

## 1

# Firestone EPDM Roofing Systems

To ensure a long-lasting, trouble-free roof today, it is not sufficient to manufacture high quality roofing membranes. Experience learned that roofing membranes need to be compatible with other products in order to be integrated into a complete waterproofing system, which will function under extremely variable conditions.

Depending upon these conditions, the specifier can select one of the following roofing systems:

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In the following pages you will find a brief description and illustration of each individual Firestone EPDM Roofing System, including its main characteristics and advantages.



## 1.1 Ballasted System

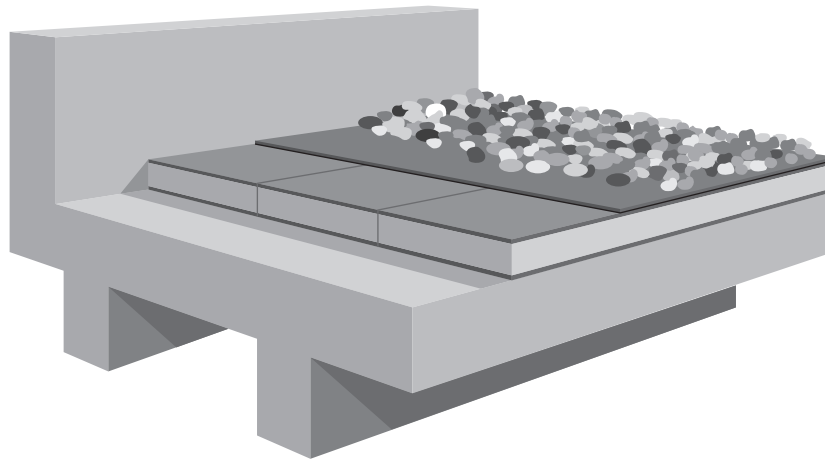


Fig. 1.1.1

The Firestone Ballasted System is the most economical EPDM Roofing System available and is suitable for a wide variety of buildings.

The EPDM sheets are loose laid over an acceptable substrate. Rough substrates need to be isolated with an acceptable protective layer. Adjoining sheets are overlapped a minimum of 100 mm and the seams are spliced with a self-adhesive QuickSeam Splice Tape to form a continuous watertight membrane. Once the seams are spliced and roof perimeters and penetrations are flashed in accordance with the Firestone specifications, the EPDM membrane is held in place using the following materials as ballast:

- Gravel, in the form of round, smooth, river washed aggregate without broken pieces, of adequate size (nominal 16 to 32 mm).
- Concrete pavers (min. 50 mm thickness) with smooth trowel finish. Installation of a protective mat may be required.
- Crushed gravel that must be graduated, the larger the gravel, the higher the weight. A protective mat must be used.

The system features are:

- Use of large EPDM panels
- Fewer seams
- Large choice of compatible substrates
- Fast installation
- Low installation cost
- Excellent fire rating
- Superb weathering resistance

Prior to selection of this system, the specifier should evaluate structural conditions of the building to verify its load bearing capacity. Roof slopes and wind requirements should also be investigated.

## 1.2 Inverted System

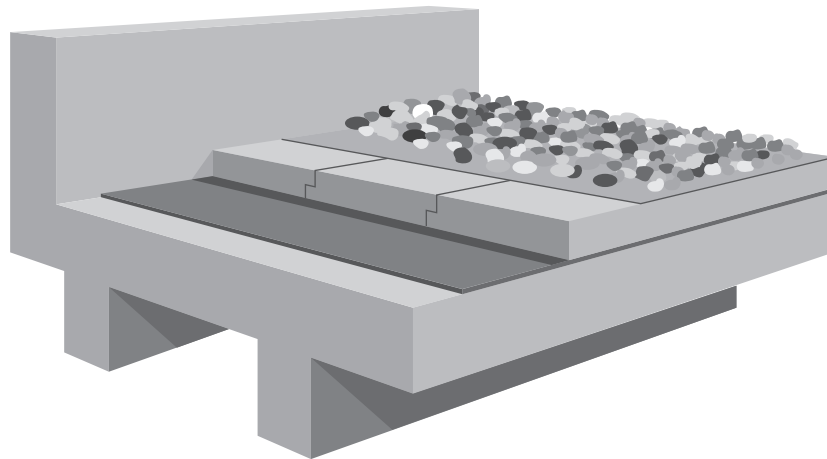


Fig. 1.2.1

The Firestone Inverted System is a variation of the conventional ballasted system. It is ideal for roofs with regular traffic or severe weather climates.

The EPDM sheets are loose laid over an acceptable substrate. Rough substrates need to be isolated with an acceptable protective mat. Adjoining sheets are overlapped a minimum of 100 mm and spliced with a self-adhesive QuickSeam Splice Tape to form a continuous watertight membrane. Once the roof perimeters and penetrations are flashed in accordance with the Firestone specifications, a layer of extruded polystyrene is placed over the membrane. A protective mat is then laid over the insulation and the total system is held in place using the following as ballast:

- Gravel, in the form of round, smooth, river washed aggregate without broken pieces of adequate size (nominal 16 to 32 mm).
- Concrete pavers (min. 50 mm thickness) with smooth trowel finish.
- Crushed gravel that must be graduated, the larger the gravel, the higher the weight.

The system features are:

- Use of large EPDM panels
- Fewer seams
- Large choice of compatible substrates
- Fast installation
- Low installation cost
- Extra durability
- Flexibility for upgrading of insulation in reroofing projects

Prior to selection of this system, the specifier should evaluate the structural conditions of the building with regard to its strength to accommodate the load. Roof slope, wind requirements and flashing height around details should also be investigated.

### 1.3 Fully Adhered System (F.A.S.)

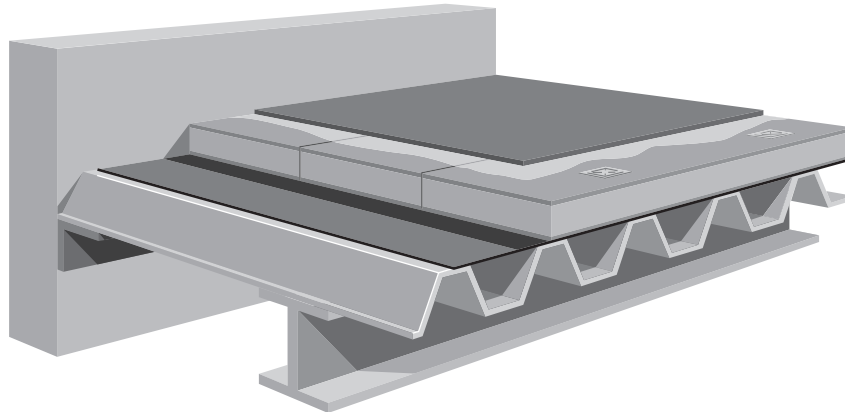


Fig. 1.3.1

The Firestone Fully Adhered System is a lightweight system with outstanding design flexibility. It is suitable for contoured roofs, roofs with irregular shape and any roof with limited load bearing capacity, provided the substrate is compatible with adhesives.

The system typically uses 3.05 m to 6.10 m wide panels, which are fully adhered directly to an acceptable substrate using Bonding Adhesive. Adjoining sheets are overlapped a minimum of 100 mm and the seams are spliced with a self-adhesive QuickSeam Splice Tape to form a continuous, watertight membrane. All flashings around roof perimeters and penetrations are installed in accordance with Firestone details.

The system features are:

- Applicable on any slope
- Applicable to unusual roof configurations
- Lightweight
- High wind uplift performance
- Aesthetics

Prior to selection of this system, the specifier should determine whether the substrate is compatible with Bonding Adhesive to provide sufficient adhesion. For insulated roofs the ability of the roof deck to provide sufficient pullout resistance for the fastening system should be established.

## 1.4 Reinforced Mechanically Anchored System (R.M.A.)

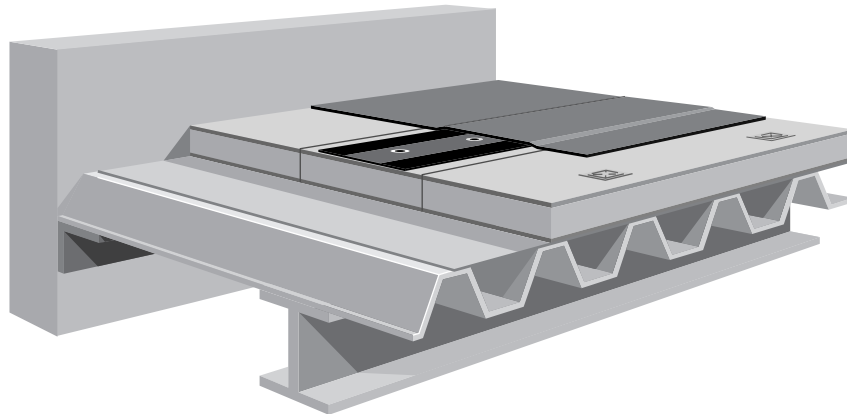


Fig. 1.4.1

The Firestone R.M.A. System is a lightweight, non-penetrating mechanically attached system that offers an alternative to the conventional M.A.S and B.I.S. systems. It is developed around the QuickSeam R.M.A. strip: a 254 mm wide strip of reinforced EPDM membrane incorporating two strips of self-adhesive QuickSeam Splice Tape laminated along each edge over the entire length of the strip.

In this system, the QuickSeam R.M.A. strips are laid out over an acceptable substrate and mechanically attached with Batten Strips or plates and fasteners. Spacing of the strips differs to accommodate for wind loadings. The large EPDM panels are then adhered to these mechanically attached QuickSeam R.M.A. strips using standard seaming techniques. In perimeter zones, membrane panels can also be fully adhered to the substrate instead of using the QuickSeam R.M.A. strips. Adjoining sheets are overlapped a minimum of 100 mm and spliced with a self-adhesive QuickSeam Splice Tape to form a continuous, watertight membrane. All flashings around roof perimeters and penetrations are installed in accordance with Firestone details.

The system features are:

- None penetrating
- Use of large EPDM panels
- Fast coverage
- Fewer seams
- Lightweight
- Aesthetics

Prior to selection of this system, the specifier should evaluate whether the roof deck will provide sufficient pullout resistance for the fastening system.

## 1.5 Mechanically Anchored System (M.A.S.)

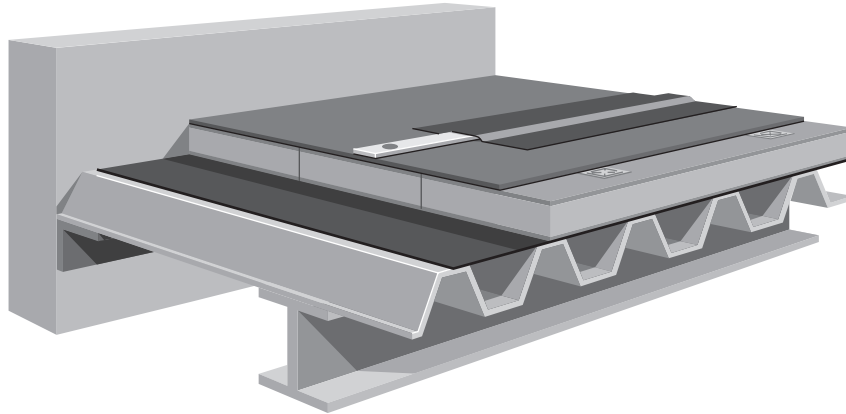


Fig. 1.5.1

The Firestone M.A.S. System is a lightweight system suitable for large size roofs that cannot carry the additional load of ballast, with few obstructions and where the roof deck is suitable for mechanical attachment.

The system uses typically 6.10 m and 9.15 m wide panels, which are loose laid over an acceptable substrate. Perimeter zone panels may either be fully adhered or mechanically attached. Field zone membrane panels are mechanically attached with batten strips placed on top of the panel and protected with 152 mm wide, self-adhesive QuickSeam Batten Cover Strips. Spacing of the batten strips will differ to accommodate for wind loadings. Adjoining sheets are overlapped with a minimum of 100 mm and spliced with a self-adhesive QuickSeam Splice Tape to form a continuous, watertight membrane. All flashings around roof perimeters and penetrations are installed in accordance with Firestone details.

The system features are:

- Use of large EPDM panels
- Fast coverage
- Fewer seams
- Lightweight

Prior to selection of this system, the specifier should evaluate the roof slope and determine whether the roof deck will provide sufficient pullout resistance for the fastening system.

## 1.6 Batten-In-Seam System (B.I.S.)

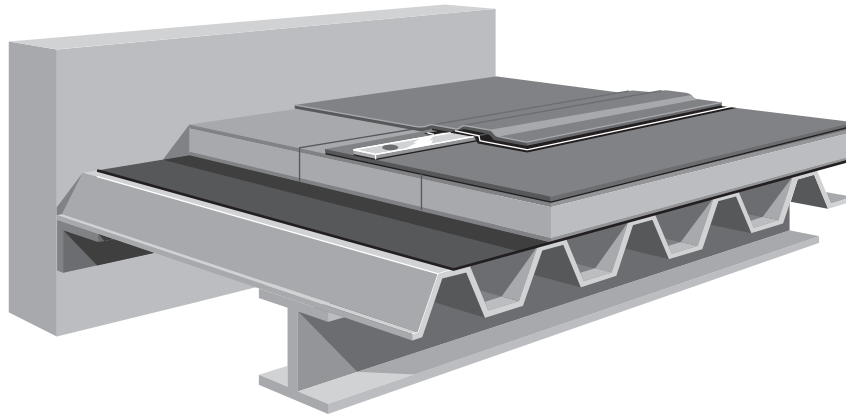


Fig. 1.6.1

The Firestone Batten-In-Seam System is a lightweight system, suitable for roofs that cannot carry the additional load of ballast, where the roof deck is suitable for mechanical attachment and the use of smaller EPDM sheets is more practical.

The system uses typically 1.67 and 2.28 m wide panels, which are loose laid over the substrate. When using reinforced membranes, panel sizes up to 3.05 m can be used. Perimeter zone panels may either be fully adhered or mechanically attached. Field zone membrane panels are mechanically attached with metal or polymer batten strips placed in the seams of adjoining sheets. Reinforced panels can also be mechanically attached using seam plates instead of batten strips. Spacing of the batten strips and the width of the panel differ to accommodate for wind loadings. Adjoining sheets are overlapped at least 200 mm at side laps and 100 mm at end laps. The sheets are spliced with a self-adhesive QuickSeam Splice Tape to form a continuous, watertight membrane. All flashings around roof perimeters and penetrations are installed in accordance with the Firestone details.

The system features are:

- Adaptable to unusual roof configurations
- High wind uplift performance
- Low material cost
- Lightweight

Prior to selection of this system, the specifier should evaluate the roof slope and determine whether the roof deck will provide sufficient pullout resistance for the fastening system.