EPDM Guide for Designers

RubberGard™ EPDM
RubberGard Platinum EPDM
RubberGard EPDM Pre-Taped
RubberGard MAX EPDM
RubberGard EPDM R.M.A.
RubberGard EPDM SA
RubberGard EcoWhite™ EPDM

June 2026

NOTE: The contents of this guide are considered accurate at the time of posting. All information contained within should be validated for accuracy as it relates to specific project conditions or requirements. Specific codes, uplifts or other factors may result in changes to the information contained within this document. Validate all specific conditions with a Elevate Regional Technical Coordinator prior to its use.

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GENERAL DESIGN CRITERIA

Amrize can provide a broad scope of roofing system design assistance and product recommendations to architects, consultants, and other specifiers; however, Amrize does not engage in the practice of architecture or engineering.

Applicability

1. Parameters of this manual outline the minimum requirements for the Elevate Red Shield™ Warranty, including RubberGard, EcoWhite™, and RubberGard EPDM SA Roofing Systems. Reference to Elevate Application Guides, Technical Information Sheets and other published information is necessary to ensure that the completed roofing system is installed in compliance with Elevate requirements. Local code and insurance requirements may require specific enhancements.
2. Extended warranties, 15-, 20-, 25-, and 30-year, 2" hail coverage, and wind warranties greater than 55 MPH, may require special consideration or enhancement regarding fasteners, insulation, membrane gauge and securement, some of which can be found in this manual and in the Elevate Attachment Guide. If a proposed installation falls outside this specification, contact a Elevate Regional Technical Coordinator for additional information.
3. For 30-year EPDM warranties, refer to the RubberGard Platinum EPDM system requirements referenced in this Guide.

> **!** Platinum Warranty Critical Information:
> This guide notes specific application requirements when Platinum Warranties are requested. Please review this document, Application Guides, Specifications, and Details for further information. Please contact a Elevate Regional Technical Coordinator for additional information or questions.

> **!** Platinum Warranty Critical Information:
> All components of the Elevate Platinum roof system must be roofing system materials furnished by Amrize. The Platinum roof system shall consist of Elevate: .090" Platinum EPDM membrane, adhered to HailGard, ISOGARD HD, min. 1/4" DensDeck, min 1/4" SECUROCK Gypsum-Fiber or ISO 95+ GL / ISOGARD GL Polyiso Insulation attached to an acceptable substrate combined with other Elevate roof system accessories as indicated in the following text and tables.

4. Statements in this guide are provided in good faith with the expectation that a design professional be consulted prior to any job decisions being made.
5. Elevate roof systems may or may not be applicable, without special consideration, if subject to local, regional, or national building code requirements or testing agency restrictions.
   - It is the building owner's or the design professional's responsibility to consult with the controlling code agency official(s) to determine the specific requirements of each project and each system.
   - Contact a Elevate Regional Technical Coordinator at 800-428-4511 when local codes conflict with Elevate recommendations.

> **!** Certain situations may arise where Elevate specifications and/or roofing requirements cannot be applied. It may not be possible for Amrize to issue the desired warranty for projects that deviate from current Elevate requirements and standards, unless a written deviation request for approval has been received, reviewed, and approved by a Elevate Regional Technical Coordinator prior to application of the proposed system.

6. The following conditions require special consideration and may not be warrantable. Contact a Elevate Regional Technical Coordinator for information if any of the following conditions are present:
   - Roofs that exceed the maximum slope and height limits for the roof system assembly, refer to Table I-1
   - Projects that require special hail or wind coverage greater than 55 mph
   - Roofs located where localized wind phenomenon may occur, reference ASCE-7 wind maps
   - Roofs located in down-slope, foothills of mountain ranges or escarpments
   - Mechanically attached systems located within 5 miles (8.3 Km) of the ocean coastline or within 1500' (457 m) of a Great Lake shoreline
   - Geographical areas susceptible to hurricanes
   - Roofs subject to chemical or process byproduct discharge
   - Roofs with non-linear slopes such as arches, domes, barrels, etc.
   - Buildings with large openings in a wall (greater than 10% of the any one wall surface) that could be left open in a storm
   - Roofs subject to heavy or repeated traffic in an area
   - Roofs subject to positive pressure situations such as pressurized buildings, air infiltrating decks, canopies, overhangs, airplane hangars, distribution centers, etc.
   - Buildings with high interior humidity such as natatoriums (swimming pools)
   - Roof decks that do not provide adequate fastener pullout resistance
7. Cold storage, freezer facilities and natatoriums (swimming pools) constitute a special condition. A designer familiar with cold storage, indoor swimming pool construction and vapor migration should be consulted in the design of the roof system and integration with the rest of the structure envelope.

! Unlimited slope in the following chart only refers to the potential maximum installation slope. When using installation equipment there may be practical limitations to the slope that can be done. Safety is the first order to consider when doing any job. Consult with the equipment manufacturer on the performance of the individual items.

Table 1: Roofing System Applicability RubberGard EPDM Membranes

ROOFING SYSTEM APPLICABILITY RUBBERGARD EPDM MEMBRANES

System			Product	Slope	Maximum Height	Maximum Warranty Term
Platinum – Adhered			.090" PLATINUM EPDM	Unlimited	250' (76.2 m)	30 Years
RubberGard EPDM (Standard, LSFR, or FR)	Adhered		.060" RubberGard EPDM	Unlimited	250' (76.2 m)	25 Years
			.045" RubberGard EPDM	Unlimited	250' (76.2 m)	15 Years
	Self-Adhered		.060" RubberGard EPDM SA	Unlimited	250' (76.2 m)	20 Years
	Ballasted	Paver	.090" RubberGard EPDM	Max. 2:12 (16.6%)	250' (76.2 m)	25 Years
			.060" RubberGard EPDM	Max. 2:12 (16.6%)	250' (76.2 m)	25 Years
			.045" RubberGard EPDM	Max. 2:12 (16.6%)	250' (76.2 m)	15 Years
		Stone	.090" RubberGard EPDM	Max. 2:12 (16.6%)	75' (76.2 m)	25 Years
			.060" RubberGard EPDM	Max. 2:12 (16.6%)	75' (22.8 m)	25 Years
			.045" RubberGard EPDM	Max. 2:12 (16.6%)	75' (22.8 m)	15 Years
	Mechanically Attached		Min. .060" RubberGard EPDM With use of Air Barrier or where existing roof remains in place and is sealed. (Requires new or existing roof insulation be attached as in an adhered system)	Max. 4:12 (33.3%)	Fastener Row spacing ≤ 7 ' (2.1 m) 120' (36.6 m) Fastener Row spacing > 7 ' (2.1 m) 80' (24.4 m)	25 Years
			.045" RubberGard EPDM	Max. 4:12 (33.3%)	120' (36.6 m)	15 Years
			Min. .060" RubberGard EPDM R.M.A.	Max. 4:12 (33.3%)	120' (36.6 m)	25 Years
			.045" RubberGard EPDM R.M.A.	Max. 4:12 (33.3%)	120' (36.6 m)	15 Years
RubberGard MAX EPDM (Reinforced Membrane)	Adhered		.075" RubberGard MAX	Unlimited	250' (76.2 m)	30 Years
			.060" RubberGard MAX	Unlimited	250' (76.2 m)	25 Years
			.045" RubberGard MAX	Unlimited	250' (76.2 m)	20 Years
	Ballasted	Pavers	.075" RubberGard MAX	Max. 2:12 (16.6%)	250' (76.2 m)	25 Years
			.060" RubberGard MAX	Max. 2:12 (16.6%)	250' (76.2 m)	25 Years
			.045" RubberGard MAX	Max. 2:12 (16.6%)	250' (76.2 m)	15 Years
		Stone	.075" RubberGard MAX	Max. 2:12 (16.6%)	75' (22.8 m)	25 Years
			.060" RubberGard MAX	Max. 2:12 (16.6%)	75' (22.8 m)	25 Years
			.045" RubberGard MAX	Max. 2:12 (16.6%)	75' (22.8 m)	15 Years
	Mechanically Attached		.075" RubberGard MAX	Max. 4:12 (33.3%)	120' (36.6 m)	25 Years
			.060" RubberGard MAX	Max. 4:12 (33.3%)	120' (36.6 m)	25 Years
			.045" RubberGard MAX	Max. 4:12 (33.3%)	120' (36.6 m)	15 Years
Metal Building Recover	Adhered		RubberGard EPDM Any Thickness (Standard, LSFR, or FR)	Unlimited	250' (76.2M)	20 Years
	Mechanically Attached		RubberGard R.M.A.	Max. 4:12 (33.3%)	120' (36.6 m)	15 Years

NOTE: Ballast systems are not approved for use in Barrel, Arch, etc. roofs.

Consultation

1. Amrize recommends that a design professional be involved in the design process. For additional assistance, contact a Elevate Regional Technical Coordinator for consultation with respect to any necessary deviations from current Elevate requirements and standards.
2. For recommendations on any specific project, about the applicability, or appropriateness, of any material's suitability for use or use of products in conjunction with any other specific material, follow these steps:
   - Consult the Amrize Building Envelope LLC ("Amrize") Website: www.elevatecommercialbp.com.
   - Consult this manual, Elevate EPDM Application Guides, and specific Technical Information Sheets (TIS).
   - Consult with the building owner or his design professional.
   - Consult with a Elevate Regional Technical Coordinator for information.

3. Statements in this design guide are provided in good faith with the expectation that a design professional be consulted prior to any job decisions being made.

Design

1. As a supplier of roofing systems, Amrize does not perform engineering or design functions and does not approve or make comments regarding them.
2. Amrize recommends that a design professional be consulted to ensure proper design, (i.e., roof system selection) installation, and conformance to building codes, insurance requirements, etc.
3. Refer to the Elevate Roofing Systems Attachment Guide for additional requirements for securing insulations and membranes.

A few of the conditions that may influence the need for a design professional:

- Structural conditions that might not be sufficient to support the anticipated load of the completed roof installation
- Structural conditions to support the dynamic loading of the roof system
- The need to review the proposed system assembly for its applicability on specific projects
- The requirements of building codes for the need of a thermal barrier
- The requirements of building codes for the need of a vapor retarder
- The requirements of building codes for the need of an air barrier
- When considering the effect of loads on the structure/decking due to the loading/staging of materials as a part of system installation. The design professional should specify the load limitations to be observed by the licensed Elevate applicator.

Warranty

Pre-Warranty Issuance Requirements include:

- Submit an Electronic Pre-Installation Notice (P.I.N.) along with an approved roof drawing, 14 days prior to project start and receive an acknowledgement from Amrize of acceptance or necessary enhancements to meet Amrize requirements to receive a warranty.
- The Elevate roof system must be installed by a current licensed Elevate applicator.
- Upon inspection and acceptance of the installed roof system by a Elevate Technical Representative, the warranty will be issued and dated based on the completion date of the roof installation reported by the roofing contractor.
- Elevate inspections are to confirm the installation details for the roofing system for compliance with Elevate's documents of record for warranty requirements. The inspection is not intended as an inspection for the benefit of the building owner or the design professional with respect to contract, building codes or compliance with specifications other than Elevate.

The following warranties include the Elevate brand materials and the workmanship of the licensed Elevate applicator when the system is installed according to Elevate's technical specifications.

1. Red Shield™ Warranty
   - 5 – 25 years for qualifying systems
   - Includes labor and materials to repair warranted leaks.
   - Non-prorated with No Dollar Limit (NDL)
   - Includes all Elevate-branded products used in the roofing system. Excludes non-Elevate branded products and any materials not provided by Amrize. Use of non-Elevate branded products may prevent warranty issuance.
2. Extended Warranty Coverage
   - A Red Shield Warranty is eligible for the following extended coverage. Contact Elevate Technical Services for limitations.
   - Increased Wind Speed [72 – 120 mph (116 – 193 km/h), depending on system criteria]
   - Cut and Puncture Protection (CPP) warranty coverage is available with Elevate RubberGard EPDM Membranes.
     - Use of 60 mil or greater Elevate RubberGard EPDM membrane system and additional cost per square foot. Please see the warranty pricing guide for current pricing.
     - Use of 90 mil RubberGard EPDM membrane and HailGard cover board.
       NOTE: Roof walkway pad or paver is required at all roof access points.
   - Hail Coverage
     - Up to 2" hail coverage requires a minimum 60 mil adhered Elevate RubberGard EPDM membrane and an approved, adhered high density (HD) coverboard.
     - Severe Hail (SH) or Very Severe Hail (VSH) requires an approved Factory Mutual assembly. Factory Mutual SH or VSH rating does not imply Red Shield Hail warranty coverage. Additional requirements may apply.
     - Elevate RubberGard EPDM Mechanically Attached systems do not qualify for hail coverage
     - Contact a Regional Technical Coordinator for additional information.

Table 2: RubberGard Hail Warranty Coverage

RUBBERGARD HAIL WARRANTY COVERAGE						
Membrane	**Securement**	**Thickness**	**Cover Board**	**Cover Board Attachment**	**Warranty Term**	**Maximum Hail Diameter**
LS-FR	Adhered	60	Approved Cover Board	Adhered HailGard Fasteners	25	2"
Platinum EPDM	Adhered	90	DensDeck® StormX™ Prime	Adhered	30	2"
MAX EPDM	Adhered	60	Approved Cover Board	Adhered HailGard Fasteners	25	2"
		75	Approved Cover Board	Adhered HailGard Fasteners	25	2"
EcoWhite EPDM	Adhered	60	Approved Cover Board	Adhered HailGard Fasteners	25	2"
EcoWhite Platinum EPDM	Adhered	90	DensDeck® StormX™ Prime	Adhered	30	2"
EPDM SA	Adhered	60	Approved Cover Board	Adhered HailGard Fasteners	20	2"

3. Red Shield Platinum Warranty
   - 30 years for qualifying systems
   - Includes labor and materials to repair warranted leaks.
   - Non-prorated with No Dollar Limit (NDL)
   - Includes all Elevate-branded products used in the roofing system. Excludes non-Elevate branded products and any materials not provided by Amrize. Use of non-Elevate branded products may prevent warranty issuance.
4. Elevate Membrane Limited Warranty
   - 5 – 30 years
   - Provides replacement membrane for leaks caused by manufacturing defects or premature weathering
   - Limited to owner's original cost of the membrane
5. Other Elevate Warranties
   - AcryliTop™ PC-100 Adhesion Warranty (10 or 15 Years)
   - AcryliTop PC-100 Reflectance Warranty (5 or 10 Years)
   - Paint Finish Warranty for all Elevate branded metal roofing products or UNA-CLAD™ metal, including edge metal

! Certain situations may arise where Elevate specifications and/or roofing requirements cannot be applied. It may not be possible for Amrize to issue the desired warranty for projects that deviate from current Elevate requirements and standards, unless a written request for approval has been received, reviewed, and approved by a Elevate Regional Technical Coordinator prior to application of the proposed system.

A Amrize warranty cannot be issued if any of the following conditions exist:
- Non-roofing applications such as plaza deck construction, waterproofing, pond liners, etc.
- Roofing applications for single-family residences
- Other non-approved applications

Platinum Warranty Critical Information:

Elevate roof systems cannot receive a Platinum EPDM warranty if any of the following conditions exist:
- Re-Cover applications do not qualify for Platinum warranty coverage.
- Non-roofing applications such as plaza deck construction, waterproofing, pond liners, etc.
- Roofing applications for single-family residences

! At a minimum, the Platinum EPDM roof system shall consist of a .090 inch (2.29 mm) Platinum EPDM membrane, adhered to one of the following Elevate Insulations, which has been installed over an acceptable substrate:
- HailGard, min. 1.5" (38.1 mm)
- ISOGARD HD min. ½" (12.7mm)
- DensDeck Prime, min. 1/4" (6.35 mm)
- ISO 95+ GL / ISOGARD GL Polyiso Insulation, min. 1.0" (25.4 mm)
- SECUROCK Gypsum-Fiber, SECUROCK UltraLight Coated Glass-Mat, min ¼" (6.35 mm)

Consult the appropriate warranty table of the Platinum systems for the needed assembly.

QUALITY ASSURANCE

Jobsite Considerations

1. All safety regulations required by OSHA and other agencies having jurisdiction must be followed.
2. During the construction process, the roofing contractor is responsible for ensuring that all components of the Elevate roof system, including the finished areas are protected from damage, including, but not limited to:
   - Damage that may result from the continued construction process
   - Direct contact with continuous steam or heat sources when the in-service temperature is more than 160 °F (71.11 °C) for EPDM products
   - Asphalt, coal tar, oil base or plastic roof cements, and re-saturated roof products, which are not to be used in direct contact with the waterproofing components of the Elevate EPDM Roofing Systems
   - Discharges, such as petroleum products, greases, oils (mineral and vegetable), animal fats and other byproducts, which may come in contact with the membrane
3. Cold weather application
   - When the outside temperature is below 40 °F (4 °C), installation of Elevate roofing systems may require additional application precautions:
     - Adhesives and sealants should remain in an environment between 60 °F and 80 °F (16 °C and 27 °C) until ready for use
     - Materials should be used within four hours of removal from a heated storage area. If materials are not used within that time, they should be returned to the heated storage area until the temperature of the material returns to 60 °F (16 °C). Typically, this is 24 hours
   - For additional information and guidelines, refer to Elevate Technical Information Sheets (TIS), Elevate Cold Weather Application Guidelines, Elevate Application Guides, any relevant Elevate product-specific installation instructions, and the NRCA Roofing and Waterproofing Manual.

Asphalt Products

1. Refer to the Elevate Asphalt Roofing Systems Guide for Applicators and Designers for additional information.
2. Asphalt for insulation, roofing plies, or base sheets must be Elevate SEBS Mopping Asphalt or either ASTM D312 Type III or Type IV. Asphalt selection must be suitable for the roof slope. All asphalt must be tested in accordance with ASTM D312 and be certified by the supplier that it meets the minimum requirements for the specific type and application. Asphalt selection must be suitable for the roof slope.
3. Assure that all health and safety measures are followed when installing hot asphalt to protect the installers as well as occupants of the building. Assure compliance to all building codes and safety regulations when using hot asphalt.
4. Asphalt properties may change when stored at high temperatures and/or for long periods of time. Asphalt may become harder or may experience what is known as “fallback.” Fallback is the degradation of the asphalt to the point that its physical properties (i.e., softening point) deteriorate which could then cause roof slippage. To reduce the chances for fallback, the following recommendations should be implemented:
   - Use higher softening point asphalt
   - Use material as quickly as possible, thus reducing exposure time
   - Insulate all lines and equipment used to transport asphalt
5. Asphalt primer: Asphalt primer must meet ASTM D41.
6. With the exception of SEBS, Amrize does not manufacture or supply asphalt and does not warrant products we do not sell or supply.

Phased Construction/Temporary Roofing

> ! Platinum Warranty Critical Information:
> Phased Construction is not allowed when constructing an Elevate Platinum EPDM Roof System.

1. Phased Construction
   - Phased Construction is defined by the NRCA as “The installation of a roof system in two or more separate time intervals.” The need for temporary roofing is determined by the design professional.

> ! Elevate discourages phased construction. Phased construction results in unprotected roof sections, which can allow moisture into the base plies or trap moisture, dust, or debris between the plies of the roof system. These application defects may increase the incidence of blistering in the Elevate roof system.

   - A better option than the use of phased construction would be the use of a temporary roof, which allows for the delayed installation of the roof system until more suitable weather, or until other trades can complete projects. A temporary roof can be designed and installed in the same way as a vapor retarder and can then become a vapor retarder.
2. Temporary Roofing
   - If installation of the roof system is required during unsuitable weather, or before completion of wood blocking, curbs, penetrations, or the erection of walls, a temporary roof may need to be installed.
   - If a temporary roof is needed due to construction requirements, Elevate recommends installing a modified asphalt base sheet or two fiberglass roofing plies in an appropriate adhesive over an approved substrate, to be used as the temporary roof. This temporary roof can serve to protect the interior of the building during the early stages of construction. It may then

be removed or repaired, if necessary, and can be left as a vapor retarder prior to the installation of the finished Elevate roofing system.
- If roof insulation is installed under the temporary roof, the insulation shall be inspected for wet or damaged areas, so that such areas may be removed and replaced prior to installation of the Elevate roof system.
- When a temporary roof is specified as a vapor retarder, precaution shall be exercised in protecting the temporary roof from other construction tradesmen. Damage to the temporary roof may impair its effectiveness as a vapor retarder. If a vapor retarder is installed as a temporary roof during construction, the vapor retarder shall be examined and repaired as necessary to ensure watertight integrity prior to installation of the remainder of the roof system.
- For additional information regarding temporary roofs, refer to the NRCA's Roofing and Waterproofing Manual or contact a Elevate Regional Technical Coordinator for Technical Information.

VAPOR RETARDERS/AIR BARRIERS

Vapor Retarders

!	The determination of the necessity and location for a vapor retarder or an air barrier is a project specific requirement, which is the responsibility of the building owner or his design professional. The proper assessment of the building, the need for, and the proper design and installation of, an air barrier and vapor retarder are critical to the long-term operation of the roofing system.
	Amrize does not review or calculate dew point analyses and therefore does not accept responsibility for damage due to recurrence rate or location of the dew point. Although not all projects require a vapor retarder, a design review should be considered for all projects.
	The inclusion of an air barrier or vapor retarder may affect the Underwriters Laboratories or Factory Mutual rating of the roof system. The inclusion of an air barrier or vapor retarder may affect the Elevate system requirements and consequently the Amrize warranty. Contact a Elevate Regional Technical Coordinator for Technical Information prior to application of the proposed system.

1. To control moisture, a vapor retarder may be necessary to protect certain roofing components when high interior humidity is of concern. Some examples are:
   - When high interior relative humidity is present.
   - When vapor drive may be expected to form a dew point under the roof membrane or in the insulation. Building usages with high humidity interiors where vapor drive may occur, such as natatoriums (swimming pools), laundry facilities, paper mills, and bottling plants.
2. In these types of environments, there is substantial upward vapor drive, and the potential exists for extreme amounts of moisture accumulation within the roof assembly. If an effective vapor retarder is not included at the proper location in the roof assembly, so that the retarder is warmer than the dew point, condensation will cause damage from the moisture retained in the roof assembly.
3. This movement is reversed in some air-conditioned buildings in humid summer conditions. This is especially true in southern states.
4. Vapor retarders are installed because water vapor causes several types of roof assembly failures such as:
   - Reduced R-value since wet insulation becomes a conductor of heat rather than an insulator.
   - Deterioration of the roof membrane, insulation, structural decks, and associated building components.
   - Delamination of roof components from trapped moisture, which freezes and thaws, eventually evaporating under solar heat with the resulting vapor pressure causing blisters and delamination.
5. The following is a partial listing which might influence the need for a vapor retarder:
   - Building usage as related to vapor drive.
   - External temperature in relation to internal temperature.
   - The humidity of the interior and/or exterior air.
   - Building code requirements.
   - Construction generated moisture, particularly during winter when temporary propane heat is required.
6. A vapor retarder's effectiveness generally depends upon the following factors:
   - The vapor retarder's perm (permeance) rating shall be as close to zero as possible.
   - The adequacy of design of the vapor retarder membrane.
   - The integrity of the vapor retarder's seals at perimeters and penetrations.
   - The integrity of the vapor retarder's membrane after other tradesmen finish their projects during construction or any subsequent roof or equipment alterations.
   - The vapor retarder's location within the insulated roof assembly.
7. Construction roof traffic shall be restricted to prevent damage to the vapor retarder. In the event damage does occur, repair the vapor retarder damage with the same roof components and quantities as specified for the vapor retarder installation.
8. Contact one of the four generally accepted agencies for help in determining the need for a vapor retarder. They are:
   - National Roofing Contractors Association (NRCA)
   - U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL)
   - American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
   - Oak Ridge National Laboratory (ORNL)
9. Vapor Retarder Properties
   - A vapor retarder is defined as a building envelope element that limits diffusion of moisture into an assembly. Diffusion is water vapor migration in a material. Its rate depends on two factors:
     - Water vapor pressure difference across the roof assembly.
     - Resistance of materials along the migration path.

- Some materials have more resistance than others. Placing a high-resistance material in a roof assembly may help control moisture migration.
- Vapor retarders are intended to limit moisture diffusion. Therefore, the main property requirement of a vapor retarder is low water vapor permeance. Water vapor permeance is defined as:

  "The time of water vapor transmission through a unit area of flat materials or construction induced by a unit vapor pressure difference between two specified surfaces, under specified temperature and humidity conditions".

10. Design

The roof system designer is generally responsible for the design requirements of the roof deck, vapor retarder, and rigid insulation along with the roof system. This is more important when specifying roofing systems over high humidity buildings. The need for a vapor retarder, as well as the type, placement and location of a vapor retarder should be determined by a professional architect or engineer. The list below are examples of common vapor retarder applications.

- Elevate V-Force FR Vapor Barrier Membrane does not require a primer when applied to an approved flat substrate. Some conditions where residual asphalt and adhesives are present SA-Solvent Based (SB) Primer may be required. Contact a Regional Technical Coordinator for more information.
- Elevate V-Force™ Vapor Barrier Membrane (self-adhered) applied to an approved flat substrate that has been primed with SA Water Based Primer, SA LVOC Primer, or SA Solvent Based Primer. See the V-Force and appropriate Primer Technical Information Sheets (TIS) on the Elevate website for application information.
- Mopped Elevate Type IV or VI Ply Sheet over a nailed Elevate MB Base Sheet.
- Mechanically attached fiberglass or polyester venting base sheet with 18" (457 mm) side and end laps mopped with hot asphalt.
- Existing dry and sound un-insulated built-up roof system (all splits and blisters repaired).
- Mopped Elevate Type IV or VI Ply Sheet over an existing dry and sound un-insulated built-up roof system. If gravel surfaced, then gravel shall be removed by power brooming, vacuuming, and spudding.
- 2 plies of Mopped Elevate Type IV or VI Ply Sheet set in hot asphalt over an acceptable mechanically attached barrier board.
- 2 plies of Mopped Elevate Type IV or VI Ply Sheet set in hot asphalt directly on a properly prepared structural concrete deck.
- Adhered Elevate SBS Base Sheet set in hot asphalt, cold adhesive, or SBS Torch Base heat fused, over an acceptable mechanically attached barrier board.
- Adhered Elevate SBS Base Sheet set in hot asphalt, cold adhesive, or SBS Torch Base heat fused, directly on a properly prepared structural concrete deck.
- Six (6) mil polyethylene sheeting taped at laps and to penetrations and perimeters.

The roof system designer must:

- Assure that the methods of attachment of the roof system to the vapor retarder selected are compatible.
- Assure that the vapor retarder will extend continuously and evenly throughout the roof plane to provide a complete seal against the intrusion of moist air from the building interior. Integration of the wall and roof air retarder systems is essential.
- Consider the effect of construction moisture on a new roof system, particularly during winter, when temporary propane heat is required.

V-Force FR Application

Elevate V-Force FR Vapor Barrier Membrane may be applied directly to properly prepared substrate as outlined in the table below. The substrates must be clean, dry, and smooth. Some substrates may require special preparation. Review the Technical Information Sheet (TIS), Application Instructions and details for application requirements and additional information. Reference the V-Force FR Requirements – Increased Wind Speed section in this guide for information related to extended wind speeds. V-Force FR adhered direct to steel will not be approved on projects with special wind regions or coastal areas. When uplift and fire requirements are specified, alternate applications may be required.

Table 3: V-Force FR – Acceptable Substrates

V-FORCE FR – ACCEPTABLE SUBSTRATES	
Acceptable Substrate	**NOTE**
Structural Concrete	Clean, dry, and properly cured. Free of any contaminants or sources of puncture.
Steel Deck	Processing Oils must be removed. Clean, dry, and free of contaminants. Beads of adhesive must sit on top of deck flute. NOTE: Factory Mutual (FM) does not recognize direct to steel deck adhesion of this product. (Max. 20 Years when not fastened through.)
Plywood or OSB	Clean, dry, and free of any contaminants or sources of puncture.
DensDeck® Prime DensDeck StormX® Prime	Clean, dry, and free of any contaminants or sources of puncture.
Securock® Gypsum Fiber Securock Cement Securock UltraLight Coated Glass-Mat	

DEXcell FA® Glass Mat DEXcell® Cement Board DEXcell FA VSH® Glass Mat	
Structodek® HD	
ISOGARD™ HD	
ISOGARD HD Composite	
Resista™ / ISOGARD CG	
HailGard / ISOGARD HG	
Existing Smooth Surface BUR, SBS or APP Modified Bitumen	Clean, dry, and free of any contaminants or sources of puncture.

NOTE:
1. All substrates except metal decks must be primed with SA-Solvent Based (SB) Primer.
2. Hot/Cold asphalt cannot be used to adhere roofing material to V-Force Vapor Barrier membrane.
3. On steel deck assemblies, beads should be spaced to be located over the top flute of the steel deck. (Max. 20 Years)
4. Spatter application of Twin Jet Y is not approved for insulation adhesion direct to V-Force FR.

Table 4: V-Force FR – Acceptable Adhesives for Insulation Attachment

V-FORCE FR – ACCEPTABLE ADHESIVES FOR INSULATION ATTACHMENT

TIS Number	Adhesive	Bead Spacing (o.c.) (55 mph)		
		Field	Perimeter	Corner
812	I.S.O. Twin Pack	12” (304.8 mm)	6” (152.4 mm)	4” (101.6 mm)
819	I.S.O. Stick			
831	I.S.O. Spray R			
836A	Twin Jet			
836B	Twin Jet Y			

NOTE:
1. All substrates except metal decks must be primed with SA-Solvent Based (SB) Primer.
2. Hot/Cold asphalt cannot be used to adhere roofing material to V-Force FR Vapor Barrier membrane.
3. On steel deck assemblies, beads should be spaced to be located over the top flute of the steel deck. (Max. 20 Years)

V-Force™ Application

Elevate V-Force Vapor Barrier Membrane may be applied directly to properly prepared substrate as outlined in the table below. The substrates must be clean, dry, and smooth. Some substrates may require special preparation including cleaning and/or priming. Review the Technical Information Sheet (TIS), Application Guide and details for application requirements and additional information. Reference the V-Force Requirements – Increased Wind Speed section in this guide for information related to extended wind speeds. V-Force adhered direct to steel will not be approved on projects with special wind regions or coastal areas. When uplift and fire requirements are specified, alternate applications may be required.

Table 5: V-Force – Acceptable Substrates

V-FORCE – ACCEPTABLE SUBSTRATES	
Acceptable Substrate	**NOTE**
Structural Concrete	Clean, dry, and properly cured. Free of any contaminants or sources of puncture.
Steel Deck	Processing Oils must be removed. Clean, dry, and free of contaminants. Beads must NOTE: Factory Mutual (FM) does not recognize direct to steel deck adhesion of this product.
Plywood or OSB	Clean, dry, and free of any contaminants or sources of puncture.
DensDeck® Prime DensDeck StormX® Prime	Clean, dry, and free of any contaminants or sources of puncture.
Securock® Gypsum Fiber Securock Cement Securock UltraLight Coated Glass-Mat	
DEXcell FA® Glass Mat DEXcell® Cement Board DEXcell FA VSH® Glass Mat	
Structodek® HD	
ISOGARD™ HD	
ISOGARD HD Composite	
Resista™ / ISOGARD CG	
HailGard / ISOGARD HG	
Existing Smooth Surface BUR, SBS or APP Modified Bitumen	Clean, dry, and free of any contaminants or sources of puncture.

NOTE:
1. All substrates except metal decks must be primed with either Elevate SA-Water Based (WB) Primer, SA-LVOC Primer or SA-Solvent Based (SB) Primer.
2. Do Not use Elevate SA-Water Based (WB) Primer over a concrete deck with residual asphalt or pitch.
3. Hot asphalt cannot be used to adhered roofing material to V-Force Vapor Barrier membrane.

Table 6: V-Force – Acceptable Adhesives for Insulation Attachment

V-FORCE – ACCEPTABLE ADHESIVES FOR INSULATION ATTACHMENT				
TIS Number	**Adhesive**	**Bead Spacing (o.c.) (55 mph)**		
		Field	**Perimeter**	**Corner**
812	I.S.O. Twin Pack	12" (304.8 mm)	6" (152.4 mm)	4" (101.6 mm)
819	I.S.O. Stick			
831	I.S.O. Spray R			
836A	Twin Jet			
836B	Twin Jet Y			

NOTE:
1. All substrates except metal decks must be primed with either Elevate SA-Water Based (WB) Primer, SA-LVOC Primer or SA-Solvent Based (SB) Primer.
2. Do Not use Elevate SA-Water Based (WB) Primer on concrete with residual asphalt or pitch.
3. Hot asphalt cannot be used to adhere roofing material to V-Force Vapor Barrier membrane.
4. On steel deck assemblies, beads should be spaced to be located over the top flute of the steel deck.

Air Barriers

1. While some Elevate roofing systems may require an air barrier to meet codes or project specifications, the need for an air barrier, as well as the type, placement and location of the air barrier must be determined by a professional architect or engineer.
2. Air barriers systems are a component of building envelope systems that control the movement of air into and out of buildings.
3. An air barrier may consist of a single material or of two or more materials which, when installed as a system, make up an air impermeable, structurally adequate barrier.
4. Air barrier systems are generally comprised of building components and materials that have an air permeability not exceeding 0.004 cfm/ft2 under a pressure differential of .3" water.
5. No single component or material has the capability to provide a complete air barrier system for a building; therefore, air barrier systems include many components and materials that are interfaced with each other. Amrize recommends that the individual manufacturers of these products provide written certification that their products, when used together, meet this requirement.
6. If the air barrier is to perform its intended role, it must meet a number of requirements:
   - Continuity: the assembly must be linked together to ensure that there is no break in the air tightness of the envelope.

- Structural Integrity: The air barrier must can resist the imposed load or must be supported by one that can. It must can resist the strongest wind load acting as either a pressure or suction without rupturing or breaking away from its support. The air barrier and its support must be sufficiently rigid to resist displacement.
- Air Impermeability: A major requirement of an air barrier is that it offers a high resistance to airflow.
- Durability: Durability depends largely on how a material reacts to a specific environment such as moisture, temperature, ultra-violet radiation, and to the presence of other materials (incompatibility).

Sloped Roofs – Asphalt Vapor or Air Barrier Systems Attachment

The building owner or the design professional intending to specify back-nailing should consider geographic location, specific job conditions, accepted area application practices, and the type and grade of materials specified when creating an actual specification for a project.

- When the slope of the roof exceeds ½": 12" (4.2%), and hot asphalt attachment is specified, Elevate requires Elevate SBES Mopping Asphalt or Type IV asphalt be used.
- Contact a Regional Technical Coordinator for additional requirements regarding roof slopes over 3": 12" (25%).
- For roof slopes up to and including ½": 12" (4.2%), the side laps can be installed parallel or perpendicular to the slope.
- For roofs slopes greater than ½": 12" (4.2%), the membrane must run parallel to the slope and be back-nailed as outlined in below.
- An air barrier is required for projects with large wall openings that are greater than 10% of the total wall areas that can be left open in a storm. Criteria to be determined based upon Elevate review.

Table 7: Back-Nailing Requirements for Sloped Roofs

BACK-NAILING REQUIREMENT FOR SLOPED ROOFS					
Base Sheet	**Attachment**	**<½" (4.2%)**	**>½" <1" (4.2% - 8.3%)**	**>1"< 2" (8.3% -16.7%)**	**>2"< 3" (16.7% - 25%)**
Any Applicable Elevate Base Sheet	Elevate Multi-Purpose MB Cold Adhesive	NFR	NFR	Nailers 32' o.c. Full Length Sheet	Nailers 16' o.c. ½ Length Sheet
Any Applicable Elevate Base Sheet	Heat Fused, Hot Asphalt, or Self-Adhered	NFR	NFR	NFR	Nailers 32' o.c. Full Length Sheet
Refer to Elevate MB-BN-1 for detailed back-nailing requirements.					
NOTE: ½" = 12.7 mm; 3" = 76 mm; 1" = 25 mm; 16' = 4.9 m; 2" = 50.8 mm; 32' = 9.7 m; NFR = No Fastener Required at This Slope					

Insulation Stops and Back-Nailing Nailing Strips

1. Back-nailing nailing strips are required on all roofs with slopes greater than 16.6% (2:12)
2. Insulation stops and are recommended on all roofs with slopes greater than 16.6% (2:12)
3. Back-nailing nailing strips and Insulation stops shall be a minimum of 3½" (89 mm) wide and the same thickness as the roof insulation.
4. Back-nailing nailing strips and Insulation stops must be attached to resist a force of 200 lbf per lineal foot (2.9 kN/m) minimum.
5. Insulation stops and back-nailing nailing strips are not needed when system is applied directly to a wood deck or a similar nailable substrate.
6. Contact a Elevate Regional Technical Coordinator for information regarding back-nailing requirements utilizing approved insulation less than 1" (25 mm).

Back-nailing Modified Asphalt Base and Cap Sheets

1. Non-Nailable decks and nailable decks with insulation
   - Cut the sheet to conform to nailer spacing. Using capped nails, nail the end lap across the width of the sheet, with the first nail spaced ¾" (19 mm) from the leading edge of the sheet. The remaining nails are to be spaced approximately 3" (76 mm) on center. The nails should be staggered across the width of the nailer.
   - Elevate fasteners and plates may be used in lieu of cap nails. Four per end lap are required.
2. Nailable decks with no insulation
   - Cut the sheet to conform to nailer spacing. Using capped nails or Elevate fasteners and plates, nail the end lap across the width of the sheet, with the first nail spaced ¾" (19 mm) from the leading edge of the sheet. The remaining nails are to be spaced approximately 3" (76 mm) on center. The nails should be staggered across the width of the nailer.
   - Elevate fasteners and plates may be used in lieu of cap nails. Four per end lap are required.
3. Cap nails must have 1" (25 mm) diameter heads with steel head only. Shank must be min. 11-gauge (2.3 mm) annular ring or spiral shank and be FM Approved.

Back-nailing Type IV and Type VI Fiberglass Roofing Plies

1. Using capped nails or Elevate fasteners and plates, back-nail 3" (76 mm) o.c. from the back edge of each felt along the nailer ensuring that the nails are covered by a minimum of two plies of felt. The nails must be FM Approved and have 1" (25 mm) diameter steel heads. Shank must be a min. of 11-gauge (2.3 mm) annular ring or spiral.
2. Cap nails must be FM Approved and have 1" (25 mm) diameter steel heads. Shank must be a min. of 11-gauge (2.3 mm) annular ring or spiral.

Cap Nails

1. Cap nails must be FM Approved and have 1" (25 mm) diameter steel heads. Shank must be a min. of 11-gauge (2.3 mm) annular ring or spiral.
2. Cap nails cannot be used to attach insulation or for 20-year systems.
3. Elevate insulation plates and fasteners may be used in lieu of cap nails.
   - It is the roof system designer's responsibility to:
     - Assure that the methods of attachment of the roof system to the vapor retarder selected are compatible.
     - Assure that the vapor retarder will extend continuously and evenly throughout the roof plane to provide a complete seal against the intrusion of moist air from the building interior. Integration of the wall and roof air retarder systems is essential.
     - Take the appropriate steps necessary to deal with the effect of construction moisture on a new roofing system, particularly during winter, when temporary propane heat is required.

SUBSTRATES AND SUBSTRATE REQUIREMENTS

It is the roofing contractor's responsibility to ensure that the substrate is acceptable for the Elevate roof system.

! Amrize does not approve of or recognize the results of destructive testing by others for the purposes of project close-out or to satisfy contract requirements. Any damage caused by such testing may prevent Amrize from issuing a warranty. Amrize is not responsible for costs associated with repairs or enhancements performed to the roof system as a result of testing.

General

1. The Elevate roof system depends on a suitable substrate to perform its intended function of weatherproofing the building.
2. The substrate to which the Elevate roof system is installed must:
   - Be structurally sound
   - Be dry, smooth, flat, and clean
   - Be free of sharp fins, or foreign materials that could damage the membrane
   - Meet the minimum requirements for the system
3. When using asphalt to adhere insulation to a structural concrete substrate, the concrete must be primed with an ASTM D41 asphalt primer. The primer is applied at a rate of 1½ to 2 gallons per 100 ft^2 (0.61 to 0.82 L/m^2).

Fastener Pullout/Adhesive Requirements

1. Substrates for membrane and or the insulation attachment are required to provide sufficient pullout resistance for the fasteners and the roof system.
2. In the case where the structural deck does not meet the minimum fastener pullout requirements, contact a Technical Services Advisor for Technical Information.

Table 8: Minimum Fastener Pullout Resistances for Specific Systems

MINIMUM FASTENER PULLOUT RESISTANCES FOR SPECIFIC SYSTEMS	
System	**Minimum Fastener Pullout**
Adhered systems with Insulation Mechanically Attached to Deck	300 lb (136.1 Kg)
Single-Ply mechanically attached	400 lb (181.4 Kg)
Base Sheet Mechanically Attached to Deck	300 lb (136.1 Kg)
Base Sheet Nailed to Deck (Cap nail or LWC Fastener)	30 lb (18.1 Kg)

Contact a Technical Services Advisor for Technical Information when the structural deck does not meet the minimum fastener pullout requirements.

3. Refer to the Attachment Guide for the minimum adhesive pull test requirements for insulation adhesives.
4. Pullout Tests: Due to the variety of physical conditions that can affect pullout resistance, Amrize recommends that on-site tests be conducted by an independent testing laboratory, the manufacturer's representative, or the roofing contractor, to determine actual pullout values. The following deck types are those which may not provide sufficient pullout resistance:
   - Steel decks thinner than 22 ga (0.76 mm)
   - Concrete less than 3000 psi (20,684 kPa)
   - Plywood or oriented strand board less than 7/16" (11.1 mm) thickness
   - Wood plank less than ¾" (19 mm) thickness

- All poured or pre-cast gypsum, cementitious wood fiber and lightweight insulating concrete decks
- Existing masonry or brick
- Any other substrate that does not have a published pullout capacity greater than the minimum required for the applicable roof system.
- The sections of the substrate where integrity is most in question should be used for testing. Test areas should include the corners, drain areas, and perimeters. The minimum number of pullout test recommended is as follows:

Table 9: Recommended Number of Pull-Out Tests

RECOMMENDED NUMBER OF PULL-OUT TESTS		
Roof Size		Number of Pull-Out Tests
Less Than 10,000 ft^2	Less Than 1,000 m^2	6
10,000 ft^2 – 50,000 ft^2	1,000 m^2 – 5,000 m^2	10
50,000 ft^2 – 100,000 ft^2	5,000 m^2 – 10,000 m^2	20
Over 100,000 ft^2	10,000 m^2	1 per 5,000 ft^2/500 m^2

- When new construction or other conditions prevent preliminary on-site pullout tests, the fastener manufacturer should supply estimated pullout values for design and bid purposes. On-site verification of the pullout capacity must be confirmed prior to system installation. (Consider requesting a unit price bid for potential increased fastening requirement.)

Moisture Considerations

1. The roofing contractor is responsible for ensuring that the substrate is suitable to receive a Elevate roof system. Substrates must be properly cured to meet current industry standards before installing roofing components.
2. Amrize suggests a moisture survey be conducted to determine the moisture content of any existing roof system component. All damaged and/or wet components of the existing system that would be detrimental to the new Elevate roof system must be removed and replaced in kind, prior to its installation.
3. Failure to remove existing roof system components that cause damage to the new Elevate roofing system constitutes a non-warrantable condition.
4. The best diagnostic technique is by taking and evaluating a series of roof cores.
5. Three techniques are currently available to evaluate the roof by indirect/non-invasive means. Results of these studies must still be correlated with roof cores. These techniques provide measurements of factors that can be associated with the presence of moisture.
   - Nuclear moisture detection
   - Infrared thermography
   - Electric capacitance

Drainage and Slope

!	Building codes may require a specific minimum slope for drainage. It is the building owner or his design professional's responsibility to consult with the controlling code agency official(s) to determine the specific requirements of each project and each system.
	When interior drains are necessary, they must be installed at the low points of a sloped roof deck or insulation and maintained in a working condition.

1. The NRCA and prevailing building codes recommends that a minimum roof slope of 1/4" (6.4 mm) per foot be obtained to facilitate proper drainage and maximize long-term performance of the roof system. Amrize recommends following the NRCA guidelines. The minimum Amrize requirement is POSITIVE drainage.
2. Ponding water is defined as a condition existing on any area of the roof where water remains more than forty-eight (48) hours after precipitation.
3. Adequacy of drainage provisions, placement, sizing and/or number of drains required is the responsibility of the building owner or his design professional. Drainage conditions should meet the requirements of applicable codes as well as standard industry recommendations.
4. In re-roofing or re-cover situations, analysis of the existing drainage conditions is the responsibility of the building owner or his design professional. Existing deck deflection or ponding water may necessitate upgrading of the drainage provisions, including relocation of existing drains, possible addition of new drains, increased bar joist support etc. Amrize does not design roof drainage systems or assume any liability for the adequacy (or lack of) roof drainage systems or facilities.
5. Proper and adequate drainage of the roof surface is required to assure the long-term performance of the roofing system. Drains should be of sufficient number, size, and located to provide satisfactory and rapid drainage of the entire roof surface (within 24 to 48 hours of precipitation). Although, a minimum roof slope of 1/4" (6.4 mm) per foot is recommended, other slopes are acceptable to receive an Elevate warranty provided positive drainage is attained.
6. Tapered Elevate insulation provides an effective and economical solution where substrate slope will not permit efficient drainage. When properly installed, they can extend the life of the roof system by eliminating problems associated with ponded water.

Tapered ISO 95+ GL / ISOGARD GL and tapered RESISTA / ISOGARD CG are available in slopes from 1/16" (1.6 mm) to 1/2" (13 mm) per foot. Amrize provides a variety of technical support services for the installation of tapered insulation through the Elevate Tapered Engineering Design Department.

7. The following are just some of the reasons why proper roof drainage is important:
   - Standing water can result in deck deflection and possible structural damage
   - Water on the roof can promote vegetation, fungal and bacterial growth
   - In the event of an opening in the roof membrane, standing water can significantly worsen the damage to the roof system, the building itself, and the interior contents
   - It is required by many, if not all, building codes
   - Proper drainage of the roof system prevents premature deterioration of the roof membrane and roof components

Wood Nailers

> **!** Due to EPA regulations regarding treated wood, new treatments for lumber may be highly corrosive to fasteners. Contact the fastener manufacturer for their recommendations on fasteners if attaching nailers that have been treated with the more corrosive materials.
>
> Chemical treating for fire resistance or other purposes (other than pressure treating for rot resistance, i.e., CCA, ACZA, CBA, ACQ or other copper treatments) may affect the performance of the Elevate membrane and accessories. Contact a Elevate Regional Technical Coordinator for Technical Information when using chemically treated lumber that will come in contact with the membrane.

1. For new construction projects, wood nailers must be kiln-dried (Southern Pine, Douglas Fir) structural grade #2 or better.
2. Wood nailers by others: Make these specifications and details available when others will install nailers. Work that compromises the integrity of the system may jeopardize the warranty.
3. For re-roof projects and new construction projects where a poured-in-place deck will be used, wood nailers must be pressure treated for rot resistance, #2 or better lumber. Asphaltic or creosote-treated lumber is not acceptable. Lumber treated with other wood preservatives such as Pentachlorophenol, Copper Naphthenate or Copper 8-quinolinolate will adversely affect the membrane when in direct contact and are, therefore, unacceptable.
4. Amrize requires wood nailers at the following locations:
   - All roof edges
   - Metal penetration pockets
   - Wood nailers must totally support all sheet metal flanges and be at least ½" (13 mm) wider to roof side
   - Refer to Elevate details for other location requirements
5. The wood nailer may be omitted when all metal flanges are less than 12" (305 mm) on a side OR when placed on and secured directly to the deck.
6. The building owner or his design professional must specify a wood nailer attachment system that will resist a minimum force of 200 lb/ft (2.9 N/m) in any direction. Elevate fasteners are required for all roofing applications. For further clarification, please refer to Factory Mutual Loss Prevention Data Sheet 1-49.

> **!** If forces at the building perimeters are greater than 200 lb/ft (2.9 N/m) due to increased wind speed as dictated by code requirements and calculated using either ASCE-7 or ANSI/SPRI ES-1, then the securement of the nailers must also be increased to accommodate the calculated loads.

Expansion Joints

1. The determination of the necessity and location for expansion joints is a project specific requirement, which is the responsibility of building owner or his design professional. Typical consideration for selection criteria may include one or more of the following:
   - Where expansion, contraction or deflection joints are provided in the building structural system
   - Roof expansion joints must be located to accommodate movements caused by building structural movement
   - Where structural framing elements such as joists, rafters, purlins, or steel decking change direction
   - Deck material changes (e.g., from steel to concrete deck). Where different types of roof decks such as concrete and steel abut each other
   - Where additions are connected to existing buildings
   - At junctions where interior heating conditions change such as a heated space abutting an unheated space
   - Where movement between vertical walls and the roof deck is anticipated
   - Roof areas greater than 200' (61 m) on any direction
   - Coordination and sequencing of expansion joint closure systems and their continuity, compatibility and function of seal is the responsibility of the design team

   NOTE: The conditions above may not be all-inclusive. Other conditions may exist in which expansion joints should be considered as determined by a design professional.
2. Expansion joints must not restrict the flow of water.

Flashing Foam

Elevate Flashing foam may be used to fill voids around penetrations, wall/roof perimeters, and other gaps where fill may be needed.

FASTENERS

General

! Platinum Warranty Critical Information:
Elevate #12s and All Purpose (AP) fasteners are acceptable for use with adhered Platinum EPDM roof system installations for the mechanical attachment of insulation in wood or steel decks.

1. Refer to the Technical Information Sheet (TIS) that references the specific fastener being used and for the deck penetration requirements of that fastener. All fasteners must be suitable for the existing deck type.
2. Roofing systems rely on the attachment of the components to the deck substrate to perform its basic functions. Wind creates uplift forces on the roof; therefore, the overall holding power of the fasteners is critical. Amrize recommends that the use of any fastener be investigated should there be concerns about the structural integrity of the deck. Some items to be considered include:
   - How the fastener(s) might affect the deck
   - The capability of the deck to hold the fasteners and roof system in place in a wind related event
3. The structural integrity of the deck may have been weakened over time; thus, the choice of fastener and roof attachment methods and frequency should be considered in determining the best solution to the given deck and situation.

Regarding fastener selection:
- For new installation or complete tear-off, Elevate AP or HD fasteners may be used for up to a 20-year Red Shield Warranty for mechanical attachment of insulation and or membrane.
- For re-cover or partial tear-off, HD fasteners are required for 15-year or greater warranties, except into wood decks.

! Fasteners and plates are not approved for use directly under ballasted roofing systems.
Elevate requires that a suitable insulation or cover board be installed over any substrate that would damage the membrane due to the additional loading of the ballast system. This includes, but is not limited to:
- Fasteners/plates used for insulation attachment
- Fasteners/plates used for existing membrane or insulation securement
- Substrates that are not smooth, flat, clean, free of sharp fins, or foreign materials that could damage the membrane

When using fasteners, verify that the substrate has sufficient fastener pullout resistance to meet the system requirements.

Table 10: Acceptable Fastener Uses

ACCEPTABLE FASTENER USES

Elevate Fastener		For the attachment of:	
TIS No.	Fastener	Elevate Batten Strips	Termination Bars
		See the specific fastener TIS for detailed application data	
1001	All-Purpose Fastener*	✓	
1002	Heavy-Duty Fastener	✓	✓
1005	Concrete Drive Fastener	✓	✓
		Do not use with polymer batten strips.	
1006	Polymer Fastener	✓	
		(Special battens and plates required, not approved for in seam attachment.)	
1009	HD Plus Fastener	✓	
		Elevate Metal Batten Strips in Batten in the Seam (B.I.T.S.), M.A.S. and Reinforced MAX, mechanically attached systems.	
1011	Purlin Fastener	✓	
		▪ Membrane and QuickSeam R.M.A. Strip to 12 – 18-gauge structural steel purlin. ▪ The Elevate Purlin Fastener can be used in conjunction with Elevate 2" Metal Plates, Elevate V-Plates, or batten strips.	
1050	RetroDriller Fastener	✓	
		▪ Membrane and QuickSeam R.M.A Strip to into steel up to 3.16" (5 mm) thick. ▪ The Elevate RetroDriller Fastener can be used in conjunction with Elevate 2" Metal Plates, Elevate V-Plates, or batten strips.	
✓ = Acceptable			

Table 11: Acceptable Plate Uses

ACCEPTABLE PLATE USES					
TIS No.	**Fastener Plates**	**RubberGard EPDM (Standard, LSFR, or FR)**		**RubberGard EPDM MAX**	
		Batten in the Seam (BTS)	**Mechanically Attached System (MAS)**	**Batten in the Seam (BITS)**	**Mechanically Attached System (MAS)**
1101	2″ Metal Plate	√	√	√	√
		For attaching Elevate Reinforced Perimeter Fastening Strips (RPF Strip) to approved substrates as required by Elevate Specifications and Details.			
1102	Polymer Fastener Plate	√	√	√	√
		For attaching Elevate Reinforced Perimeter Fastening Strips (RPF Strip) to approved substrates as required by Elevate Specifications and Details.			
1103	V-Plate	√	√	√	√
		For attaching Elevate RubberGard MAX membrane, Elevate RPF and QuickSeam RPF Strips, and Elevate QuickSeam R.M.A. Strip to approved substrates as required by Elevate Specifications and Details.			
1106	Insulation Fastening Plate	√	√	√	√
		For attaching insulation to approved substrates as required by Elevate Specification and Details.			
1107	Polymer Fastener Insulation Plate	√	√	√	√
		For attaching insulation to approved substrates as required by Elevate Specification and Details.			
√= Acceptable for use					

Table 12: Acceptable Uses for Batten and Termination Bars

ACCEPTABLE USES FOR BATTEN AND TERMINATION BARS					
TIS No.	**Fastener Plates**	**For the attachment of:**			
		RubberGard EPDM (Standard, LSFR, or FR)		**RubberGard EPDM MAX**	
		Batten in the Seam (BTS)	**Mechanically Attached System (MAS)**	**Batten in the Seam (BITS)**	**Mechanically Attached System (MAS)**
1201	Coiled Metal Batten Strip	√		√	
		For anchoring RubberGard membrane and flashing details to approved substrates as required by Elevate Specifications and Details.			
1202	Metal Batten Strip	√		√	
		For anchoring RubberGard membrane and flashing details to approved substrates as required by Elevate Specifications and Details.			
1204	Polymer Fastener Metal Batten Strip	√		√	
		For anchoring RubberGard membrane to approved substrates as required by Elevate Specifications and Details.			
1205	Termination Bar	√	√	√	√
		For anchoring and sealing flashing terminations to approved substrates as required by Elevate Specifications and Details.			
1206	Aluminum Drain Bar	√	√	√	
		Used with Elevate Adhered and Ballasted systems for terminating the RubberGard membrane to approved substrates as required by Elevate Specifications and Details.			
1207	Polymer Batten Strip	√	√	√	
		Used for anchoring RubberGard membrane and flashing details to approved substrates as required by Elevate Specifications and Details.			
√= Acceptable for use					

DECKS

> **!** Platinum Warranty Critical Information:
> Platinum roof system cannot receive the Elevate Platinum warranty if the existing roof remains in place. A complete removal of the existing roof system, including the membrane, insulation and flashings is required.

> **!** If present, Phenolic foam insulation must be removed. Once removed, a visual inspection of the deck condition and other components is required; all deteriorated components must be replaced as necessary.
> It is the building owner or their design professional's responsibility to determine the condition of the deck.

> **!** Sprayed-In-Place Polyurethane Foam (PUF) roofing systems require a COMPLETE TEAR-OFF of the polyurethane foam system.

General

1. Structural roof decks should be properly designed and constructed to provide sufficient strength to support the anticipated dead and live loads along with the loads anticipated due to the construction traffic without excessive deflection or movement.
2. Roof replacement usually involves more complexities than new construction roofing. Such contingencies as rusted or deteriorated decks, rotted wood components, rooftop equipment that cannot be moved or shut down, and numerous other conditions are often encountered.
   - All holes, deformations, depressions, etc., must be reinforced and /or smoothed prior to the roof application.
   - Determination and acceptance of a deck for re-roofing is the responsibility of the building owner or his design professional.
   - The deck should provide slope to drain.
3. Refer to Section IX-D-6 for fastening requirements for Mechanically Attached Systems should pullout values be less than 400 lbf (181.4 kg).
4. Even existing concrete roof decks may contain latent amounts of moisture that may affect the insulation and the roof system. To help protect the roofing components, an Elevate Venting Base Sheet or other vapor retarder material may be installed in accordance with the manufacturer's instructions. The installation of a vapor retarder should be considered regardless of the method of attachment of the insulation or membrane attachment, hot asphalt or adhesive attachment of insulation or the membrane system.

Classification

1. Structural decks can be classified as nailable or non-nailable (sometimes both) for purposes of mechanically attaching or nailing insulation or base sheets. Nailable decks include wood and new decks of gypsum and lightweight insulating concrete. These decks are soft enough so that the above-deck components can be secured with fasteners. Cementitious wood fiber and poured or precast structural concrete decks have been referred to as non-nailable. The term non-nailable is misleading. Amrize has fasteners that are approved for these decks.
2. Structural decks can be classified as combustible or non-combustible for purposes of fire ratings and code requirements.

Table 13: Structural Deck Classification

STRUCTURAL DECK CLASSIFICATION		
Deck	**Nailable or Non-Nailable**	**Combustible or Non-Combustible**
Steel	Non-Nailable	Non-Combustible
Concrete	Both	Non-Combustible
Wood	Nailable	Combustible
Cementitious Wood Fiber Decks	Both	Non-Combustible
Gypsum	Nailable	Non-Combustible
Lightweight Insulating Concrete	Nailable	Non-Combustible

Steel Decks

1. Amrize recommends that steel decks be a minimum 22 ga (0.76 mm).
2. FM Approved steel decks are currently available in 22 ga (.0295" 0.794 mm), 20 ga (.0358", 0.909 mm) and 18 ga (0.0474", 1.204 mm) thick sheets with 1.5" (38 mm) deep corrugations. The corrugations (ribs) are cold rolled in the sheets. The deck has a 6" (152 mm) module, that is, the ribs are 6" (152 mm) on center. All fastening Approvals and recommendations are based on this profile. (Approved and recommended spacing's are such that the fasteners will engage the top flange of the deck). Another common configuration is 3" (76 mm) deep deck, which usually has an 8" (203 mm) module.
3. When mechanically attaching a membrane to a steel deck refer to Section IX-D for specific requirements.

4. When mechanically attaching insulation, steel decks are required to have a minimum fastener pullout of 300 lb per fastener for adhered roofing systems.
5. Elevate single-ply membranes may not be adhered or fastened directly to a steel deck.
6. On steel decks, the edges of insulation boards running parallel with the deck are required to be supported by the top flange of the metal deck. The board should have a minimum 1 ½" bearing on the steel deck flange. Cantilevering insulation boards over deck flutes can result in fracturing insulation boards, reducing the support for the membrane, making it susceptible to puncture.
7. All deteriorated components must be replaced, in kind.
8. For retrofit of metal buildings, refer to Metal Building Recover Specifications. Direct attachment of Elevate mechanically attached or adhered roofing systems to metals roofs (regardless of gauge) without an acceptable cover board is strictly prohibited.

Table 14: Acceptable Fasteners for Steel Decks

ACCEPTABLE FASTENERS FOR STEEL DECKS	
Insulation	**Deck Penetration**
All-Purpose Fastener	¾" (19 mm) through deck *AP and #12 fasteners are approved for warranty purposes. If uplift validation is required HD fasteners may be required.
Heavy Duty Fastener	
Pre-Assembled #12 Fastener and Plate	
AP AccuTrac™ Kits (#12 Fasteners and insulation Plate)	
IsoFast™ #12 Belted Fasteners and Insulation Plates	
HD AccuTrac Kits™	
All-Purpose Stainless-Steel Fastener	
Elevate #12 Fastener	
HailGard Fastener (No Insulation Plate)	¾" (19 mm) through deck
Membrane	
Heavy Duty Fasteners and Plates	¾" (19 mm) through deck
Heavy Duty Plus Fasteners and Plates	1" (25 mm) through deck
Elevate All-Purpose Fastener and V-Plate	¾" (19 mm) through deck

Table 15: Acceptable Insulation Adhesives for Insulation Attachment to Steel Decks

ACCEPTABLE INSULATION ADHESIVES FOR USE DIRECT TO STEEL DECKS	
I.S.O. Spray™ R	NOTE:
I.S.O. Stick™	▪ The deck must be clean, free of all processing oils and other contamination.
I.S.O. Twin Pack™	▪ Bead spacing should be spaced to ensure top flute adhesion is made.
Twin Jet	▪ Use only 4' x 4' (1.2 m x 1.2 m) insulation boards with adhesives.
Twin Jet Y	▪ Factory Mutual (FM) does not recognize adhesion of insulation direct to steel deck.

Structural Concrete Roof Decks

> **!** Platinum Warranty Critical Information:
> Platinum EPDM membrane may not be adhered directly to a structural concrete deck. The membrane must be adhered to an acceptable insulation or cover board.

1. Amrize recommends that the concrete deck be a minimum 2500 psi (20684 KPa).
2. Refer to Section 108-5 for fastening requirements for Mechanically Attached Systems should pullout values be less than 400 lbf (181.4 kg).
3. When mechanically attaching insulation, structural concrete roof decks require a minimum fastener pullout of 300 lb (1.8 kN) per fastener for adhered roofing systems.

> **!** The suitability of mechanically fastening insulation or membrane to any hollow core, pre-stressed or post-tensioned structural concrete deck assembly is the responsibility of the design professional. Special consideration needs to be given to the relationship between the deck attachment allowances and Amrize mechanical attachment requirements.

4. Verify with the building owner or the owner's design professional about the suitability of mechanical fastening into pre-stressed and post-tensioned structural concrete.
5. Newly poured decks must be sufficiently cured to allow adhesion to the substrate surface. Cure times vary. A roof consultant, structural engineer, or concrete industry professional should be contacted to perform moisture tests if the readiness of concrete is in question.
6. Pre-cast concrete panels may not always be a suitable substrate to receive insulation due to the potential for irregularities, even if the joints are grouted. It may sometimes be necessary to consider pouring a leveling layer of structural or lightweight concrete over the panels prior to roofing.

When mopping direct to concrete decking, precautions must be taken to protect everything below from dripping hazards of the hot asphalt!

Table 16: EPDM Adhesion/Attachment to Structural Concrete Roof Decks

EPDM ADHESION/ATTACHMENT TO STRUCTURAL CONCRETE ROOF DECKS	
RubberGard EPDM	
Adhered	The Elevate RubberGard EPDM Roofing System Membrane may be attached directly to poured-in-place structural concrete using bonding adhesive.
Mechanically Attached	Requires protection mat or insulation.
RubberGard MAX EPDM	
Adhered	The Elevate RubberGard MAX EPDM Roofing System Membrane may be attached directly to poured-in place structural concrete using bonding adhesive.
Mechanically Attached	Requires protection mat or insulation.
RubberGard EPDM SA	
Self-Adhered	The RubberGard EPDM SA membrane may be self-adhered directly to poured-in-place structural concrete.

Table 17: Acceptable Fasteners for Concrete Roof Decks

ACCEPTABLE FASTENERS FOR CONCRETE ROOF DECKS	
Elevate Heavy Duty Fastener	1" (25 mm) into the structural deck
Elevate HailGard / ISOGARD HG Fastener	
Elevate Concrete Drive Fasteners	1¼" (32 mm) into the structural deck

Table 18: Acceptable Insulation Adhesives for Structural Concrete Roof Decks

ACCEPTABLE INSULATION ADHESIVES FOR STRUCTURAL CONCRETE ROOF DECKS
Elevate I.S.O. Twin Pack
Elevate I.S.O. STICK
Elevate I.S.O. SPRAY R
Elevate Twin Jet
Elevate Twin Jet Y
Hot Asphalt
NOTE: Use only 4' x 4' (1.2 m x 1.2 m) Insulation boards with Insulation Adhesives.

Wood Decks: Plywood, OSB, and Wood Plank

Platinum Warranty Critical Information:
Platinum EPDM membrane may not be adhered directly to a plywood, OSB, or wood plank roof deck. The membrane must be adhered to an acceptable insulation or cover board.

1. Amrize recommends that wood plank have a minimum ¾" (19.1 mm) thickness.
2. Amrize recommends that plywood and OSB decks have a minimum 7/16" (10.5 mm) thickness.
3. Adhered and mechanically attached EPDM systems may be installed directly to an OSB or plywood deck when:
   - The surface is structurally sound, smooth, flat, clean, dry, and free of sharp fins, loose splinters or foreign materials that may damage the membrane.
   - The deck is secured using threaded fasteners that provide a smooth profile, meeting FM 4470 and the guidelines found in "Wind-Rated Roofs: Designing Commercial Roofs to Withstand Wind Uplift Forces", which can be found at apawood.org. NOTE: Nails are not permitted.
   - Tongue and groove panels are recommended.
   - Adhering over "H" clips is not recommended. Validate if used proper adhesion is achieved around clips.

Fire treated plywood may be used provided it has not been treated with Ammonium Phosphates.

4. Refer to Section IX-D-6 for fastening requirements for Mechanically Attached Systems should pullout values be less than 400 lbf (181.4 kg).
5. When mechanically attaching insulation to wood decks, the required fastener pullout is of 300 lb (1.8 kN) per fastener minimum for adhered roofing systems.
6. When nailing a base sheet, wood decks are required to have a min. per fastener pullout of 40 lb (0.24 kN) for cap nails.

Table 19: Acceptable Fasteners for Plywood and OSB Roof Decks

ACCEPTABLE FASTENERS FOR PLYWOOD AND OSB ROOF DECKS	
Insulation	**Deck Penetration**
All-Purpose*	1" (25 mm) into or through deck *AP and #12 fasteners are approved for warranty purposes. If uplift validation is required HD fasteners may be required.
Heavy Duty	
Pre-Assembled #12 Fastener and Plate*	
AP AccuTrac™ Kits (#12 Fasteners and Insulation Plates)*	
IsoFast™ #12 Belted Fasteners and Insulation Plates*	
HD AccuTrac Kits™	
All-Purpose Stainless-Steel Fastener	
Heavy Duty (HD) ISOGARD™ HG / HailGard Fastener (No Insulation Plate)	
Elevate #12 Fastener	
Membrane	
All Purpose Fasteners and Plates (25-year max.)	1" (25 mm) through deck
Heavy Duty Fasteners and Plates	
All-Purpose Stainless-Steel Fastener	

Table 20: Acceptable Insulation Securement Options, Adhesives for Insulation Attachment to Plywood and OSB Roof Decks

ACCEPTABLE INSULATION SECUREMENT OPTIONS, ADHESIVES FOR INSULATION ATTACHMENT TO PLYWOOD AND OSB ROOF DECKS
Elevate I.S.O. Twin Pack
Elevate I.S.O. STICK
Elevate I.S.O. SPRAY R
Elevate Twin Jet
Elevate Twin Jet Y
NOTE: Use only 4' x 4' (1.2 m x 1.2 m) Insulation boards with Insulation Adhesives.

Table 21: Adhesion/Attachment to Wood Decks

ADHESION/ATTACHMENT TO WOOD DECKS	
RubberGard EPDM	
Adhered	The Elevate RubberGard EPDM Roofing System Membrane may be adhered directly to wood deck using bonding adhesive.
Mechanically Attached	The Elevate RubberGard EPDM Roofing System Membrane may be mechanically attached directly to wood deck using the appropriate fasteners and plates or batten bars.
RubberGard MAX EPDM	
Adhered	The Elevate RubberGard MAX EPDM Roofing System Membrane may be adhered directly to wood deck using bonding adhesive.
Mechanically Attached	The Elevate RubberGard MAX EPDM Roofing System Membrane may be mechanically attached directly to wood deck using the appropriate fasteners and plates or batten bars.
RubberGard EPDM SA	
Self-Adhered	The Elevate RubberGard EPDM SA membrane may be adhered directly to wood deck.

Cementitious Wood Fiber Decks

> **!** Platinum Warranty Critical Information:
> Platinum EPDM membrane may not be adhered directly to a cementitious wood fiber deck. The membrane must be adhered to an acceptable insulation or cover board.

1. Mechanically Attached Membrane Systems are not approved into Cementitious Wood Fiber Decks.
2. When mechanically attaching insulation, cementitious wood fiber decks are required to have a fastener pullout of 300 lb (1.8 kN) for each fastener for adhered roofing systems.
3. Amrize recommends that cementitious wood fiber deck have a minimum 2" (51 mm) thickness.
4. Elevate EPDM Membranes cannot be installed directly to a cementitious wood fiber deck. The membrane must be adhered to an acceptable Elevate insulation or cover board.

Table 22: Acceptable Fasteners for Cementitious Wood Fiber Decks

ACCEPTABLE FASTENERS FOR CEMENTITIOUS WOOD FIBER DECKS	
Elevate Polymer Fastener	1½" (38 mm) into deck

Table 23: Acceptable Insulation Securement Options, Adhesives for Insulation Attachment to Cementitious Wood Fiber Decks

ACCEPTABLE INSULATION ADHESIVES FOR ATTACHMENT TO CEMENTITIOUS WOOD FIBER DECKS	
I.S.O. Spray R I.S.O. Stick I.S.O. Twin Pack Twin Jet Twin Jet Y	NOTE: ▪ The deck must be clean, free of all processing oils and other contamination. ▪ Use only 4' x 4' (1.2 m x 1.2 m) insulation boards with adhesives.

Gypsum Roof Decks

! Platinum Warranty Critical Information:
Platinum EPDM membrane may not be adhered directly to a gypsum roof deck. The membrane must be adhered to an acceptable insulation or cover board.

1. Amrize recommends that the gypsum roof deck have a minimum 2" (51 mm) thickness.
2. Mechanically Attached Membrane Systems are not approved into Gypsum Decks.
3. When attaching insulation to a gypsum roof deck, a fastener pullout of 300 lb (1.8 kN) per Elevate Polymer Fastener is required for adhered roofing systems.
4. When mechanically attaching a base sheet to a gypsum roof deck, a fastener pullout of 40 lb (.24 kN) per Elevate LWC Base Sheet Fastener is required.
5. Elevate EPDM Membranes cannot be installed directly to a gypsum roof deck. The membrane must be adhered to an acceptable Elevate insulation or cover board.

Table 24: Acceptable Fasteners for Gypsum Roof Decks

ACCEPTABLE FASTENERS FOR GYPSUM ROOF DECKS	
Elevate Polymer Fastener	1½" (38 mm) into deck
1.2" (30.5 mm) and 1.7" (43 mm) LWC Base Sheet Fastener	For attaching base sheets to gypsum decks

Table 25: Acceptable Insulation Adhesives for Gypsum Roof Decks

ACCEPTABLE INSULATION ADHESIVES FOR ATTACHMENT DIRECT TO GYPSUM DECKS	
I.S.O. Spray R I.S.O. Stick I.S.O. Twin Pack Twin Jet Twin Jet Y	NOTE: ▪ The deck must be clean, free of all processing oils and other contamination. ▪ Use only 4' x 4' (1.2 m x 1.2 m) insulation boards with adhesives.

Lightweight Insulating Concrete Roof Decks

! Platinum Warranty Critical Information:
Platinum EPDM membrane may not be adhered directly to a lightweight insulating concrete roof deck. The membrane must be adhered to an acceptable insulation or cover board.

! Amrize suggests a vapor retarder be considered over any Lightweight Concrete roof deck, especially over Lightweight Concrete with aggregate. However, where not specifically required in the chart below, the determination of the necessity and placement of a vapor retarder is project-specific and rests with the building owner or their design professional.

1. Amrize recommends that lightweight insulating concrete have a minimum 2" (51 mm) thickness.
2. Refer to Section IX-D-6 for fastening requirements for Mechanically Attached Systems should pullout values be less than 400 lbf (181.4 kg). All mechanically attached membrane systems must attach into or through a structural concrete deck or steel form pan.
3. When mechanically attaching insulation through lightweight insulating concrete, into a structural deck, a fastener pullout of 300 lb (1.8 kN) per fastener is required for adhered roofing systems.
4. When mechanically attaching a base sheet to lightweight insulating concrete using Elevate 1.7" LWC Base Ply fasteners, a fastener pullout of 40 lb (.24 kN) per fastener is required.

5. A properly prepared, existing, dry, and sound, un-insulated built-up roof system (all splits and blisters repaired) can function as a vapor retarder in a warranted Elevate system but will not be included within Elevate warranty coverage.

Table 26: EPDM Adhesion/Attachment to Lightweight Insulating Concrete Roof Decks

EPDM ADHESION/ATTACHMENT TO LIGHTWEIGHT INSULATING CONCRETE ROOF DECKS		
New System with Insulation		**New System without Insulation**
RubberGard EPDM		
Adhered	Insulation and Vapor Retarder required	New systems without Insulation are not allowed.
Mechanically Attached	Insulation and Vapor Retarder required	The vapor retarder may be omitted provided that the deck is clean, smooth, dry, free of sharp edges, fins, loose or foreign materials, oil, grease, and other materials, which may damage the membrane, and the RubberGard EPDM Mechanically Attached System is installed over an Elevate Protection Mat.
RubberGard MAX EPDM		
Adhered	Insulation and Vapor Retarder required	New systems without Insulation are not allowed.
Mechanically Attached	Vapor Retarder required	The vapor retarder may be omitted provided that the deck is clean, smooth, dry, and free of sharp edges, fins, loose or foreign materials, oil, grease, and other materials, which may damage the membrane.
RubberGard EPDM SA		
Self-Adhered	Not required	RubberGard EPDM SA may not be adhered directly to Lightweight Insulating Concrete containing aggregate.

Table 27: Acceptable Fasteners for Lightweight Concrete Roof Decks

ACCEPTABLE FASTENERS FOR LIGHTWEIGHT CONCRETE ROOF DECKS	
Acceptable Fastener	**Minimum Penetration**
Acceptable Fasteners into Steel Pan	
Elevate Heavy Duty (HD's) Elevate HailGard	¾" (19 mm) Minimum penetration of fastener through steel pan
Acceptable Fasteners into Structural Concrete Substrate	
Elevate Heavy Duty (HD's) Elevate HailGard	1" (25 mm) into concrete deck
Elevate Concrete Drives	1¼" (32 mm) into concrete deck
Acceptable Fasteners for attaching Base Sheet to Light Weight Insulating Concrete	
Elevate 1.7" (43 mm) LWC Base Ply Fastener	Full
Acceptable Fasteners for attaching Base Sheet to Light Weight Structural Concrete	
Elevate 1.7" (43 mm) LWC Base Ply Fastener	Full
Elevate Lite Deck Fastener	2" (50.8 mm) into deck

Table 27A: Acceptable Insulation Adhesives for Attachment Direct to Lightweight Concrete Decks

ACCEPTABLE INSULATION ADHESIVES FOR ATTACHMENT DIRECT TO LWC DECKS	
I.S.O. Spray R I.S.O. Stick I.S.O. Twin Pack Twin Jet Twin Jet Y	NOTE: ▪ The deck must be clean, free of all processing oils and other contamination. ▪ Use only 4' x 4' (1.2 m x 1.2 m) insulation boards with adhesives.

Special Considerations for Partial Tear Off, and Retrofit/Recover Applications

!	Platinum Warranty Critical Information: Platinum Warranty coverage is not allowed on recover applications.
!	If present, it is required that Phenolic foam insulation be removed. Once removed, a visual inspection of the deck condition and other components is required; all deteriorated components must be replaced as necessary. It is the building owner or their design professional's responsibility to determine the condition of the deck.

1. Platinum systems require complete tear-off.

2. A Partial Tear Off is the removal of the existing roofing membrane, installing a new layer of insulation over the existing in-place insulation, and installing a new membrane roofing system over the new insulation.
3. A Retrofit or Recover is the installation of a new membrane roofing system (including insulation) over an existing roofing membrane.
4. The effect of existing moisture on the performance of the new system may be significant depending upon the roofing components selected. Therefore, a moisture survey should be conducted to determine the moisture content of the existing roof system components. All components of the existing system that would be detrimental to the new Elevate roof system must be removed and replaced in kind prior to installation.
5. Limitations in flashing heights may be encountered. Existing building features (e.g., door or window locations, weep holes, and through-wall flashings) may not allow sufficient clearance to provide proper termination above the potential water level, additional insulation, or other details. Detailed consideration of these conditions is critical to the integrity of the roofing system. Contact a Elevate Regional Technical Coordinator for Technical Information or assistance.
6. Confirm the structural integrity of the existing deck and specify repair or replacement as required.
7. Existing roof components are not included in the Elevate warranty.
8. Verify that the attachment of the existing roof system is acceptable for the specific new Elevate roof system.

Table 28: Special Considerations for Partial Tear-Off, and Recover/Retrofit Applications

SPECIAL CONSIDERATIONS FOR PARTIAL TEAR-OFF, AND RECOVER/RETROFIT APPLICATIONS	
Deck	**Special Considerations**
Steel Decks and Nailable Decks (Wood Plank, Plywood, OSB, Gypsum, Cement Wood Fiber, Poured-in-Place Concrete Decks)	The attachment of the existing system may not be sufficient if the existing insulation is not mechanically fastened or not fastened correctly, or if the existing system contains fasteners that may be corroded. It is strongly recommended that the existing roof system be mechanically attached to the structural deck according to local code, Insurance and Amrize requirements, and prior to installing the new insulation.
Non-Nailable Decks (Poured-in-Place Concrete Decks, Pre-cast Concrete Decks, Post-Tension Concrete Decks, Hollow Core)	If the existing insulation or membrane is not adequately adhered to the deck, it is strongly recommended that the existing roof system be removed to the deck.

!	The suitability of mechanically fastening insulation or membrane to any hollow core, pre-stressed or post-tensioned structural concrete deck assembly is the responsibility of the design professional. Special consideration needs to be given to the relationship between the deck attachment allowances and Elevate mechanical attachment requirements.
	All recover or retrofit systems using adhesives for insulation attachment require a pull test to verify adhesion. Refer to the Elevate Attachment Guide for adhesion pull test requirements for Elevate insulation adhesives.
	When using fasteners, verify that the substrate has sufficient fastener pullout resistance to meet system requirements.

Partial Tear Off

! Platinum Warranty Critical Information:
Platinum Warranty coverage is not allowed on recover applications.

1. Platinum systems require complete tear-off.
2. Partial Tear Off and Recover is the removal of the existing membrane, installing a new layer of insulation over the existing in place insulation and a new membrane over the new insulation.
3. The existing insulation must be suitable for use as a component of the new roof system. The existing insulation must be:
   - Dry and free of trapped moisture.
   - Re-secured as necessary to meet Amrize, local code, or other specified wind uplift requirements.
   - An acceptable substrate for the new insulation and the new membrane.
4. If existing insulation is to remain, all damaged or wet components must be removed and replaced, in kind, prior to installing the new roof system.
5. Existing roof components are not included in the Elevate warranty.

Retrofit/Recover Applications

! Platinum Warranty Critical Information:
Platinum Warranty coverage is not allowed on recover applications.

! For new roof installations, RubberGard EPDM SA may not be adhered directly to an existing roof membrane.

1. Existing Smooth Surface Built-Up or Modified Bitumen Roofs
   - New Elevate insulation or cover board is required.

- Bonding to an existing asphalt-based roof system is not acceptable when the melting point of the existing asphalt is less than 180 °F (82 °C).
- All damaged or wet components must be removed and replaced prior to installing the new roof system.
- Existing roof components are not included in the Elevate warranty.

2. Mineral Surfaced Modified Bitumen Cap Sheet
   - New Elevate insulation or cover board is required.
   - All damaged or wet components must be removed and replaced, in kind, prior to installing the new roof system.
   - Existing roof components are not included in the Elevate warranty.
3. Asphalt Built Up and Modified Roofs with Flood Coat & Gravel
   - New Elevate insulation or cover board is required. Use of 4' x 4' (1.2 m x 1.2 m) boards is recommended.
   - All damaged or wet components must be removed and replaced, in kind, prior to installing the new roof system.
   - Existing roof components are not included in the Elevate warranty.
   - The removal of loose gravel may be required to meet local building code requirements or for structural consideration. If loose gravel is removed, some method of leveling may be required to provide a suitable substrate for new insulation.
4. Coal Tar Built-Up Roofs
   - New Elevate insulation or cover board is required.
   - All damaged or wet components must be removed and replaced, in kind, prior to installing the new roof system.
   - Flow of existing coal tar into the building may occur when new fasteners penetrate an existing coal tar pitch membrane and substrate.

> ! Flow of existing coal tar into the building may occur when new fasteners penetrate an existing coal tar pitch membrane and substrate.

   - The removal of loose gravel may be required to meet local building code requirements or for structural consideration. If loose gravel is removed, some method of leveling may be required to provide a suitable substrate for the insulation.
   - Existing roof components are not included in the Elevate warranty.
5. Existing Single-Ply Systems
   - New Elevate insulation or cover board is required.
   - Recover over single-ply roofing systems require that all existing base tie-ins be removed or cut prior to the new roof installation.
   - All damaged or wet components must be removed and replaced, in kind, prior to installing the new roof system.
   - Existing roof components are not included in the Elevate warranty.

Preparation of Existing Gravel, Smooth, and Granule-surfaced Asphalt Membranes

1. Verify that the attachment of the existing roof system is acceptable. If existing insulation is not mechanically fastened, contains fasteners that may be corroded or loose, or the attachment may not be sufficient, consideration should be given to re-attaching the roof system prior to installing the new insulation.
2. When adhering insulation to a gravel surfaced roof, all loose gravel or granules must be removed by vacuuming and/or, power brooming. After all loose gravel has been removed; spud the remaining gravel smooth to provide a level bonding surface.
3. If adhering the insulation or cover board with asphalt, prime the surface using an ASTM D41 asphalt primer.
4. The existing assembly should be re-secured as necessary to meet local code and insurance or design wind uplift requirements. Conduct and document adhesion tests.

> ! Sprayed In-Place polyurethane foam (PUF) roofing systems require a COMPLETE TEAR-OFF of the Sprayed In-Place polyurethane foam system.
>
> Existing roofs over Phenolic Insulation require a COMPLETE TEAR-OFF of the entire roof system to the structural deck. Once Phenolic insulation is removed, a visual inspection by the owner's representative of the deck condition and other components is required; all deteriorated components must be replaced as necessary to provide a suitable decking substrate.

BASE SHEETS

GENERAL

> ! Platinum Warranty Critical Information:
> Except when used as part of a vapor retarder, base ply sheets may not be used in Platinum EPDM systems and still receive a Amrize Platinum warranty

1. Depending on the base sheet and the substrate, base sheets may be attached with fasteners, hot asphalt, or heat fusing as required by the specifications.
2. The Elevate modified base sheets and base plies must be installed so that all laps shed water.
3. Where the slope exceeds ½" (13 mm) in 12" (305 mm), (4.2%) and hot asphalt is required, Amrize recommends that Elevate SEBS Mopping Asphalt or Type IV asphalt be used. Refer to Table III-1 for attachment of asphalt membranes on slopes.
4. Amrize does not manufacture or supply Type III or Type IV asphalt and does not warrant the performance of products not supplied by Amrize.

Table 29: Allowable Base Sheet Attachments

ALLOWABLE BASE SHEET ATTACHMENTS

Substrate to which Base Sheet or Base Ply will be attached	Attachment Method		
	Mechanically Attached	Heat Weld	Hot Asphalt
Decks			
Structural Concrete	√	√	√
Plywood or Oriented Strand Board	√		
Wood Planking	√		
Poured or Pre-Cast Gypsum	√		
Cementitious Wood Fiber	√		
Lightweight insulating concrete Decks and Fills (refer to Section VI-I for additional requirements)	√		
Recover			
Existing Smooth Surface Built-up or Modified Bitumen Roofs		√	√
Asphalt Gravel Surfaced Built-Up Roofs			√
Mineral Surface Built-Up or Modified Bitumen Roofs		√	√
New Insulation / Cover Board			
ISOGARD HD	√		
STRUCTODEK HD Wood Fiber Board	√		√
HailGard / ISOGARD HG	√		
DensDeck Products	√	√	√
SECUROCK Products	√	√	√
DEXcell™ Glass Mat	√		
DEXcell FA Glass Mat	√	√	√
DEXcell Cement Board	√	√	√
DEXcell FA VSH Glass Mat	√	√	√

√ = Acceptable for use

Reference must be made to other sections of the Single Ply Design Guide, the Asphalt Design Guide, Detail Drawings, and Technical Information Sheets (TIS) for additional and/or specific requirements.

Table 30: Base Sheet Attachment

BASE SHEET ATTACHMENT

TIS	Fastener	Deck Type						
		Steel	Structural Concrete	Plywood/OSB/Wood Plank	Cementitious Wood Fiber	Gypsum	LWC/Steel Pan	LWC/Concrete
1001	All-Purpose Fastener	✓	-	✓	-	-	-	-
1002	Heavy Duty Fastener	✓	✓	✓	-	-	✓[1]	✓[1]
1003	Pre-Assembled #12 Fastener and Plate	✓	-	✓	-	-	-	-
1005	Concrete Drive Fastener	-	✓	-	-	-	-	✓[1]
1006	Polymer Fastener	-	-	-	✓	✓	-	-
1012	LWC Base-Ply Fasteners	-	-	-	-	✓	✓	✓
1014	IsoFast™ #15 Belted Fasteners and Membrane Plates	✓	-	✓	-	-	✓[1]	-
1017	All-Purpose Stainless-Steel Fastener	✓	-	✓	-	-	-	-
1020	Two Piece Impact Nail	-	-	-	✓	✓	✓	✓

NOTE:
1. Must penetrate steel pan or structural concrete.

Roofing plies or base sheets cannot be fully mopped to polyiso insulation. A suitable overlay must be used to separate the polyiso insulation from the adhered, hot asphalt applied, ply.
The following are overlays over polyiso that are generally acceptable when attaching any ply sheet with hot asphalt:

1. A compatible cover board
2. Approved DensDeck product
3. A base sheet mechanically attached through the polyiso insulation into the structural deck

INSULATION

Only Elevate brand insulation can be included in the Elevate Red Shield warranty.

General

1. Insulation must provide a suitable substrate for the proposed roof system as well as insulating the building.
2. Insulation thickness requirements may vary for code compliance. Contact the local code or insurance official before contacting a Elevate Regional Technical Coordinator for Technical Information.
3. Refer to Insulation or Cover Board Technical Information Sheet (TIS) for specific spanning capabilities.
4. Refer to the Elevate Attachment Guide for adhesion pull test requirements for Elevate insulation adhesives.

Attachment

Platinum Warranty Critical Information:
Platinum warranted systems require all insulation to be fastened at a rate of not less than sixteen (16) Elevate Fasteners and Elevate Insulation Plates (as required) per 4' x8' (1.22 m x 4.44 m) board. (One (1) per every two (2) square feet)

1. Insulation may be installed by various methods including fasteners, adhesives, and asphalt. It is acceptable to combine fastener and adhesive attachment methods in multi-layer applications.
2. Tapered insulation below the 1" (25 mm) minimum thickness must be fastened at a rate of one (1) fastener and plate per 2 ft^2 (0.19 m2). If possible, install the tapered insulation first, covered by the flat stock.
3. Refer to specific Technical Information Sheets (TIS) for installation and fastening requirements.
4. When a composite of two insulation layers is installed, the fastening pattern required for the top board thickness must be used. A common fastener may be used to install multilayer applications. Some restrictions apply to fastener length epending on standards used.

Ballasted systems are not allowed when the membrane is installed directly onto a hard surface, such as DensDeck, SECUROCK, DEXcell, OSB, Gypsum, ISOGARD HD or concrete.
Ballasted systems are not allowed when the membrane is installed directly over a layer of mechanically attached insulation.

Table 31: Insulation /Cover Board Attachment Options by Deck and Recover / Retrofit

INSULATION/COVER BOARD ATTACHMENT OPTIONS BY DECK AND RECOVER/RETROFIT

Substrate to Which Insulation / Cover Board Will Be Attached or Adhered	Attachment Method						
	Mechanically Attached	I.S.O. SPRAY R	Twin Jet	Twin Jet Y	I.S.O. Twin Pack	I.S.O. Stick	Hot Asphalt
		Adhesive attachment may require a primer and an adhesive pull test. See the Elevate Attachment Guide and Product Technical Information Sheets.					
Decks							
Steel	✓	✓	✓	✓	✓	✓	N/A
Structural Concrete	✓	✓	✓	✓	✓	✓	✓
Plywood or Oriented Strand Board	✓	✓	✓	✓	✓	✓	N/A
Wood Planking	✓	✓	✓	✓	✓	✓	N/A
Poured or Pre-Cast Gypsum	✓	✓	✓	✓	✓	✓	N/A
Cementitious Wood Fiber	✓	✓	✓	✓	✓	✓	N/A
Lightweight Insulating Concrete Decks (LWC section for additional requirements)	✓	✓	✓	✓	✓	✓	N/A
Recover/Retrofit (Excluding Platinum Systems)							
Existing Smooth Surface Built-Up Roof	✓	✓	✓	✓	✓	✓	✓

or Modified Bitumen Roofs							
Coal Tar Built-Up Roofs	N/A	✓	✓	✓	✓	✓	N/A
Asphalt Gravel Surfaced Built-Up Roof	✓	✓	✓	✓	✓	✓	✓
Mineral Surface Built-Up Roof or Modified Bitumen Roof	✓	✓	✓	✓	✓	✓	✓
Vapor Barrier							
V-Force Vapor Barrier Membrane	✓	✓	✓	✓	✓	✓	N/A
V-Force FR Vapor Barrier Membrane	✓	✓	✓	✓	✓	✓	N/A
Sprayed Urethane Roof (PUF) – Complete Tear-Off Required							
Existing Roof with Phenolic Insulation	Complete tear-off required. When Phenolic insulation is removed, a visual inspection of the deck condition and other components is required, and all deteriorated components must be replaced, as necessary.						
NOTE: ▪ Elevate recommends mechanically attaching a Cover board over existing insulation. The responsibility of identifying and removing damaged or wet insulation is that of the contractor. ▪ Refer to the Elevate Attachment Guide for adhesion pull test requirements for insulation adhesives.							
✓ = Acceptable N/A = Not Applicable							

Multiple Layers of Insulation

1. Where overall insulation thickness is 2" (51 mm) or greater, Amrize recommends installing the insulation in two (2) or more layers.
2. Insulation may be installed in one or multiple layer applications for the Elevate warranty. If installed in multiple layers, the joints of each succeeding and adjoining layer should be staggered from the joints of previous layers by a minimum of 6" (152 mm) in each direction.
3. When a composite of two insulation layers is installed, the fastening pattern required is dependent on the top board type and thickness. A common fastener may be used to simultaneously fasten all layers to the structural deck.

Table 32: Insulation/Cover Board Attachment to Insulation Options by Insulation Type

INSULATION/COVER BOARD ATTACHMENT TO INSULATION OPTIONS BY INSULATION TYPE						
Base Layer of Insulation to Which Insulation / Cover Board Will Be Adhered	**Insulation / Cover Board to Insulation Attachment Method**					
	I.S.O. SPRAY R	**Twin Jet**	**Twin Jet Y**	**I.S.O. Twin Pack**	**I.S.O. Stick**	**Hot Asphalt**
ISO 95+ GL / ISOGARD GL	✓	✓	✓	✓	✓	✓*
Resista / ISGOARD CG	✓	✓	✓	✓	✓	N/A
ISOGARD HD	✓	✓	✓	✓	✓	N/A
STRUCTODEK HD Wood Fiberboard	✓	✓	✓	✓	✓	✓
DensDeck	N/A	N/A	N/A	N/A	N/A	N/A
DensDeck Prime	✓	✓	✓	✓	✓	✓
DensDeck StormX Prime	✓	✓	✓	✓	✓	✓
Securock Gypsum-Fiber	✓	✓	✓	✓	✓	✓
Securock UltraLight Glass-Mat	N/A	N/A	N/A	N/A	N/A	N/A
Securock Cement	✓	✓	✓	✓	✓	✓
Securock UltraLight Coated Glass-Mat	✓	✓	✓	✓	✓	N/A
DEXcell FA Glass Mat	✓	✓	✓	✓	✓	✓
DEXcell Cement Board	✓	✓	✓	✓	✓	✓
DEXcell FA VSH Glass Mat	✓	✓	✓	✓	✓	✓
Perlite Insulation	N/A	N/A	N/A	N/A	N/A	✓
Asphalt Base Sheet	✓	✓	✓	✓ with primer	✓ with primer	✓
V-Force Vapor FR Barrier Membrane	✓	✓	✓	✓	✓	N/A
V-Force Vapor Barrier Membrane	✓	✓	✓	✓	✓	N/A

NOTE:
- Elevate recommends mechanically attaching a Cover board over existing insulation. The responsibility of identifying and removing damaged or wet insulation is that of the contractor.
- Refer to the Elevate Attachment Guide for adhesion pull test requirements for insulation adhesives.

* Board to board attachment acceptable but membrane to board securement with hot asphalt not approved.

✓ = Acceptable N/A = Not Applicable

Mechanical Attachment of Insulation and Cover Board to Approved Substrates

! Platinum Warranty Critical Information:
Platinum warranted systems require all insulation to be fastened at a rate of not less than sixteen (16) Elevate Fasteners and Elevate Insulation Plates (as required) per 4' x8' (1.22 m x 4.44 m) board. (One (1) per every two (2) square feet)

1. Insulation must be fastened with appropriate Elevate fasteners and insulation plates.
2. Elevate All Purpose (AP) Fasteners, Elevate AP AccuTrac Kits, Elevate ISOFast#12 Belted Fasteners and Insulation Plates, and Elevate Pre-Assembled #12 Fasteners and plates are not acceptable for use on any warranties greater than 20 years for new construction, re-cover, or partial tear off applications into steel decking and the system type is adhered.
3. Insulation must be installed in accordance with the fastening rate and pattern for the applicable system, as shown in the Elevate attachment specifications.
4. Fastening rates and patterns may vary for code or regulatory compliance. Contact a local code or insurance official before contacting a Elevate Regional Technical Coordinator for Technical Information
5. When a composite of two insulation layers is installed, the fastening pattern required is dependent on the top board type and thickness. A common fastener may be used to simultaneously fasten all layers to the structural deck.
6. In areas where tapered insulation thickness is below the 1" (25 mm) minimum thickness, insulation must be fastened at a rate of one (1) fastener and plate per 2 ft^2 (0.18 m^2).
7. Elevate's published reduced fastening rates for ISO 95+ GL / ISOGARD GL insulation, under selected conditions, will not affect the products performance. However, the reduced fastening rate may allow insulation board movement that may result in interior building noise.

Table 33: Allowable Fasteners – Insulation Attachment

ALLOWABLE FASTENERS – INSULATION ATTACHMENT

TIS	Fastener	Deck Type						
		Steel	Structural Concrete	Plywood/OSB/Wood Plank	Cementitious Wood Fiber	Gypsum	LWC/Steel Pan	LWC/Concrete
1001	All-Purpose Fastener	✓	-	✓	-	-	-	-
1002	Heavy Duty Fastener	✓	✓	✓	-	-	✓[1]	✓[1]
1003	Pre-Assembled #12 Fastener and Plate	✓	-	✓	-	-	-	-
1005	Concrete Drive Fastener	-	✓	-	-	-	-	✓[1]
1006	Polymer Fastener	-	-	-	✓	✓	-	-
1007	AP AccuTrac™ Kits (#12 Fasteners and insulation Plate)	✓	-	✓	-	-	-	-
1013	IsoFast™ #12 Belted Fasteners and Insulation Plates	✓	-	✓	-	-	-	-
1016	HD AccuTrac Kits™	✓	-	✓	-	-	-	-
1017	All-Purpose Stainless-Steel Fastener	✓	-	✓	-	-	-	-
1019	Heavy Duty (HD) ISOGARD™ HG / HailGard™ Fastener	✓	✓	✓	-	-	-	-
1026	Elevate #12 Fastener	✓	-	✓	-	-	-	-

NOTE:
1. Must penetrate steel pan or structural concrete.

Table 34: Insulation Attachment Fastener – Warranty Coverage

INSULATION ATTACHMENT FASTENER – WARRANTY COVERAGE

TIS	Fastener	Warranty Coverage by Deck Type						
		Steel	Structural Concrete	Plywood/OSB/Wood Plank	Cementitious Wood Fiber	Gypsum	LWC/Steel Pan	LWC/Concrete
1001	All-Purpose Fastener	20	-	20	-	-	-	-
1002	Heavy Duty Fastener	30	30	30	-	-	30	30
1003	Pre-Assembled #12 Fastener and Plate[1]	20	-	20	-	-	-	-
1005	Concrete Drive Fastener	-	30	-	-	-	-	30
1006	Polymer Fastener	-	-	-	30	30	-	-
1007	AP AccuTrac™ Kits (#12 Fasteners and insulation Plate)	20	-	20	-	-	-	-
1013	IsoFast™ #12 Belted Fasteners and Insulation Plates	20	-	20	-	-	-	-
1016	HD AccuTrac Kits™	20	-	20	-	-	-	-
1017	All-Purpose Stainless-Steel Fastener	20	-	20	-	-	-	-
1019	Heavy Duty (HD) ISOGARD™ HG / HailGard™ Fastener	30	30	30	-	-	-	-
1026	Elevate #12 Fastener	20	-	20	-	-	-	-

Minimum Number of Fasteners and Plates per Insulation Board

1. Refer to TIS 950 and the Elevate Attachment Guide for the required patterns for proper placement of approved fasteners and plates for insulation on Elevate minimum roofing systems specifications. These fastening patterns apply to the following flat or tapered insulations. The most common fastener density and pattern requirements are shown on this Technical Information Sheet. For non-standard fastener densities, contact a Elevate Regional Technical Coordinator for information.
2. Certain specifications and job conditions may call for increased densities of fasteners in the perimeters and corners of roofs.

! Platinum Warranty Critical Information:
Platinum warranted systems require all insulation must be fastened at a rate of not less than sixteen (16) Elevate Fasteners and Elevate Insulation Plates (as required) per 4' x8' (1.22 m x 4.44 m) board. (One (1) per every two (2) square feet)

Table 35: Minimum Number of Fasteners and Plates per Insulation Board

MINIMUM NUMBER OF FASTENERS AND PLATES PER INSULATION BOARD

System		Insulation	Insulation Thickness	Number of Fasteners per Board		
				4'x 4'	4'x 8'	4'x 12'*
Mechanically Fastened Systems	EPDM New Construction with NO Air/Vapor Barrier or Not over a BUR, Modified, or Adhered Single-Ply System	All Elevate Approved Insulations	All Approved	4	5	6*
	EPDM New Construction with an Air/Vapor Barrier or a recover over existing loose laid or Mechanically Attached Single-Ply System	ISO 95+ GL*/ISOGARD GL* RESISTA/ISOGARD CG	1"-1.4" 1.5"-1.9" 2"-4"	8 6 4	16 12 8	24* 18* 12*
		ISOGARD HD	0.5"	6	12	---
		StructoDek	0.5"	8	16	---
		ISOGARD HD Composite	1.5" or greater .5"-1"	8	16	---
		DensDeck SECUROCK DEXcell	¼" ½" ⅝"	8 6 4	16 12 8	---
		DensDeck Prime	¼" ½" ⅝"	6 5 4	16 12 8	---
		DensDeck StormX Prime	5/8"	4	8	---
Adhered & Self-Adhered Systems	EPDM	ISO 95+ GL*/ISOGARD GL* RESISTA/ISOGARD CG	1"-1.4" 1.5"-1.9" 2" or greater	8 6 4	16 12 8	24* 18* 12*
		StructoDek	0.5"	8	16	---
		ISOGARD HD	0.5"	6	12	---
		ISOGARD HD Composite	1.5" or greater .5"-1"	8	16	---
		SECUROCK Gypsum-Fiber SECUROCK UltraLight Coated Glass-Mat	¼" ½" ⅝"	6 5 4	10 8 8	---
		DensDeck Prime	¼" ½" ⅝"	6 5 4	12 8 8	---
		DensDeck StormX Prime	5/8"	4	8	---
		DEXcell FA Glass Mat	¼" ½" ⅝"	6 5 4	12 8 8	---
		DEXcell Cement Board	7/16" ⅝"	5 4	10 8	---
		DEXcell FA VSH Glass Mat	⅝"	4	8	---

Table 36: Minimum Fastener Pullout Resistances for Specific Systems

MINIMUM FASTENER PULLOUT RESISTANCES FOR SPECIFIC SYSTEMS	
System	**Minimum Fastener Pullout**
Adhered systems with Insulation Mechanically Attached to Deck	300 lb (136.1 kg)
Single-Ply Mechanically Attached	400 lb (181.4 kg)
Base Sheet Mechanically Attached to Deck	300 lb (136.1 kg)
Base Sheet Nailed to Deck (Cap nail or Elevate LWC Fastener)	40 lb (18.1 kg)

! In the event the structural deck does not meet the minimum fastener pullout requirements, contact a Elevate Regional Technical Coordinator.

Asphalt Attachment of Insulation/Cover Board to Substrate

1. The proposed insulation or cover board must be compatible with the roof substrate, the proposed bitumen, and the requirements of the Elevate roof system.
2. Hot steep asphalt (ASTM D312 Type III or Type IV) may be used to attach insulation beneath a ballasted, adhered or mechanically attached roof system.
3. When using hot asphalt for attachment:
   - The insulation must be no larger than 4' x 4' (1.2 m x 1.2 m)
   - Stagger all insulation joints from adjoining boards and subsequent layers by 6" (153 mm)
4. Assure that all health and safety measures are followed when installing hot asphalt to protect the installers as well as occupants of the building.
5. Expanded or extruded polystyrene insulation cannot be attached or adhered to with hot asphalt.

Table 37: Approved Substrates for use with Asphalt Attachment of Insulation/Cover Board

APPROVED SUBSTRATES FOR USE WITH ASPHALT ATTACHMENT OF INSULATION/COVER BOARD		
Approved base sheets that have been attached in accordance with Elevate requirements		√
Approved base plies that have been adhered in accordance with Elevate requirements		√
Compatible Insulations	ISO 95+ GL ISOGARD GL, RESISTA/ISOGARD CG	√
Compatible Cover Boards	Approved DensDeck, SECUROCK and DEXcell Products (DensDeck must be primed with ASTM D41) (DEXcell Glas Mat and SECUROCK UltraLight Coated Glass-Mat, not approved for hot application)	√
Poured-in-Place or pre-cast structural concrete decks that have been primed with ASTM D41 primer		√
Existing properly prepared asphalt membrane roofing systems	Uncoated smooth or granular surfaced BUR	√
	Granule surfaced SBS modified asphalt roofing systems	√
	Gravel surface Built-Up roofing systems	√
√ = Acceptable for use		

Adhesive Attachment of Insulation/Cover Board to Substrate

1. Assure that all safety measures are followed when installing insulation adhesives to protect the installer as well as the occupants of the building.
2. Elevate insulation adhesives must be applied in accordance with the installation instructions and Technical Information Sheets (TIS).
3. Elevate I.S.O. Twin Pack, Elevate I.S.O. Stick, Elevate Twin Jet, Elevate Twin Jet Y and Elevate I.S.O. SPRAY R Adhesive:
   - The insulation must be no larger than 4' X 4' (1.2 m X 1.2 m)
   - Stagger all insulation joints from adjoining and adjacent boards and adjacent layers, 6" (153 mm) minimum.
4. Refer to the Elevate Roofing Systems Adhered Insulation Layout Guide at the end of this section for adhesion pull test requirements for Elevate I.S.O. Twin Pack, Elevate I.S.O. Stick, I.S.O. SPRAY R, Elevate Twin Jet and Elevate Twin Jet Y.
5. Existing decks containing residual asphalt must be cleaned and scraped as smooth as possible.
6. Existing decks shall be smooth, flat, clean, dry, free of sharp fins, or foreign materials.

Table 38: Allowable Adhesive Attachment of Insulation/Cover Board to Structural Deck

ALLOWABLE ADHESIVE ATTACHMENT OF INSULATION / COVER BOARD TO STRUCTURAL DECK

Structural Deck to Which Insulation or Cover Board Will Be Adhered	Twin Jet			Twin Jet Y			I.S.O. SPRAY R			I.S.O. Twin Pack			I.S.O. Stick		
	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable
Steel [1]	✓			✓			✓				✓			✓	
New Structural Concrete [2]	✓			✓			✓			✓			✓		
Existing Structural Concrete [3]		✓			✓		✓				✓			✓	
Plywood, OSB, Wood Planking	✓			✓			✓			✓			✓		
Cementitious Wood Fiber		✓			✓		✓			✓			✓		
Poured or Pre-Cast Gypsum		✓			✓			✓			✓			✓	
Cellular Lightweight Insulating Concrete (Celcore or Elastizell) [4]		✓			✓			✓			✓			✓	
Lightweight Insulating Concrete Decks (See LWC Deck Section for additional requirements) [4]								✓			✓			✓	
✓ = Acceptable															

NOTE:
1. New steel decks require cleaning to remove processing oils.
2. New poured decks must have a minimum 28-day drying/curing time and be dry from "weather".
3. Existing concrete containing residual asphalt must be cleaned and scraped smooth as possible.

Table 39: Allowable Adhesive Attachment of Insulation/Cover Board to Recover/Retrofit

ALLOWABLE ADHESIVE ATTACHMENT OF INSULATION/COVER BOARD TO RETROFIT/RECOVER

Recover / Retrofit to Which Insulation or Cover Board Will Be Adhered	Twin Jet			Twin Jet Y			I.S.O. SPRAY R			I.S.O. Twin Pack			I.S.O. Stick			NOTE
	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	Acceptable	Pull Test Required	Not Acceptable	
Smooth Surface BUR		✓			✓		✓				✓			✓		Primer may be required.
Existing Asphalt Roofs Gravel Surfaced BUR Mineral Surface BUR Mineral Surface Modified		✓			✓		✓				✓			✓		All interruptions in the existing roof membrane must be re-sealed to prevent air infiltration. Primer may be required.
Coal Tar Pitch BUR			✓			✓		✓			✓			✓		Aged and oxidized. Primer may be required.
Existing Single-Ply Systems			✓			✓			✓			✓			✓	Primer may be required.
✓ = Acceptable																

EPS Fanfold and Flute Fill Insulation

- Fanfold insulation is approved for use on ballast roof and ballast membrane replacement application as a separator layer.
- Fanfold EPS insulation must not be directly under the EPDM membrane unless the membrane has sufficient ballast cover.
- Fanfold must be Type VIII with a minimum thickness of 1/2" (12.7 mm) and must meet the following minimum physical properties outlined below.
- Existing gravel surfaced roofs should be spud/scraped clean and vacuumed.
- Existing single-ply membrane should be cut into 10' x 10' (3.05 m x 3.05 m) grids and all flashings and base tie-ins should be detached/removed before placing Fanfold. Preliminary securement of fanfold may be accomplished using Elevate #12 Insulation Fasteners, All Purpose Fasteners and Heavy-Duty Fasteners with Elevate Insulation Plates, as well as IsoFast™ Bested Fasteners and Insulation Plates or AP AccuTrac® Kits. If fasteners are used, then either a protection mat or sacrificial layer of membrane shall be use between plates/fasteners and membrane.
- Damaged or wet components of the existing roofing system must be removed/replaced.
- Fanfold must have a suitable facer. "Bare" EPS must never come into contact with PVC or PVC KEE membranes, or with residual asphalt.

- Adjacent Fanfold sheets should be laid parallel and staggered ever 2' (0.61 m).
- For projects requiring performance validation, switch to an appropriate Elevate insulation and/or cover board.
- Check with local building code authorities for requirements for partial tear-offs and re-covers.
- The maximum Red Shield™ Warranty term for systems including Fanfold is 20 years. Wind speeds up to 72 MPH may be approved based on project characteristics. Hail and Cut & Puncture Protection are not available when Fanfold is used in lieu of an Elevate insulation and/or cover board.
- Contact a Regional Technical Coordinator for more information.

Table 40: Minimum Physical Properties of EPS Insulation

EPS WARRANTY COVERAGE					
Product and Coverage	**Product Data**				
Alleguard ½" (12.7 mm) Fanfold Rigid Board Insulation (TIS 967) Maximum 20-year, 55 mph Warranty	Facer:				
	Poly/Poly		Poly/Foil		
	Type (ASTM C578 (CAN/ULC-S701) and Density (lb/ft³ (kg/m³)):				
	FF13	FF15 (HD)	FF20 (HD)	FF30 (HD)	FF40 (HD)
	VIII (1)	II (2)	II (2)	IX (3)	XIV (3)
	1.15 (18)	1.35 (22)	1.50 (24)	2.0 (32)	2.5 (40)
Alleguard Flute Fill Rigid Insulation (TIS 968) (Square or Beveled Edge) Maximum 20-year, 55 mph Warranty	Facer: Non-Faced				
	Type (ASTM C578 (CAN/ULC-S701) and Density (lb/ft³ (kg/m³)):				
	FL13	FL15 (HD)	FL20 (HD)	FL25 (HD)	
	VIII (1)	II (2)	II (2)	IX (3)	
	1.25 (20)	1.35 (22)	1.50 (24)	1.80 (29)	

NOTE:
1. Performance validation (uplift and/or fire) may not be available when EPS insulation is used.
2. 3/8" (9.53 mm) thick fanfold approved for ballast reskin applications only.

Table 41: EPS Installation Requirements for Warranty

EPS INSTALLATION REQUIREMENTS FOR WARRANTY	
Product	**Minimum Installation Requirements**
Alleguard Fanfold Rigid Board Insulation (TIS 967)	▪ Preliminarily fastened with appropriate fasteners and plates at a minimum of 5 fasteners and plates per 32 ft² (2.97 m²) into appropriate substrate. ▪ Approved for use in appropriate re-cover applications only.
Alleguard Flute Fill Rigid Insulation (TIS 968)	▪ Loose laid or preliminarily attached with appropriate fastener and plates.

NOTE:
1. EPS direct to deck application is acceptable but may not meet building code or Factory Mutal (FM) requirements.
2. Performance validation (uplift and/or fire) may not be available when EPS insulation is used.
3. Non-Faced EPS shall not be in direct contact with bonding adhesives, asphalt products, PVC, or PVC KEE membrane.
4. EPS Insulation not to be used directly underneath EPDM membranes unless under ballasted conditions.

ROOF MEMBRANE

<u>Platinum (30-Year) Warranty Critical Information:</u>
The roof membrane shall consist of a .090" (2.2 mm) Platinum EPDM membrane or RubberGard MAX .075" (1.90 mm) EPDM membrane bonded to the approved substrate with an approved bonding adhesive. The following insulations are acceptable substrates, consult tables for correct choice depending on performance level desired, for the Platinum EPDM roof membrane:

- HailGard, min. 1.5" (38.1 mm)
- ISOGARD HD ½" or 1" (12.7mm / 25.4mm)
- DensDeck, min. 1/4" (6.4 mm)
- SECUROCK Gypsum-Fiber, or SECUROCK UltraLight Coated Glass-Mat, min ¼" (6.2 mm)
- DEXcell (FA Glass Mat, Cement Board or FA VSH Glass Mat), min ¼" (6.2 mm)
- Elevate Polyiso Insulation, min. 1.0" (25.4 mm)

! Platinum Warranty Critical Information:
Complete all lap splices using Elevate QuickPrime Plus followed by 3" QuickSeam Splice Tape, followed by the application of QuickPrime Plus and 5" QuickSeam flashing centered over the completed sheet edge splice. Refer to Elevate Platinum EPDM Details regarding specific requirements.

Membrane Securement Options for EPDM Membrane Systems

1. The following outlines the various securement options for individual system types. Compliance with all installation criteria is required to issue an Elevate Warranty. Additional attachment requirements may be necessary to comply with design criteria, insurance requirements or local building code.
2. An air barrier is required for projects with large wall openings that are greater than 10% of any one wall area that could be left open in a storm. Criteria for enhancements to be determined based upon Amrize's review. Contact a Elevate Regional Technical Coordinator for Technical Information.

Table 42: Approved Immediate Insulation Substrates for EPDM Membranes Up to and Including 25-Year Warranties

APPROVED IMMEDIATE INSULATION SUBSTRATES FOR EPDM MEMBRANES UP TO AND INCLUDING 25-YEAR WARRANTIES				
New Elevate Insulation or Approved Elevate Base Sheet to Which Membrane can be Applied	EPDM			
	Adhered	RubberGard EPDM SA (Only eligible for up to a 20-year warranty)	Mechanically Attached	Ballasted (eligible for up to a 25-year warranty)
ISO 95+ / ISOGARD GL	√	√	√	√
RESISTA / ISOGARD CG	√	√	√	√
ISOGARD HD	√	√	√	
HailGard / ISOGARD HG	√	√	√	
STRUCTODEK HD Fiberboard (Maximum 20 Year Warranty)	√	√	√	√
DensDeck			√	
DensDeck Prime	√	√	√	
DensDeck StormX Prime	√	√	√	
Securock Gypsum-Fiber	√	√	√	
Securock UltraLight Glass-Mat			√	
Securock Cement	√	√	√	
Securock Ultra-Light Coated Glass-Mat	√	√	√	
DEXcell Glass Mat			√	
DEXcell FA Glass Mat DEXcell Cement Board DEXcell FA VSH Glass Mat	√	√	√	
Perlite Insulation (applicable for 15-year or less Warranties)				√
EPS / XPS Insulation				√
Fiberglass Insulation				√
√ = Acceptable for use				

Table 43: Approved Immediate Insulation Substrates for EPDM Membranes Up to and Including 20-Year Warranties

APPROVED IMMEDIATE INSULATION SUBSTRATES FOR EPDM MEMBRANES UP TO AND INCLUDING 20-YEAR WARRANTIES				
Structural Deck to Which Membrane can be Applied	EPDM			
	Adhered	RubberGard EPDM SA (self-adhered)	Mechanically Attached	Ballasted
Structural Concrete	√	√	√	
Plywood or Oriented Strand Board	√	√	√	
Wood Planking	√	√	√	
Poured or Pre-Cast Gypsum				
Cementitious Wood Fiber				
Lightweight Insulating Concrete Decks (See deck section for additional requirements)		√	√	
√ = Acceptable for use				

Adhered Systems

Table 44: Adhesives for EPDM Membranes to Approved Substrates

ADHESIVES FOR EPDM MEMBRANES TO APPROVED SUBSTRATES
Single-Ply LVOC BA/1168
BA-2004 Bonding Adhesive
EPDM - Solvent Free Bonding Adhesive[1]
Jet Bond Spray Adhesive

NOTE:
1. Use only with non-reinforced EPDM Membrane.

Ballasted Systems

Ballasted systems are not allowed when the membrane and ballast are installed directly onto a hard surface, such as ISOGARD HD, DensDeck, SECUROCK, DEXcell, OSB, gypsum or concrete.
Insulation fasteners/plates are not approved for use directly under a ballasted membrane system.
Amrize requires that a suitable insulation or cover board be installed over any substrate that would damage the membrane. This includes, but is not limited to:

- Fasteners/plates used for insulation attachment
- Fasteners/plates used for existing membrane/insulation securement
- Substrates that are not smooth, flat, clean, free of sharp fins, or foreign materials that could damage the membrane

1. Ballast
   - All ballast should be of adequate size and weight to provide proper protection against wind uplift. The building owner or his design professional is responsible for the ballast design and selection on a specific building. Amrize can assist with its Elevate Ballast Paver system in selection and design. Amrize does not certify or comment on stone ballast other than to state the requirements for warranty described in this technical guide.
   - Regarding size and roughness of stone ballast refer to local building codes, the ANSI/SPRI "Wind Design Standard for Ballasted Single-Ply Roofing Systems RP-4" or Factory Mutual Technical Advisory Bulletin 1-29 for information regarding stone ballast requirements on loose laid single-ply roofing systems.
   - The weight of ballast must be considered when determining the structure's ability to support the load of staged materials or the completed roof installation and other expected loads. Amrize takes no responsibility for making this structural analysis, but strongly recommends that a professional engineer or registered architect make this determination prior to the job start.
   - Install ballast materials daily as a maximum time frame. Failure to do so may cause damage to the system from wind or allow movement of the insulation.
   - Do not stockpile ballast materials.
2. Stone Ballast
   - Stone ballast should be smooth, water worn gravel with rounded edges and corners, relatively free of fractures, loam, sand, or other foreign substances and contain no more that 4% fines.
   - Unless otherwise designed, the minimum ballast coverage required by Amrize for warranty is 10 lb/ft^2 (48.8 kg/sq. m) using nominal ¾" to 1½" (19 mm to 38 mm) diameter stone meeting ASTM D448 size #4 using ASTM C136 method of testing.
   - This rate may not provide adequate membrane coverage if stone larger than ASTM D448 size #4 is used.

Table 45: Chart of Minimum Coverage Requirements for Various Ballast Gradations

CHART OF MINIMUM COVERAGE REQUIREMENTS FOR VARIOUS BALLAST GRADATIONS		
ASTM Size No.	**Nominal Size**	**Min. Acceptable Coverage**
4 (Elevate minimum)	¾" (19 mm) to 1½" (38 mm)	10 lb/ft^2 (48 kg/m^2)
357	¾" (19 mm) to 2" (51 mm)	10 lb/ft^2 (48 kg/m^2)
3	1" (25 mm) to 2" (51 mm)	10 lb/ft^2 (48 kg/m^2)
24	¾" (19 mm) to 2½" (63 mm)	11 lb/ft^2 (54 kg/m^2)
2	1½" (38 mm) to 2½" (63 mm)	13 lb/ft^2 (63 kg/m^2)
1	1½" (38 mm) to 3½" (89 mm)	16 lb/ft^2 (78 kg/m^2)

3. Concrete Pavers
   - Only approved ballast systems are permitted on warranted Elevate installations. The Elevate Roof Ballast Paver system consists of smooth trowel finished interlocking concrete pavers, and may be used, and should be applied at a rate of not less than 12 lb/ft^2 (58.48 kg/m^2). Maximum space between pavers should be ½" (13 mm).

- Interlocking paving stones weighing a minimum of 10 lb per ft^2 (48.8 kg/m^2) which have proven performance for wind and weather resistance, may be used. This system should have a minimum performance warranty from the paver manufacturer equal to the Amrize roof warranty.
- Elevate Protection Mat or an additional layer of Elevate Membrane must be installed between the membrane and all pavers. The Elevate Protection Mat must be completely covered with pavers to prevent ultraviolet degradation of the mat.

4. Crushed Stone Ballast
   - Crushed stone ballast should be durable, free of excessive sharps or fractures, loam, sand, or other foreign substance, meeting the physical testing requirements below.
   - Elevate Protection Mat or an additional layer of Elevate Membrane must be installed between the membrane and the crushed stone ballast. The Elevate Protection Mat must be completely covered with the crushed stone ballast to prevent ultraviolet degradation of the mat.
   - Specific Gravity: Minimum 2.40 Mg/m^3 (ASTM C127 test method)
   - Impact Resistance: Maximum 40% weight loss (ASTM C535 and C131 test methods).
   - Soundness: (ASTM C 88 test method)
   - Maximum 12% weight loss (with sodium sulfate)
   - Maximum 18% weight loss (with magnesium sulfate)
   - Unless otherwise designed, the minimum ballast coverage required by Amrize for warranty is 10 lb/ft^2 (48.8 kg/m^2) using nominal 3/4" to 1 1/2" (19 mm – 38 mm) diameter stone.

Mechanically Attached Systems

1. Within Elevate Specifications, reference is made to Elevate's Mechanically Attached Systems. Mechanically Attached EPDM Roofing Systems include:
   - Batten in the Seam – BITS
   - Mechanically Anchored System (Non-Reinforced Membrane) – MAS
   - Mechanically Anchored System (Reinforced Membrane) – Reinforced MAS
   - Reinforced Mechanically Anchored System – R.M.A.

> **!** Amrize recommends that when installing mechanically attached membranes over steel decks, the field attachment should run perpendicular the deck panels.

2. Refer to the Elevate Attachment Guide for specific membrane layout requirements.
3. Due to the nature of mechanically attached roof systems, some fluttering or billowing of the membrane can be expected and may produce sound under certain conditions.
4. RubberGard EPDM RMA strips are acceptable for intermediate perimeter attachment for up to a 15-year Red Shield warranty.
5. Elevate Batten Strips or Plates (appropriate for the system) must be used with Elevate fasteners to attach the Elevate roof system membrane.
6. Where the deck system will not provide a minimum fastener pullout resistance of 400 lb (1.8 kN), Amrize has designed a system of alternate fastener spacing to be used based on fastener pullout capacity.
7. Consult with local building, code and insurance officials or design professionals to determine if more stringent securements are required. Below is the minimum attachment requirement to receive an Elevate Warranty:

Table 46: Chart of Fastening Rates

CHART OF FASTENING RATES		
Min. Pullout Value	**Fastener Spacing for Field**	**Fastener Spacing for Perimeter**
400 lbf (1.8 kN) of greater	12" (305 mm) o.c.	12" (305 mm) o.c.
300 lbf to 399 lbf (1.3 kN to 1.8 kN)	12"-6"-12" o.c. (305 mm-152 mm-305 mm o.c.)	12"-6"-12" o.c. (305 mm-152 mm-305 mm o.c.)
200 lbf to 299 lbf (0.9 kN to 1.3 kN)	6" (152 mm) o.c.	6" (152 mm) o.c.
less than 200 lbf (0.9 kN)	This system is not acceptable	

Table 47: Allowable Fasteners – Membrane Attachment

ALLOWABLE FASTENERS – MEMBRANE ATTACHMENT									
TIS	Fastener	Deck Type							
		Steel	Structural Concrete	Plywood/OSB/Wood Plank	Cementitious Wood Fiber	Gypsum	LWC/Steel Pan	LWC/Concrete
1001	All-Purpose Fastener	-	-	✓	-	-	-	-
1002	Heavy Duty Fastener	✓	✓	✓	-	-	✓[1]	✓[1]
1005	Concrete Drive Fastener	-	✓	-	-	-	-	✓[1]
1009	Heavy Duty Plus Fastener	✓	-	-	-	-	-	-
1011	Purlin Fasteners Black E-Coated	16-gauge Structural Steel Purlins						
1014	IsoFast™ #15 Belted Fasteners and Membrane Plates	✓	-	✓	-	-	✓[1]	-
1017	All-Purpose Stainless-Steel Fastener	-	-	✓	-	-	-	-
1050	RetroDriller Fastener	Steel up to 3/16" (5 mm) thick						

NOTE:
1. Must penetrate steel pan or structural concrete.

Table 48: Membrane Attachment Fastener – Warranty Coverage

MEMBRANE ATTACHMENT FASTENER – WARRANTY COVERAGE									
TIS	Fastener	Deck Type							
		Steel	Structural Concrete	Plywood/OSB/Wood Plank	Cementitious Wood Fiber	Gypsum	LWC/Steel Pan	LWC/Concrete
1001	All-Purpose Fastener	-	-	25	-	-	-	-
1002	Heavy Duty Fastener	30	30	30	-	-	30	30
1005	Concrete Drive Fastener	-	30	-	-	-	-	30
1009	Heavy Duty Plus Fastener	30	-	-	-	-	-	-
1011	Purlin Fasteners Black E-Coated	20 years: (16-gauge Structural Steel Purlins)						
1017	All-Purpose Stainless-Steel Fastener	-	-	20	-	-	-	-
1050	RetroDriller Fastener	20 years: Steel up to 3/16" (5 mm) thick						

8. The fastener spacing in the above tables assumes that decking is dry and free of any deterioration. Amrize recommends that pullout testing be completed by the licensed Elevate applicator on all re-roof projects, regardless of deck type to confirm pullout resistance.
9. For decks other than those listed above, contact Quality Building Services Technical Department.

> ! For retrofit of metal buildings, refer to the Metal Building Recover Guide. Direct attachment of Elevate Mechanically Attached Roofing Systems to metal roofs (regardless of gauge) is strictly prohibited.

10. Perimeter Attachment Selection
    - Roof perimeter areas must be attached in accordance with the Elevate Attachment Guide.
    - As an alternate to mechanical attachment, the perimeter area may be adhered.
      - The adhered perimeter area must cover the same area as if the perimeters were mechanically attached, as indicated in the Elevate Attachment Guide
      - The adhered perimeter area must be prepared in accordance with the substrate and insulation requirements of the Elevate Adhered roof system
      - The adhered perimeter area must be isolated from the mechanically attached field of the roof by a continuous row of Elevate Fasteners and Seam Plates
      - Membrane Lap Splicing (RubberGard EPDM Membrane)
11. Membrane splicing is accomplished by installing either a 3" (76 mm) or 6" (152.4 mm) QuickSeam Splice tape in the side and end laps of the RubberGard EPDM sheet.

12. 6" (152 mm) QuickSeam Splice Tape is required when Elevate V Plates are used with RubberGard Max Membrane.
13. 20-year Red Shield Warranty requirements are:
    - Side and End laps have a minimum 3" QuickSeam Splice Tape.
    - QuickSeam Joint covers at all "T" joints and wall intersections.
    - QuickSeam Joint covers at all QuickSeam Splice Tape roll splice laps
14. 25-year Red Shield Warranty requirements are:
    - Side and End laps have a minimum 6" QuickSeam Splice Tape.
    - QuickSeam Joint covers at all "T" joints and wall intersections.
    - QuickSeam Joint covers at all QuickSeam Splice Tape roll splice laps
15. Refer to Elevate details regarding specific requirements.

FLASHINGS

! Platinum Warranty Critical Information:
Complete all lap splices using Elevate QuickPrime Plus followed by 3" QuickSeam Splice Tape, followed by the application of QuickPrime Plus and 5" QuickSeam flashing centered over the completed sheet edge splice. Refer to Elevate Platinum EPDM Details regarding specific requirements.

Edge Metal Requirements

Elevate metal must be used and installed per Elevate details and standards for warranty inclusion. ES-1 certified metal and details are required for increased wind speed warranties over 80 mph. Contractors participating in the Elevate ES-1 Metal Cleat Program may receive up to 90 mph coverage for qualifying products. To meet Elevate's technical specifications, all edge metal, metal copings and edge systems whether field fabricated, shop fabricated, or factory formed should be designed in compliance with the International Building Code (IBC) and be tested/installed in accordance with ANSI/SPRI/FM4435/ES-1 standard and requirements. Reference the table below and the Attachment and Supplemental Increased Wind Speed Guide for more available warranty terms and wind speed coverage options.

Table 49: Elevate Edge Metal and Flashing Warranty Breakdown

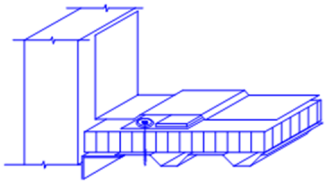
ELEVATE EDGE METAL AND FLASHING WARRANTY BREAKDOWN			
Material	Edge Metal Warranty Term	Included in Red Shield	Notes
Non-Elevate Metal	None	N/A	
Non-Elevate Factory Formed	None	No	
Elevate Metal (Flat/Coil)	Product Finish Warranty Up to 35 Years	No	Must be purchased from Elevate.
Elevate Metal – Field Fabricated	Max. 20-Years, 55 mph	Yes	Installed per current NRCA, SMACNA or other appropriate details/guidelines.
Elevate Metal – Field Fabricated	Max. 20-Years, 80 mph	Yes	Installed per current Elevate details/guidelines.
Elevate Metal – Shop Fabricated (ES-1 Metal Cleat Program)	Max. 20-Years, up to 90 mph	Yes	Installed per current Elevate details/guidelines. Factory Cleat required (ANSI/SPRI ES-1).

NOTE:
1. See warranty sample for specific coverage.
2. See appropriate edge metal tables below for warranty coverage based on specific engineered edge metal system offerings.

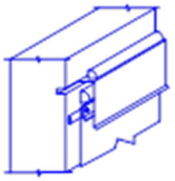
Design considerations

1. Many factors affect the performance of the flashing system. Extended warranties may require special flashing applications and details. Design drawings for several common applications are available from the Elevate Technical Database Web Site. Contact a Elevate Regional Technical Coordinator for Technical Information.
2. A flashing is a roofing element used to prevent water from penetrating the exterior surface of a roof or to intercept and lead water off it. Flashings divert the water to the roof membrane. The roof membrane then carries it to the roof drainage system. Typically, a flashing intercepts water flowing down parapets, down walls of higher adjacent construction and down roof penetrations. There are four typical locations where a flashing is needed:
    - Terminations
    - Junctions
    - Projections
    - Joints
3. In any flashing detail, there are up to three different flashing components:

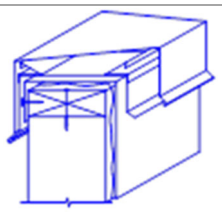
Base Flashing
An extension of the roofing membrane or a different material that is bonded to the roof to form a waterproof joint. It extends upward along the vertical surface to divert water onto the membrane. The base flashing should reach a higher level than that reached by water on the roof. In some situations, water may have to be temporarily stored on the roof. This may occur during heavy rainfalls, where the drain size is inadequate, where local building regulations require controlled flow drains, or where ice and snow restrict drainage.



Counter Flashing
Counter Flashing is used, in some situations, to carry water onto the base flashing and the membrane. This may be the case where a wall rises above a roof surface. The counter flashing covers the vertical termination of the base flashing. It provides protection for the base flashing and may serve to shed water. Where required, the counter Flashing is secured to the parapet or wall cladding.



Cap Flashing
Cap flashings are horizontal coverings for parapets and expansion joints. Cap flashing should be sloped toward the roof and secured to allow differential movement. Failure to provide for adequate flashing height at the design stage may result in serious problems that cannot be corrected subsequently.



4. Limitations in flashing heights may be encountered. Existing building features (i.e., door or window locations, weep holes, through-wall flashings, etc.) may not allow sufficient clearance to provide proper termination above the potential water level, additional insulation, or other details. Detailed consideration of these conditions is critical to the integrity of the roofing system. Contact a Technical Services Advisor for assistance.
5. Remove all loose existing flashings.
6. All penetrations passing through the membrane must be flashed.
7. All penetrations passing through the vapor barrier and/or air barrier must be flashed and terminated or tied in correctly. Consult with the air/vapor barrier designer to validate these detail requirements.
8. Use Elevate Flashing Foam to fill voids around penetrations, wall/roof perimeters and other gaps where fill may be needed.

Wall/Curb Flashing Materials and Requirements

1. The following chart lists the flashing requirements for Elevate EPDM systems.
2. Refer to the Elevate EPDM Application Guides and detail drawings for additional information.
3. 25- and 30-year warranties may require special flashing applications.
4. All membrane base tie-ins must be attached to substrates which provide a minimum of 200 lbf (89 kN) force in any direction.

Table 50: Platinum EPDM Roof System – Detail Descriptions Wall/Curb Flashing Materials

PLATINUM EPDM ROOF SYSTEM – DETAIL DESCRIPTIONS WALL/CURB FLASHING MATERIALS	
Detail	**Requirements (Consult Details)**
Wall Terminations	Elevate Termination Bar with reglet or surface mounted counterflashing
Curbs	Curbs and expansion joints longer than eight (8) feet on any side must secure membrane by using QuickSeam RPF Strip. Where this is not practical, curbs may be flashed using 60 mil RubberGard Membrane or QuickSeam Curb Flashing. In either case, the base lap shall be completed with QuickSeam Tape and stripped in with Elevate 5" QuickSeam Flashing.
Corners	Flashed with QuickSeam T-joint cover and 9" QuickSeam Corner Flashing
Roof Edges/Parapets	Appropriate Elevate Factory Formed Edge Metal System or Non-Factory Formed Edge Conditions. Non-Factory Formed Edge Conditions may include Elevate Drain Bar, Elevate Drain Bar, Elevate Termination Bar, Elevate TPO Coated Metal and Elevate Approved Details.
Penetrations	As shown in the Elevate Platinum details. Elevate QS6 or QS10 Penetration Pockets may be used where a penetration pocket is required, with the flange stripped in using 9" QuickSeam FormFlash or QuickSeam Pipe Flashing or Conduit Flashing.

Table 49: Platinum EPDM Roof System – Detail Descriptions Wall/Curb Flashing Materials (Continued)

Walkways	Constructed using QuickSeam Walkway Pads, Pavers with sacrificial membrane layer or Red Shield Walkways.
Equipment and Pipe Supports	Use Elevate Pipe Support systems

Table 51: Wall/Curb Flashing Materials and Requirements

WALL/CURB FLASHING MATERIALS AND REQUIREMENTS			
Membrane	**Detail**	**Detail Description**	
RubberGard EPDM	Wall Terminations	Elevate Termination Bar with AP Sealant applied along the caulk ledge. Alternate, surface mounted or inserted counter-flashings may also be used in accordance with current Elevate details.	
	Curbs	Curbs and expansion joints longer than eight (8) feet on any side must be anchored using QuickSeam RPF Strip. Curbs must be flashed using QuickSeam Curb Flashing, 18" QuickSeam SA Flashing or 9" QuickSeam FormFlash.	
	Corners	Flashed using QuickSeam Corner Flashing or 9" QuickSeam FormFlash.	
	Roof Edges/ Parapets	Up to 20-year	Appropriate Elevate Factory Formed Edge Metal System, Elevate ES-1 Cleat Program Metal Offering (5 – 20 Year Warranty) or Non-Factory Formed Edge Conditions. Non-Factory Formed Edge Conditions may include Elevate Drain Bar, Elevate Drain Bar, Elevate Termination Bar, Elevate TPO Coated Metal and Elevate Approved Details.
		25-year	Appropriate Elevate Factory Formed Edge Metal System or Non-Factory Formed Edge Conditions. Non-Factory Formed Edge Conditions may include Elevate Drain Bar, Elevate Drain Bar, Elevate Termination Bar, Elevate TPO Coated Metal and Elevate Approved Details.
	Penetrations	Flashed using QuickSeam Pipe Flashing, QuickSeam Penetration Pocket.	

Table 52: Wall/Curb Flashing Requirements

WALL/CURB FLASHING REQUIREMENTS		
EPDM Flashing System	**Warranty Term**	
	5, 10, and 15-year	**20-year and 25-year**
RubberGard EPDM	RubberGard EPDM (all), MAX, FormFlash, or QuickSeam Flashing; consult details	RubberGard EPDM, MAX, or QuickSeam Flashing; consult details
RubberGard EPDM SA	RubberGard EPDM SA or QuickSeam Flashing; consult details	RubberGard EPDM SA or QuickSeam Flashing; consult details (n/for 25-year)

Penetrations (Pipes, Conduits, Etc.)

Penetrations shall be placed to maintain a minimum distance away from obstructions (walls, curbs, etc.) to allow for proper installation of flashing details. Minimum 12" (304.8 mm) of clearance is required for penetrations when located near obstructions and/or details (base tie-in, flashing, etc.). Liquid flashing may be used as an alternative to standard flashings if the membrane and system application allows.

Platinum Warranty Critical Information:
Refer to the Platinum Penetration Flashing Details for Platinum Warranty Requirements.

Pipe Flashings:

1. Refer to the Platinum Flashing Details.
2. All round rigid pipe penetrations ranging in size from 1" (25.4 mm) outside diameter to 6 1/2" (165.1 mm) outside diameter must be flashed with Elevate QuickSeam Pipe Flashing.
3. All round rigid conduits from 1/2" (12.7 mm) to 2 1 Elevate /2" (63.5 mm) outside diameter must be flashed with Elevate QuickSeam Conduit Flashing.
4. The flange of the pipe boot or conduit flashing must be flashed with an additional layer of 5" QuickSeam Flashing or 9" QuickSeam FormFlash. Refer to the Platinum roof system details.
5. If pre-molded boots will not work refer to Penetration Pockets in "D" Penetration Pockets below.
6. If it is not possible to fit a pre-molded pipe flashing or conduit flashing onto the penetration due to site conditions, the penetration must be covered with a field-fabricated flashing in accordance with Platinum Flashing Details.
7. Under no circumstance can a Elevate QuickSeam Pipe Flashing or Elevate QuickSeam Conduit Flashing be cut and patched to accommodate a penetration.
8. Pre-molded and field-fabricated flashings must not be installed around flexible pipes or conduits. Non-rigid penetrations require the installation of a Elevate QuickSeam Penetration Pocket and storm hood per Platinum Flashing Details.
9. Rigid pipe penetrations with an outside diameter greater than 8" (203.2 mm) must be covered with a field-fabricated flashing in accordance with Platinum Flashing Details.

1. Pipe Flashings: Whenever possible, all-round rigid pipe penetrations ranging in size from 1" (25 mm) outside diameter to 6 ½" (165 mm) outside diameter should be flashed with Elevate Pre-molded Pipe Flashings. If it is not possible to fit a Pre-Molded Pipe/Conduit Flashing or Elevate QuickSeam Flashing onto the pipe due to site conditions, the pipe should be covered with a field-fabricated flashing in accordance with Elevate Details.
2. Flexible penetration (electrical and braided cable, etc.): Pre-molded and field-fabricated flashing must not be installed around flexible pipes or conduits. Flexible penetrations must be installed in a sheet metal gooseneck or other boxed out structure.

Penetration Pockets

Platinum Warranty Critical Information:
Refer to the Platinum Penetration Pockets Details for Platinum Warranty Requirements.

Pipe Flashings:

1. Refer to the Platinum Flashing Details
2. The following types of penetrations require the installation of a Elevate QuickSeam Penetration Pocket and storm hood:
   - Rigid pipes with an outside diameter less than 1" (25.4 mm).
   - Clusters of pipes.
   - Unusual shapes, e.g. structural beams, channels or angles.
3. A minimum clearance of 1" (25.4 mm) between penetrations, pipes, conduits, etc., and on all sides of the penetration pocket, is required to assure adequate space for the application of Elevate Pourable Sealer around each penetration.
4. Use Elevate QS 6 or QS 10 Penetration Pockets for penetrations of up to 4" (101.6mm) and 8" (203.2mm) respectively. These may be split to go around penetrations.
5. Should the penetration exceed 8" (203.2 mm), it must be flashed with a shop fabricated penetration pocket, in accordance with Elevate Platinum Details.
6. Install storm hoods over each penetration pocket to protect the Pourable Sealer.
7. Flexible penetration (electrical and braided cable, etc.) must be installed in a pipe, sheet metal gooseneck or rigid housing with side discharge.

1. The following types of penetrations require the installation of an Elevate Penetration Pocket wherever possible:
   - Rigid pipes with an outside diameter less than 1" (25 mm) and up to 4" (102 mm).
   - Clusters of pipes.
   - Unusual shapes, e.g., structural beams, channels, or angles.
2. A minimum clearance of 1" (25 mm) between penetrations, pipes, conduits, etc., and on all sides of the penetration pocket, is required to assure adequate space for the application of QuickPrime Plus and Pourable Sealer around each penetration.

Curbs and Terminations

Platinum Warranty Critical Information:
Refer to the Platinum Curbs and Terminations Details for Platinum Warranty Requirements.

Curbs and Terminations:

1. Refer to the Platinum Flashing Details.
2. Curb flashings must be completed using Elevate QuickSeam Reinforced Perimeter Fastening (RPF) Strip as the base tie-in. For curbs where this is not practical, the membrane may be attached to the vertical surface using a Elevate metal or polymer batten strip and the appropriate Elevate Fastener.
3. The curb must be flashed and stripped in using one of the following membrane materials:
   - Elevate QuickSeam 18" Curb Flashing
   - Elevate QuickSeam SA Flashing
   - RubberGard .060" (1.5 mm) membrane
   - Platinum .090" (2.2 mm) membrane
4. The flashing RubberGard or Platinum membrane must be spliced to the field sheet using 3" QuickSeam Splice Tape followed by the application of 5" QuickSeam flashing over the completed splice.
5. Provide a minimum design height of at least 8" (203.2 mm) for all flashing termination's (except penetration pockets and Pre-Molded EPDM Pipe Flashings). Flashing height must be at least as high as the potential water level that could be reached as a result of a deluging rain. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.
6. Terminations must be made directly to a sound, watertight, rigid, vertical substrate. Existing loose flashing materials must be removed or overlaid with 5/8" exterior grade plywood. Termination bars are not acceptable directly to gypsum or wooden substrates.
7. When using a surface-mounted termination, (i.e., termination bar, surface-mounted counterflashing) ensure a consistent seal at the wall interface. The surface above the termination must be waterproof.
8. Gypsum board, used as a substrate for flashings, must be moisture resistant exterior grade with laminated fiberglass facers and recommended for this application by the gypsum board manufacturer. Base tie-ins must be made into the deck because gypsum does not provide the required minimum fastener pullout resistance of 200 lbf (0.9 kN).
9. Stucco, cobblestone, textured masonry, corrugated metal panes or any uneven surface is not a suitable substrate to receive flashing. Such surfaces must be prepared to provide an acceptable substrate by attaching minimum 5/8" (15.8 mm) exterior grade or pressure treated plywood. Attach as required for structural integrity.
10. Intermediate attachment of the flashing membrane is required at 36" (914 mm) intervals in accordance with Elevate Detail PT-13 or PT-14, except when:

- The wall surface is smooth, without noticeable high spots or depressions (i.e., plywood, poured or precast concrete, or hollow core block or masonry walls where joints are flush with masonry surface). AND…
- The membrane has been installed underneath a coping over to the outside edge of the wall to a point below the nailer wall interface. OR…
- The membrane has been installed underneath a stone or masonry coping to the outside edge of the wall.

1. All flashing terminations above the field of the roof membrane (except penetration pockets and Pre-Molded Elevate accessories) should provide a minimum design height of at least 8" (203 mm).
2. There are situations where minimum design height cannot be met. In these situations, minimum flashing height should be no lower than the potential water level that could be reached because of a deluging rain. Wherever a vertical termination height is 5" (127 mm) or less, a Elevate Termination Bar detail that is subsequently counter-flashed is required. Do not flash over existing through-wall flashings, weep holes or scuppers.
3. Termination must be made directly to a sound, watertight, rigid, vertical substrate. For retrofit conditions, existing loose flashing materials must be removed or overlaid with ⅝" (16 mm) exterior grade plywood. Termination bars are not to be installed into gypsum or wood substrates.
4. When using a surface-mounted termination, (i.e., termination bar or surface-mounted counter-flashing) ensure a consistent seal along the wall interface. The wall surface above the termination must be waterproof.
5. Gypsum board, used as a substrate for flashings, must be moisture resistant exterior grade with laminated fiberglass facers and recommended for this application by the gypsum board manufacturer. Base tie-ins must be made into the deck because gypsum does not provide the required minimum fastener pullout resistance of 200 lbf (0.9 kN).
6. Uneven substrates such as stucco, cobblestone, textured masonry, or corrugated metal panels, etc. are not suitable to receive flashings. Such surfaces must be prepared to provide an acceptable substrate by attaching minimum ⅝" (16 mm) exterior grade or pressure treated plywood. Attach as required for structural integrity.
7. DensGlass® Gold is not an acceptable substrate for any Elevate membrane wall flashing system.

Sheet Metal

! Platinum Warranty Critical Information:
Elevate: Coping System, AnchorGard Fascia, Drain Bars and Counter Flashings, etc., must be supplied as complete systems for Platinum roofs. If Amrize is not able to supply a given sheet metal product or design, it must be installed per current Elevate details but will not be included as part of the warranty.

All sheet metal work not supplied by Amrize should have a quality weather resistant coating such as Kynar or similar finish, or be fabricated from anodized aluminum, copper or stainless steel that will not corrode or weather to the point of failure, during the 30 year warranty period.

1. Coping, gravel stops, drain bars, counter-flashings etc., must be supplied by Amrize. If Amrize is not able to supply a given sheet metal product or design, it must be installed per current Elevate details but will not be included as part of the Elevate Warranty.
2. The installed membrane roofing system must be made watertight before sheet metal application.
3. It is the owner's responsibility to maintain non- Elevate sheet metal in a watertight condition.
4. Make these specifications available to the sheet metal fabricator/contractor.
5. Attachment
   - Counter-flashings, copings, and other perimeter or penetration metal work must be properly fastened and sealed by the roofing contractor or others.
   - All sheet metal work not supplied by Amrize should be fabricated and installed in accordance with the most stringent requirements from one of the following organizations, the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), the National Roofing Contractors Association (NRCA), ANSI/SPRI or Dade County.

! Some specific roofing details in Technical Specifications may exceed SMACNA recommendations. For such details, follow Amrize requirements. Refer to ANSI/SPRI ES-1 for information on enhanced wind design for metal edge treatments and performance criteria. Extended wind speed warranties require enhanced edge details. Contact a Elevate Regional Technical Coordinator for Technical Information.

6. If a metal flashing product by others is submitted via a deviation request for inclusion in the warranty coverage, the following are minimum requirements for consideration:
   - The sheet metal work must be shop or factory formed or extruded.
   - Minimum requirements regarding sheet metal work material are 24 ga (0.61 mm) G-90 Kynar pre-finished steel or 0.040" (1 mm) aluminum (mill finished, pre-finished or anodized).
   - A deviation request for inclusion of sheet metal work in warranty coverage must accompany the PIN form submitted by the installing contractor.
   - The deviation request must include shop drawings of the sheet metal work to be included and a roof plan showing the installed location and linear dimension for each profile.
   - Should the deviation request be granted, the installing contractor will be responsible to Amrize for a period of two-years from the date of Amrize's inspection and acceptance under their installer's agreement.

7. Metal work not in conformance with Elevate specifications and details or which compromises the integrity of the roof system may jeopardize issuance of the warranty for the entire project. Amrize does not warrant the performance of products Amrize does not supply.

WALKWAYS

Locations

Walkways help protect the membrane from damage due to necessary rooftop service traffic.

1. Walkway systems on warranted Elevate roofs are required at all access points (ladders, hatches, doorways, etc.) and are recommended for use:
   - On roof areas that are subject to foot traffic more frequently than once per month
   - Around all serviceable rooftop units
2. Walkway maintenance is the responsibility of the building owner and not part of the warranted waterproofing assembly.
3. Traffic related roof damage is not covered by the Amrize Warranty. In areas of extreme traffic, contact an Elevate Regional Technical Coordinator for options to enhance the roof system to prevent or mitigate damage to roofing components.

Walkway Material

1. For EPDM systems, Elevate provides EPDM QuickSeam Walkway Pads to be utilized in the areas indicated above. Each pad is to be installed in accordance with the installation instructions provided in the Technical Information Sheet for each product.
2. Elevate AcryliTop Red Shield Support System offers an engineered walkway system. Refer to Red Shield Pipe Support System.
3. Walkways may be constructed using QuickSeam Walkway Pads or Pavers with sacrificial membrane layer. Platinum warranties require the use of QuickSeam Walkway Pads, Pavers with sacrificial membrane layer or Red Shield support system walkways.
4. Concrete pavers, with an additional layer of membrane installed beneath the paver for protection, may be substituted for walkway pads on ballasted and adhered systems.
5. Special Requirements for Ballasted Systems: Walkways within 10' (3.04 m) of the edge of the roof must be concrete pavers over an additional layer of membrane.
6. Contact a Elevate Regional Technical Coordinator for information regarding other materials designated as a walking surface.

ROOF COATINGS

General

1. A coating is considered a maintenance item and is not included in an Elevate Red Shield Warranty. While the maintenance of field-applied coatings is not required to keep a Red Shield Warranty in good standing, Amrize recommends that an applied coating be adequately maintained. Periodic maintenance and recoating may be required to maintain the Underwriters Laboratories, Factory Mutual or other ratings.
2. Proper preparation of the EPDM roof surface is important to assure the best possible adhesion of the roof coating.
3. Elevate AcryliTop PC-100 Coating
   - AcryliTop PC-100 Coating is eligible for material warranty coverage provided specific procedures are followed. AcryliTop may be applied to further protect the Elevate membrane and flashing surfaces from the effects of weathering, or for aesthetic reasons.
   - The owner should be advised that during the roof membrane service life, periodic re-application of the coating may be required to maintain the effectiveness of the coating or its aesthetic value.
   - Re-application of AcryliTop PC-100 should be performed by an Elevate-licensed applicator according to application specifications.
   - Refer to the Technical Information Sheet and Safety Data Sheet for AcryliTop PC-100, for additional information on application, storage, and safety.

WARRANTY

General

1. Consult this Guide's opening section: Section I: General Design Criteria for initial design considerations and general warranty requirements.
2. Platinum Roofing Systems require a new construction or complete tear off of existing components down to the deck.
3. For re-cover or partial tear-off, Elevate HD fasteners are required for 15-year or greater warranties. For wood decks, AP Fasteners are acceptable for up to 20 years.
4. Tie-ins to other roofing systems are not warranted by Amrize.
5. Failure of a flashing or termination to an intermediate building component (e.g., metal panel, insulation, surface treatment, etc.), which itself could fail and admit moisture beneath the membrane is beyond the limits of an Elevate warranty.
6. Upon Amrize's inspection and acceptance of the installed roof system, the requested warranty can be issued. Amrize's inspection is not intended as an inspection for the benefit of the owner or design professional with respect to contract, building codes or compliance with specifications other than Amrize's. Warranted Elevate roofing systems are to be installed only on commercial, industrial, institutional, or multi-family commercial housing structures in the United States and Canada. Issuance of a warranty for projects outside the US and Canada must be submitted to a Elevate Regional Technical Coordinator for

consideration prior to bidding. Individual residential construction does not qualify for a Amrize warranty. Only Amrize supplied components are eligible to be covered as part of the Elevate Warranty.

7. Elevate Platinum EPDM Roof System tie-ins to existing roof systems are not warranty by Amrize.
8. Failure of a flashing terminated to an intermediate element (e.g., metal flashing, insulation, surface treatment, etc.), which itself could fail and admit moisture beneath the membrane is beyond the limits of the Elevate Platinum warranty.

Table 53: Red Shield Warranty Length by Membrane System

RED SHIELD WARRANTY LENGTH BY MEMBRANE SYSTEM						
	Membrane	Available Warranty Terms				
		5-to 15-year	20-year	25-year	30-year	Membrane Only
EPDM	.090″ (2.28 mm) Non-reinforced Refer to PLATINUM EPDM sections of this Design Guide				√	5-30
	.060″ (1.52 mm) Non-reinforced RubberGard	√	√	√		5-25
	.045″ (1.14 mm) Non-reinforced RubberGard	√				5-20
	.075″ (1.90 mm) RubberGard MAX Reinforced	√	√	√	√	5-30
	.060″ (1.52mm) RubberGard MAX Reinforced	√	√	√		5-25
	.045″ (1.14 mm) RubberGard MAX Reinforced	√	√*			5-20
	.060″ (1.52 mm) RubberGard EPDM SA	√	√			5-20
	*NOTE: Adhered Only					

9. It is the building owner's responsibility to expose the membrane if warranty service is required when access is impaired. Such impairment includes, but is not limited to:
   - Design features, such as window washer systems, which require the installation of traffic surface units more than 80 lb (36.3 kg) per unit
   - Any equipment, ornamentation, building service units and other roof top surfacing materials that are not defined as part of the membrane assembly
   - Intricately placed or multicolored ballast configurations
   - Individual pavers utilized as ballast, which weigh more than 80 lb (36.3 kg) per unit.
   - Interlocking paver systems that utilize mechanical clips, strapping, adhesive, etc.
   - Rooftop equipment that does not provide Amrize with reasonable access to the membrane
   - Severely ponded water, snow, ice, and other unrelated materials

! Platinum Warranty Critical Information:

Elevate roof systems cannot receive a Elevate Platinum warranty if any of the following conditions exist:

- The existing roof system remains in place. A complete removal of the existing roof system is required.
- Roofs where structural conditions are insufficient to support the load of the completed roof installation and other anticipated loads as identified by the building owner or the design professional.
- Non-roofing applications such as plaza deck construction, waterproofing, pond liners, etc.
- Roofing applications for single-family residences.

Table 54: Acceptable Insulations for EPDM Membranes: 5, 10, 15-Year Red Shield Warranty

ACCEPTABLE INSULATIONS FOR EPDM MEMBRANES: 5, 10, 15-YEAR RED SHIELD WARRANTY

System	I.S.O. 95+ GL / ISOGAD GL (flat or taper)	RESISTA/ ISOGARD CG	STRUCTODEK HD Fiberboard	ISOGARD HD Composite	HailGard/ ISOGARD HG	ISOGARD HD	DensDeck & SECUROCK	DEXcell Products
The minimum thickness of Elevate insulation acceptable for use as an immediate substrate for Elevate roof system.								
Thickness	1.0" (25 mm)	1.0" (25 mm)	1/2" or 1.0" (13 or 25 mm)	1.5" (38 mm)	1.5" (38 mm)	0.5" (12.7 mm)	.25" (6.3 mm)	.25" (6.3 mm)
Adhered	√	√	√	√	√	√	√	√
RubberGard EPDM SA (self-adhered)	√	√	√	√	√	√	√	√
Ballasted	√	√	√					
Mechanically Attached	√	√	√	√	√	√	√	√

NOTE:
1. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof boards are not approved for use with adhered membranes.
2. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof board is approved for use with mechanical attachment only.

Table 55: Acceptable Insulations for EPDM Membranes: 20-Year Red Shield Warranty

ACCEPTABLE INSULATIONS FOR EPDM MEMBRANES: 20-YEAR RED SHIELD WARRANTY

System	I.S.O. 95+ GL (flat or tapered)	RESISTA/ ISOGARD CG	STRUCTODEK HD Fiberboard	ISOGARD HD Composite	HailGard/ ISOGARD HG	ISOGARD HD	DensDeck & SECUROCK	DEXcell Products
The minimum thickness of Elevate insulation acceptable for use as an immediate substrate for Elevate roof system.								
Thickness	1.0" (25 mm)	1.0" (25 mm)	1/2" or 1.0" (13 or 25 mm)	1.5" (38 mm)	1.5" (38 mm)	0.5" (12.7 mm)	.25" (6.3 mm)	.25" (6.3 mm)
Adhered	√	√	√	√	√	√	√	√
RubberGard EPDM SA (self-adhered)	√	√	√	√	√	√	√	√
Ballasted	√	√	√					
Mechanically Attached	√	√	√	√	√	√	√	√

NOTE:
1. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof boards are not approved for use with adhered membranes.
2. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof board is approved for use with mechanical attachment only.

Table 56: Acceptable Insulations for EPDM Membranes: 25-Year Red Shield Warranty

ACCEPTABLE INSULATIONS FOR EPDM MEMBRANES: 25-YEAR RED SHIELD WARRANTY

System	I.S.O. 95+ GL (flat or tapered)	RESISTA/ ISOGARD CG	ISOGARD HD Composite	HailGard/ ISOGARD HG	ISOGARD HD	DensDeck & SECUROCK	DEXcell Products
The minimum thickness of Elevate insulation acceptable for use as an immediate substrate for Elevate roof system.							
Thickness	1.0" (25 mm)	1.0" (25 mm)	1.5" (38 mm)	1.5" (38 mm)	0.5" (12.7 mm)	.25" (6.3 mm)	.25" (6.3 mm)
Adhered	√	√	√	√	√	√	√
Mechanically Attached	√	√	√	√	√	√	√

NOTE:
1. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof boards are not approved for use with adhered membranes.
2. DensDeck, Securock UltraLight Glass-Mat and DEXcell Glass Mat roof board is approved for use with mechanical attachment only.

Table 57: Elevate Available Warranty Summary - Licensed Elevate Applicators Only

ELEVATE AVAILABLE WARRANTY SUMMARY - LICENSED ELEVATE APPLICATORS ONLY		
Warranty Name	**Specification**	**Coverage**
Red Shield Limited Warranty	Elevate RubberGard EPDM specifications for the term requested	Repair leaks in the roofing system caused by Amrize supplied materials or the workmanship used to install them. No dollar limit to repair warranted leaks.
Membrane Only Warranty	Elevate RubberGard specifications for the term requested	Provide replacement EPDM membrane material sufficient to replace any area of Elevate Roofing Membrane ("Membrane") that leaks as a result of ordinary exposure to weather or any manufacturing defect in the Membrane.
Up to 5 or 10-year White AcryliTop PC-100 Reflectance Warranty	Elevate RubberGard EPDM, specifications for the term of 5 or 10-years from date of installation	Provide the owner with replacement AcryliTop PC-100 Coating to repair the affected area should the reflectance rating fall below .50.
Up to 10 or15-year AcryliTop PC-100 Adhesion Warranty	Elevate RubberGard EPDM specifications for the term of 10 or 15-years from date of installation	Provide the owner with replacement AcryliTop PC-100 Coating to repair the area should the coating come loose.
Red Shield RubberGard MAX Roofing System Warranty	Elevate RubberGard MAX EPDM specifications for the term requested	Cut & Puncture Protection – Up to 16 Labor hours plus materials per year to repair leaks due to unintentional and occasional damage to the RubberGard MAX membrane.
Cut & Puncture Protection	Elevate EPDM membrane (min. 60 mils) specifications for the term requested	Cut & Puncture Protection - Up to 16 Labor hours plus materials per year to repair leaks due to unintentional and occasional damage to the RubberGard EPDM membrane.
Red Shield Limited Warranty with Hail Coverage	Elevate EPDM membrane (min. 60 mils) specifications for the term requested	Repair leaks in the roofing system caused by Amrize supplied materials or the workmanship used to install them. No dollar limit to repair warranted leaks. Includes hail up to 2″ (51 mm).

Table 58: Platinum Warranty Summary

PLATINUM WARRANTY SUMMARY			
Warranty Name	**Specifications**	**Eligible Contractor**	**Coverage**
Platinum PHW Puncture Hail and Wind	Elevate 90 mil Platinum membrane, adhered to HailGard insulation	Licensed Elevate Applicator	Repair leaks in the roof system caused by Amrize supplied materials or the workmanship used to install them plus damage by puncture, hail, or winds up to 100 mph. No dollar limit to Amrize expenditures to honor the warranty. Warranty term: 30-years
Platinum PW Puncture and Wind	Elevate 90 mil Platinum membrane, adhered to HailGard insulation	Licensed Elevate Applicator	Repair leaks in the roof system caused by Amrize supplied materials or the workmanship used to install them plus damage by puncture or winds up to 100 mph. No dollar limit to Amrize expenditures to honor the warranty. Warranty term: 30-years
Platinum PH Puncture and Hail	Elevate 90 mil Platinum membrane, adhered to Dens-Deck Prime, installed over ISO 95+ GL / ISOGARD GL insulation	Licensed Elevate Applicator	Repair leaks in the roof system caused by Amrize supplied materials or the workmanship used to install them plus damage by puncture or hail. No dollar limit to Amrize expenditures to honor the warranty. Warranty term: 30-years
Platinum P Puncture	Elevate 90 mil Platinum membrane, adhered to ISO 95+ GL / ISOGARD GL insulation	Licensed Elevate Applicator	Repair leaks in the roof system caused by Amrize supplied materials or the workmanship used to install them plus damage by puncture. No dollar limit to Amrize expenditures to honor the warranty. Warranty term: 30-years

Table 58: Platinum Warranty Summary (Continued)

Platinum B Basic	Elevate 90 mil Platinum membrane, adhered to ISO 95+ / ISOGARD GL insulation	Licensed Elevate Applicator	Repair leaks in the roof system caused by Amrize supplied materials or the workmanship used to install them. No dollar limit to Amrize expenditures to honor the warranty. Warranty term: 30-years
White AcryliTop PC-100 Reflectance Warranty	Elevate 90 mil Platinum EPDM, specifications for the term of 5 or 10-Years from date of installation	Licensed Elevate Applicator	Provide the owner with replacement AcryliTop PC-100 Coating to repair the affected area should the reflectance rating fall below .50
AcryliTop PC-100 Adhesion Warranty	Elevate 90 mil Platinum EPDM or Thermoplastic specifications for the term requested	Licensed Elevate Applicator	Provide the owner with replacement AcryliTop PC-100 Coating to repair the area should the coating come loose. Warranty term: Up to 10 or 15-years

Other Considerations

Leak Detection – Wire Grid System

A leak detection grid system refers to a network of sensors or conductors arranged in a grid pattern, installed beneath a surface like a roof, designed to detect the presence of moisture or leaks by creating an electrical circuit when water contacts the grid, allowing for pinpoint location of the leak within the monitored area.

- Wire mesh provided by others for use in an electronic leak detection systems (ELD) is allowed in warranted Elevate membrane systems provided the mesh is placed beneath an acceptable cover board. The mesh may not come in direct contact with the Elevate membrane to prevent compromising system uplift resistance or physical damage to the membrane.
- Elevate assumes no liability for ELD products or services provided by others. Only Elevate branded and Elevate provided products are included within warranty coverage. Validation of uplift performance and fire ratings may not be possible when ELD systems are used.
- Low Voltage scanning platforms can be utilized in the following systems: TPO, PVC and modified bitumen.
  NOTE: Full compatibility shall be validated by the user with the ELD system provider.

Leak Detection – Conductive Primer

Conductive primer enables electronic leak detection (ELD) of conventional roofing assemblies by creating the required conductivity directly below the membrane.

- A conductive primer provided by others for use in an ELD is allowed in a warranted adhered single-ply Elevate system. Warranted wind speeds for projects using a conductive primer are limited to 72 MPH unless performance can be validated via a tested assembly.
- Elevate assumes no liability for ELD products or services provided by others. Only Elevate branded and Elevate provided products are included within warranty coverage.
- Conductive primer can be utilized in the following systems: TPO, PVC, EPDM and modified bitumen.
  NOTE: Full compatibility shall be validated by the user with the ELD system provider.

The charts within this guide are only a summary of the general warranty coverage. Please contact a Elevate Regional Technical Coordinator for additional information.

This guide is meant to highlight Elevate products and specifications provided by Amrize Building Envelope LLC and is subject to change without notice. Amrize takes responsibility for furnishing quality materials which meet published Elevate product specifications or other technical documents, subject to normal roof manufacturing tolerances. Neither Amrize nor its representatives practice architecture. Amrize Building Envelope LLC offers no opinion on and expressly disclaims any responsibility for the soundness of any structure. Amrize accepts no liability for structural failure or resultant damages. Consult a competent structural engineer prior to installation if the structural soundness or structural ability to properly support a planned installation is in question. No Amrize representative is authorized to vary this disclaimer.