SECTION 07 13 26

SELF-ADHERING SHEET WATERPROOFING (PRIMETAK MEMBRANE SYSTEM)

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This guide specification has been prepared by Kingfield Construction Products, in printed and electronic media, as an aid to specifiers in preparing written construction documents for self-adhering sheet membranes. Kingfield Primetak Membrane is a strong, pliable, self-adhesive sheet consisting of a 4-mil, cross-laminated, high-density, polyethylene (HDPE) backing bonded to 56 mils of rubberized asphalt waterproofing compound. Primetak Membrane is produced in both summer and winter grade formulations; use Primetak Membrane for temperatures 40°F (5ºC) and rising, use Primetak Membrane Winter for temperatures 25°F (-4ºC) to 65°F (18ºC).

Edit entire master document to suit project requirements. Modify or add items as necessary. Delete items which are not applicable. Words and sentences may contain choices to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance-, proprietary-, and/or descriptive-type specifications. Edit to avoid conflicting requirements. Editor notes to guide the specifier are included between lines of asterisks to assist in choices. Remove these editor notes before final printing of specification.

This guide specification is written around the Construction Specifications Institute (CSI) Section Format standards.

For specification assistance on specific product applications, please contact our offices or any of our local product representatives throughout the country.

Kingfield Construction Products reserves the right to modify these guide specifications at any time. Updates for this guide specification will be posted on the manufacturer's web site and/or in printed media as they occur. Manufacturer makes no expressed or implied warranties regarding content, errors, or omissions in the information presented.

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PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Application of self-adhering membrane system.

1.02 RELATED SECTIONS

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Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

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A. Section 03 30 00 – Cast-in-Place Concrete

B. Section 04 20 00 – Unit Masonry

C. Section 07 11 00 – Dampproofing

D. Section 07 60 00 – Flashing and Sheet Metal

E. Section 07 92 00 – Joint Sealants

F. Section 07 95 00 – Expansion Control

G. Section 33 46 00 – Subdrainage

1.03 REFERENCES

A. ASTM C 836 – Standard Specification for High Solids Content, Cold Liquid Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.

B. ASTM D 146 – Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Fabrics Used in Roofing and Waterproofing.

C. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.

D. ASTM D 570 – Standard Test Method for Water Absorption of Plastics.

E. ASTM D 882 – Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

F. ASTM D 903 – Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.

G. ASTM D 1000 – Standard Test Methods for Pressure-Sensitive, Adhesive-Coated Tapes used for Electrical and Electronic Applications.

H. ASTM D 1876 – Standard Test Method for Peel Resistance of Adhesives.

I. ASTM D 1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection – Section 7.6 Low Temperature Flexibility.

J. ASTM D 5385 – Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.

K. ASTM E 96 (Method B) – Standard Test Methods for Water Vapor Transmission of Materials.

L. ASTM E 154 – Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.

M. General Services Administration, Public Building Service: GSA-PBS-07115 Guide Specification for Elastomeric Waterproofing.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations.

B. Samples: Submit representative samples of the following for approval:
1. Sheet Membrane
2. Protection Board
3. Prefabricated Drainage Composite
4. Perimeter Drainage Composite

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Sheet Membrane must be manufactured by a company with a minimum of ten (10) years of experience in the production and sales of membrane waterproofing materials.

B. Applicator Qualifications: A firm having at least three (3) years of experience in applying these types of specified materials and specifically accepted in writing by the membrane system manufacturer.

C. Materials: For each type of material required to complete the work of this section, provide primary materials which are the products of a single manufacturer.

D. Pre-Application Conference: A pre-application conference shall be held to establish procedures and to review conditions, installation procedures and coordination with other related work. Meeting agenda shall include review of special details and flashing.

E. Manufacturer's Representative: Arrange to have trained representative of the manufacturer on site periodically to review installation procedures.

A.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Store materials in a clean, dry area in accordance with manufacturer's instructions.

C. Store adhesives at temperatures of 40^{o} F (5^{o}C) and above to facilitate handling.

D. Store membrane cartons on pallets.

E. Keep away from sparks and flames.

F. Completely cover when stored outside. Protect from rain.

G. Protect materials during handling and application to prevent damage or contamination.

H. Avoid use of products which contain tars, solvents, pitches, polysulfide polymers, or PVC materials that may come into contact with waterproofing membrane system.

1.07 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the membrane manufacturer. Do not apply membrane if the temperature is below 25ºF (-4°C) or to a damp, frost covered, or otherwise contaminated surface.

B. Proceed with installation only when substrate construction and preparation work is complete. If necessary, ensure that subsoil is approved by architect or geotechnical firm.

C. Warn personnel against breathing of vapors and contact with skin and eyes; wear appropriate protective clothing and respiratory equipment.

D. Keep flammable products away from spark or flame. Post “No Smoking” signs. Do not allow use of spark-producing equipment during application and until all vapors have dissipated.

E. Maintain work area in a neat and workmanlike condition. Remove empty cartons and rubbish from the site daily.

1.08 WARRANTY

A. Manufacturer warrants only that this product is free of defects, since many factors which affect the results obtained from this product are beyond our control; such as weather, workmanship, equipment utilized and prior condition of the substrate. We will replace, at no charge, proven defective product within twelve (12) months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided. An extended material or system warranty may be available upon request. Contact Kingfield Construction Products for further details.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Kingfield Construction Products, 20 N 4th St, Suite 300, Minneapolis, MN 55401; Phone: (612) 225-5167; Fax: (612) 225-5167; Email: info@kingfieldcp.com

2.02 SYSTEM MATERIALS

A. Self-adhesive Membrane Waterproofing: Shall be Kingfield Primetak Membrane, a 60-mil rubberized-asphalt membrane consisting of a high-density polyethylene film bonded to a layer of rubberized-asphalt meeting or exceeding the following requirements:

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
FILM COLOR		Black/White
MEMBRANE THICKNESS	ASTM D 1000	60 mils
TENSILE STRENGTH - MEMBRANE	ASTM D 412 Modified Die C	370 PSI
ELONGATION - ULTIMATE FAILURE OF RUBBERIZED ASPHALT	ASTM D 412	600%
TENSILE STRENGTH - FILM	ASTM D 882	7294 PSI
PERMEANCE	ASTM E 96 Method B	0.022 Perms
CRACK CYCLING	ASTM C 836 Tested @-15°F (-26°C)	No effect
PEEL ADHESION	ASTM D 903	17 lbs./in. width
LAP PEEL ADHESION	ASTM D 1876	8.0 lbs./in. width
LOW TEMPERATURE FLEXIBILITY (-15°F)	ASTM D 1970 Modified	Pass
PLIABILITY	ASTM D 146 180° bend over 1” mandrel at -25°F (-32°C)	No effect
PUNCTURE RESISTANCE - MEMBRANE	ASTM E 154	69 lbs.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.
EXPOSURE TO FUNGI IN SOIL	GSA-PBS 07115 (16 weeks)	No effect
WATER ABSORPTION	ASTM D 570	0.1%

2.03 SYSTEM ACCESSORIES

A. Surface Primer Roller-grade Adhesive:

1. Kingfield Primetak Liquid Adhesive: A quick drying, rubber-based, tacky adhesive which is specifically formulated to provide excellent adhesion.

3. Kingfield Primetak ST Liquid Adhesive: A low VOC polymer emulsion based adhesive which is specifically formulated to provide excellent adhesion.

B. Detail Tape:

1. Kingfield Primetak Detail Tape: Rubberized-asphalt waterproofing membrane laminated to polypropylene (PP) backing. The membrane is wound onto a disposable, silicone-treated release sheet to prevent the membrane from sticking onto itself while in the roll. Use Detail Tape for applications (1) inside/outside corners and penetrating items (2) for patching damaged areas.

C. Liquid Membrane:

1. Kingfield Primetak Liquid Membrane: A two-component, asphalt-modified, urethane.

D. Detail Sealant:

1. Kingfield Primetak Detail Sealant: A single-component, STPE, 100% solid moisture-cured, elastomeric sealant. It is an environmentally-friendly, non-isocyanate product that replaces silicone and urethane sealants. It is also a low VOC / HAPS-free, cold-applied, self-adhesive, elastomeric sealant.

F. Drainage Composite:

1. Kingfield K-Drain 300: Consists of a heavy-duty HDPE geonet drainage core with its ridges heat fused to a single layer of non-woven filter fabric. The filter fabric retains soil or sand particles as well as freshly placed concrete or grout, allowing filtered water to pass through the drainage core from the side of the filter fabric only.

2. Kingfield K-Drain 302: Consists of a heavy-duty HDPE geonet drainage core with its ridges heat fused to a of non-woven filter fabric on both sides of the geonet. The filter fabric retains soil or sand particles as well as freshly placed concrete or grout, allowing filtered water to pass through the drainage core from both sides.

3. Kingfield K-Drain 400: Consists of a moderate-duty impermeable PP sheet cuspated under heat and pressure to form a high flow dimpled drainage core, which is then bonded to a layer of nonwoven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

4. Kingfield K-Drain 400XL: Consists of an extra heavy-duty impermeable PP sheet cuspated under heat and pressure to form a high flow dimpled drainage core, which is then bonded to a heavy-duty layer of nonwoven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

5. Kingfield K-Drain 420: Consists of a moderate-duty impermeable PP sheet cuspated under heat and pressure to form a high flow dimpled drainage core, which is then bonded to a layer of nonwoven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core. A waterproofing membrane protective film in fused to the backside of the drainage core.

6. Kingfield K-Drain 420XL: Consists of an extra heavy-duty impermeable PP sheet cuspated under heat and pressure to form a high flow dimpled drainage core, which is then bonded to a heavy-duty layer of nonwoven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core. A waterproofing membrane protective film in fused to the backside of the drainage core.

7. Kingfield K-Drain 700: Consists of a heavy-duty impermeable polymeric sheet cuspated under heat and pressure to form a high flow dimpled drainage core. The

core is then bonded to a layer of non-woven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

8. Kingfield K-Drain 720: Consists of a heavy-duty impermeable polymeric sheet cuspated under heat and pressure to form a high flow dimpled drainage core. The core is then bonded to a layer of non-woven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core. A protection sheet is bonded to the backside of the drainage core proving protection for soft membrane waterproofing systems. Does not require the use of protection board over soft waterproofing membranes.

9. Kingfield K-Drain 740: Consists of a heavy-duty impermeable polymeric sheet cuspated under heat and pressure to form a high flow dimpled drainage core. The core is then bonded to a layer of 4oz per square yard non-woven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

10. Kingfield K-Drain 760: Consists of a heavy-duty impermeable polymeric sheet cuspated under heat and pressure to form a high flow dimpled drainage core. The core is then bonded to a layer of 6oz per square yard non-woven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

11. Kingfield K-Drain 780: Consists of a heavy-duty impermeable polymeric sheet cuspated under heat and pressure to form a high flow dimpled drainage core. The core is then bonded to a layer of 8oz per square yard non-woven filter fabric. The filter fabric retains soil or sand particles, as well as freshly placed concrete or grout, allowing filtered water to pass into the drainage core.

12. Kingfield K-Drain 990: Consists of a heavy-duty, impermeable PP sheet cuspated under heat and pressure forming a high flow dimpled drainage core. The core is chemically resistant and designed for applications where chemical exposure is possible. The drainage core is then bended to a layer of woven filter fabric, which retains soil, sand particles, as well as freshly placed concrete and grout, allowing for filtered water to pass into the core.

13. Kingfield K-Drain 1000: Consists of a heavy-duty HDPE geonet drainage core with its ridges heat fused to a single layer of non-woven filter fabric. The filter fabric retains soil or sand particles as well as freshly placed concrete or grout, allowing filtered water to pass through the drainage core from the side of the filter fabric only. The backside of the geonet is bonded to a layer of heavy duty grey fabric to provide cushion and abrasion protection for waterproofing systems requiring a protection layer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to receive self-adhering membrane. Notify the general contractor if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

A. Protect adjacent surfaces not designated to receive waterproofing.

B. Clean surfaces to receive waterproofing in accordance with manufacturer's instructions.

C. Do not apply waterproofing to surfaces unacceptable to manufacturer.

D. Concrete surfaces must be clean, smooth, and free of standing water.

E. Patch all holes and voids and smooth out any surface misalignments.

F. Cast-In-Place Concrete:

1. Normal weight structural concrete must be allowed to cure a minimum of seven (7) days. For lightweight structural concrete, the minimum cure time is fourteen (14)

days. All concrete surfaces must be dry to the touch before proceeding with the installation of the waterproofing system.

2. Fill all form tie holes. Finish flush with the surrounding surface.

3. Fill and repair cracks, single bug holes of 1/2-inch or greater, or cavities in concrete with a Portland cement grout or concrete. Single bug holes can also be filled with Kingfield Primetak Detail Sealant. Finish flush with the surrounding surface.

4. All cracks over 1/16-inch in width, and any moving cracks under 1/16-inch, shall be routed out to a minimum of 1/4-inch width and sealed using a high-performance polyurethane sealant. Allow adequate curing time per the manufacturer's directions. Upon cure install an 8-inch wide strip of Kingfield Primetak Membrane over the crack.

G. Masonry Surfaces:

1. Striking off joints flush with surface is also required. Concrete masonry walls or brick with deeply recessed mortar joints require a well-adhered parge coat before application of membrane.

3.03 APPLICATION

A. Priming:

1. Apply primer to a cleaned, dust free surface. Apply by roller or spray. Apply Kingfield Primetak Liquid Adhesive or Primetak ST Liquid Adhesive at a rate of 250-300 sq. ft. per gallon. Allow to dry per manufacturer's directions. Do not prime underneath Kingfield Primetak Detail Sealant or Primetak Liquid Membrane.

B. Membrane Installation - Vertical Surfaces:

1. All inside and outside corners shall be treated either with a 12-inch wide strip of Primetak Detail Tape centered along the vertical axis, or by applying a 90-mil thick application of Primetak Detail Sealant or Primetak Liquid Membrane.

2. Install a 3/4-inch, 45-degree angle cant (fillet) of Primetak Detail Sealant or Primetak Liquid Membrane at all changes in plane including inside corners to 6" vertically and horizontally beyond the cant (fillet). Do not use wood or fiber cant strips.

3. Waterproofing membrane should be applied vertically in sections of 8 feet in length or less. When vertical walls sections of more than 8-feet are to be waterproofed, apply Primetak Membrane in sections no longer than 8-feet, starting from the lower foundation base and rising to the top with the 6-inches overlap, shingling down on each ply of membrane.

4. Side laps should be 2-1/2 inches minimum and staggered end laps should be 6 inches minimum.

5. Use a hard roller or firmly press in the material as it is placed on the vertical surface.

6. At penetrations, posts, or projections, seal with Primetak Detail Sealant or Primetak Liquid Membrane 6 inches onto concrete and 3 inches onto penetrating item; then apply a second flashing sheet over the penetration extending a minimum of 6 inches from the detail. Then seal the cut edges of all terminations with Primetak Detail Sealant or Primetak Liquid Membrane.

7. Pipes which are wired together and touching cannot properly be waterproofed. Ensure all pipes have proper spacing. Recommended spacing for pipe penetrations is 2-inches. The minimum allowed is 1-inch.

8. All terminations of the membrane should receive a troweled bead of Primetak Detail Sealant to a flat surface approximately 1/8-inch thick by 3/4-inch wide.

9. Inadequately lapped seams and damaged areas should be patched with Primetak Detail Tape. Patched areas should extend at least 6 inches in each direction beyond the defect.

10. Fishmouths and/or severe wrinkles should be slit, flaps overlapped, and repaired.

C. Membrane Installation – Horizontal Surfaces:

1. All inside and outside corners shall be treated either with 12-inch strips of membrane or a 12-inch wide by 90-mil thick application of Primetak Detail Sealant or Primetak Liquid Membrane. The field membrane should be centered over the corner. All inside corners shall have a minimum 3/4-inch fillet of Primetak Detail Sealant, Primetak Liquid Membrane, or latex modified cement mortar.

2. Apply waterproofing membrane to the primed surface starting at the low point and working to the high point in a shingling technique for maximum drainage.

3. Side laps should be 2-1/2 inches minimum and staggered end laps should be 6-inches minimum. Refer to Kingfield slope and/or zero-slope applications for Balconies and proper lap adhesion requirements.

4. Firmly roll the entire membrane with a minimum 75 lb. linoleum roller immediately after application. This will insure excellent adhesion and minimize air pockets between the substrate and membrane.

5. At penetrations, posts, or projections, seal with Primetak Detail Sealant or Primetak Liquid Membrane 6-inches onto concrete and 3-inches onto penetrating item; then apply a second flashing sheet over the penetration extending a minimum of 6 inches from the detail. All the cut edges and terminations must be sealed with Primetak Detail Sealant or Primetak Liquid Membrane.

6. Drains: apply Primetak Detail Sealant or Primetak Liquid Membrane around the inside edge of the drain out onto substrate at least 6 inches, then overlap with Primetak Membrane a minimum of 6 inches. Seal all permanently-exposed cut edge terminations with Primetak Detail Sealant or Primetak Liquid Membrane.

7. Membrane turned up on walls shall be terminated. Firmly press the terminated edge with a hand roller, and protect with a troweled bead of Primetak Detail Sealant or Primetak Liquid Membrane.

8. Inadequately lapped seams and damaged areas should be patched with additional Primetak Membrane. Extend patch at least 6 inches beyond the defect.

9. Slit all "fishmouths," overlap the pieces, place patch over area, and roll in place. Air blisters are typically caused by exposure and heat; this condition will subside as the sun no longer heats the membrane. This condition does not need attention unless blisters are large or excessive, softball size, and do not dissipate. Puncture large air blisters, expel the air, prime and cover with patch. Extend the patch material at a minimum of 6 inches in all directions beyond the repair area, then seal the patch edges with Primetak Detail Sealant or Primetak Liquid Membrane.

10. Upon completion of horizontal membrane application, Kingfield recommends a flood test or appropriate leak detection method be completed on the surface with 2 inches of water for 24 hours. Check with the structural engineer to make sure the deck structure will withstand the weight of the flood test. Mark any leak areas found during flood test and make repairs.

D. Protection and Drainage Course:

1. Apply protection board and/or drainage composite and perimeter drainage composite in accordance with manufacturer's written directions.

END OF SECTION