

Technical Bulletin WP 2025-01

First Release:

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Prepared by:

Laura Blaul
Senior Wildfire Fellow

Applicable Standards:

Wildfire Prepared

Applicable Designation Level:

Home

Plus

Neighborhood

Single-ply Roof Membranes

Introduction

Single-ply roofing membranes, including thermoplastic and thermoset products such as TPO (thermoplastic Polyolefin), PVC (Polyvinyl Chloride), and KEE (Ketone Ethylene Ester), are widely used on low-slope roofs. While many single-ply roof assemblies achieve a Class A rating under ASTM E108/UL790, not all such roof systems are rated Class A.

Achieving a Class A roof rating requires evaluation of the entire roof assembly, not the membrane alone. All components, including but not limited to the membrane, insulation board, coverboard, and roof deck must match a tested and approved Class A assembly. Any deviation from or substitution within the tested system will void the Class A rating.

Absent original installation documents, it is not possible to confirm whether a single-ply roof system meets class A rating requirements.

This technical bulletin outlines conditions under which single-ply membranes may be used on homes seeking Wildfire Prepared Home or Home Plus (WPH/WFPH+) designation, acceptable proof of Class A compliance, retrofit/reroof options and recommended approaches for single-ply membrane roof systems.

Compliance Verification Requirements

Single-ply membranes are only permitted when they are part of a tested and listed Class A roof assembly in accordance with ASTM E108/UL790.

Owners must provide proof through one of the following:

1. Approved Plans + Final Inspection

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- Approved plans specifying the exact membrane type, cover board, attachment method, and ASTM/UL Class A assembly reference AND
- Final building inspection record confirming the roof passed inspection as specified

2. Installation Records

- Roofing contractor invoice/work order listing the exact membrane type (brand + product name) and all underlayment, cover board, insulation, and attachment details AND
- **Detailed photo documentation and material verification.** Acceptable evidence must include:
 - Comprehensive photo documentation of all roof assembly material labels (each product used) and of each material to be installed.
 - Approved testing documentation identifying the tested assembly, materials used in the test, and the achieved Class A rating.
 - Photographic correlation between the tested assembly materials and the installed products.

Roof Retrofit/Replacement

If verification that the single-ply membrane is part of a Class A roof assembly cannot be provided, the roof system must be retrofitted or replaced using materials and installation methods that are part of a complete roofing system tested and certified to achieve a Class A fire rating in accordance with ASTM E108 or UL 790.

A retrofit will require one of the following*:

1. Roof deconstruction and addition of any missing component and/or replacement of any unlisted component including membrane, insulation, cover board, and deck. The process must be documented in accordance with Compliance Verification Requirement 2 set out above.
2. The addition of a new Class A Single-ply roof assembly over the existing roof, assuming a combustible roof deck. The installation must be documented in

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accordance with Compliance Verification Requirement 2 set out above.

NOTE: Structural capacity must be demonstrated to the authority having jurisdiction through engineering calculations or manufacturer/evaluation report documentation; Addition of roofing layers must be in accordance with the local building code for reroofing.

*IBHS is currently evaluating other retrofit methods and will update this bulletin if necessary.

Alternatively, the roof should be fully replaced with a Class-A rated tested assembly and appropriately documented in accordance with one of the verification methods above.

Recommended Single-Ply Membrane Systems

For new installations in wildfire-prone areas, IBHS recommends PVC or KEE membranes over TPO due to:

- Higher melting and softening temperatures
- Reduced vulnerability to ember intrusion.

Frequently Asked Questions

1. Why can't I just submit my approved plans?

Approved plans show *intent*, not necessarily *execution*. Plans often carry a "Class A roof" note but do include the exact tested assembly for field inspection.

1. Will a building permit suffice?

Like approved plans, it's only partial proof unless it contains the specific assembly details and there is confirmation that the roof was installed as permitted.

2. Can I use other materials on a flat/low slope roof?

Yes, metal and modified bitumen are accepted roof coverings as part of a Class A-rated roof system.

3. What are the requirements for insulation?

There are no insulation requirements for WPH designation. The cover board (1/4" gypsum or equivalent) is essential and protects the insulation.