



## NOVATAK MEMBRANE

PRE-APPLIED BLINDSIDE & UNDERSLAB WATERPROOFING

### NOVATAK PRE-APPLIED IONIC BONDING WATERPROOFING SYSTEM

20% Recycled Butyl – Ionic Bond to Concrete – Cold, Heat, UV, and Weather Resistant



#### APPLICATIONS

Foundation Blindside (Single-Sided Forms)  
Pre-Applied Foundation Walls  
Pre-Applied Base Slab  
Shotcrete Structural Walls  
Horizontal Split-Slab  
Elevator Pits

#### KEY FEATURES

**Pre-Applied Blindside Waterproofing – Reduced excavation costs**

Fast and Easy Installation – No priming, heat welding, or challenging detailing

**Fully Adhered Seams – Laps are watertight, preventing water ingress at the seams**

Fully Adhered System – Eliminates lateral water migration behind the waterproofing membrane

**Chemically Resistant – High resistance to acids, alkalis, gases, and vapors and to most soil contaminants**

Jobsite Durability – Immediately trafficable butyl membrane is cold, heat, ponding water, puncture, and UV-resistant

**Ionic Bond to Concrete – True chemical bonding does not rely on a pressure sensitive adhesive or geo-textile mechanical bond**

Environmentally Resistant – Membrane does not require compaction or hydration, works in fresh & salt water, and will not wash out

**Foundation Wall Shotcrete Waterproofing Membrane – Utilizing Kingfield's Reinforced Seam System for blowout protection, Novatak completely bonds to structural shotcrete without requiring injection ports**

#### DESCRIPTION

Novatak Sheet is an adhesive-free, highly durable, non-vulcanized, 20+% reclaimed butyl rubber membrane comprised of a chemistry that creates a tenacious ionic chemical bond to poured-in-place concrete, instead of a mechanical fleece- or adhesive-concrete bond. Novatak is developed to withstand prolonged environmental exposure and follow on trades prior to the application of concrete. Novatak, unlike membranes that utilize a pressure sensitive adhesive or non-woven fleece, creates an ionic chemical bond to concrete that is 40-75% stronger than conventional pre-applied sheet membranes.

Positively charged metal oxide ions within cement react with a negatively charged active carboxyl groupings within the Novatak membrane to create an exceptionally strong ionic bond as the concrete cures.

Using Kingfield's ionically bonding positive-side lap seam tape or double sided butyl sandwich seam tape, lateral water migration and water ingress around the building envelope is virtually eliminated by the continuously adhered membrane.

#### APPLICATIONS

##### SHOTCRETE FOUNDATION WALLS

Utilizing a Novatak underslab system and continuing that up the foundation walls, Novatak creates a joint-free waterproofing membrane around the entire Slab-Shotcrete Wall system. Due to Novatak's tenacious ionic bond, strength, and the utilization of Kingfield's Novatak Reinforced Seam System to prevent blowouts, Novatak is perfect for foundation Shotcrete applications where speed, visual performance, and waterproofing confidence are concerned. Without the need for post-application injection ports, Novatak allows for the negative surface of the Shotcrete walls to be fully exposed.

**INFO@KINGFIELDCP.COM – 612.225.5167 – WWW.KINGFIELDCP.COM**

**KINGFIELD CONSTRUCTION PRODUCTS – 20 NORTH 4TH STREET, SUITE 300, MINNEAPOLIS, MINNESOTA 55401**

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| Property                              | Kingfield Novatak                              | Test Method           |
|---------------------------------------|--|-----------------------|
| Membrane Thickness                    | .060 in. (1.5 mm)                              | ASTM D3767            |
| Lateral Water Migration Resistance    | Pass at 231 ft HH (71 m)                       | ASTM D5385, modified1 |
| Low Temperature Flexibility           | Unaffected at -20°F (-29°C)                    | ASTM D1970            |
| Resistance to Hydrostatic Head        | 231 ft (71 m)                                  | ASTM D5385, modified2 |
| Maximum Load MD                       | 49.3 lbf/in                                    | ASTM D1970            |
| Maximum Load XMD                      | 94.8 lbf/in                                    | ASTM D1970            |
| Tensile Strength, Film                | 1538 psi (10.60 MPa)                           | ASTM D412             |
| Crack Cycling at -9.4 F, 100 Cycles   | Unaffected, Pass                               | ASTM C836 note 4      |
| Puncture Resistance                   | 151 lbs (1.1 in. deflection)                   | ASTM E154             |
| Peel Adhesion to                      | 7.2 lbf/in. (1,260 N/m)                        | ASTM D903, modified5  |
| Lap Peel Adhesion at 72               | 9.3 lbf/in. (1,628 N/m)                        | ASTM D1876, modified6 |
| Lap Peel Adhesion at 40               | 9.3 lbf/in. (1,628 N/m)                        | ASTM D1876, modified6 |
| Permeance to Water Vapor Transmission | 0.05 perms (2.8 ng/(Pa x s x m <sup>2</sup> )) | ASTM E96, method B    |

  

|                             | Novatak Sheet  | Novatak Tape                                   | QMQ Dual Bond                            | Nail Stopper   |
|-----------------------------|--|--|--|--|
| <b>Description</b>          | Ionic Bonding non-vulcanized butyl membrane  | Ionic Bonding single-sided butyl adhesive tape | Double-sided butyl adhesive seaming tape | Ionic Bonding adhesive butyl coated stainless steel washer |
| <b>Thickness</b>            | 0.060 in. (1.5 mm)   | 0.060 in. (1.5 mm)                             | 0.040 in. (1.0 mm)                       | 0.24 in. (6 mm)  |
| <b>Dimensions</b>           | 3.6 ft. x 32.8 ft. (1.1 m x 10 m)  | 3.93 in. x 32.8 ft (0.1 m x 10 m)              | 3.93 in. x 19.69 ft. (0.1 m x 6 m)       | 2.36 in. x 1.97 in. (60 mm x 50 mm)                        |
| <b>Surface Area</b>         | 118 ft <sup>2</sup> (11 m <sup>2</sup> )   | -  | -  | -  |
| <b>Applied Area</b>         | 105 ft <sup>2</sup> (9.75 m <sup>2</sup> )   | -  | -  | -  |
| <b>Weight</b>               | 57.3 lb. (26 kg)   | 6.4 lb. (2.9 kg)                               | 30.9 lb. (14 kg)                         | 57.3 lb. (26 kg)   |
| <b>Packaging</b>            | Carton   | Carton   | Carton                                   | Carton   |
| <b>Units/Carton</b>         | 1 unit/carton  | 4 units/carton                                 | 9 units/carton                           | 200 units/carton   |
| <b>Units/Pallet</b>         | 30 units/pallet  | 160 units/pallet                               | 405 units/pallet                         | 45 cartons/pallet  |
| <b>Shelf Life</b>           | Indefinite   | Indefinite                                     | Indefinite                               | Indefinite   |
| <b>Kingfield Waterstops</b> | Bentotak AB, Bentotak DS, or Sepa Seal SH-100 for non-moving construction joints, penetrations, and H-beam penetrations (See associated data sheets for more information at kingfieldcp.com) |  |  |  |

## VERTICAL STRUCTURAL WALL

Novatak is applied vertically in blindside applications where the waterproofing membrane is pre-applied. This application method is typical for zero lot line and cut and cover applications without over excavation of the box structure. Novatak is applied against the support of excavation, i.e. sheet pile, soldier pile & lagging, secant/DSM wall. Concrete is then cast directly against the applied Novatak membrane. The ionic bond activates to continuously and integrally bond the Novatak waterproofing membrane to the cast-in-place concrete. The vertical Novatak waterproofing membrane can transition to the horizontal slab waterproofing membrane to create a continuous, fully adhered system.

## HORIZONTAL BASE SLAB

Novatak is applied as an underslab waterproofing membrane in horizontal applications on top of compacted earth, crushed compacted stone, and concrete raft/mud slab substrates. A structural concrete base slab is cast directly on top of the applied Novatak membrane. The ionic bond activates to continuously and integrally bond the Novatak waterproofing membrane to the cast-in-place concrete. The horizontal Novatak waterproofing membrane can transition to the vertical wall waterproofing membrane to create a continuous, fully adhered waterproofing membrane.

## SUBSTRATE PREPARATION AND INSTALLATION

The following are general installation guidelines. For the most up to date installation guidelines and details, please access the technical resources section of the Kingfield website (kingfieldcp.com). Additional technical information can be requested from a technical representative by calling Kingfield (612-225-5167).

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**HORIZONTAL BASE SLAB SUBSTRATE PREPARATION**

Ensure that the substrate is relatively smooth and flat with no protrusions, discontinuity, or irregularities that would inhibit the placement of the membrane. All surface debris that would impede placement must be removed, such as large rocks, concrete fragments, sticks, roots, etc. Avoid sloped or curved substrates. The substrate may be wet but standing water must be removed. When applied over earth or gravel sub-bases, ensure proper compaction prior to membrane placement to avoid displacement. Kingfield recommends that a filter fabric layer be placed over crushed compacted stone substrates.

**VERTICAL WALL SUBSTRATE PREPARATION**

The substrate must have the proper structural integrity to support the mechanical fastening and placement of the membrane. Ensure that the substrate is relatively smooth and flat with no protrusions, discontinuity, or irregularities that would inhibit the placement of the membrane. For application against secant, DSM, or slurry wall earth retention systems, purge all rock pockets that would create negative displacement of the membrane during concrete pour. Enquire with Kingfield technical support for a listing of approved substrates for application. Ensure that the support of excavation system does not allow the rupture of the installed waterproofing membrane during concrete pour due to the negative side displacement of the concrete against the positive face of the support of excavation.

**MEMBRANE INSTALLATION**

*There are no environmental limitations for the installation of the membrane. However, ensure that proper adhesion of the specified seaming tape – Novatak Tape or QMQ Dual Bond – can be achieved. Excessive cold, rain, or snow may prevent proper adhesion. Use a heavy roller to roll all seams. Please consult the specific seaming tape data sheet for additional information.*

**HORIZONTAL BASE SLAB INSTALLATION**

Roll the membrane out onto the substrate with the white release film side facing up towards the installer. Stagger end laps to prevent a continuous end seam throughout adjacent sheets and excessive buildup of seaming tape layers. Position adjacent sheets up to the manufacturer marked selvedge line to overlap the previously positioned sheet by 4" (100mm).

**Novatak Tape** – To achieve proper adhesion of the Novatak Tape ionic bonding single-sided seaming tape, ensure that the top of both sheets at the seam are dry, clean, and free from defect. Line up the center of the seam with the plumb line down the center of the Novatak Tape and pull the release liner as the tape is rolled out along the seam. Ensure that the tape covers the seam equally on both sides of the lap (2"x2"). Roll seam firmly with a heavy metal roller to ensure sheets are fully and continuously adhered together without creases or fishmouths. Repeat the same seaming process for the end laps.

**QMQ Dual Bond** – To achieve proper adhesion of the QMQ Dual Bond seaming tape, ensure that both sides of the selvedge seam are dry, clean, and free from defect. Remove release liner from one side of QMQ Dual Bond seaming tape while adhering it in place along the selvedge edge of the under sheet, ensuring white release film is peeled back 4" to expose membrane selvedge. Accurately position lapped sheet before pulling release film from the exposed side of the QMQ Dual Bond seaming tape. Remove release liner from QMQ Dual Bond seaming tape while adhering to the adjacent lap sheet. Roll seam firmly with a heavy metal roller to ensure sheets are fully and continuously adhered together without creases or fishmouths. Repeat the same seaming process for the end laps.

**VERTICAL WALL INSTALLATION**

Membrane should be installed vertically on to substrate with the plastic white release film facing towards the installer. Remove the plastic white release film from the Novatak sheet. Mechanically fasten the membrane using wide, flathead fasteners suitable for the substrate. Fasten through Kingfield Novatak Nail Stopper adhesive stainless steel ionic bonding patches to ensure a leak-free gasket seal at each nail location; ensure release film is removed from both sides of Nail Stopper patch and from Novatak membrane. Stagger end laps to prevent a continuous end seam throughout adjacent sheets. Position adjacent sheets to overlap the previously positioned sheet by 4" along the manufacturer marked seam line.

**Fasten any Form Tie support nails/screws through a Novatak Nail Stopper patch, or apply a 1-inch wide circular bead of Kingfield's Sepa Seal 5000 butyl detailing sealant at the location of fastening and cover with Novatak Tape to create a self-sealing butyl gasket.**

**Reinforced Seam System** – Utilize both QMQ Dual Bond sandwich seams covered with Novatak Tape positive lap seam systems to reduce chance for seam blowout during Shotcrete applications. After first seaming with QMQ Dual Bond, fasten the membrane along the length of the seam with wide, flathead fasteners. Cover fasteners heads with Novatak Tape.

**Novatak Tape** – To achieve proper adhesion of the Novatak Tape ionic bonding single-sided seaming tape, ensure that the top of both sheets at the seam are dry, clean, and free from defect. Line up the center of the seam with the plumb line down the center of the Novatak Tape and pull the release liner as the tape is rolled out along the seam. Ensure that the tape covers the seam equally on both sides of the lap (2"x2"). Roll seam firmly with a heavy metal roller to ensure sheets are continuously adhered together without creases or fishmouths. Repeat the same seaming process for the end laps.

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**QMQ Dual Bond** – To achieve proper adhesion of the QMQ Dual Bond seaming tape, ensure that both sides of the selvage seam are dry, clean, and free from defect. Remove release liner from one side of QMQ Dual Bond seaming tape while adhering it in place along the selvage edge of the under sheet, ensuring white release film is peeled back 4” to expose membrane selvage. Accurately position lapped sheet before pulling release film from the exposed side of the QMQ Dual Bond seaming tape. Remove release liner from QMQ Dual Bond seaming tape while adhering to the adjacent lap sheet. Roll seam firmly with a heavy metal roller to ensure sheets are fully and continuously adhered together without creases or fishmouths. Repeat the same seaming process for the end laps.

#### REBAR PLACEMENT FOR VERTICAL AND HORIZONTAL APPLICATIONS

CONCRETE OR BRICK DOBIES AND PAVERS ARE THE ONLY APPROVED STEEL REINFORCEMENT SUPPORT OVER NOVATAK MEMBRANES.

Ensure that the support does not puncture the membrane and ensure that they are sufficiently spaced to distribute the load of the installed reinforcement to reduce the risk of the support puncturing the membrane when fully loaded. Do not point load the membrane with reinforcement support.

#### DETAILING AND PENETRATIONS

Ensure that all detailed areas and penetrations are treated properly and according to manufacturer details and specifications. For the most up to date standard details please visit the Kingfield website at [Kingfieldcp.com](http://Kingfieldcp.com).

#### CONCRETE PLACEMENT

Novatak membranes are not recommended for twin-sided wall forming systems.

Protect membrane prior to concrete placement from follow on trade activities including welding and reinforcement placement. Place protective sheeting on top of membrane for heavily trafficked areas or areas where damage is likely to occur. A 3” non-reinforced protection screed is recommended for superior protection. Verify that all plastic release liner has been removed from the membrane. Inspect membrane for any damage, tears, or punctures and repair any punctures under 1-inch in diameter with a Novatak Tape patch, and use Novatak Tape along any slices in the membrane. For larger damage to the membrane, cut a fresh cover patch of Novatak Membrane and seal edges with Novatak Tape or QMQ Dual Bond.

Follow Novatak repair guidelines for all damaged areas prior to placement of concrete.

Place concrete according to current ACI standards taking care not to damage the membrane during the consolidation process. Do not use sharp edge tools which may puncture the membrane during the concrete pour.

#### REMOVAL OF FORMWORK

Novatak membranes can be applied to removable formwork, such as slab perimeters, elevator and lift pits, etc. Kingfield recommends that the Novatak is fastened with either staples or easily extracted nails or screws. Fasten Novatak to the formwork by lapping 6 inches of excess sheet over the forms and fastening on the top edge or along the rear of the form.

**Initial Adhesion** – As a guideline, structural concrete poured against Novatak adhered to removable formwork typically will require a cure time of approximately 5-7 days at an average ambient temperature of 40°F (5°C), or 3-5 days at an average ambient temperature of 70°F (21°C) to achieve a complete ionic bond to the concrete.

**Cure Accelerators** – Kingfield does not recommend the use of cure/set accelerating admixtures, as they may reduce the ionic bonding potential of the concrete. If cure/set accelerating admixtures are used, it is recommended that the concrete is tested against a sample of Novatak prior to stripping formwork.

**Stripping formwork prematurely may result in permanent loss of bond between the membrane and concrete, resulting in potential water ingress and spalling of the concrete as the membrane failed to get full adhesion due to operator error, resulting in a potential void of warranty. Contact Kingfield immediately if the above situation occurs.**

#### QUALITY ASSURANCE PROGRAM

Kingfield offers a comprehensive quality assurance program for Novatak systems installed by manufacturer approved applicators including third party inspection services. Comprehensive system warranties and performance guarantees are provided by Kingfield to meet the specific requirements of specified applications. For more information consult with a Kingfield representative (+1-612-225-5167) or review the website at [Kingfieldcp.com](http://Kingfieldcp.com).

#### HEALTH AND SAFETY

Refer to SDS for complete health and safety information.

**COMPLETE ROLLS OF NOVATAK MEMBRANE SHOULD BE LIFTED/CARRIED BY A MINIMUM OF TWO PERSONS**

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