

### Fully Adhered Single Ply EPDM Roofing with Photovoltaics

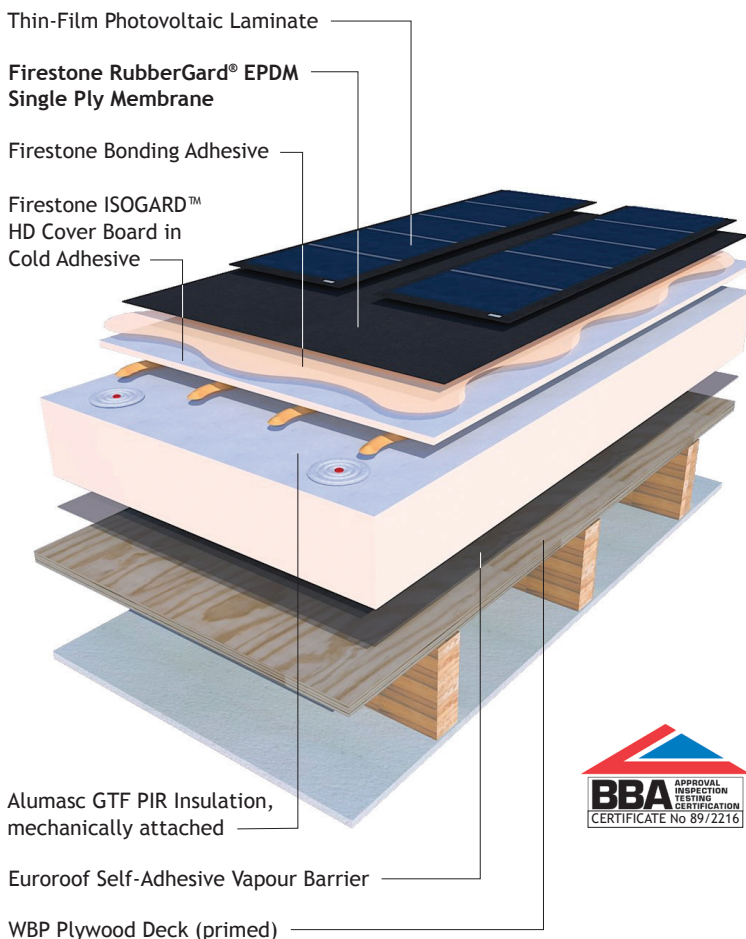
#### ✓ When to Specify

Firestone RubberGard® fully adhered, high performance lightweight warm roof systems with integral amorphous silicon (a-Si) photovoltaic panels offer high levels of durability and waterproof integrity whilst employing the flat roof space to passively generate electricity.

## Firestone

BUILDING PRODUCTS

**NOBODY COVERS YOU BETTER.®**



#### ☀ Warranties

Alumasc offers a comprehensive range of warranty options. The typical warranty period for Firestone RubberGard® is 20 years. Installed exclusively by Alumasc Firestone Authorised or Licensed Contractors and underpinned by Alumasc's extensive project support service. Independent insurance backed latent product defect warranties are also available through FSA licensed brokers.

#### Key Features

##### Power Generation

Facilitates the passive generation of electricity by fully adhered thin film photovoltaic panels, connected to the mains via an inverter. Surplus energy can be fed into the electricity grid, attracting a fixed rate return according to the prevailing feed-in-tariff rate.

##### Lifespan

According to BBA Certificate No 89/2216, under normal service conditions the system will provide a durable waterproof covering with a service life of at least 20 years. Firestone RubberGard® EPDM membranes have a typical service life in excess of 30 years.

##### Durability

Firestone RubberGard® EPDM offers outstanding resistance to UV degradation and superior mechanical properties such as high elasticity (> 400%) and tensile strength to accommodate building and thermal movement.

##### Performance

Containing no plasticisers or flame retardants, RubberGard® EPDM's characteristics remain stable and unchanged over time, providing a sustainable roofing solution. High compressive strength Firestone ISOGARD™ HD Cover Board provides the ideal substrate for the in-service demands of photovoltaic roof installations and complies with Firestone's "Enviro-Ready" roofing programme. Unisolar a-Si PV panels will achieve a minimum of 92% of the design power output after 10 years, 84% after 20 years and comply with IEC 61646 and IEC 61730 (International electrotechnical commission).

##### Quality

Firestone RubberGard® EPDM is manufactured and independently assessed against BS EN ISO 9001:2008 Quality Management Standard, ensuring a consistently high performance product. The membrane has been assessed for its properties according to EN 13956 (CE mark).

##### Environment

Manufactured in accordance with the ISO 14001:2004 Environmental Management Standard, Firestone RubberGard® EPDM can benefit BREEAM ratings (e.g. Section MAT5 for responsible sourcing of materials) and contributes to a 'very good' rating in the BRE Green Guide to Specification (an 'A+' rating is achievable when installed on timber or metal decks).

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### Application

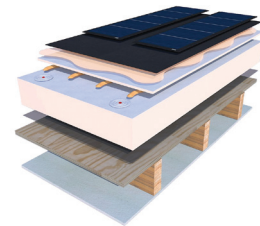
1. Tape joints and prime the plywood deck with Euroroo Contact Adhesive immediately prior to installing the vapour barrier.
2. Roll out and align one layer of Euroroo Self-Adhesive Vapour Barrier, providing for 100mm side and 150mm end laps. Remove the release film and firmly pressure roll the surface and laps to ensure adhesion.
3. Install Alumasc GTF polyisocyanurate insulation, thickness to achieve the target thermal value, secured by mechanical fasteners and plates at a rate and in a pattern as specified, and to resist wind uplift in accordance with Eurocode 1: BS EN 1991-1-4:2005.
4. Firestone ISOGARD HD Cover Board will be adhered to the installed insulation boards using Firestone I.S.O. Twin pack Adhesive at centres calculated to resist wind uplift in accordance with Eurocode 1: BS EN 1991-1-4:2005, cut to maximum 1.2 x 1.2m and laid directly into fresh adhesive, tightly butted with joints staggered.
5. At upstands and angle changes >15% an appropriate base tie-in detail will be installed. The membrane will be terminated at a height not less than 150mm above the finished roof surface.
6. Unroll the RubberGard® EPDM membranes (without stretching) onto the cover boards, and allow to relax for a minimum of 30 minutes before attachment or splicing operations, allowing for a sufficient overlap with the adjoining membranes at all edges. Fold the membrane back onto itself to expose the cover board.
7. The membrane will be fully adhered to the substrate using Firestone Bonding Adhesive BA-2004(T) in a thin, even, coat onto both mating surfaces using a short-haired roller, avoiding globs and puddles of adhesive. Allow sufficient time for the adhesive to flash off until tacky with no wetness or stringing to finger.
8. Roll the coated portion of the membrane onto the coated substrate slowly and evenly to minimise wrinkles. Consolidate the contact with the substrate using a stiff broom. Repeat the bonding procedure to complete adhesion of the membrane.
9. Adjoining membranes will be spliced together using 76mm (3") QuickSeam Splice Tape, the splice area being prepared using QuickPrime Plus primer. A minimum 5mm and maximum of 15mm of the splice tape must remain exposed at the seam edge. The completed seam will be rolled using a 50mm wide silicone roller.
10. Install Unisolar PV laminate panels by self-adhesion to the RubberGard® EPDM membrane and connect to mains via an inverter and meter. Note: The roof slope for PV systems must be a minimum of 3°, maximum 60°.
11. Detail work to be in accordance with the project specification and the Firestone Technical Guidelines.

**NB:** Firestone RubberGard® EPDM single ply roofing systems are exclusively installed by a nationwide network of Firestone Authorised or Licensed Contractors. Photovoltaic systems must be installed and commissioned by a Microgeneration Certification Scheme (MCS) accredited installer.

*The company pursues a policy of constant product development and information contained in this publication is therefore subject to change without notice.  
The customer is responsible for ensuring that each product is fit for its intended purpose and that the conditions for use are suitable. All quoted data is nominal and subject to production tolerances.*

### System Components

- Unisolar PVL-68, PVL-136 or PVL-144 amorphous silicon (a-Si) shadow tolerant photovoltaic laminate with integral copolymer adhesive.
- Firestone 1.5mm RubberGard® EPDM is a fully-cured, synthetic rubber membrane adhered with Firestone Bonding Adhesive BA-2004(T), a high-performance, neoprene-based, rubber contact adhesive.
- Firestone ISOGARD™ HD is a high-density 12.7mm thickness polyisocyanurate cover board, supplied in board sizes of 1.2m x 2.2m, bonded with Firestone I.S.O. Twin Pack Adhesive, 2-part, low-rise polyurethane roofing adhesive.
- Alumasc GTF is a CFC- and HCFC-free polyisocyanurate thermal insulation with plain glass-fibre tissue to both faces, supplied in 600 x 1200mm boards and a range of thicknesses to suit the required thermal value.
- Euroroo Self-Adhesive Vapour Barrier is a 2.5mm thick, modified bitumen glass reinforced vapour barrier with a self-adhesive coating that will provide a strong bond with the substrate.



### Technical Support

Alumasc Technical Services provide an extensive project support service that includes site surveys, project specifications, performance calculations (e.g. U-values, condensation risk analysis), CAD detail drawings and general technical advice.

#### Contact Alumasc Technical Services via:

☎ +44 (0) 1744 648400

✉ [waterproofing@alumasc-exteriors.co.uk](mailto:waterproofing@alumasc-exteriors.co.uk)

Online resources are available on our website or via the embedded links below:

#### Web Links

- 📄 [Brochures & Datasheets](#)
- 📄 [NBS Specifications](#)
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[www.alumascwaterproofing.co.uk](http://www.alumascwaterproofing.co.uk)