NewBrick® Application Instructions

Materials Required for Installation of NewBrick® Pieces

1) Air/Water-Resistive Barrier (when specified) shall be one of the following:
    a. Backstop® NT™ Smooth
    b. Backstop NT Spray
    c. Backstop NT Texture
2) Adhesive shall be one of the following:
    a. Primus®
    b. Genesis®
    c. Primus® DM
    d. Genesis® DM
3) CAN/CSA-A179-04 (R2014) Type N or S Mortar
4) NewBrick Mortar Admix
5) NewBrick pieces are available in Modular, Utility, Norman and Economy sizes (refer to figures below):
    a. Flat Brick
    b. Corner Brick
    c. End Brick
    d. 135° Corner Brick (available only in Modular size)
    e. Edge Cap Brick

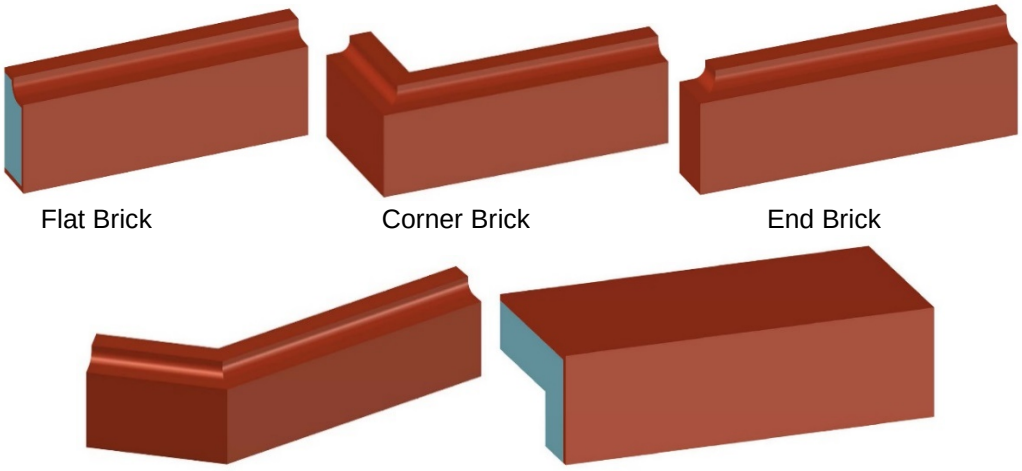


Figure 1: Flat Brick, Corner Brick, End Brick; 135° Corner Brick and Edge Cap Brick Configuration

Recommended Tools For Installation of NewBrick Pieces

1) Variable Speed Drill capable of producing 1000 RPM's
2) Wind-lock B-M1 mixing blade or equivalent
3) Stainless Steel Hawk and Notched Trowel (recommended 13 mm (½ in) square notched trowel)
4) Margin Trowel
5) Tape Measure
6) Level
7) White Chalk Line
8) White Chalk
9) Pencil
10) Extension Cord
11) Miter saw with a carbide or masonry cutting blade
12) Mechanical Mortar Gun or Grout Bag with #5 tip
13) 3/8 in (9.5 mm) Tile Spacers
14) Brick Jointer
15) Hand Grinding Stone
16) Utility Knife

1. Substrate Inspection

1.1. Prior to installing the NewBrick materials, inspect the substrate to ensure that it is a substrate listed in the Dryvit NewBrick Specification, DSC872.

1.2. The substrate shall be flat and level to 6 mm (1/4 in) within a 1.2 m (4 ft) radius, and be free of imperfections, recesses or protrusions that would interfere with the brick application.

2. Surface Preparation

2.1. The substrate shall be free of foreign materials such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellents, moisture, frost, and any other materials that inhibit adhesion.

2.2. Dryvit Exterior Insulation and Finish System: The Dryvit system shall be installed in accordance with the current published literature.

2.2.1. The reinforcing mesh shall be completely embedded in the Dryvit base coat.

2.2.2. The base coat shall be fully dried (a minimum of 24 hours, or longer, depending on weather conditions).

2.2.3. The base coat shall be free of any imperfections prior to applying the NewBrick units.

2.3. Concrete

2.3.1. Shall have cured a minimum of 28 days.

2.3.2. Air/Water-Resistive Barrier (when specified): Shall be Dryvit Backstop® NT™ applied in accordance with Backstop NT Application Instructions, DSC177.

2.4. Unglazed Brick and Masonry

2.4.1. Apply a continuous layer of Genesis or Genesis DM mixture over the entire wall surface to fill voids and provide a smooth level base for the brick application. Application thickness shall not exceed 3.2 mm (1/8 in) in a single pass.

2.4.2. When specified, a layer of reinforcing mesh is embedded into the wet base coat mixture and troweled smooth.

2.4.3. Allow the base coat mixture to cure a minimum of 24 hours until completely dry. Cool, humid conditions may require longer cure times.

2.4.4. Air/Water-Resistive Barrier (when specified): Shall be Dryvit Backstop NT applied in accordance with Backstop NT Application Instructions, DSC177.

2.5. Portland Cement Plaster

2.5.1. Shall be dry, and cured a minimum of 7 days, prior to application of the bricks.

2.5.2. When specified, a layer of reinforcing mesh is embedded into the wet base coat mixture and troweled smooth.

2.5.3. Allow the base coat mixture to cure a minimum of 24 hours until completely dry. Cool, humid conditions may require longer cure times.

2.5.4. Air/Water-Resistive Barrier (when specified): Shall be Dryvit Backstop NT applied in accordance with Backstop NT Application Instructions, DSC177.

3. Mixing Instructions

3.1. General

3.1.1. No additives such as sand, aggregates, rapid binders, anti-freeze, accelerators, etc. shall be added to any Dryvit materials under any circumstances. Such additives will adversely affect the performance of the material and void all warranties.

3.2. Air/Water-Resistive Barrier

3.2.1. Backstop NT

3.2.1.1. Open the bucket with a utility knife or lid-off.

3.2.1.2. Backstop NT is ready to use after an initial spin-up using a “Twister” paddle or equivalent mixing blade, powered by a 12.7 mm (1/2 in) drill, at 450 - 500 rpm. Do not add cement or any other additives.

3.3. Adhesive

3.3.1. Primus or Genesis

3.3.1.1. Open the bucket with a utility knife or lid-off.

3.3.1.2. Due to shipping and storage, there may be some separation of materials. Prior to splitting the material and adding Portland cement, mix the material thoroughly. Use a “Twister” paddle or equivalent mixing blade powered by a 12.7 mm (1/2 in) drill, at 500 - 1200 rpm only. NOTE: A minimum 7 amp drill works best for Portland cement based materials. CAUTION: Do not over-mix or use other types of mixing blades as air entrapment and product damage may occur and result in workability and performance problems.

3.3.1.3. Pour 1/2 of the freshly mixed material [approximately 13.5 kg (30 lbs)] into a clean plastic container.

3.3.1.4. Add 1/3 of a bag [approximately 13.5 kg (30 lbs)] of fresh, lump free Type GU Portland cement. Either gray or white cement is acceptable. Add cement slowly and mix thoroughly. Do not add large quantities of cement at one time.

3.3.1.5. Clean potable water may be added to the mixture to adjust the workability.

3.3.1.5.1. Primus

3.3.1.5.1.1. Add as little water as possible, in small increments, and only after the Portland cement is thoroughly mixed. Do not over water as this will degrade the performance and promote efflorescence.

3.3.1.5.1.2. Mix the Primus material with Portland cement thoroughly; then wait five (5) minutes and mix again to break the initial set. Retempering with a small amount of water is permissible provided the mixture has not set. The mixture has a pot life similar to other Portland cement plaster material. Mix only as much material as can be conveniently used during a work period.

3.3.1.5.2. Genesis

3.3.1.5.2.1. Add 950 ml (1 qt) of water prior to adding Portland cement. Additional water may be added to adjust workability.

3.3.1.5.2.2. Mix the Genesis material with Portland cement thoroughly; then wait ten to fifteen (10-15) minutes and mix again to break the initial set. Retempering with a small amount of water is permissible provided the mixture has not set. The mixture has a pot life similar to other Portland cement plaster material. Mix only as much material as can be conveniently used during a work period.

3.3.2. Primus DM

3.3.2.1. Pail Mixing

3.3.2.1.1. One 22.7 kg (50 lb) bag of material will produce approximately 19 L (5 gal) of Primus DM mixture. Add 5.7 L (1.5 gal) of clean potable water into a clean plastic container.

3.3.2.1.2. Add Primus DM slowly while mixing using a “Twister” paddle or equivalent mixing blade, powered by a 12.7 mm (1/2 in) drill, at 500 - 1200 rpm. NOTE: A minimum 7 amp drill works best for Portland cement based materials.

3.3.2.1.3. Thoroughly mix until uniformly wetted, adjusting consistency with a small amount of water or Primus DM material.

3.3.2.1.4. Allow the mixture to set a minimum of five (5) minutes (5-8 minutes recommended) then retemper, adding a small amount of water if necessary. Material must be free of lumps before using.

3.3.2.2. Mortar Mixer

3.3.2.2.1. Add 5.7 L (1.5 gal) of clean potable water for each 22.7 kg (50 lb) bag of Primus DM into a clean mortar mixer.

3.3.2.2.2. Add the Primus DM while the mixer is running. Mix three to five (3 – 5) minutes, shut mixer off for five (5) minutes, then run mixer for another two to three (2 – 3) minutes to break the set and add a small amount of water if necessary to adjust the workability. The pot life is one to three (1 – 3) hours depending on weather.

3.3.3. Genesis DM

3.3.3.1. Pail Mixing

3.3.3.1.1. One bag of Genesis DM will produce approximately 19 L (5 gal) of Genesis DM mixture. To a clean 19 L (5 gal) pail, add 5.7 - 6.6 L (6 - 7 qt) of clean potable water.

3.3.3.1.2. Add the Genesis DM slowly while constantly mixing with a "Twister" paddle or equivalent mixing blade, powered by a 12.7 mm (1/2 in) drill, at 500 - 1200 rpm. NOTE: A minimum 7 amp drill works best for Portland cement based materials.

3.3.3.1.3. Thoroughly mix until uniformly wetted, adjusting consistency with a small amount of water or Genesis DM.

3.3.3.1.4. Let set for ten (10) minutes. Retemper, adding a small amount of water if necessary. Material must be free of lumps before using.

3.3.3.2. Mortar Mixer

3.3.3.2.1. Add 5.7 - 6.6 L (6 - 7 qt) of clean potable water for each 22.7 kg (50 lb) bag of Genesis DM into a clean mortar mixer.

3.3.3.2.2. Add the Genesis DM while the mixer is running. Mix three to five (3 – 5) minutes, shut the mixer off for ten (10) minutes, then run mixer for another two to three (2 – 3) minutes to break the set adding a small amount of water if necessary to adjust workability. The pot life is one to one and one half (1 – 1 ½) hours depending on weather.

3.4. Mortar

3.4.1. Mix the mortar in accordance with the manufacturer's printed instructions for the material, using a 4:1 ratio of water to NewBrick Mortar Admix. For reference, several examples are included in the table below.

Water	0.95 L (1 quart)	3.79 L (1 gallon)	7.57 L (2 gallon)
NewBrick Mortar Admix	237 mL (8 ounces)	0.95 L (1 quart)	1.89 L (0.5 gallon)

4. Installation:

4.1. NewBrick units are available in the following configurations:

4.1.1. Flat Bricks: designed with an integral horizontal mortar spacing feature. Flat Bricks are used in field-of-wall applications.

4.1.2. Corner Bricks: "L"-shaped bricks designed for use at outside corners, sills and other areas.

4.1.3. 135° Corner Bricks: Additional option for outside corners (only available in Modular size).

4.1.4. End Bricks: Used at expansion joints and terminations without returns.

4.1.5. Edge Cap Bricks: Used at sill, jambs and other areas.

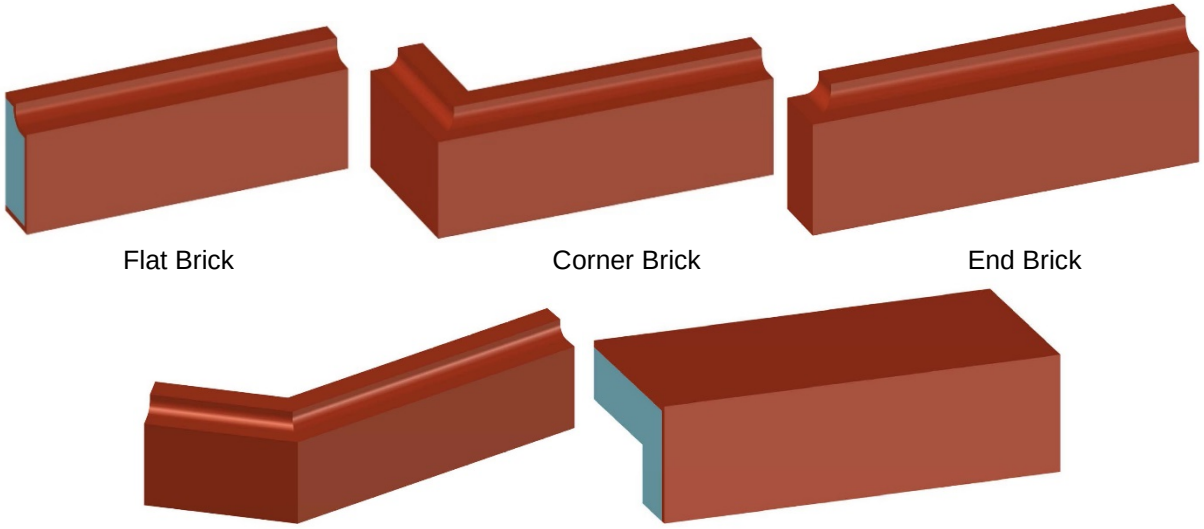


Figure 2: Flat Brick, Croner Brick, End Brick; 135° Croner Brick, and Edge Cap Brick Configurations

4.2. Establishing layout for Modular sized bricks:

NOTE: Generally, the length of six bricks, with six mortar joints, is 1219 mm (48 in) and the height of three bricks, with three mortar joints, is 203 mm (8 in). Keep this in mind for best layouts. These instructions are written using NewBrick modular sizes. NewBrick units are also available in Utility, Norman and Economy sizes - layouts will work in a similar manner but must be adjusted for the different sizes.

4.2.1. Use a level and a straight piece of wood (or equivalent) to create a temporary “ledger” across the bottom of the wall. Strike a horizontal line and secure the ledger to the wall. This will allow you to keep the bricks straight and level. When you are finished, the ledger will be removed and holes sealed.

4.2.2. Corner Bricks and End Bricks are used at terminations as per the NewBrick Installation Details, DS873.

4.2.3. Consider alignments with openings to ensure proper layout.

4.2.4. Starting at a termination point, place a Corner Brick or End Brick on the ledger board and measure 1219 mm (48 in) from its edge and establish a mark. Repeat marking every 1219 mm (48 in) horizontally along the full length of the wall.

4.2.4.1. This dimension may vary depending on openings in walls. See Section 4.3 Adjusting the brick layout.

4.2.5. Using a level or plumb line, make vertical guide lines from the bottom to the top of the wall at each 1219 mm (48 in) increment.

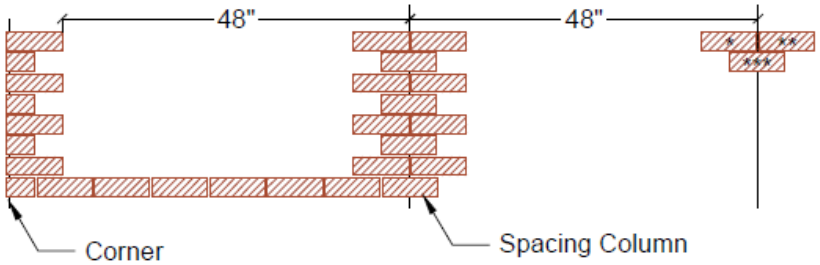


Figure 3 : Spacing Column Layout

4.3. Adjusting the brick layout:

4.3.1. From the Corner Brick or any 1219 mm (48 in) mark interval, measure the distance to openings to calculate the predetermined distance to fill.

4.3.2. The NewBrick lengths can be cut for adjustment and/or mortar joint widths adjusted as necessary.

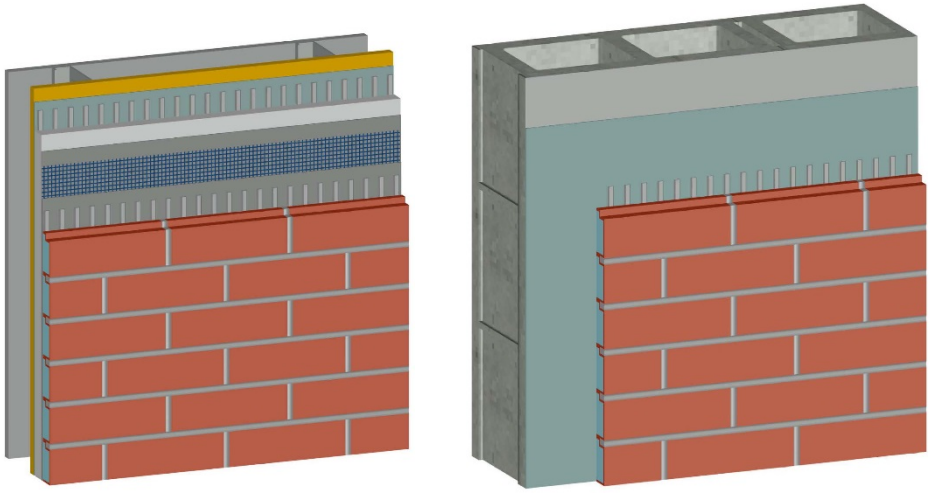
4.4. Applying adhesive mixture

4.4.1. Once the layout has been determined, mix the Dryvit adhesive as described in Section 3.3 and apply adhesive mixture with a notched trowel, 9.5 mm (3/8 in) wide, 12.7 mm (1/2 in)

deep notches spaced 38 mm (1-1/2 in) apart to the face of the substrate. Holding the trowel at a 45° angle, apply pressure to the substrate in order to scrape the excess adhesive from between the adhesive beads. NOTE: Apply the adhesive so that the ribbons run vertically.

4.4.2. Care should be taken so that adhesive does not skin over before application of brick. Recommended maximum working area is 0.37 m^2(4 ft^2). If the adhesive should happen to skin before the bricks are installed, it must be removed and fresh adhesive applied.

NOTE: Install Flat Brick with the lip facing up.



NewBrick applied over Dryvit Outsulation System Base Coat

NewBrick applied over a solid Subtrate

Figure 4: Install Flat Brick with the lip facing up

4.5. Setting the bricks

NOTE: Individual bricks can have slight colour and texture variations from brick to brick and package to package. This is to be expected and is designed to maximize the visual appeal and should not be considered a defect. For best results, the installing contractor should always pick bricks from several boxes or bundles and inspect the bricks before applying them on the wall. Any bricks with undesirable colouration should be set aside and not installed.

4.5.1. Set the initial column of bricks at the outside corner. Place the brick into the adhesive bed and apply pressure to ensure good initial grab.

4.5.2. Once the corner is complete proceed to the next spacing column.

4.5.3. Set the first brick, over the starting ledger, for the spacing column on the 1219 mm (48 in) mark against the nearest side of the line and apply pressure to ensure initial grab.

4.5.4. On the far side of the line set a second brick separated with a 9.5 mm (3/8 in) spacer.

4.5.5. On the course above your first two bricks, center a brick on the 9.5 mm (3/8 in) head joint.

4.5.6. Continue setting bricks using this process until you have a column of brick laid.

4.5.7. Proceed to the next 1219 mm (48 in) mark, and repeat setting another column of brick.

4.5.8. Once spacing columns are completed, fill in between columns with bricks separated with 9.5 mm (3/8 in) spacers to create the vertical joints

NOTE: We recommend verifying level and alignment at least every 8 courses and make adjustments as necessary to ensure straight and level brick runs.

4.5.9. If adjustments are necessary, brick lengths may be cut using a saw with a carbide tipped or masonry cutting blade.

4.5.10. Use of varying coloured spotters can be included to create colour patterns to match the approved sample.

4.5.11. Any colour adjustments required can be done at this time by dabbing the selected bricks with a camel backed sponge or sock dipped in coloured finish.

5. Mortar Application

5.1. Allow a minimum of 24 hours for the adhesive to set prior to installing mortar or otherwise disturbing the bricks. During cool humid conditions longer times may be required. Verify that the adhesive is fully cured before proceeding with mortar application.

5.2. If necessary, any colour adjustments required can be done at this time by dabbing the selected bricks with a camel backed sponge or sock dipped in coloured finish.
5.3. To minimize mortar colour differences, always apply mortar to distinct wall areas in the same work period using the same mortar batch.
5.4. Mix the mortar per the manufacturer's instructions and as described in Section 3.4
5.5. Mortar Application
5.5.1. Using a mortar bag with a #5 tip or a mechanical mortar gun, fill the mortar joints to the full depth.
5.5.2. Mortar horizontal joints first, followed by vertical joints.

CAUTION: Care should be taken to avoid wet mortar falling onto the brick face or staining may result. Mortar droppings on the face of the bricks should be removed after it is allowed to partially set. Any remaining stains may be touched up by dabbing with matching finish material.

5.6. Striking Joints
5.6.1. Many commercially available striking tools can be used.
5.6.2. Prior to striking joints, determine the proper consistency of the mortar. When lightly pressed, the mortar should show a light fingerprint and excess mortar should fall away without leaving stains on the brick.
5.6.3. All mortar should be struck when it is at the same consistency. Moist mortar when struck will have a different appearance than dry mortar when struck and may stain the bricks.
5.6.4. Run the striking tool down the joint hard enough to compress the mortar. The dry, excess mortar should just fall away.
5.6.5. Joints must be struck flush or slightly concave.

WARNING: Recessed joints are not permitted.

5.7. Brushing
5.7.1. After the mortar has been tooled, brush the wall at a 45° angle to remove excess material from the brick using a soft-bristle brush.
5.7.2. Do not allow the excess mortar to completely dry before removal. Undesirable mortar stains on the bricks that cannot be removed by cleaning, can be touched up with matching finish after mortar has fully cured.

NOTE: Thin hairline cracks can occur in the mortar joints for several reasons including; striking too early, excess water in the mortar mix, too rapid mortar curing during hot, windy or dry weather, and substrate movement. These small cracks should not be considered a defect and will not affect the performance of the product and can be minimized by striking at the appropriate time, using proper mix and controlling the environmental conditions during application. To ensure proper cement hydration and strength development, the mortar should not be allowed to completely dry for a minimum of 4 days after installation. Fogging the wall to prevent premature drying is recommended. To minimize potential for mortar cracking, it is recommended that the wall not be subjected to impact, movements or vibrations from other work for a minimum of 7 days after the mortar is applied.

DISCLAIMER

Information contained in this document conforms to standard detail and product recommendations for the installation of the NewBrick materials as of the date of publication of this document and is presented in good faith. Dryvit Systems Canada assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To ensure that you are using the latest, most complete information, contact Dryvit Systems Canada.

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