

Henry[®] Blueskin PreSeal[®] Pre-Applied Waterproofing System Installation Manual



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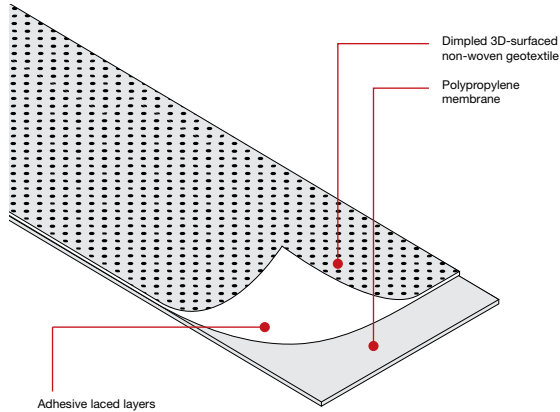
For more than half a century, Max Frank has been synonymous with reliable solutions to create watertight concrete structures. To bring the Blueskin PreSeal System to North America, Henry Company partnered with Max Frank – an integrated building technology supplier based in Germany that develops, produces and distributes a wide range of proven products for concrete and reinforced concrete construction.

1. Introduction

This installation manual includes materials and installation procedures for the Henry® Blueskin PreSeal™ pre-applied waterproofing system, using either Blueskin PreSeal 320 or Blueskin PreSeal 435. The Blueskin PreSeal system is designed as a pre-applied waterproofing system that meets or exceeds industry established testing standards as a fully bonded waterproofing system.

1.01 Product description

Blueskin PreSeal 320 and Blueskin PreSeal 435 are pre-applied, fully and permanently bonded, composite sheet membranes for waterproof construction. The membrane is designed to adhere directly into wet, curing concrete, via an integral mechanical and adhesive attachment, to form a permanent barrier against water and vapor. Blueskin PreSeal membranes consist of a polypropylene membrane laminated to a chemically enhanced non-woven geotextile fleece with dimpled surfaces. Blueskin PreSeal membranes are pre-applied prior to rebar installation and concrete placement.



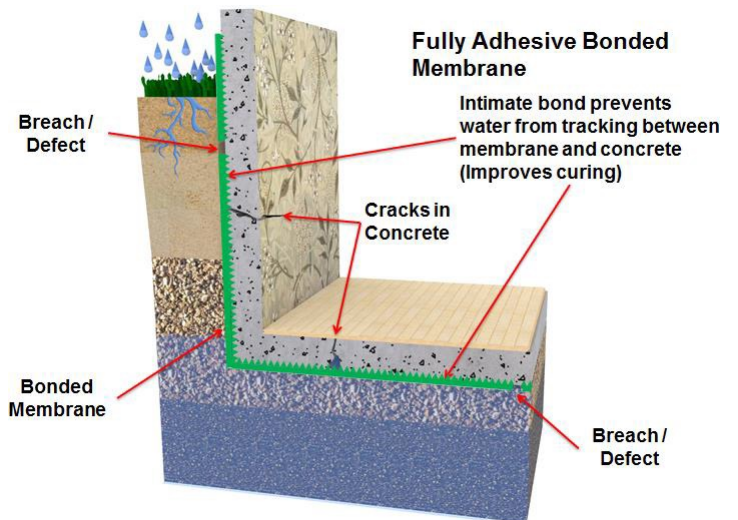
Blueskin PreSeal membranes mechanically and adhesively bond to concrete, providing continuous waterproofing on the exterior of the building. The Blueskin PreSeal membrane is applied to acceptable substrates then cast in place concrete is applied for underslab and property line construction.

1.02 Product use

Designed for waterproofing of below ground structural concrete surfaces that are subject to continuous or intermittent hydrostatic pressure, the Blueskin PreSeal system provides protection of the concrete from water and most chemicals, as well as against radon gas permeation through the concrete. The Blueskin PreSeal membrane can be used in underslab applications and is immediately ready for placement of reinforcing steel. The Blueskin PreSeal membrane can be applied to permanent formwork including but not limited to lagging, sheet piling or caissons.

Limitations

The Blueskin PreSeal membrane should only be installed after the substrate is properly prepared (see Section 3.04) and is suitable to receive the waterproofing system. Concrete work should use conventional or single sided cast-in-place forms that produce a smooth surface. Do not use stay-in place concrete forming; use removable forming products only. Blueskin PreSeal membranes are designed for below-grade waterproofing applications where the product is properly covered in concrete. Blueskin PreSeal membranes should not be installed in standing water or over ice. Blueskin PreSeal membranes are not designed to waterproof expansion joints. Consult your Henry Company Representative for special installation guidelines that apply to shotcrete construction.



2. Blueskin PreSeal Waterproofing System

Henry defines a warranted waterproofing system as the installation of a primary waterproof membrane, such as a Blueskin PreSeal membrane, and authorized auxiliary components. For this reason, Blueskin PreSeal membranes are designed to be installed in conjunction with Henry authorized auxiliary products to create a complete waterproofing system that manages long-term protection of commercial buildings against water ingress.

2.01 Warranties

Warranty options	Warranty duration	Warranty description
Product warranty	Five (5) year	Products warranted individually
Henry BlueShield™ Pre-Applied Warranty	Ten (10) years	Blueskin PreSeal 320 and Blueskin PreSeal 435 along with authorized Henry auxiliary products warranted collectively

2.02 Blueskin PreSeal system components

System components	Product name	Product description
Primary product	Blueskin PreSeal Pre-Applied Waterproofing Membrane	Waterproof membrane
Auxiliary materials	Henry Blueskin PreSeal Tape 50S	Attachment Tape
	Henry Blueskin PreSeal Tape 120V	Detailing and seaming tape
	Henry 925 BES Sealant	Building envelope sealant & mastic
	MiraSTOP™ SS	Building envelope sealant & mastic
	Henry Blueskin® WP 200 Self Adhered Waterproofing Membrane	Self-adhered flashing
	Henry Synko-Flex® Waterstop	Concrete Joint Waterstop
	MiraSTOP™ BW	Concrete Joint Waterstop
	MiraSTOP™ IW	Injectable Concrete Joint Waterstop
	MiraSTOP NBW	Concrete Joint Waterstop
	Henry Drain Board	Prefabricated Drainage Composite
	Tie Back Covers	Prefabricated Tie Back Covers

3. Installation considerations

Consider your installation prior to application: sequencing of materials may be dependent on job progress, product or crew availability. Only products offered through Henry Company and installed as referenced in this installation manual qualify for warranty.

3.01 Safety

First and foremost, job site safety is of prime consideration. Coordinate in advance with job site supervision and follow all site-specific and OSHA safety requirements and recommendations. Be aware of your surroundings at all times. If in doubt, stop all work, remove yourself from immediate danger and speak with your job site supervisor or safety official before proceeding.

3.02 Delivery, storage and handling

For product-specific delivery, storage and handling instructions, refer to relevant product Technical Data Sheets (TDS) and Safety Data Sheets (SDS) available at www.henry.com.

- Materials should be delivered to the job site undamaged and in original packaging indicating the manufacturer and product name.
- Store materials in original packaging, in accordance with relevant product TDS, and conform to applicable safety regulatory agencies.
- Keep solvent-based products, such as adhesives and primers, away from open flame or excessive heat.
- Provide adequate ventilation for protection from hazardous fumes.

3.03 Site conditions

Environmental requirements

For product-specific characteristics, limitations and suitable weather conditions, refer to relevant product TDS and material SDS available at www.henry.com.

- Do not install during rain or inclement weather. Do not install materials over frost-covered substrates or surfaces that are wet to touch.
- If applicable, installer should verify compliance with all federal, state and local regulations controlling use of volatile organic compounds (VOCs) on the job site.

3.04 Substrate conditions and preparation

Substrate conditions

For hydrostatic conditions, the Blueskin PreSeal membrane should be installed under footings and grade beams as shown in Figures 3.1, 3.2 and 3.3. Prior to installing the Blueskin PreSeal membrane, the substrate must be properly prepared. Complete all required elevator pit (fig. 3.4), sump pit, grade beam and piling work prior to installing the Blueskin® PreSeal membrane under main slab area. These areas must be correctly tied into the underslab waterproofing to form a monolithic seal.

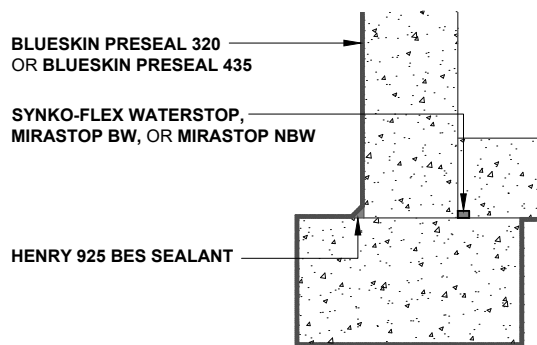


Fig. 3.1

SLAB ON FOOTING
HYDROSTATIC

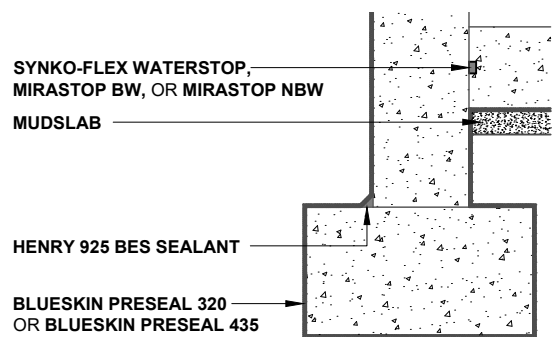


Fig. 3.2

RAISED SLAB WITH MUDSLAB
HYDROSTATIC

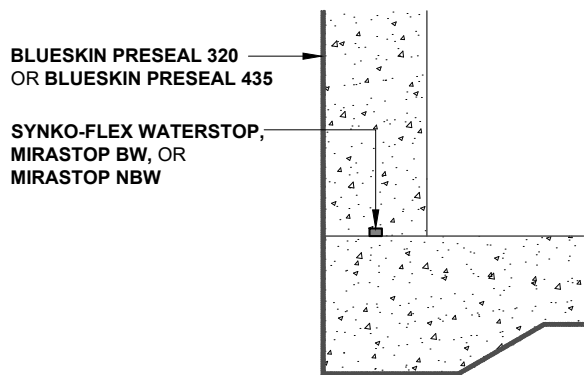


Fig. 3.3

FLUSH SLAB AT BACKFILLED WALL
HYDROSTATIC

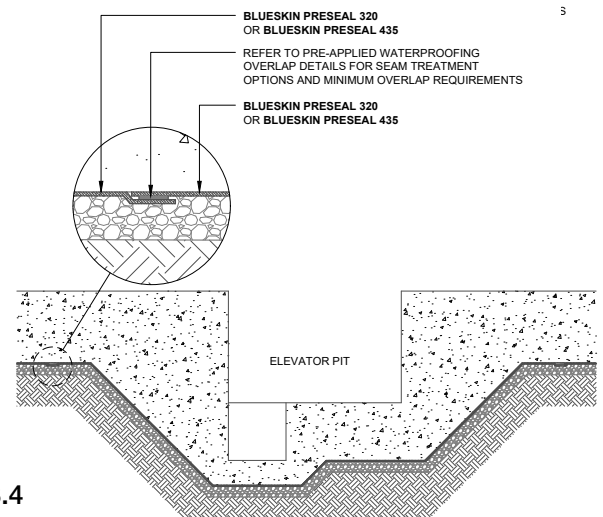


Fig. 3.4

Appropriate substrate conditions are critical to obtain proper adhesion; be sure surfaces are ready for product installation and are in accordance with this installation manual.

- Substrate must be continuous and secure. Substrates must be sound and solid to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 0.5 in. (13 mm). Substrates must be free of loose aggregate and sharp protrusions. Surface does not need to be dry, but standing water must be removed. Applications may require the use of Henry Drain Board or plywood to provide a suitable substrate to the soil retention system.
- In underslab applications, Henry Blueskin PreSeal can be installed on mudslabs, compacted earth or compacted stone. When installing Blueskin PreSeal over compacted stone or earth, the substrate should be compacted to a minimum 85% modified proctor or 95% standard proctor.

4. Installation

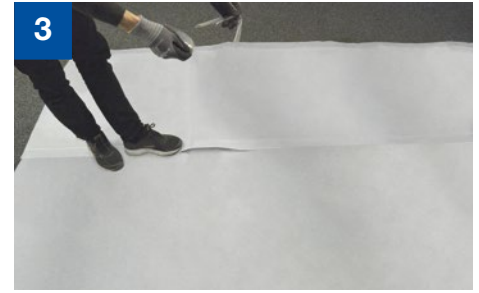
4.01 Underslab/Horizontal application



1. Apply the Blueskin PreSeal membrane with the smooth polypropylene film side facing the prepared substrate and the textured geotextile side facing the concrete pour.



2. Overlap succeeding sheets a minimum of 2 in. (50mm), remove release liner from selvedge tape side.

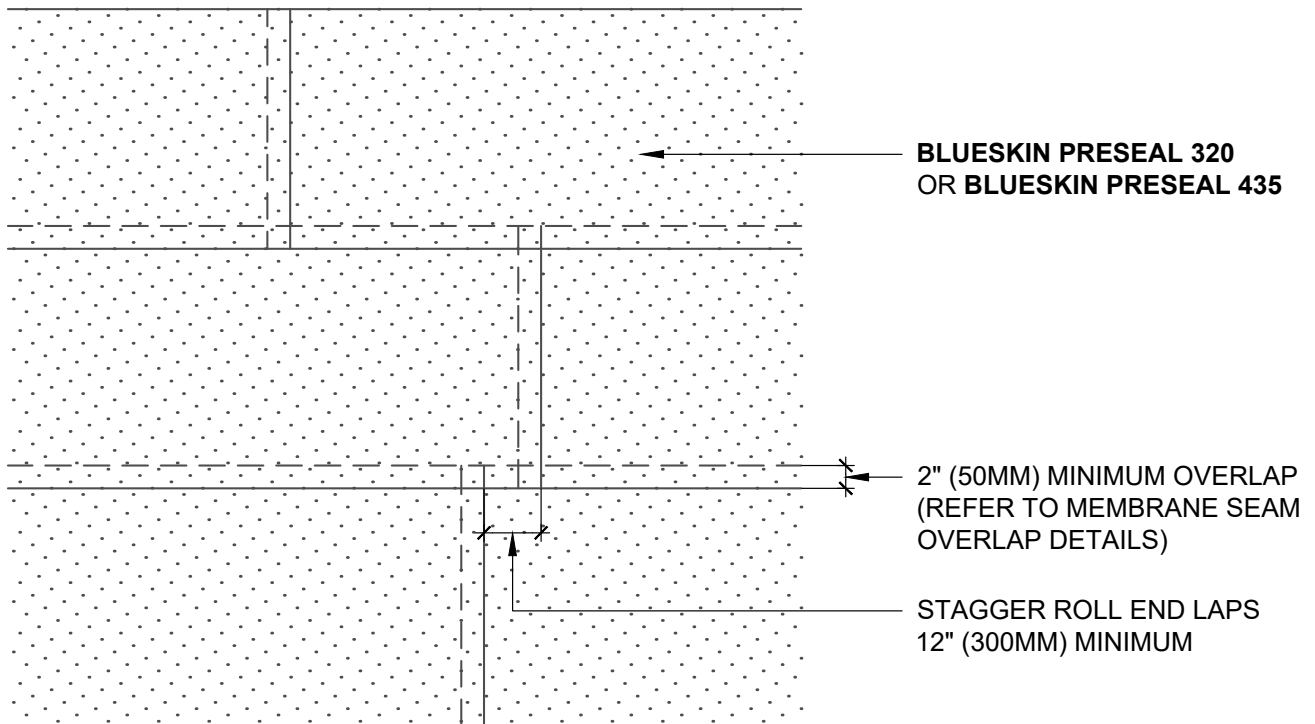


3. Where selvedge tape doesn't exist, overlap sheet a minimum of 2 in. (50mm) and use Blueskin PreSeal Tape 120V. For cut membrane (without the selvedge), this is applicable.



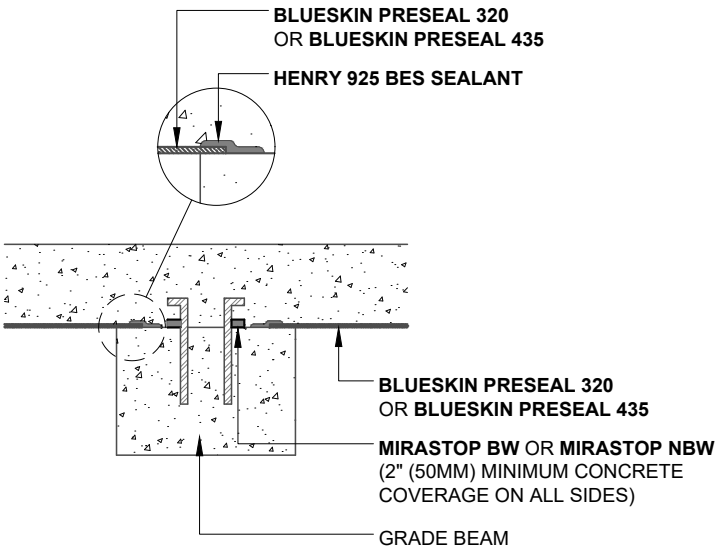
4. Roll all overlaps firmly to insure adhesion of the tape and geotextile.

For end laps, please follow the end lap detail.

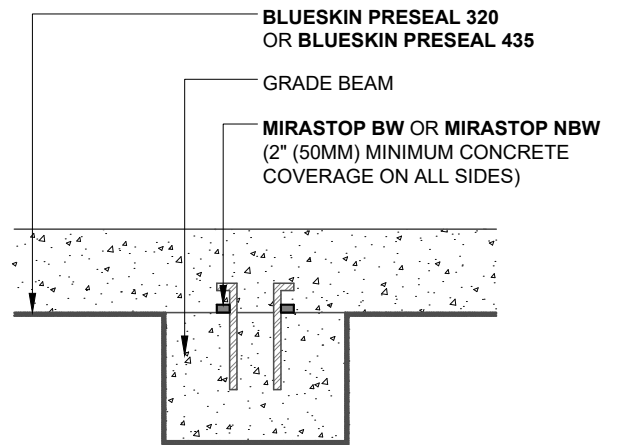


Steps for underslab/horizontal application – grade beam

NOTE: Drawings are for illustration purposes only. For most up to date details, please use www.henry.com.

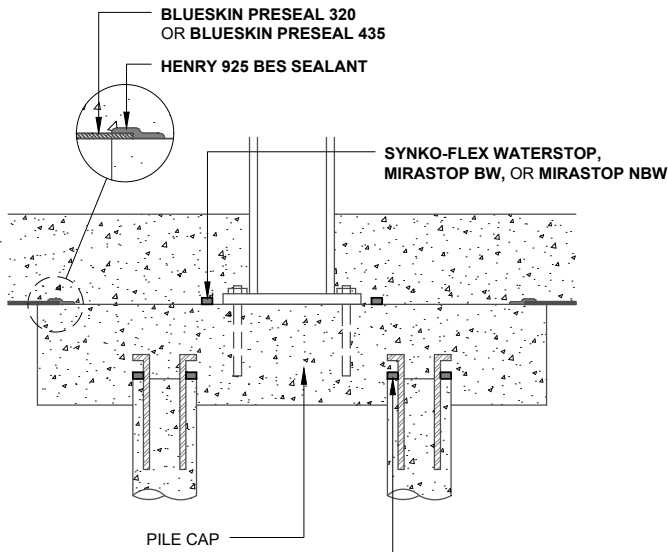


GRADE BEAM
NON-HYDROSTATIC

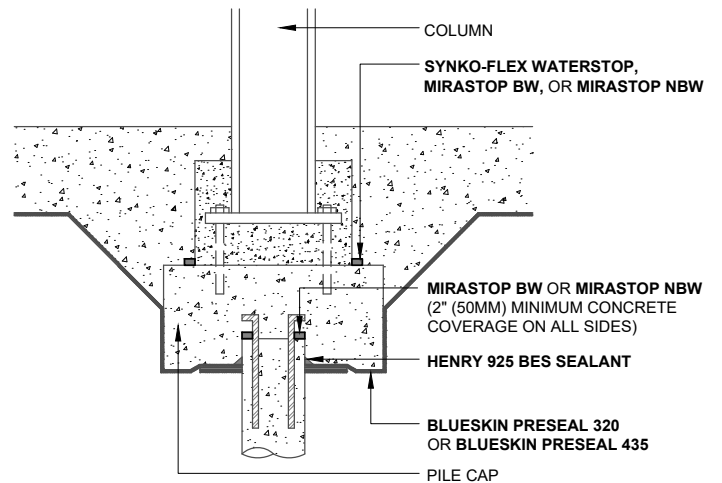


GRADE BEAM
HYDROSTATIC

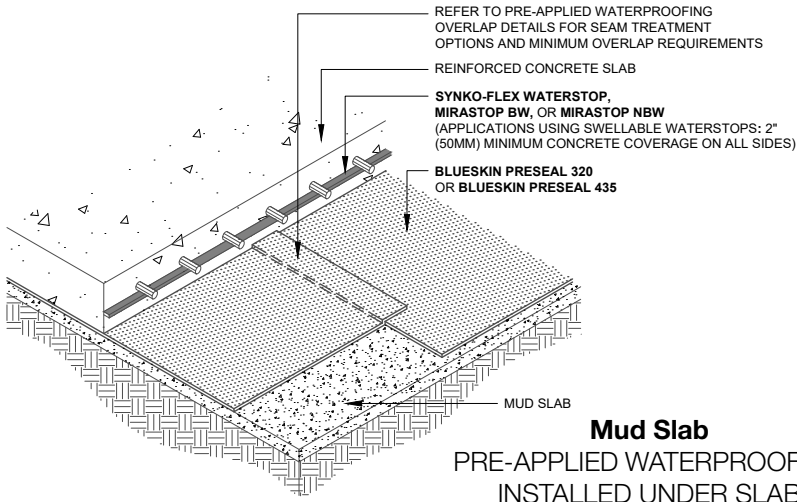
Steps for underslab/horizontal application – pile cap detail



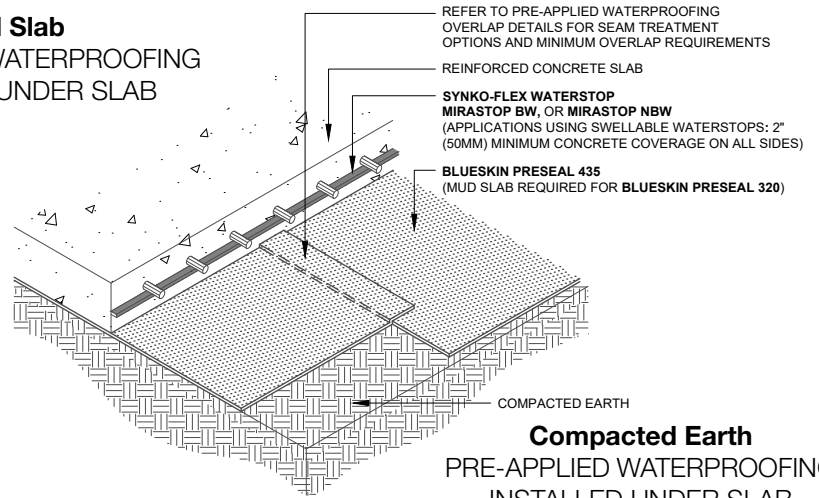
PILE CAP
NON-HYDROSTATIC



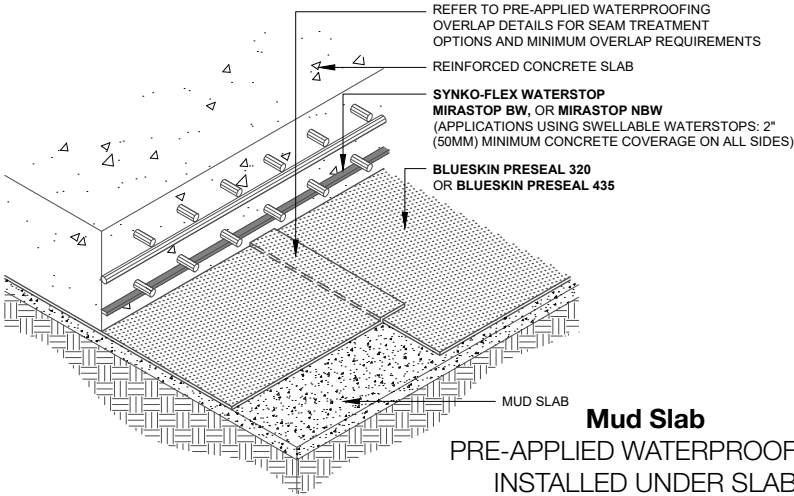
PILE CAP
HYDROSTATIC



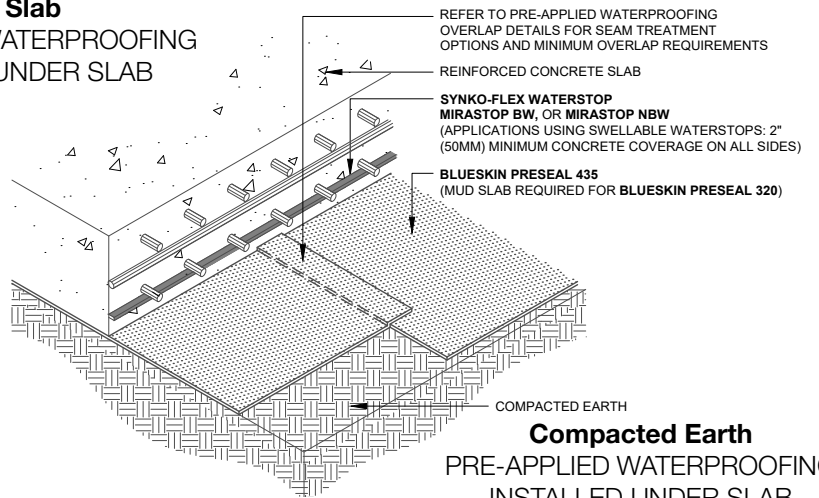
Mud Slab
PRE-APPLIED WATERPROOFING
INSTALLED UNDER SLAB



Compacted Earth
PRE-APPLIED WATERPROOFING
INSTALLED UNDER SLAB



Mud Slab
PRE-APPLIED WATERPROOFING
INSTALLED UNDER SLAB



Compacted Earth
PRE-APPLIED WATERPROOFING
INSTALLED UNDER SLAB

4.02 Property line wall application

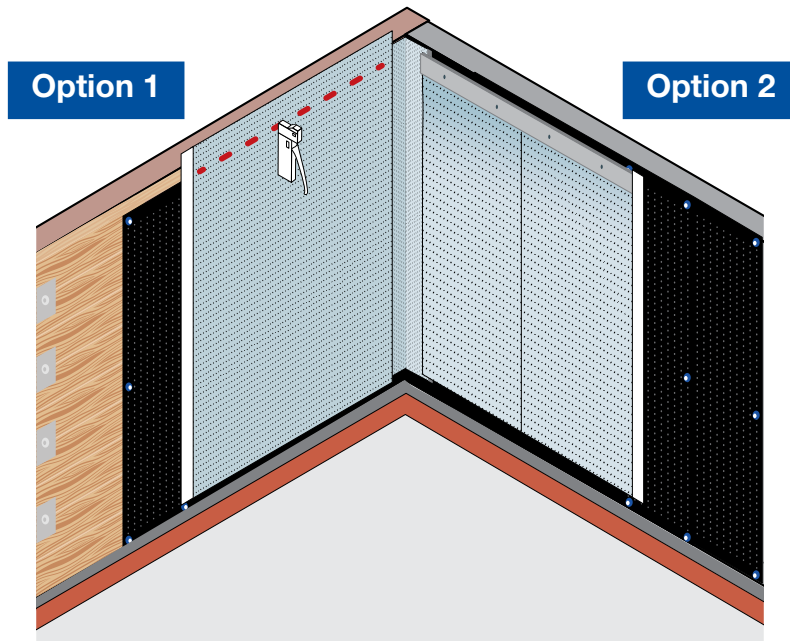
Apply Blueskin PreSeal membrane with the smooth polypropylene film side facing the prepared substrate.

Option 1 (Fastener)

Temporarily fasten Blueskin PreSeal to the substrate along the top edge a maximum of 18" (460 mm) on center with large head nails, non-washer covered fasteners or staples. Unroll the Blueskin PreSeal down the wall towards the slab, as appropriate. For lengths greater than 8 ft. (2.4 m), additional fastening at 2 ft. (0.6 m) intervals along the selvedge prior to making the side lap is recommended. If fasteners are used in the selvedge, use Blueskin PreSeal Tape 50S or Blueskin Tape 120V as required to overlap the adjoining membrane a minimum of 2" (50mm).

Option 2 (Termination Bar)

Temporary attach a termination bar, through the Blueskin PreSeal membrane a maximum of 24" on center with large head nails, non-washer covered fasteners or staples. Unroll the Blueskin PreSeal down the wall towards the slab, as appropriate. For lengths greater than 8 ft. (2.4 m), additional fastening at 2 ft. (0.6 m) intervals along the selvedge prior to making the side lap is recommended. If fasteners are used in the selvedge, use Blueskin PreSeal Tape 50S or Blueskin Tape 120V as required to overlap the adjoining membrane a minimum of 2" (50mm).



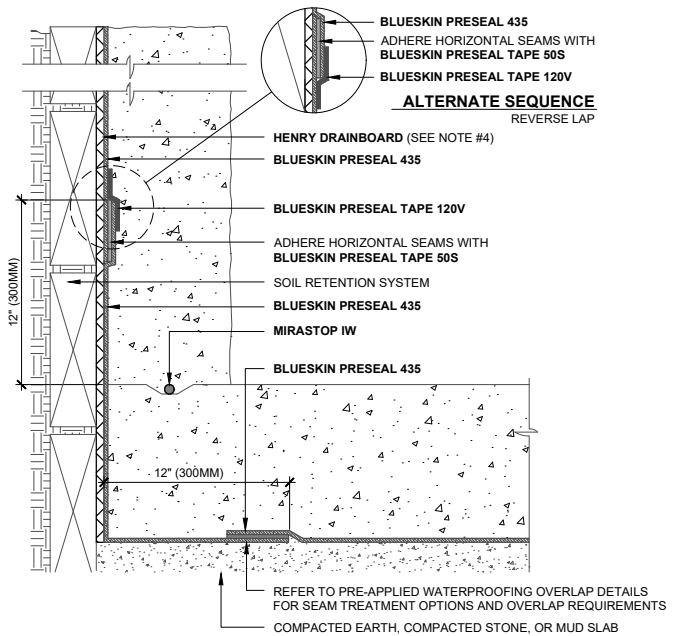
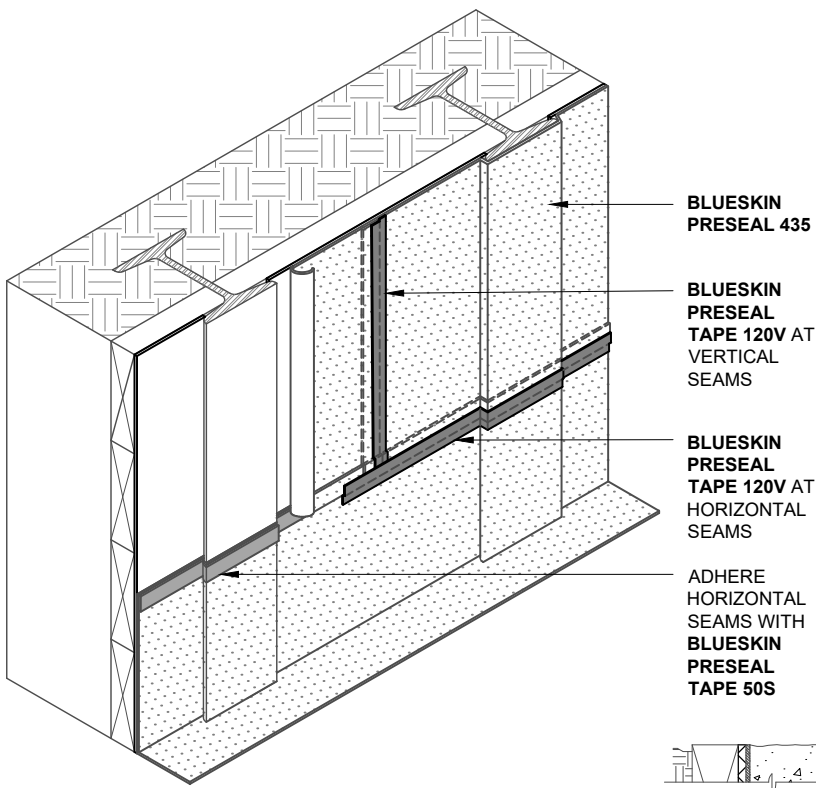
4.03 Shotcrete application

The structural shotcrete wall should be designed as per ACI 506.2 – Specification for Shotcrete. Shotcrete should be placed as per ACI 506R – Guide to Shotcrete to provide proper consolidation shotcrete.

Penetrations through the Blueskin PreSeal membrane as part of the rebar installation and securement should be limited. The use of anchors or mechanical fasteners should be coordinated with and accepted by the waterproofing installer. At minimum the anchor's "shank" should be exposed a minimum of 1/2" (12.5mm) to achieve a proper seal with MiraSTOP SS. Consult Henry for approved anchor systems and appropriate detailing (www.henry.com) for penetrations to the Blueskin PreSeal 435 membrane.

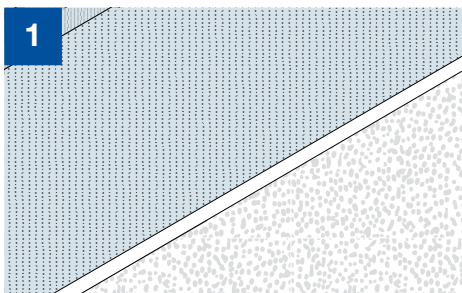
Special precaution should be taken during the shotcrete application to protect adjacent areas of the Blueskin PreSeal 435 membrane from shotcrete, shotcrete overspray, shotcrete rebound and shotcrete dust/mist. Formed pour stops must be used against the membrane.

Install Blueskin PreSeal 435 with dimpled surface facing the installer, on the prepared substrate. All Blueskin PreSeal seams shall be installed as per standard Henry requirements with an additional layer of Blueskin PreSeal Tape 120V. For side laps, the manufactured selvedge should be rolled firmly and covered with additional Blueskin PreSeal Tape 120V. For end laps, add Blueskin PreSeal 50S Tape in between overlapping membrane, rolled firmly and covered with additional Blueskin PreSeal Tape 120V. MiraSTOP IW (injectable waterstop) is required at construction joints and penetrations in contact with the Blueskin PreSeal system. Additional detailing may be required as per site conditions or per Henry requirements.

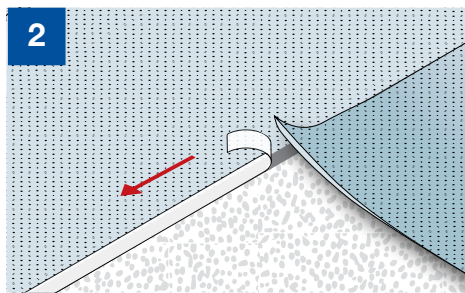


4.04 Seam installation

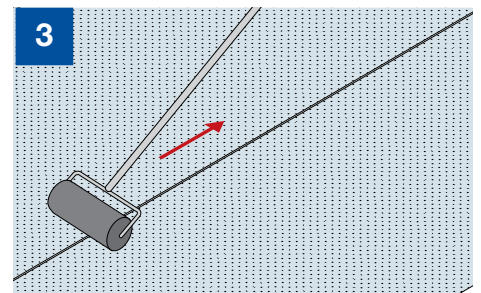
Factory Seam Installation



1. Remove the release liner from the exposed selvedge of the Blueskin PreSeal membrane.

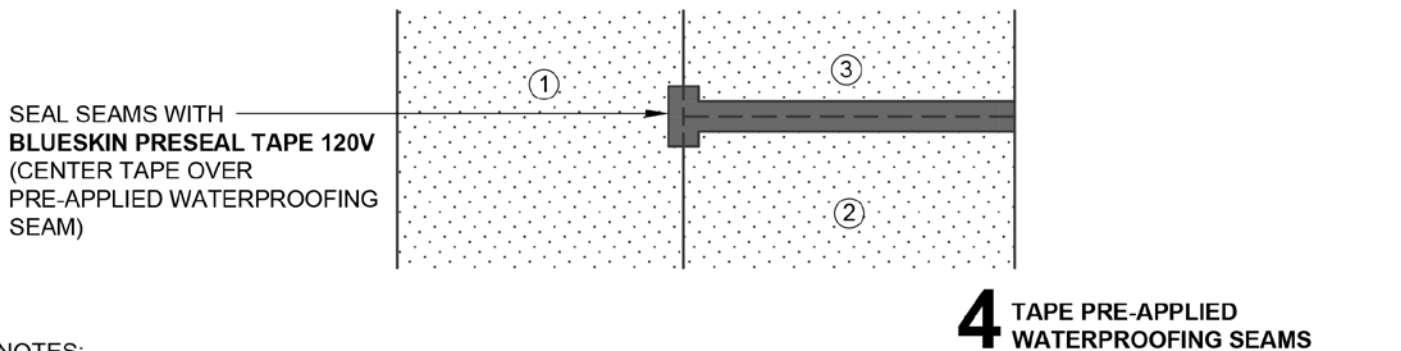
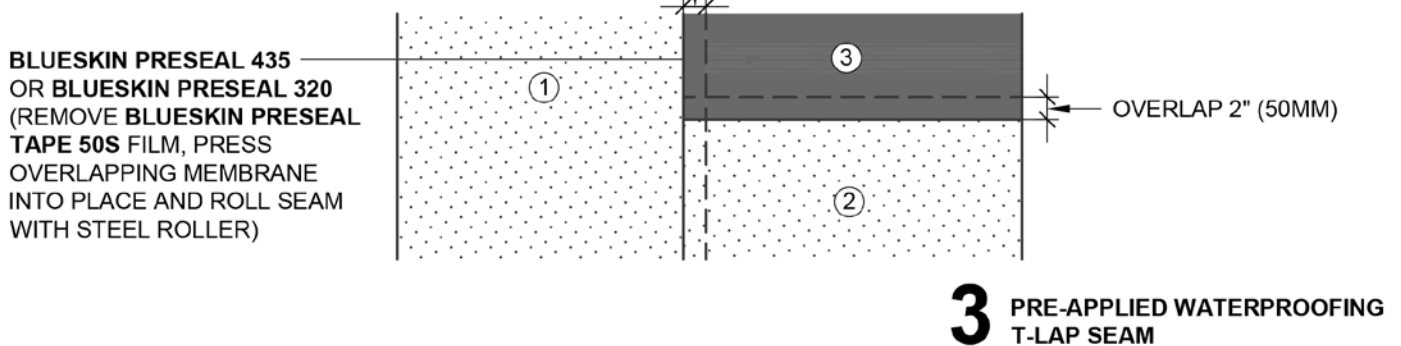
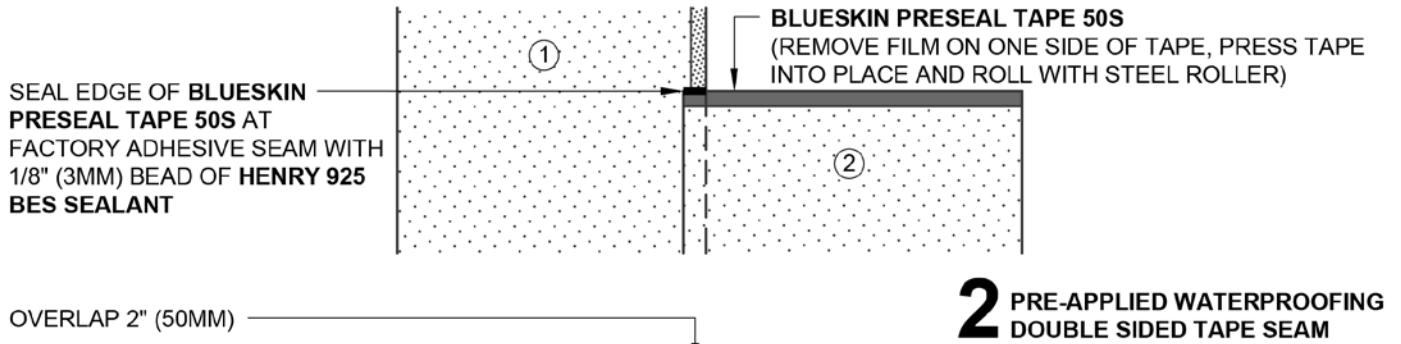
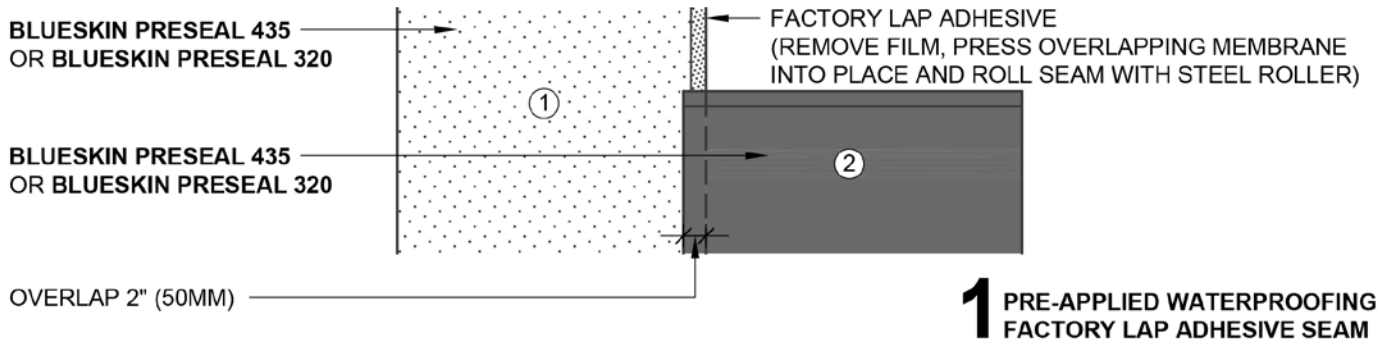


2. Lay down the 2nd layer of Blueskin PreSeal membrane over the exposed adhesive. Remove release liner from the underside of the roll as the membrane is overlapped 2 in. (50mm)



3. Roll a steel roller over the 2nd layer of the Blueskin PreSeal membrane several times while applying pressure. Installer must apply sufficient pressure to ensure proper bonding. Verify seam is properly bonded, if not, fix as necessary.

T Lap and Seam End Lap Installation



NOTES:

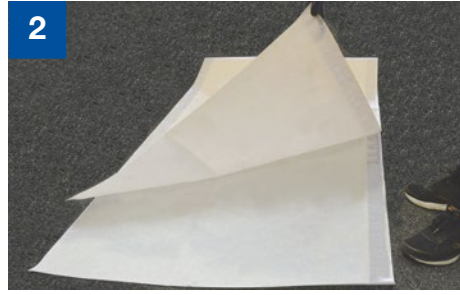
1. DETAIL SHOWS HENRY PRE-APPLIED WATERPROOFING SYSTEM FOR APPLICATIONS USING HENRY **BLUESKIN PRESEAL 320** OR **BLUESKIN PRESEAL 435**. SUBSTRATE SHOWN IS FOR REFERENCE ONLY.
2. REFER TO PRODUCT SPECIFIC TECHNICAL DATA SHEET (TDS) AND GUIDE SPECIFICATION FOR INSTALLATION PROCEDURES.

4.05 Corner installation

Inside Corner Installation



1. Cut a piece of Blueskin PreSeal membrane to suitable length.
 - a. Customize and perform longitudinal fold up so that it ends.
 - b. Fold back.



2. Then fold the membrane width wise so the Blueskin PreSeal membrane.



3. Bring the lower corner of the Blueskin PreSeal membrane and move it diagonally up towards the longitudinal fold and press to fold.



4. Then open the finished fold and the inner corner by lifting it back one short side from the other.



5. Adjust to the inner corner and the longitudinal fold.



6. After creating the fold, install Blueskin PreSeal Tape 50S or Henry 925 BES Sealant and set folded piece in place.



7. Remove the protective plastic the pre-assembled edge tape in the fold and press. Cut a piece of Blueskin PreSeal Tape 120V in suitable length and mount the tape over the diagonal fold in the inner corner.



8. Installation of inner corner is finished.



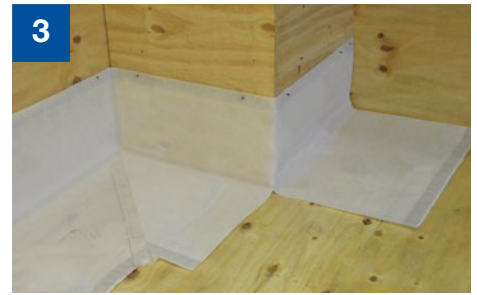
Outside Corner Installation



1. Cut a piece of Blueskin PreSeal membrane to suitable length.
 - a. Customize and perform longitudinal fold up so that it ends.
 - b. Fold back.



2. Make a cut from the point of the outside corner. Cut from the folds' meeting point out over the tape edge so that an incision is created.



3. Then fold the membrane width wise so the Blueskin PreSeal membrane becomes half its original length, press to fold. Then bring the short side towards short side so the Blueskin PreSeal membrane becomes half its original length, press to fold.



4. Next, open the creased cut and outside corner.



5. From a separate sheet of Blueskin PreSeal, cut away a square 4 in x 4 in from one corner. Insert that cut away corner to the outside corner. Be sure to place the cut away corner under the existing sheet.



6. Underneath the attached Blueskin PreSeal creating the outside corner, insert the created piece of Blueskin PreSeal membrane. Apply Henry 925 BES Sealant at the corner of the cutaway and external corner. Extend Henry 925 BES Sealant along the underside of the top sheet



7. Cover the entire seam with Blueskin PreSeal Tape 120V.



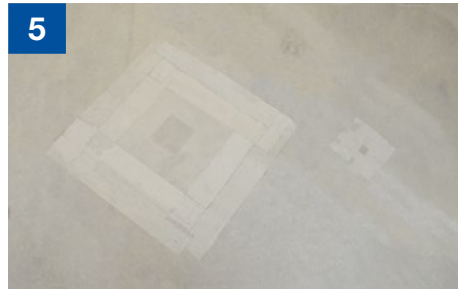
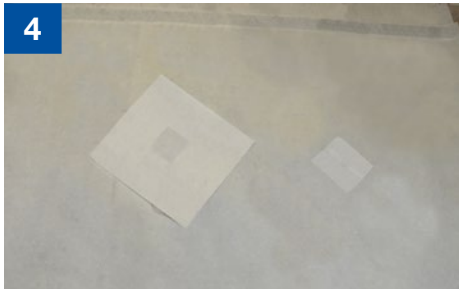
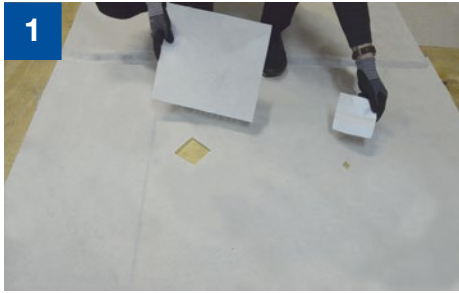
8. Cut a piece of Blueskin PreSeal Tape 120V 4.75 in. x 4.75 in. (120 x 120 mm), which is then mounted over the corner. Press firmly or roll into place.



9. Installation of outside corner is finished.

4.06 Membrane repair

For cuts to the Blueskin PreSeal membrane smaller than 1 in, Blueskin PreSeal Tape 120V can be used as a patch. If there are cuts in the membrane greater than 1 in., please use Blueskin PreSeal membrane to cover the area and attach with Blueskin PreSeal Tape 120V as shown below.



1. Details

Drawings are available that indicate typical conditions for installing the Blueskin PreSeal system. Prior to installation, verify unique requirements of local codes, laws, statutes or regulations that may be applicable for a specific installation. Henry assumes no liability for the accuracy, completeness or appropriateness of the drawings included in this installation manual for a specific installation or purpose. Confirm project specific conditions with a local licensed design professional in order to assure compliance with all legal requirements. Henry is not licensed to provide professional engineering or architectural services.

A complete selection of Blueskin PreSeal guide specifications and details are located at www.us.henry.com

- Property line wall
- Underslab
- Grade termination
- Pipe penetration
- Pile cap
- Sheet pile
- Lagging
- Wall slab-horizontal orientation

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