

At Johns Manville, Scientific Advances are Producing Better System Performance, Easier Installations, Greater Energy Efficiency and More Environmentally Smart Applications.

Johns Manville is leading the development of new technologies by ushering in a new era of roofing systems. The science behind our materials and products is extensive. Working in partnership with our customers, our research and new product development teams are challenged to invent new and innovative technologies that cost-effectively increase the performance of our customers' commercial/industrial roofing systems.

The Johns Manville Technical Center in Littleton, Colorado, is one of the bestequipped research facilities in the country, with extensive research capabilities in structural, chemical, mechanical and thermal analyses. Here, JM scientists and engineers test and develop products to find technology-based solutions for specific product needs.

Johns Manville also strongly supports the development of "cool roof" technology. From manufacturing to installation and use, JM single ply membranes, for example, are environmentally sound and represent an excellent choice with high energy efficiency for owners. Other scientific advancements, particularly in the area of cold-application technology, are coming to fruition as well.

We invite you to review our total commercial roofing capabilities on the next few pages, then visit www.jm.com for complete product and system details.

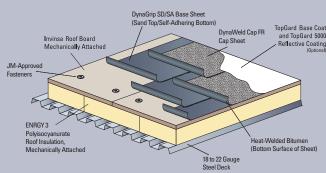
Bringing the Latest Technology to Bituminous Systems

SBS Modified Bitumen Systems

Johns Manville produces quality SBS (styrene-butadienestyrene) systems which include base and cap sheets and flashing components. JM products are available with a reinforcement of either fiber glass, polyester or a combination of both. Utilizing the rubberized modifier SBS increases the overall performance of the sheet by providing unrivaled elongation and recovery characteristics.

SBS modifiers extend the service range of the products, so that they can be handled in cooler temperatures.

Sample SBS Modified Bitumen System



Reinforcements play a key role in performance, each targeting specific needs:

- Fiber glass reinforcements offer tensile strength and dimensional stability required for rooftops with heavy traffic areas.
- Polyester mats deliver superior tear strength and puncture resistance, and can handle continual stress created by rooftop movement.
- Composite reinforcements offer ultimate tensile strength, dimensional stability and puncture resistance because they combine the strength of fiber glass and the flexibility of polyester.

As a single source provider, JM also features a complete line of cements, adhesives and flashing products for use with SBS Modified Bitumen Systems.

APP Modified Bitumen Systems

Like our SBS products, JM's APP (atactic polypropylene) line provides high-tensile strength while maintaining critical flexibility. Through scientifically advanced formulation, the APP membranes are highly compatible with heat-welding application methods. Several products are available for varying degrees of strength, elasticity and flexibility. Please visit www.jm.com for complete information.

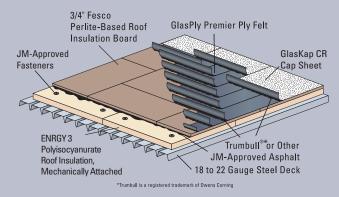
JM Built-Up Roofing (BUR) Systems, Still the Best of the Tried and True

With BUR roofing systems, the waterproof membrane is field fabricated with layers of bitumen alternating with plies of reinforcing felts. JM manufactures a complete line of fiber glass felts including base, ply and granule-surfaced cap sheets.

Base felts are available in three major types. One type incorporates a coating of rubber-modified asphalt; another lighter sheet is also available. A third product is primarily used as a venting base sheet for applying a new built-up roof over an existing bituminous membrane that is no longer serviceable, or over lightweight insulating concrete substrates. Check the complete list of BUR system components at www.jm.com to see which is best suited for your use.

Ply felts are coated with high-grade, unfilled asphalt. Two types are available depending on the ASTM standard that needs to be met.

Sample BUR System



Cap sheets are fiber glass mats coated with filled asphalt and surfaced with mineral granules for applications where a granule-surfaced sheet is desired.

GlasKap® CR is a white mineral surfaced, white acrylic coated, fiber glass cap sheet for use in built-up roofing systems. The unique surfacing provides protection to the underlying asphalt and membrane, as well as the benefit of a reflective, emissive surface that meets California Title 24.

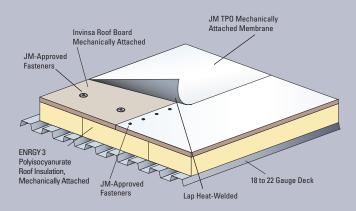
Compatible cements, coatings and surfacings are available for a fully integrated, single source system. JM-approved asphalt is required for hot-applied BUR systems.

TPO and PVC Single Ply Roofing Systems

TPO and PVC roofing membranes from Johns Manville have provided an effective, weatherproof roofing alternative for two decades.

The formulation of our white TPO and PVC membranes has enabled Johns Manville to be a partner in the Environmental Protection Agency's Energy Star® program. These highly reflective surfaces help reduce electricity and natural gas consumption when specified with ENRGY 3® polyisocyanurate roofing insulation. The membranes can also help minimize the "heat island" effect in metropolitan areas. Testing on white membranes showed initial reflectivity values of 86 percent, far exceeding Energy Star's guidelines.

TPO thermoplastic membrane systems are offered by JM for use in specific roofing applications. Contact your JM representative about your requirements.



JM PVC is a flexible, thermoplastic membrane manufactured using an ultraviolet-resistant polyvinyl chloride and an Elvaloy® KEE (ketone ethylene ester) formulation.

JM PVC membranes are reinforced with a non-wicking polyester fabric and provide excellent weathering characteristics, high tensile strength and long-term flexibility. The membranes also have excellent resistance to harsh chemicals and industrial pollutants.

JM PVC Fleece-Backed Membranes have a polyester fleece embedded into the sheet through a molten film-extrusion process. They are available in 50 and 60 mil thicknesses.

These membranes are composed of UV- and fire-resistant PVC (polyvinyl chloride) and are aesthetically pleasing and light in weight. They have excellent durability and dimensional stability, and they are easy to install year-round – even in northern climates. Greater thicknesses add to the rigidity of the systems, increase resistance to wind uplift and add longevity. The membranes are available in a standard, energy-saving white color, as well as sandstone and grey.

JM EPDM Single Ply Roofing Systems

The JM thermoset single ply membrane is called JM EPDM (ethylene propylene diene monomer). JM EPDM has superior weatherability through a wide range of temperatures and conditions and it demonstrates superior ozone resistance.

These membranes are available with or without a polyester scrim reinforcement. JM EPDM non-reinforced membranes are available in 45, 60 and 90 mil thicknesses. JM reinforced EPDM membranes are available in 45, 60 and 75 mil thicknesses. JM EPDM can be installed in ballasted, mechanically fastened or adhered applications. For those applications where added strength, durability and dimensional stability are desired, the polyester reinforced products should be specified.

Roof Insulation and Cover Board Products for Every Roofing System and Thermal Requirement

Thermal Products

Johns Manville offers high thermal roof insulation products composed of closed-cell polyisocyanurate foam, bonded to fiber glass reinforced facers.

JM polyiso rigid roof insulation boards are designed for direct application over metal, nailable and non-nailable deck types and may be used with all membrane systems. These insulation products meet the physical property requirements of ASTM C 1289 and are also available in a higher 25 psi (172 kPa) compressive strength.

JM polyisocyanurate is a state of the art product line manufactured with pentane (HC). These polyiso foams have zero ozone depletion potential.

JM offers several perlite-based options meeting lower thermal requirements for various decking configurations and re-cover solutions. These insulations are manufactured using 25% up to 36% recycled content.

Composite Products

Johns Manville has a full line of polyisocyanurate-based composite boards for use as insulation underlayments in a variety of roofing systems.

Cover Boards

JM now offers Invinsa™ Roof Board. It is a resilient, lightweight roof board designed as an integral component of the roof system. It provides a protective layer for the insulation, while working with the membrane above to ensure maximum performance and longevity.

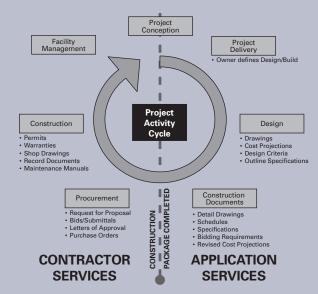
Helping to Specify the Complete Roofing System

Specifying and designing today's roofing systems can become very complicated due to the vast amount of products, codes, qualifications, trades, and considerations required of both the design professional and installation entity on projects throughout the industry.

Design Engineering is a group of professionals brought together to emphasize the roof as a system. This diverse group offers a variety of expertise in all facets of roofing and building design including: building science, specifications, design assist, codes assistance, tapered layouts, wind design, sheet layouts, details, and assembly logistics.

When specifying a JM system, this resource now provides the building professional with a key tool for ensuring a roofing system that complements the building envelope and works as a system to complete a quality building package.

Design Engineering Group (800) 341-8032



Tapered Insulation Group

With JM's dedicated Tapered Insulation Group, complex designs with limitations in slope, edge conditions, maximum thickness, or minimum thermal resistance value are easily and effectively achieved. Through years of experience with tight design requirements, this group can maximize the tapered layout to address all thermal and drainage concerns.

Assuring Better Roof Performance through Education and Contractor Incentives.

To help you design and specify the most effective roofing system and deliver the absolute best value to owners, JM has created a definitive and objective training school for architects, engineers, consultants, specification writers and roofing contractors. It's called the JM Roofing Institute. The Better Understanding of Roofing Systems Institute (BURSI®) is a part of the JM Roofing Institute™.

BURSI offers a comprehensive, 1½-day program of intensive instruction covering all aspects of the roofing system as they apply to design, specification, installation, performance and maintenance. The institute is staffed by experts in low-slope roofing technology.

To ensure quality workmanship and top-notch installation, JM offers its Peak Advantage® Contractor Program.

Contractors selected to participate are proven to be best of class, having lived up to the highest performance standards. These contractors have access to JM's strongest guarantees. To be assured of the best possible results on the roofing system you specify, make sure it's installed by a JM Peak Advantage contractor.

Product Warranties

Johns Manville designs roofing products that work together to provide a one source comprehensive roofing system solution. Total roofing system guarantees are available under the JM Peak Advantage® Guarantee program. To learn more about our standard guarantee terms and conditions, visit our Web site at www.jm.com or talk to your local JM sales representative.

JM Peak Advantage Guarantees are available only on qualified JM roofing systems containing JM roofing products. JM standard product terms and conditions will apply to include a one-year limited product warranty. Limited product warranty information is available at www.jm.com/About Us/US Terms and Conditions.



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