

Black Pearl®

Cold Applied Asphalt Built-Up Waterproofing System

DESCRIPTION

Barrett's Black Pearl® Waterproofing System is composed of two primary products:

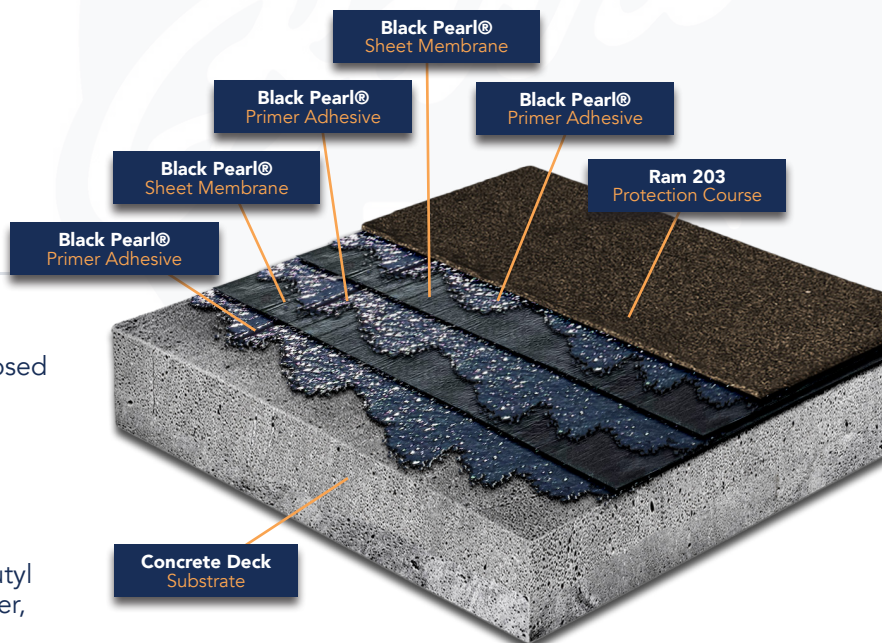
- **Black Pearl® Primer Adhesive**
- **Black Pearl® Sheet Membrane**

These components are based upon the same core formula of select, unoxidized asphalt cement base, butyl rubber, styrene isoprene styrene (SIS), neoprene rubber, styrene-butadiene-styrene rubber (SBS), fillers, plasticizers and curing agents. The Black Pearl Primer Adhesive also has an aliphatic solvent that is within acceptable OSHA and EPA current regulations.

Black Pearl® Sheet Membrane is a 55 mil woven polyester fabric providing extra tensile strength and stability. This fabric is impregnated and coated with the Black Pearl® rubberized formula. The compatibility between the two components is 100 percent, with the Black Pearl® Primer Adhesive acting as a catalyst on the sheets and chemically fusing the system elements together (including flashings) into a thick, semi-monolithic waterproof membrane.

Most Black Pearl® applications are over concrete substrates, exterior grade plywood, blindside lagging, sheet piling, cement board and even asphalt protection boards are also acceptable substrates with some waterproofing designs. Consultation and peer reviews are encouraged and welcomed.

Black Pearl® is an all-season material that can be installed anytime between 0°F and 100°F, eliminating stocking and out of date problems due to weather. Black Pearl® systems are compatible with extruded and expanded foam boards, PVC, EPDM, drain mats, asphaltic materials and coal tar pitch. It also has the unique ability to be applied to green and damp concrete.



SURFACE PREPARATION

Check that all drains are properly installed, slightly depressed below the top of the roof deck and operative, all pipe and sleeve penetrations in place and properly secured, material storage and access areas determined and agreed to. All honeycomb, form tie holes or cones, air holes, bug holes and other defects must be parged/filled prior to membrane application and protrusions and high spots scraped down.

Any questions about concrete surface acceptability can be determined by evaluating the concrete surface using ASTM D-5295 and American Concrete Institute (ACI) ACI 117R-90, reapproved 2002, Section 4.5.6, Section 4.5.7, Detail FF 191.4 or FF 52.9 Guides. Fresh concrete that supports foot traffic is acceptable. Standing water on the concrete surface at the time of installation is not acceptable and needs to be removed. Water curing of concrete with impermeable covers is recommended when long-term curing is employed.

All metal surfaces shall be cleaned of oils, paints, silicones and rust. Power wire brushing, shot blast, sand blasting, ice blasting and similar treatments can be used as required. Formboard release agents like No. 20 weight motor oil or diesel fuel are commonly used on concrete wall forms. Do not use or go over any release agent containing motor oil, fuel oil, animal fats, or stearates. Surface applied wax based, and acrylic curing agents are not acceptable. Suspect areas must be shot blast, sand blast, ice blast or similarly treated prior to application of waterproofing to provide an acceptable surface. Frost-free surfaces are required.

MATERIALS

- Black Pearl® Primer Adhesive** (3 Courses)
- Black Pearl® Sheet Membrane** (2 Plies)
- Ram 200/203** Protection Course (1 Ply)
- Black Pearl® Butyl Tape** Non-Hardening Tape Sealant
- KeeneSeal 100** Single Component Elastomeric Sealant



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CORNERS

Exterior and interior corners are installed with 2 plies of Black Pearl® Sheet Membrane, each cut to 10 inches wide. First, apply 20 mils of Black Pearl® Primer Adhesive to the substrate. Then, embed the first layer of Black Pearl® Sheet Membrane into the adhesive so that there are 4 inches on one side and 6 inches on the other side.

Apply a second coating of the Black Pearl® Primer Adhesive onto the surface of the first sheet at a rate of 20 mils. Use a squeegee to embed the second sheet into the coating, this time alternating so that there are 6 inches over the 4 inch side and 4 inches over the 6 inch side. Ensure that the sheet is squeegeed firmly into place without any holidays, voids or air pockets. At parapet walls, membrane assembly should extend full height and to the outside edge of the parapet unless there is a thru-wall flashing or reglet. Do not cover up any weep holes or thru-wall flashings.

DRAIN DETAILS

Carefully clean drain sumps of any process oils, rust or other contaminants with solvent and powered wire brush if required. Make sure the drain is set below or at the drainage plane to ensure there are no dams preventing the free flow of water.

Install a 39 inch square sheet of Black Pearl® Sheet Membrane into 20 mils of Black Pearl® Primer Adhesive before running the ply sheets over the field of the deck. Install all waterproofing sheets over the drain. Cut out a small circular opening with slits carefully cut back to partially conform to the drain bowl shape. Install a clamping ring and cut back interior slit sheets to within 1 to 2 inches from the inside of the clamping ring. Do not allow any laps in the clamping ring area. All drains require clamping rings.

PENETRATIONS

Cut a star pattern in the membrane slightly smaller than the outside diameter of the penetration. Coat the pipe/sleeve and surrounding base with 20 mils of Black Pearl® Primer Adhesive. Wrap the pipe/sleeve with Black Pearl® Sheet Membrane to achieve a minimum of a 2 inch lap. Cut 3 inch long fingers at the base of the wrap to extend out at the change in direction. The membrane should be installed a minimum of 8 inches above water level onto the pipe penetration and 8 inches beyond the base of the pipe penetration.

Apply a second coating of Black Pearl® Primer Adhesive onto the first layer of the sheet membrane at a rate of 20 mils, extending onto the pipe and substrate. Embed the second layer of Black Pearl® Sheet Membrane into the coating, ensuring that it is all set with no voids or bridging in the primer adhesive. If any of the Black Pearl® Sheet Membrane is above-grade and exposed to sunlight,

apply 20 mils of Black Pearl® Primer Adhesive and embed with Ram 306 bitumen modified granular cap sheet. Alternatively, surface can be covered with one coat of Ram Ultra-White® Primer, followed by two coats of Ram Ultra-White® Acrylic Latex Coating. In all cases, install stainless steel clamps at the top of flashings.

If detail of projections requires Polymethyl Methacrylate, please refer to Barrett's Ram Quick Flash PMMA technical data sheets and installation instructions.

JOINTS

Expansion joints, control joints, cold joints and pre-cast joints are all always reinforced.

Expansion Joints

For expansion joints up to 2 ½ inches, install a backer rod in the joint, leaving a ½ inch depth. Seal the opening with a layer of KeeneSeal 100, making sure that it is flush with the top of the deck. Once the sealant is fully cured, apply 20 mils of Black Pearl® Primer Adhesive 12 inches wide on both sides. Embed Black Pearl® Sheet Membrane into the coating, making sure that it is flush on both sides. Install the full system over the joint detail.

Expansion joints may take many different forms depending on manufacturers such as Watson-Bowman-Acme, Emseal, Construction Specialties, Migutan and other proprietary systems. Such assemblies may require job-specific details, which can be acquired by contacting your local Barrett representative.

Control Joints

Control joints are not required for the Black Pearl® system. If installed, however, they will need to be detailed. Apply 20 mils of Black Pearl® Primer Adhesive a minimum of 6 inches from each side of the control joint. Embed a 12 inch wide strip of Black Pearl® Sheet Membrane into the adhesive. If control joints are recessed, fill with Black Pearl® butyl tape before ply application. Install the full system over the joint detail.



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Cold Joints

For cold joints, apply 1 gal./45 square ft. of Black Pearl® Primer Adhesive. Embed one 6 inch wide ply of Black Pearl® Sheet Membrane centered over the cold joint, ensuring that it is well adhered without any holidays, fish mouths or air bubbles. Install the full system over the joint detail.

Precast Concrete

Precast concrete decks generally require a topping slab, as recommended by ASTM and most authorities. Consult Barrett for applications over precast decks without a topping slab. Precast joint treatment will vary with pre-stressed and post-stressed T's, hollow core decks, and site conditions. Any joints that are uneven must be filled with cement-rich mortar and finished to provide a smooth transition from one plank to the next.

The joints are then stripped in, first with a 9 inch sheet and followed by a 12 inch sheet of Black Pearl® Sheet Membrane, both set in Black Pearl® Primer Adhesive (1 gal./45 square ft., approximate), that extends 4 inches beyond any mortar transition required by uneven joints. In cases where the mortar transition is wider than 6 inches, the stripping width shall be increased to extend a minimum of 3 inches beyond the mortar. Ensure that all joints are fully reinforced before the field of the deck is waterproofed.

Change of Plane

Install 20 mils of the Black Pearl® Primer Adhesive into the horizontal-to-vertical junction a minimum of 7 inches onto the vertical and horizontal surface. Install the Black Pearl® Sheet Membrane a minimum of 6 inches onto the horizontal-to-vertical junction. Use these measurements to install a second ply. Install the complete system over the detailed area to a height that is 8" above water level, then terminate appropriately.

If detail of projections requires Polymethyl Methacrylate, please refer to Barrett's Ram Quick Flash PMMA technical data sheets and installation instructions and Membrane technical data sheets and installation instructions.

HORIZONTAL MEMBRANE APPLICATION

Horizontal Application

Apply 15-20 mils of Black Pearl® Primer Adhesive with a non-serrated straight edge squeegee at the rate of 45 sq. ft./gal. Allow it to dry to a tacky condition (approximately 20 minutes) before installing the Black Pearl® Sheet Membrane. Adhesive must extend 1 inch beyond the sheet.

NOTE: Apply only as much adhesive as can be covered with a sheet before the self-priming adhesive loses tack. The ratio to follow when installing our Black Pearl® system is one pail (5 gal) of Black Pearl® Primer Adhesive for every one roll (66 ft) of Black Pearl® Sheet Membrane.

Rub the sheet into the Black Pearl® Primer Adhesive with a stiff broom, squeegee, hand garden roller, or similar method.

Lap all edge seams a minimum of 3 inches. Stagger all end laps a minimum of 6 inches. Ensure that total contact with the substrate is maintained. Any membrane "bridging" is unacceptable and will come back to haunt you the installer. Coat the top of the first ply with 15-20 mils of Black Pearl® Primer Adhesive at the rate of 45 sq. ft./gal. Allow to dry to tack state. Smoothly embed the second ply, offsetting the side laps of the first ply by half a sheet's width. Any "Fishmouths" or wrinkles in the fabric need to be cut out and detailed.

If additional plies are specified, repeat the same procedure. With multiple ply application, check the adhesion of each ply by applying hand pressure to the sheet. If the sheet moves, delay the next ply application until the underlying sheet has set.

When all specified plies are installed, it is time to run the flood test (ASTM D-5957), or EVM survey (ASTM D-7877). If any leakage or voids are detected, repair the suspect area and retest until there is no leakage of any kind.

When testing is complete, uniformly coat the final sheet with 15-20 mils of Black Pearl® Primer Adhesive at the rate of 45 sq. ft./gal. If specified, install a Ram Protection Course directly into the top coat of Black Pearl® Primer Adhesive, starting at the low points. Install any additional overburden such as aeration mats, root barriers, concrete pavers, stone ballast, and similar components in accordance with plans and specifications.

VERTICAL MEMBRANE APPLICATION

Footer Detail

Install 20 mils of the Black Pearl® Primer Adhesive into the horizontal-to-vertical junction a minimum of 7 inches on the vertical surface and as far as possible onto the horizontal, leaving room for the termination bar. Install the Black Pearl® Sheet Membrane a minimum of 6 inches onto the horizontal-to-vertical junction. Repeat the previous step with 20 mils of Black Pearl® Primer Adhesive. Then install the complete system over the detailed area. All other detailing follows the installation guidelines for horizontal applications.

Vertical Surfaces

For applications on vertical surfaces, the Black Pearl® Sheet Membrane is to be applied in vertical strips and terminated at grade. Apply Black Pearl® Primer Adhesive at a rate of 45 sq. ft./gal. Pre-cut sheets of the Black Pearl® Sheet Membrane to workable lengths (typically about 5 to 7 feet). Allow Black Pearl® Primer Adhesive to dry to a tacky state, then embed the sheets smoothly into the coating, ensuring that they fully adhere to the vertical substrate. Side laps shall be maintained at 3 inches. The bottom of the sheet shall start at the corner of the



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Vertical Surfaces (cont.)

previously applied base flashing and run up the vertical substrate to termination of the sheet. Ensure that the top edge of the sheet is sealed tight to the vertical substrate using either Black Pearl® Primer-Adhesive or Ram Mastic. The succeeding plies on vertical substrates should overlap the lower application plies by 4 inches.

Multiple plies shall be installed in the same manner as the first ply with offset side laps. For multiple ply applications, check the adhesion set-up of each ply by applying hand pressure to the sheet and exerting sideways pressure. If the sheet moves, delay installation of the next ply until the underlying plies are firmly set.

Where required, apply 20 mils of Black Pearl® Primer Adhesive at a rate of 45 sq. ft./gal at the top edge of the topmost lift. Embed a sealing strip of Black Pearl® Sheet Membrane 8 to 9 inches wide, cut lengthwise from the sheet, directly into the coating with a handheld squeegee. For specified above-ground applications, install termination bars at the top of the membrane, fastened 8 inches on centers.

Inspection and approval of all waterproofing membrane installations shall occur before application of any protection, insulation board or other overburden. All warranted installations must be inspected and accepted by the Barrett Company before any overburden installation can occur. Protection courses for vertical substrates are recommended to be 1-inch thick and 1-pound minimum density expanded or extruded polystyrene, made or cut into 2 feet by 4 feet wide sheets and adhered with 20 mils of Black Pearl® Primer-Adhesive at a rate of 45 sq. ft./gal. All protection course insulation shall be laid up in brick pattern.

PRODUCT SAFETY INFORMATION

Black Pearl® waterproofing products offer no unusual health or safety risks for products of this nature. As with any roofing and waterproofing installation process, proper ventilation, clothing and eye protection is important.

For specific product information, contact the Barrett Company for a current Material Safety Data Sheets for any and all Barrett products. Obtain Material Safety Data Sheets from manufacturers whose materials may be used in conjunction with the Barrett waterproofing system. For installation safety information, consult the National Roofing Contractors Association (NRCA), the Occupational Safety and Health Administration (OSHA), and any other informed sources.

The user should not assume that all safety measures are indicated or that other measures may not be required.

	PRODUCT	PACKAGING
PACKAGING	Black Pearl® Primer Adhesive	Pail (5 Gal)
	Black Pearl® Sheet Membrane	Roll (53 lbs) 39.5" x 66'
	Ram 200 Protection Course	Roll (80 lbs) 39" x 33'
	Ram 203 Protection Course	Roll (90 lbs) 39" x 49'
	Black Pearl® Butyl Tape	Roll (case) 1" x 1" x 14.5' 1/8" x 2" x 20' 1/8" x 4" x 50'

NOTE: All product literature (i.e., technical & safety data sheets, application instructions, etc.) is currently available to download from the "Resource Library" on our website.

For questions regarding detailed specifications, application information, or any other general inquiries, please reach out to your local Barrett Technical Representative. You can also call us directly at (800) 647-0100 or email us at info@barrettroofs.com

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**BLACK PEARL® WATERPROOFING SYSTEM
INSTALLATION DEMO VIDEO**

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