

EverGuard®
Plaza Deck Roofing
For Above-Grade
Plaza Deck Applications
Specifications

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*Quality You Can Trust Since 1886...
From North America's Largest Roofing Manufacturer™*



PLAZA DECK ROOFING FOR ABOVE-GRADE PLAZA DECK APPLICATIONS

Note: This Plaza Deck Roofing information is intended to be a supplement to the current EverGuard® and RUBEROID® Modified Bitumen Roofing Applications and Specifications Manuals.

Overview

GAF Materials Corporation (GAF) offers a series of EverGuard® TPO membrane and RUBEROID® modified bitumen roofing membrane specifications for above-grade pedestrian plaza deck applications. The EverGuard® specifications utilize either a 60 mil or 80 mil TPO fully adhered membrane. Each RUBEROID® specification utilizes either two or three layers of smooth-surfaced RUBEROID membrane to provide redundancy and durability. RUBEROID® plaza deck specifications are available for installations in hot asphalt or cold RUBEROID® Modified Adhesive, or for direct torch application. GAF Plaza Deck roofing applications installed in accordance with GAF application, specification and procedural requirements by GAF Master Select or Master Roofing Contractors are eligible for Diamond Pledge™ Guarantees of up to 25* years duration.

*Well Roof Advantage required.

Procedural Requirements

The following procedural requirements must be followed for all GAF Plaza Deck roofing projects for which a Manufacturer's Guarantee is required:

1. All GAF Plaza Deck roofing projects must be installed by a GAF Master Select or Master Roofing Contractor.
2. Each GAF Plaza Deck roofing project must be approved in writing by GAF Contractor Services prior to the start of the job. Each plaza deck roofing project must be registered by means of a GAF Notice of Award (NOA) form and all other necessary submittals in accordance with established procedures.
3. **A licensed architect or engineer, or certified waterproofing consultant must be involved in the design and specification of each plaza deck system as a requirement for a GAF guarantee. Receipt of preliminary plans and specifications, a letter of inquiry from the project specifier, or the name and telephone number of the project specifier provided on the Notice of Award is required before GAF will become involved in a plaza deck project.**
4. Each GAF Plaza Deck roofing project must be flood-tested in accordance with ASTM D 5957 flood test requirements. Documentation of the performance of a flood test is required
5. The completed plaza deck roofing system shall be inspected by a GAF Field Representative following the satisfactory completion of the flood testing but prior to the installation of any overlying materials.
6. Depending on the extent of any punch-list items identified during the Final Inspection, an additional follow-up Final Inspection may be required at the sole discretion of GAF Contractor Services. A \$350.00 fee will be charged for each follow-up Final Inspection.
7. A GAFMC Diamond Pledge™ Guarantee will be issued upon receipt of a GAF Notice of Completion (NOC) form, guarantee fee, and all other necessary submittals in accordance with established procedures.



Design Considerations

General

EverGuard® TPO membranes or RUBEROID® modified bitumen membranes can be installed on above-grade plaza decks, where pedestrian traffic is anticipated and expected. At-grade plaza decks are not acceptable applications, nor are above-grade plaza decks where vehicular traffic will be present.

Due to the difficulty or practical impossibility of removing the plaza deck surfacing to allow inspection of the roof membrane materials once the plaza deck assembly has been completed, it is of utmost importance that plaza decks are properly designed and constructed.

New construction or tear-off to an existing sound deck is required. The condition and structural integrity of the underlying deck or other substrate is most important. In addition to the general requirements that the deck be smooth, dry, with all cracks and other defects in excess of 1/8" in width repaired, the deck, substrate, and underlying structure must be able to support anticipated combined live and dead loads without significant deflection (less than 1/360 of the span).

Structural cast-in-place concrete decks are commonly used for plaza decks, and are the required substrate for all GAF Plaza Deck roofing applications unless prior approval is obtained from GAF Technical Services.

It is preferable to install GAF Plaza Deck roofing systems directly to a structural concrete deck. However, should deck drainage be such that correction of deck slope is necessary, an insulation assembly consisting of EnergyGuard™ PolyIso Tapered insulation with a Securock™ or Dens-Deck® fiberglass/gypsum panel overlay can be installed under the roofing membrane. Maximum dimension of insulation panels is 4' x 4'.

Additional Design Requirements

The following additional design requirements must be satisfied for a plaza deck roofing membrane system to be eligible for a guarantee:

1. Unimpeded positive slope to drain of 1/4":12" minimum, 3/4":12" maximum must be provided. Drainage must be provided at both the plaza deck roofing membrane level and at the traffic surfacing level for all monolithic surfacing applications such as cast-in-place concrete and paving stones, brick or tile set in a mortar bed.
2. Roof areas that will receive the installation of a plaza deck roofing system must be physically separated from adjacent roof areas.
3. All membrane base flashings must be protected from damage by means of metal (minimum 24 gauge copper or 0.032" aluminum) counterflashing extensions that provide 100% coverage of the base flashings to below the top of the traffic surfacing.
4. All flashings must provide a minimum height of 8 inches above the top of the traffic surfacing.
5. An ASTM D 5957 flood test must be performed following the completion of the plaza deck roofing membrane installation and prior to the installation of any overlay insulation, protection



pads, drainage boards and traffic surfacing. The performance of the flood test must be confirmed by the design professional of record for the project.

- It is the responsibility of the plaza deck design professional to verify the capacity of the structural deck (and any underlying insulation) beneath the EverGuard® or RUBEROID® membrane to support and withstand all anticipated live and dead loads, and to verify the capacity of the traffic surfacing system to withstand all anticipated windloads.

Approved GAF Plaza Deck Specification

The following EverGuard® and RUBEROID® specifications are suitable for use in plaza deck roofing:

GAF PlazaDeck Specifications...

With more than a dozen different available configurations, you're sure to find a PlazaDeck system that's right for your property!

Precast Concrete Pavers Without Paver Stands
 Precast Concrete Pavers With Paver Stands
 Cast In Place Concrete
 Paving Stones/Brick Tile Set In Sand
 Paving Stones/Brick Tile Set In Mortar
 Wood Deck Overlay With Blocking
 Wood Deck Panels
 Ceramic Tile Set In Mortar
 Pavers Set In Approved Adhesives

GAF Specification	System Description										Protection Layer ³	Guarantee (yrs.) ⁴
NN-0-2-MS(PD) or NN-0-3-MS(PD)	2 (or 3) layers of Ruberoid® Mop Smooth	•	•	•	•	•	•	•	•	•	PVC/PP ¹	15 Years or 20 Years
I-1-2-MS(PD) or I-1-3-MS(PD)	2 (or 3) layers of Ruberoid® Mop Smooth over Securock™ & EnergyGuard™ Iso ²	• ³	• ³	• ³	•	•	•	• ³	• ³	•	RP or PVC/PP	15 Years or 20 Years
NN-0-2-TS(PD) or NN-0-3-TS(PD)	2 (or 3) layers of Ruberoid® Torch Smooth	• ³	• ³	• ³	•	•	•	• ³	• ³	•	PVC/PP	15 Years or 20 Years
I-0-2-TS(PD) or I-0-3-TS(PD)	2 (or 3) layers of Ruberoid® Torch Smooth over Securock™ Prime & EnergyGuard™ Iso	• ³	• ³	• ³	•	•	•	• ³	• ³	•	PVC/PP	15 Years or 20 Years
NN-0-2-HWS(PD) or NN-0-3-HWS(PD)	2 (or 3) layers of Ruberoid® Heat-Weld Smooth	• ³	• ³	• ³	•	•	•	• ³	• ³	•	PVC/PP	15 Years or 20 Years
I-0-2-HWS(PD) or I-0-3-HWS(PD)	2 (or 3) layers of Ruberoid® Heat-Weld Smooth over Securock™ & EnergyGuard™ Iso	• ³	• ³	• ³	•	•	•	• ³	• ³	•	PVC/PP	15 Years or 20 Years
T-FA-N-I-N-I-60(PD)	60 mil TPO fully adhered over Securock™ & EnergyGuard™ Iso (insulation optional)		•					• ³	• ³		RP or PVC/PP	15 Years
T-FA-N-I-N-I-80(PD)	80 mil TPO fully adhered over Securock™ & EnergyGuard™ Iso (insulation optional)		•					• ³	• ³		RP or PVC/PP	20 Years
Wallcote Primer & Surface Seal	1 coat Wallcote Primer, 2 coats Surface Seal									•	N/A	10 Years
Wallcote Primer & Surface Seal with fabric	1 coat Wallcote Primer, 2 coats Surface Seal with Topester fabric									•	N/A	12 Years
CRT	3 coats of CRT									•	N/A	10 Years
CRT with fabric	3 coats of CRT with Topester fabric									•	N/A	12 Years
Surface Seal	2 coats of Surface Seal									•	N/A	10 Years
Surface Seal with fabric	2 coats of Surface Seal with Topester fabric									•	N/A	12 Years

RP = Reprocessed rubber pad, min. 3/16" thick PVC/PP = PVC/Polypropylene heavy-duty protection layer

¹Where precast concrete pavers are used, a RP protection layer may be substituted for a PVC/PP.

²Where Dens-Deck is used in hot mopped systems, a ply of GAFGLAS® Ply 4 must be mopped to the Dens-Deck® prior to the installation of Ruberoid® Mop Smooth.

³Extruded polystyrene board (XPS) insulation, min. 40 psi compressive strength, can be installed in lieu of drainage board on hot mopped, torched and TPO installations, provided that: the XPS board compressive strength is sufficient to support the applied live and dead loads; and, the XPS board includes integral drainage channels on its underside. XPS board insulation without drainage channels must be installed over an approved drainage board.

⁴Guarantee covers roofing membrane only; protection layer and surfacing material covered by separate manufacturers' guarantees.

Note: Consult the PlazaDeck design requirements section at www.gaf.com for additional requirements and complete construction details. Some local codes may restrict the use of PlazaDeck surfacings; consult local code authorities prior to PlazaDeck construction.



Protection Pad/Drainage Board Requirements

Many materials are used as the traffic surfacing for plaza decks. Normally, a drainage board must be installed between the membrane and the surfacing. The Drainage board or other acceptable protection layer must physically protect the roof membrane from the surfacing materials installed over it, *but* must not interfere with positive drainage at the membrane level.

Acceptable drainage boards provide a smooth surface for direct installation over the EverGuard® or RUBEROID® membrane, dimpled spacers to allow drainage, and a woven geotextile fabric facer to prevent clogging of the drainage board. In addition the drainage board or other acceptable protection layer...

- Must have exceptional resistance to crushing failure,
- Prevent direct transfer of concentrated point loads and impact loads to the roof membrane,
- Provide long-term physical and chemical compatibility with the roof membrane.

Protection mat can be used in lieu of the drainage board for traffic surfacing applications that utilize individual supports, such as concrete pavers with paver stands and wood decks supported on wood stringers. Protection mat is to be cut to extend a minimum of 2" beyond each plaza deck support, i.e., concrete paver stands and wood stringers.

Extruded polystyrene board insulation, min. 40 psi compressive strength, can be installed in lieu of drainage board, provided that: the polystyrene board compressive strength is sufficient to support the applied live and dead loads; and, the polystyrene board includes integral drainage channels on its underside. Extruded polystyrene board insulation without drainage channels must be installed over an approved drainage board.

Application Considerations General

In addition to general installation application considerations, refer to individual EverGuard® or RUBEROID® plaza deck roofing specifications for specific requirements for each assembly.

Membrane Installation

EverGuard® membranes can be installed in EverGuard® EPO or H2O bonding Adhesive.

RUBEROID MOP plaza deck roofing membrane systems are intended for installation in RUBEROID SEBS Modified Asphalt Type III or ASTM 312 Type III or IV asphalt.

RUBEROID® MOP specifications may also be installed in a cold-applied application, utilizing GAF RUBEROID® Modified Bitumen Adhesive. All specific recommendations for Cold Applied Applications must be followed. **Prior approval** of all cold-applied applications by GAF Technical Services is required for all guaranteed projects.

RUBEROID® TORCH APP and Heat-Weld™ SBS modified bitumen specifications are intended for direct torch installation to noncombustible surfaces.



Notice: These products must be applied only by professional roofing applicators trained in proper torch application and safety procedures. Roofing applicators must follow GAF's current torch safety requirements, available from GAF Contractor Services.

Flashing Considerations

All perimeter base and penetration flashings must extend a minimum of 8 inches above the top surface of the traffic surfacing.

EverGuard® base flashings are constructed utilizing either 60 mil or 80 mil TPO membrane matching the thickness of the field sheet.

RUBEROID® membrane base flashings must incorporate a minimum of two ply of RUBEROID® MOP (Smooth), TORCH (Smooth) or Heat-Weld™ (Smooth) modified bitumen membrane, as appropriate.

RUBEROID® membrane flashings must incorporate wood blocking/cants or concrete cast-in-place cants with a minimum of 2" face width. Wood cant sections must be mechanically secured 18" on center, as well as within 2" of each end to prevent movement between the sections.

EverGuard® and RUBEROID® membrane base flashings must be protected from damage by the use of metal (minimum 24 gauge copper or minimum .032" aluminum) counterflashing extensions that extend below the top surface of the traffic surfacing. The counterflashing extension must not be adhered to the roof membrane base flashing, and must be provided with a hemmed edge and a profile that will not cut or abrade the plaza deck membrane or flashing.

Penetrations that are not provided with a curb and that are therefore unsuitable for the installation of roof membrane base flashing must be provided with a flanged flashing formed of corrosion-resistant metal that can be soldered or welded watertight. All penetration flashings must be provided with a rain shield, cap, or other means of providing a positive seal at the top edge of the flashing.

On RUBEROID plaza deck systems, all metal flanges that are to be stripped into the roofing system must be stripped in with a minimum of two ply RUBEROID modified bitumen membrane. All METALASTIC® pre-flashed accessories must be installed with an additional layer of RUBEROID® modified bitumen membrane as the second stripping ply.

Provision for expansion/contraction must be provided at all flashing locations between the surfacing and all perimeter/penetration locations. For plaza deck applications with monolithic surfacing, such as cast-in-place concrete and paving stones, tile or brick set in a mortar bed; this is typically done by utilizing a closed-cell foam backing rod or other compression strip material, and a suitable sealant that is compatible with the surfacing material. For other surfacing materials, a gap is typically left between the surfacing and perimeter/penetration.



Flood Testing and Inspection

Flood Testing of all plaza deck roofing installations is required following completion of all roofing and flashing work, but prior to the installation of protection pads, drainage boards and traffic surfacing materials.

All drainage locations shall be temporarily sealed and a flood test should be performed in accordance with ASTM D 5957. Any sources of water infiltration into or through the plaza deck surface shall be repaired, and the flood testing repeated to confirm the watertight condition of the roofing and flashing.

The completed plaza deck roofing membrane system shall be inspected by a GAF Field Representative following the satisfactory completion of the flood testing. Upon completion of any Final Inspection punch list items, the remainder of the plaza deck assembly shall be installed immediately to protect the roofing membrane from damage.

Overburden Considerations

The overburden of a plaza deck assembly includes protection pads, drainage boards, extruded polystyrene insulation and traffic surfacing.

Normally, an approved drainage board must be installed loosely-laid over the entire roofing membrane surface. The drainage board must be installed fabric side up, and must be installed with a minimum of 1" overlap of the drainage fabric over all joints between boards. The drainage fabric must be continuous so as to prevent clogging of the drainage board by sand, concrete, or debris.

Extruded polystyrene board insulation can be installed directly over the drainage board, provided that the insulation is a suitable substrate for the installation of the plaza deck traffic surfacing materials.

For traffic surfacing applications that utilize individual supports, such as concrete pavers with paver stands and wood decks supported on wood stringers, approved rubber protection pads can be installed in lieu of the drainage board. Protection pads must be installed under all supports, and shall be loosely-laid on the roof membrane surface. The approved rubber protection pads should be trimmed to extend a minimum of 2" beyond the support on all sides. The installation of protection pads over the entire roof membrane surface is not recommended, as this may slow or otherwise impair roof drainage.

Alternatively, extruded polystyrene board insulation can be installed directly over the membrane surface without the use of rubber protection pads, provided that the insulation has adequate compressive strength to support the plaza deck traffic surfacing materials and applies loads, and has drainage channels on the underside of the board insulation.

The selection, specification, and design of the plaza deck traffic surfacing materials is the responsibility of the design professional project specifier. However, the following traffic surfacing materials are most commonly specified:



Precast Concrete Pavers without Paver Stands

Precast concrete pavers, typically 24" x 24" or 30" x 30", 2"-3" thickness, 5,000-6,000 psi compressive strength concrete, often provided with clips, dowels, or other connectors to obtain a smooth transition between adjacent pavers.

Precast Concrete Pavers with Paver Stands

Precast concrete pavers, typically 24" x 24" or 30" x 30", 2"-3" thickness, 5,000-6,000 psi compressive strength concrete, installed on plastic paver stands that are provided with shims or other height adjustment.

Cast-in-Place Concrete

Cast-in-place concrete, typically 3"-4" thickness, with wire mesh reinforcement, 3,000-5,000 psi compressive strength. Considered to be a monolithic surface, requiring drainage at surface level as well as at the roof membrane.

Paving Stones, Brick or Tile, set in Sand Bed

Specialty paving stones, brick or tile, set in 2"-3" sand bed.

Paving Stones, Brick or Tile, set in Mortar Bed

Specialty paving stones, brick or tile, set in 1"-2" mortar bed. Considered to be a monolithic surface, requiring drainage at surface level as well as at the roof membrane.

Wood Decking, Loose-Laid

Pressure-treated wood, cedar, or redwood decking constructed into panels of a size readily handled, i.e., 4' x 4'. Panels can be constructed to rest only on their corners, or secured to stringers (supports that run with the slope of the roof). Often provided with clips, dowels or other connectors to obtain a smooth transition between adjacent panels. Alternatively, the decking can be secured directly to the stringers. Stringers are typically 2" x 4"s or 2" x 6"s laid flat, but can also incorporate a vertical wood component that can be tapered to provide a flat traffic deck even if the roof is sloped to drain.

Granulated Rubber Playtiles

Granulated rubber pads rated for use as a play surface due to their cushioning and compressibility, incorporating drainage channels on the underside. Typically provided with dowels or the other connectors to obtain a smooth transition between pavers.