supply of almost every roofing component within a roof system. Polyisocyanurate manufacturers are in extremely short supply of polyisocyanurate both from a raw material standpoint as well as limited production capacity due to equipment issues or labor issues.

In most cases, polyisocyanurate ordered today cannot be filled for up to 90 days. This makes for a logistical and planning nightmare for roofing projects. The following alternative insulations may be considered when seeking alternative solutions to polyisocyanurate material shortages:

- IB EPS of **1.0 lb**. density, meeting ASTM C578 Type I or **1.25 lb**. density, meeting ASTM C578 Type VIII.
  - EPS, because of its low compressive strength requires the use of an approved mechanically fastened cover boards.
- IB Tapered EPS minimum **1.0 lb**. density, meeting ASTM C578 Type I or **1.25 lb**. density, meeting ASTM C578 Type VIII.
  - EPS, because of its low compressive strength requires the use of an approved mechanically fastened cover boards.
- IB EPS minimum **1.5 lb**. density, meeting ASTM C578 Type II or **2.0 lb**. density, meeting ASTM C578 Type IX.
  - EPS can be furnished with a facer for mechanical attachment of IB PVC directly over the faced EPS.
  - Unfaced EPS requires at a minimum a separation sheet (IB Separator Sheet, IB Poly Separator Sheet, IB HD Poly Separator Sheet, or Fire Sheet 10) or a cover board (DensDeck, DensDeck Prime, Securock, or Structodek Red Board) as a separation layer between EPS and mechanically fastened IB PVC.
- IB Tapered EPS minimum **1.5 lb**. density, meeting ASTM C578 Type II or **2.0 lb**. density, meeting ASTM C578 Type IX.
  - Unfaced EPS may be adhered with ICP BoardMax direct to approved decks or approved coverboards.
  - Unfaced EPS requires the use of an approved cover board (DensDeck Prime, Securock, or HD ISO) as a separation layer between adhered EPS and adhered IB PVC.
  - Faced EPS may not be compatible with low rise foam adhesives, as the adhesive may cause delamination of the facer from the EPS.

Check with IB Technical Services for code, wind and/or fire rating differences or impact when determining alternative insulation solutions.

EPS R-Value Table

R-value - per inch (hr • ft2 • °F)/BTU ASTM C518 Or ASTMC177	Temp @ °F	IB EPS Type I	IB EPS Type VIII	IB EPS Type II	IB EPS Type IX
	@ 25°F	4.35	4.55	4.76	5.00
	@40°F	4.17	4.25	4.55	4.76
	@75°F	3.85	3.92	4.17	4.35

LTTR/Thickness Comparison Table: Example take ISO LTTR / EPS R-value = EPS thickness to achieve equal R-Value of ISO.

Polyisocyanurate		IB EPS Type I		IB EPS Type VIII		IB EPS Type II		IB EPS Type IX	
20 psi – standard 25 psi – special order		1.00 lb. density/ 10-14 psi		1.25 lb. density/ 13-18 psi		1.5 lb. density/ 15-21 psi		2.0 lb. density/ 25-33 psi	
Thickness	LTTR Value	Thickness	LTTR Value	Thickness	LTTR Value	Thickness	LTTR Value	Thickness	LTTR Value
1.0	5.7	1.0	3.85	1.0	3.92	1.0	4.17	1.0	4.35
1.5	8.6	2.3	8.8	2.2	8.6	2.1	8.7	2.0	8.7
2.0	11.4	3.0	11.5	3.0	11.8	2.8	11.7	2.7	11.7
2.5	13.2	3.5	13.5	3.4	13.3	3.2	13.3	3.1	13.5
3.0	17.4	4.6	17.7	4.5	17.6	4.2	17.5	4.0	17.4
4.0	22.8	6.0	23.1	5.9	23.1	5.5	22.9	5.3	23.0
4.4	25.0	6.5	25.0	6.4	25.1	6.0	25.0	5.8	25.2
4.5	25.6	6.7	25.8	6.6	25.9	6.2	25.8	5.9	25.6
5.0	28.5	7.4	28.5	7.3	28.6	6.9	28.8	6.6	28.7
5.26	30.0	7.8	30.0	7.7	30.2	7.2	30.0	6.9	30.0

Please visit www.ibroof.com to view the latest specifications and system requirements or contact IB Technical Services at (800) 426-1626.