

# OUTSULATION<sup>®</sup> PLUS



DUK218

An Exterior Wall Insulation and Finish System  
With A Secondary Weather Resistive Barrier

## Outsulation Plus Installation Instructions

## CHECKLIST PRIOR TO THE INSTALLATION OF THE OUTSULATION PLUS SYSTEM

### Project Conditions

- Air and surface temperatures for application of most Dryvit products must be 4 °C (40 °F) or above and must remain so for a minimum of 24 hours. **Note: When Demandit®, Revyvit®, Prymit® or Color Prime™ is used, a minimum temperature of 7 °C (45 °F) is required. For Ameristone and Custom Brick® Finishes, refer to individual finishes' specifications and application instructions.**
- Ensure that all roof-to-wall flashings, wall to deck flashings, run-off diverters (i.e. kick-outs), or other penetration flashings, are installed where required. Particular attention must be paid to the eaves/chimney intersections, sloped roof/wall intersections, decks and windows. Refer to Outsulation Plus Installation Details, DUK110.
- Protect surrounding areas and surfaces during installation of the Outsulation Plus System.
- The tops of all walls shall be immediately covered with the final trim or be temporarily protected to prevent water infiltration behind the system. Permanent protection in the form of cap flashing or copings shall be installed as soon as possible after the finish coat has been applied.
- Dryvit materials shall be fully dry prior to installation of sealant materials (typically 48-72 hours). Humid or cool conditions may require longer drying times.

## MATERIALS REQUIRED FOR COMPLETING INSTALLATION OF THE OUTSULATION PLUS SYSTEM

### Materials Supplied by Dryvit UK Ltd.

- Dryvit Backstop™
- Dryvit Grid Tape™
- Dryvit Flashing Tape™
- Dryvit Flashing Tape Surface Conditioner™
- Dryvit AP Adhesive™
- Dryvit Starter Track™
- Dryvit Drainage Strip™
- Dryvit Genesis®, Genesis DM™, Primus®, Dryflex®
- Dryvit Genesis FM™
- Expanded Polystyrene Insulation Board
- Standard™, Standard Plus™, Intermediate®, Panzer® 15, Panzer 20, Corner, and Detail® Reinforcing Meshes.
- Dryvit Finishes
- Dryvit Coatings and Primers

### Materials Supplied by Others

- Portland cement: Type I, or II
- Clean potable water

**Note:** These application instructions are also applicable to the Dryvit Outsulation Plus FM System. The Outsulation Plus FM system requires that Genesis FM be used as both the adhesive and base coat and the finish shall be either DPR FM QP, SB, SP, or SPF.

## I. Mixing Instructions

### A. Air/Weather Barrier

#### 1. Backstop

- a. Open the bucket with a utility knife or lid-off.
- b. Due to shipping and storage, there may be some settling of materials. Prior to splitting the material and mixing with Portland cement, mix the material thoroughly using a Wind-Lock B-M1 or B-M8, or equivalent, mixing blade powered by a 13 mm (1/2 in) drill, at 700-1000 rpm. **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.**
- c. Backstop is mixed in a 1:1 ratio, by weight, with Portland cement. Pour 1/2 of the freshly mixed material, 13.6 kg (30 lbs), into a clean 18.9 l (5 gal) plastic container. Add 13.6 kg (30 lbs), approximately 1/3 of a bag, of fresh, lump-free Type I, II, or I-II Portland cement. Either white or gray cement is acceptable. Add the cement slowly and mix thoroughly. **Do not add large quantities of cement at one time or lumps may develop.**
- d. Clean, potable water may be added to the mixture to adjust the workability. Add as little water as possible, in small increments, and only after the Portland cement is thoroughly mixed. **Caution: Do not over water as this will degrade the performance of the product and promote efflorescence.**
- e. Mix the Backstop 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 based materials. Mix only as much material as can be conveniently used during a work period. **Warning: 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.**

### B. Adhesive and Base Material

#### 1. Genesis, Primus, Dryflex or Genesis FM (FM System only)

- a. Open the bucket with a utility knife or lid-off.
- b. Due to shipping and storage, there may be some settling of materials. Prior to splitting the material and mixing with Portland cement, mix the material thoroughly using a Wind-Lock B-M1 or B-M8, or equivalent, mixing blade powered by a 13 mm (1/2 in) drill, at 700-1000 rpm. **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.**
- c. The material is mixed in a 1:1 ratio, by weight, with Portland cement. Pour 1/2 of the freshly mixed material, 13.6 kg (30 lbs), into a clean 18.9 l (5 gal) plastic container. Add 13.6 kg (30 lbs), approximately 1/3 of a bag, of fresh, lump-free Type I, II, or I-II Portland cement. Either white or gray cement is acceptable. Add the cement slowly and mix thoroughly. **Do not add large quantities of cement at one time or lumps may develop. Note: The Dryflex product is shipped in 20.41 kg (45 lbs) pails, therefore the splitting procedure will differ slightly; however, the product is still mixed with Portland cement in a 1:1 ratio by weight.**
- d. Clean, potable water may be added to the mixture to adjust the workability. Add as little water as possible, in small increments, and only after the Portland cement is thoroughly mixed. **Caution: Do not over water as this may degrade the performance of the product and promote efflorescence.**
- e. Mix the product 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 based materials. Mix only as much material as can be conveniently used during a work period. **Warning: 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.**

#### 2. Genesis DM

- a. One bag of Genesis DM will produce approximately five (5) gallons of Genesis DM mixture.
- b. To a clean five (5) gallon pail, add 6-7 quarts of clean potable water. Add the Genesis DM slowly while constantly mixing with a Jiffler Mixer at 450-500 rpm. Thoroughly mix until uniformly wetted, adjusting consistency with a small amount of water or Genesis DM. Let set for ten (10) minutes. Retemper, adding a small amount of water, if necessary. Material must be free of lumps before using.
- c. Genesis DM can be mixed in a mortar mixer by first adding 6-7 quarts of water for each 50 lb. bag. Add the Genesis DM while the mixer is running. Let mix 3-5 minutes, shut mixer off for 10 minutes, run mixer for another 2-3 minutes to break set and add a small amount of water, if necessary.
- d. The pot life is 1-3 hours depending on weather. Small amounts of water can be added during this period to adjust workability.

## C. Dryvit Finishes and Coatings:

1. DPR (Dirt Pickup Resistance), DPR FM (FM System only), PMR™ (Proven Mildew Resistance) and Weatherlastic® Finishes: Quarzputz®, Quarzputz **E**™, Sandblast®, Freestyle®, Sandpebble®, Sandpebble **E**™, Sandpebble Fine™, Sandpebble Fine **E**™, FM QP, FM SB, FM SP, FM SPF, Weatherlastic Adobe™, Weatherlastic Smooth™, Demandit, Revyvit, Prymit, Color Prime and SealClear™.
  - a. Thoroughly mix the factory prepared Dryvit finish or coating with a Wind-Lock™ B-M1 or B-M8 mixing blade (or equivalent) powered by a 13 mm (1/2 in) drill, 400-500 rpm, until a uniform homogeneous consistency is attained. A small amount of clean water may be added to adjust workability. Always add the same amount of water to each pail within a given lot to avoid color variations.

## D. Dryvit Specialty Finishes:

1. Ameristone™ and Stone Mist®
  - a. Mix the factory prepared finish for 1 to 1 1/2 minutes using a Wind-Lock B-M1 or B-M8 mixing blade (or equivalent) powered by a 13 mm (1/2 in) drill, 700-1000 rpm, just prior to application. Do not over mix. Over mixing can result in air entrapment that will affect application and color. **Tip: Mix each bucket of material for the same length of time.**
2. Custom Brick® Finishes
  - a. Refer to Dryvit Custom Brick Application Instructions, DUK154 and DUK214, for complete mixing and usage instructions.

**II. Air/Weather Barrier Application**

## A. Prior to applying the Backstop mixture, check to ensure that:

1. The substrate is of a type listed in the Outsulation Plus System Specification, DUK637.
2. Exterior grade gypsum sheathing meets ASTM C79, is clean, and dry at time of application. The facing paper shall not show signs of deterioration and shall be firmly bonded to the core.
3. The substrate is structurally sound, free of loose material, voids, projections, or other conditions that may interfere with the installation of the Outsulation Plus System.
4. The substrate surface is clean, dry, free of grease, oil, paints, form release agents, and other foreign material.
5. There are no planar irregularities greater than 6.4 mm (1/4 in) within any 1.2 m (4 ft) radius. **GAPS OR DAMAGE IN SHEATHING SUBSTRATES WHICH EXCEED 9.5 MM (3/8") IN ANY ONE DIRECTION MUST BE REPAIRED BY REPLACING SHEATHING MATERIAL.**
6. All needed flashings and other waterproofing details have been completed, if such completion is required prior to the air/weather barrier application.
7. Notify the general contractor and/or architect, and/or owner of all discrepancies. Do not proceed until all unsatisfactory conditions have been corrected.

B. Check the wall surface and ambient temperature to ensure that they are above 4 °C (40 °F), and rising at the time of application. **Warning: Do not apply the Dryvit materials in the rain. The substrate surface must be dry prior to applying the air/weather barrier.**

## C. Air/Weather Barrier Application

1. Dryvit Grid Tape (not required with concrete and masonry substrates)
  - a. For sheathing substrates, apply the Dryvit Grid Tape along all joints in the sheathing, as well as inside corners, outside corners, and exposed edges at terminations that will not be covered with Dryvit Flashing Tape.
  - b. Center the Dryvit Grid Tape on the sheathing joints, edges, etc. with the pressure sensitive adhesive backing in contact with the sheathing surface. Press into position with hand pressure until adhesion is achieved.
  - c. Apply only enough Dryvit Grid Tape as can be covered with Backstop mixture in the same day.
2. Dryvit Backstop
  - a. Mix the Backstop material with Portland cement in accordance with Section I.A.
  - b. Using a stainless steel trowel, apply the Backstop mixture over the Grid Tape at all sheathing board joints, corners, and all other areas that have Grid Tape applied. Smooth and feather the Backstop mixture to completely cover the Grid Tape, and allow to take up for a minimum of two (2) hours or until firm.
  - c. Apply a continuous layer of Backstop mixture over the entire wall surface to a uniform thickness of approximately 1.6 mm (1/16 in) and allow to completely dry.

3. Dryvit Flashing Tape

a. Dryvit Flashing Tape must be installed in order to maintain a continuous air and weather barrier from the Backstop onto the framing edges at discontinuities and terminations such as openings, expansion joints, tops of parapets, etc. Refer to Dryvit Outsulation Plus System Installation Details, DUK110.

b. Surface Preparation

- 1) Apply only when air and surface temperatures are above 4 °C (40 °F).
- 2) The surface to receive the Dryvit Flashing Tape must be clean, dry, smooth and free of any other condition that will hinder adhesion.
- 3) Clean loose dust or dirt from the surface by wiping with a clean, dry cloth or brush.
- 4) If good initial adhesion cannot be obtained because of surface dust, cold temperature, or other conditions, priming is recommended with Dryvit Flashing Tape Surface Conditioner. Use of a heat gun to warm the wall surface immediately prior to application of the Flashing Tape will also help ensure good initial adhesion.

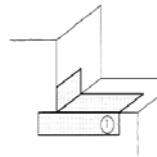
c. Dryvit Flashing Tape Surface Conditioner Application

- 1) Measure the desired amount of surface conditioner needed and dilute with an equal amount of clean, potable water.
- 2) Apply to the surfaces which are to receive the Dryvit Flashing Tape using a brush or roller. Sufficient surface conditioner should be applied to condition the surface to a dust free state suitable for the application of the Dryvit Flashing Tape. It should not be applied so heavily that it puddles or runs. Application of excess material will not improve adhesion but will extend the drying time.
- 3) Allow to dry until the surface returns to its original color. The Flashing Tape Surface Conditioner is clear when dry and slightly tacky. Low temperatures and high humidity conditions may require longer drying times. Conditioning should be limited to areas that can be covered with Dryvit Flashing Tape within the same day.

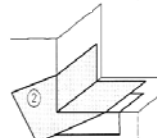
d. Dryvit Flashing Tape Application

- 1) Cut the Dryvit Flashing Tape to the appropriate length. Peel the release paper to expose the rubberized asphalt adhesive and align the tape into position before touching the wall. Position it so that it covers the Backstop 50 mm (2 in), and the remainder is turned into the opening. Move along the opening being careful to put the tape as evenly as possible and avoiding fishmouths along the edges. If wrinkles develop, cut out the affected area and replace. Apply pressure to the tape so that it is firmly in contact with the wall surface. Press the tape into place with hand roller as soon as possible to ensure continuous and intimate contact with the surface. End laps that occur must maintain a minimum overlap of 50 mm (2 in). Apply the Flashing Tape so that it completely covers the stud edges to the inside edge of opening. Additional strips of Flashing Tape may be needed. **Caution: The Dryvit Flashing Tape must be handled properly. Refer to the Material Safety Data Sheets for proper handling, storage, health and environmental considerations.**
- 2) For sill-jamb intersections, and similar conditions, apply the Dryvit Flashing Tape as shown in Figure No. 1 below. Apply the sill piece first, then apply the corner splice piece. The jamb piece is applied next, lapping over the splice piece.
- 3) For head-jamb intersections, the jamb pieces are applied first, followed by the corner splice pieces. The head piece is applied last.

1. Apply Sill Piece



2. Apply Corner Splice Piece



3. Apply Jamb Piece

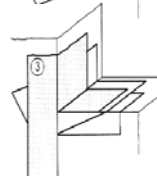


Figure No. 1

- 4) Lap additional pieces of Flashing Tape as necessary to cover the returns to the inside edge of the stud or track.
- 5) For expansion joints, position the Dryvit Flashing Tape so that it is centered over the joint. Adhere to one side of the joint, and then adhere the adjacent side. Allow enough slack in the tape to account for any joint movement.
- 6) Coordinate the Flashing Tape application with the Insulation Board installation. Apply only enough tape that can be covered with the insulation board in the same work period.

### III. Installation Dryvit Starter Trac or Drainage Strip

#### A. Dryvit Starter Trac

1. Dryvit Starter Trac shall be used at the base of the wall only.
2. Using a chalk line, strike a level line at the base of the wall that coincides with either the top or bottom of the nailing flange.
3. Install the Dryvit Starter Trac by applying a continuous bead of Dryvit's AP Adhesive on the wall side of the track's nailing flange.
4. Position the track on the chalk line and press firmly against the substrate to ensure firm and continuous contact between the adhesive and the wall surface. **Note: Do not overlap tracks, they shall be butted tightly.**
5. Secure the track to the wall using corrosion resistant fasteners attached into the underlying framing members.
6. Place a continuous bead of AP Adhesive along the top edge of the track and where tracks abut each other, to provide a seal.

#### B. Dryvit Drainage Strip

1. Dryvit Drainage Strip may be used at the base of the walls in lieu of the Starter Trac and Starter Trac with Drip Edge.
2. The Dryvit Drainage Strip shall be installed at the heads of all penetrations and at expansion/control joints as shown in Outsulation Plus Details, DUK110.
3. Using a chalk line, strike a level line at the base of the wall, head of opening or expansion/control joint to use as reference in applying the Dryvit Drainage Strip.
4. Install the Dryvit Drainage Strip by applying dabs of Dryvit's AP Adhesive at 300 mm (12 in) on center on the Backstop Air/Weather Barrier.
5. Position the Dryvit Drainage Strip on the chalk line and press firmly against the substrate to ensure firm contact between the adhesive and the wall surface. Staples may be used if necessary to maintain position until the insulation board is installed.

### IV. Installation of Insulation Board

#### A. System Terminations

##### 1. Backwrapping

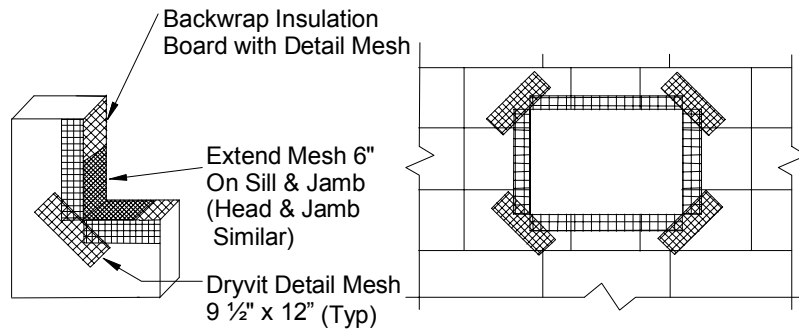
- a. Attach Detail® Mesh around the perimeter of all openings, penetrations, and other system terminations by stapling the mesh through the Dryvit Drainage Strip and into the substrate using corrosion resistant staples. Attach the Detail mesh at approximately every 300 mm (12 in) to maintain position. **Note: Backwrapping is not required at the base of the wall when using the Dryvit Starter Track.**
- b. Position the Detail Mesh so that a minimum of 63 mm (2 ½ in) extends onto the insulation board.

#### B. Insulation Board

1. Prior to installing the insulation board it shall be checked to ensure that:
  - a. It is shipped in a polyethylene bag bearing the Dryvit name. In addition, the lot number of the insulation shall be visible on the outside of the bag. Insulation board shall be obtained from Dryvit UK Ltd. or its authorized distributors, and made exclusively by manufacturers licensed by Dryvit UK Ltd.
  - b. One edge of each board shall bear the Dryvit name, the plant identification number of the block molder, the appropriate model code report number, and the name of the third party quality control agency with corresponding number. In addition, one board in each bag shall bear the same markings on the face.
  - c. The insulation board shall measure maximum .6 m (2 ft) by 1.2 m (4 ft) with a minimum thickness of 25 mm (1 in).
  - d. It meets the following tolerances:
    - 1) Length: Plus or minus 1.6 mm (1/16 in)
    - 2) Width: Plus or minus 1.6 mm (1/16 in)
    - 3) Thickness: Plus or minus 1.6 mm (1/16 in) for boards greater than 25 mm (1 in). Minimum thickness shall be 25 mm (1 in).
    - 4) Squareness: Shall not deviate from square by more than .75 mm (1/32 in) in 305 mm (12 in ) of total length.

- 5) Edge Trueness: Shall not deviate more than .75 mm (1/32 in) in 305 mm (12 in).
- 6) Face Flatness: Shall not exhibit any bowing of more than .75 mm (1/32 in) in total length. **Warning: Any insulation board not meeting the above requirements should be rejected and not installed.**
- C. Mix the Genesis, Genesis DM, Primus or Genesis FM material as described in Section I.B. **Warning: Do not apply the Dryvit materials in the rain. The air/weather barrier surface must be dry prior to adhering the insulation board.**
- D. Begin installation of the insulation board from a permanent or temporary support.
- E. Beginning at the base of the wall (above the Dryvit Starter Trac or over the Drainage Strip), use a 305 mm (12 in) by 1.2 mm (4 ft) piece of insulation board as a starter row to minimize insulation board joints from coinciding with sheathing board joints. Offset the insulation board joints from the sheathing joints a minimum of 203 mm (8 in) in both vertical and horizontal directions. Install the insulation boards with their long edges oriented horizontally.
- F. With a notched trowel, 9.5 mm (3/8 in) wide, 13 mm (1/2 in) deep notches spaced maximum 38 mm (1½ in) on center, apply the adhesive mixture to the back side of the insulation board. Apply the adhesive so that the ribbons run vertically when the insulation board is placed on the wall. **Note: Always Use a notched trowel adhesive pattern to adhere insulation board.**
- G. Apply firm pressure over the entire surface of the insulation board to ensure uniform contact and high initial grab.
- H. Using a margin trowel, clean the insulation board edges of any adhesive mixture. Ensure that the Insulation Board joints are butted tightly and are level and flush.
- I. Install subsequent rows of insulation board in a running bond pattern with vertical joints staggered.
- J. With factory edges exposed, stagger vertical joints at inside and outside corners. Make sure corners are straight and plumb.
- K. If for any reason the insulation board joints are not abutted tightly, slivers of insulation board must be installed to fill any gaps. ALL GAPS GREATER THAN 1.6 mm (1/16 in) MUST BE SLIVERED. **Tip: In order to create a tight fit, it is recommended that a wider joint be cut with a hot groover or similar tool to allow for a more precise fitting sliver. Do not install adhesive on sliver edges.**
- L. Windows, Doors, Mechanical Equipment and all wall penetrations
1. At penetrations, align the insulation boards so that the edges do not coincide with the corners of the opening. This will reduce stresses on the base coat and minimize the potential for cracking (refer to Dryvit Outsulation Plus System Installation Details, DUK110).
  2. The insulation board shall be held back from the window/door frame or mechanical equipment to allow for differential movement and proper sealant joint installation as shown in the Dryvit Outsulation Plus System Installation Details, DUK110.
- M. Expansion Joints
1. Install the Dryvit Drainage Strip as described in Section III.B when creating an expansion joint within the Outsulation Plus System. Refer to The Outsulation Plus System Installation Details, DUK110.
  2. When abutting dissimilar materials the Detail Mesh is used to construct the required expansion joint. The Detail Mesh is attached to the substrate as described in Section IV.A.1. The insulation board is then installed so as to leave a minimum 19 mm (3/4 in) separation to allow for differential movement and proper sealant joint installation.
  3. When Outsulation Plus is installed at a substrate transition, the Detail Mesh is used to construct the expansion joint. Attach the Detail Mesh as described in Section IV.A.1.
- N. Once the insulation board is in place, wait a minimum of 24 hours prior to working on the surface, to prevent any movement which may weaken the bond of the adhesive mixture to the Backstop air/weather barrier. **Note: Be sure to protect the installed insulation board from rain or inclement weather for a period of 24 hours.**
- O. To ensure an overall flat surface, use a straight edge of sufficient length to overlap at least 2.4 m (8 ft) of wall area.
- P. Any irregularities in the insulation board surface must be sanded flat. Sanding is accomplished with a light circular motion. **The entire wall area must be sanded.** Use grade 20 grit sandpaper or coarser in conjunction with hand or air rasps. **Note: Do not sand parallel to insulation board joints.**
- Q. Remove all loose pieces of insulation board and dust from the sanding operation using a brush, broom, or compressed air.
- R. Embed the Detail Mesh, which was previously installed for backwrapping at system terminations in the base coat mixture at this time.
1. With a stainless steel trowel, apply the base coat mixture to the edge and face of the insulation board and embed the Detail Mesh into it.
- S. Aesthetic reveals

1. To install an aesthetic reveal, snap a straight line using a chalk line to mark the position.
2. Position a straight edge such as a steel stud or track against the insulation board in the proper location to guide the appropriate cutting tool (router, hot knife or hot groover). **CAUTION: The thickness of the insulation board in the bottom of the reveal shall not be less than 19 mm (3/4 in).**
3. The reinforcing mesh must be continuous through aesthetic reveals. To ensure that the mesh is continuous, the reveals shall be meshed with Detail Mesh. The Detail Mesh must lap a minimum of 64 mm (2½ in) on each side of the reveal.
  - a) Apply the base coat mixture in the reveal and on the adjacent insulation board surfaces.
  - b) Embed the Detail Mesh on one side of the reveal only.
  - c) Using a sled or special tool for the reveal, embed the Detail Mesh into the reveal being careful not to cut the mesh.
  - d) Embed the Detail Mesh on the other side of the reveal. Ensure that the mesh is fully embedded and that all excess material is removed from the reveal.
  - e) Using a damp brush, clean out any irregularities in the base coat. **CAUTION: If the mesh is cut in the reveal, a new piece of mesh must be installed over the cut to ensure a 64 mm (1½ in) overlap exists.**
- T. Where Corner Mesh is specified for additional impact resistance at outside corners, the Corner Mesh should be embedded in the base coat mixture and allowed to set prior to installing the overall reinforced base coat over the face of the wall.
- U. Corners of all openings such as windows, doors, and mechanical equipment shall be reinforced with an additional piece of Detail Mesh placed diagonally to the opening as shown in Figure No. 2 below.



**Figure No. 2**

**V. Installation of Reinforcing Mesh**

- A. Prior to installing the reinforced base coat, inspect the surface of the insulation board for:
  1. Flatness, using a minimum 2.4 m (8 ft) straight edge. Sand any high areas and out-of-plane board joints flat as described in Section IV.O. **Caution: Do not build up low areas with base coat mixture to form a flat surface.**
  2. Damage and foreign materials; correct deficiencies as necessary.
  3. Surface degradation due to weathering or U/V, visible as discoloration. Sand affected areas to remove deterioration while maintaining the flatness of the surface.
- B. Mix the base coat material as described in Section I.B. **Warning: Do not apply the Dryvit materials in the rain. The insulation board surface must be dry prior to applying the base coat material.**
- C. Prior to installing the reinforcing mesh it should be inspected to ensure that it has been furnished by Dryvit UK Ltd.
- D. Dryvit reinforcing meshes are available in the following widths and lengths:
  1. Standard - 1.2 m x 45.7 m (48 in x 150'); 1.8 m x 45.7 m (72 in x 150')
  2. Standard Plus, Intermediate® - 1.2 m x 45.7 m (48 in x 150')
  3. Panzer 15 - 1.2 m x 22.9 m (48 in x 75')
  4. Panzer 20 - 1.2 m x 22.9 m (48 in x 75')
  5. Corner - 235 mm x 45.7 m (9¼ in x 150')
  6. Detail - 241 mm x 45.7 m (9½ in x 150')
- E. Installation of Dryflex base coat in high exposure areas such as sloped surfaces, windowsills, etc.
  1. Mix the Dryflex material as described in Section I.B. **Warning: Do not apply the Dryvit materials in the rain. The insulation board surface must be dry prior to applying the base coat material.**

2. Using a stainless steel trowel, apply the Dryflex mixture on the surface of the insulation board in a uniform thickness of approximately 2.4 mm (3/32 in). Apply the Dryflex continuously over the sloped surface and continue minimum 150 mm (6 in) onto the vertical areas.
  3. Immediately place the reinforcing mesh against the wet Dryflex mixture. With the curve of the mesh against the wall, trowel from the center to the edges, avoiding wrinkles, until the mesh is fully covered and not visible. The overall minimum base coat thickness shall be sufficient to fully embed the reinforcing mesh. The recommended method is to apply the base coat in two (2) passes.
  4. Allow the Dryflex to cure a minimum of 24 hours or until dry.
- F. Base Coat application (single layer of Standard, Standard Plus or Intermediate Reinforcing Mesh).
1. Standard Base Coat (Single layer of reinforcing mesh).
    - a. Mix the base coat mixture as described in Section I.B.
    - b. The base coat shall be applied such that the resulting overall minimum base coat thickness is sufficient to **fully embed** the reinforcing mesh. The recommended method is to apply the base coat in two (2) passes.
    - c. Double pass method (recommended)
      - 1) Using a stainless steel trowel, apply the base coat mixture on the entire surface of the insulation board to an area slightly larger than the width and length of a piece of reinforcing mesh, in a uniform thickness of 1.6 mm (1/16 in). **Note: The reinforcing mesh may be installed either vertically or horizontally.**
      - 2) Immediately place the reinforcing mesh against the wet base coat mixture. With the curve of the mesh against the wall, trowel from the center to the edges avoiding wrinkles, until the mesh is fully embedded and not visible. Trowel smooth to a uniform thickness slightly more than the thickness of the reinforcing mesh. **Note: The reinforcing mesh shall be continuous at corners and mesh edges lapped not less than 64 mm (2½ in). Do not lap the reinforcing mesh within 200 mm (8 in) of a corner. Tip: Corners and edges normally require light strokes with a small damp brush to smooth out irregularities.**
      - 3) Allow the base coat mixture to take up until firm to the touch. Trowel a second tight coat of the base coat mixture over the first coat to **fully cover** the reinforcing mesh (see Figure No. 3 below). The result should be such that the reinforcing mesh is approximately centered within the base coat thickness. Do not allow the first pass to completely dry prior to the second pass application or an excessive amount of base coat mixture will be necessary to fully coat the wall surface.

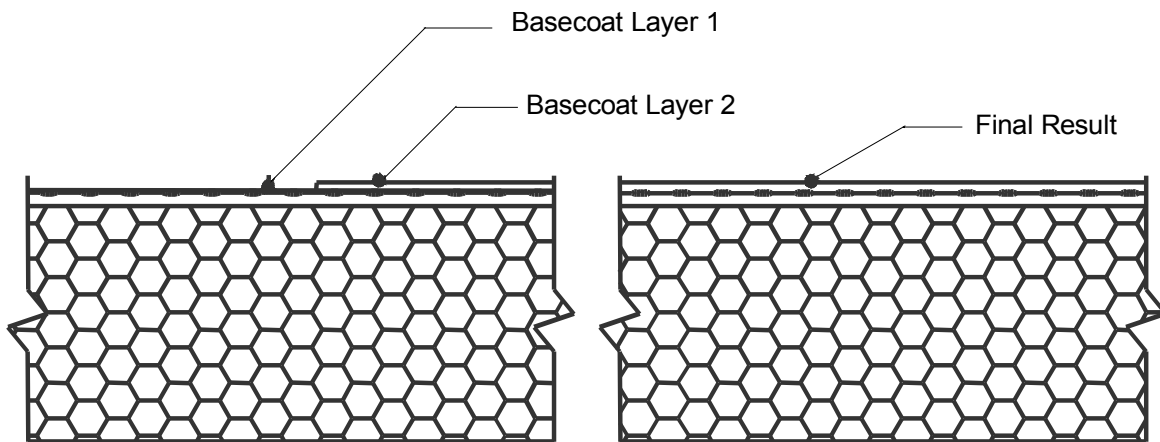


Figure No. 3

- d. Single pass method (optional)
  - 1) Using a stainless steel trowel, apply the base coat mixture on the entire surface of the insulation board, to an area slightly larger than the width and length of a piece of reinforcing mesh, in a uniform thickness of approximately 2.4 mm (3/32 in).
  - 2) Immediately place the reinforcing mesh against the wet base coat mixture. With the curve of the mesh against the wall, trowel from the center to the edges avoiding wrinkles until the mesh is fully embedded and no mesh pattern is visible. **Note: The reinforcing mesh shall be continuous at corners and mesh edges lapped not less than 64 mm (2½ in). Do not lap the reinforcing mesh within 200 mm (8 in) of a corner. Tip: Corners and edges normally require light strokes with a small damp brush to smooth out irregularities.**
- e. Protect completed work from water penetration and run-off.

- f. Allow the Genesis or Primus base coat to cure a minimum of 24 hours (Genesis DM, 10 hours) before proceeding with application of finish coat. Cool, damp conditions may require longer drying times. Do not apply finish to a wet or damp base coat.
2. Panzer Mesh base coat (Panzer 15 or Panzer 20 used in conjunction with Standard or Standard Plus Reinforcing Mesh).
  - a. Using a stainless steel trowel, apply the base coat mixture on the entire surface of the insulation board to an area slightly larger than the width and length of a piece of reinforcing mesh, in a uniform thickness of approximately 3.2 mm (1/8 in).
  - b. Immediately place the reinforcing mesh against the wet base coat mixture. With the curve of the mesh against the wall, trowel from the center to the edges avoiding wrinkles until the mesh is fully covered and not visible.
  - c. Continue in the same manner until the entire area requiring Panzer mesh is covered. **Caution: Do not lap the Panzer mesh. Adjacent pieces are to be tightly butted.**
  - d. Protect completed work from water penetration and run-off.
  - e. Allow the Panzer base coat to cure a minimum of 24 hours prior to applying Dryvit's Standard or Standard Plus reinforcing mesh.
  - f. Apply the second layer of reinforcing mesh in accordance with Section V.F.1.d. Offset the edges of the Standard or Standard Plus reinforcing mesh from the edges of the Panzer mesh a minimum of 200 mm (8 in). **Tip: If Panzer Mesh is installed horizontally, we recommend the Standard or Standard Plus mesh be installed vertically and vice versa.**

## VI. Dryvit Finish Application

- A. The following Dryvit finishes are available for use as part of the Outsulation Plus System.
  1. Standard DPR (Dirt Pick-up Resistant) Finishes.
    - a. Quarzputz, Quarzputz **E**, Sandblast, Sandpebble, Sandpebble **E**, Sandpebble Fine, Sandpebble Fine **E**, and Freestyle.
  2. DPR FM Finishes.
    - a. FM QP, FM SB, FM SP and FM SPF,
  3. Elastomeric DPR (Dirt Pick-up Resistant) Finishes
    - a. Weatherlastic Quarzputz, Weatherlastic Sandpebble, Weatherlastic Sandpebble Fine, and Weatherlastic Adobe.
  4. Medallion Series PMR (Proven Mildew Resistance)
    - a. Quarzputz, Sandblast, Sandpebble, Sandpebble Fine, and Freestyle.
  5. Specialty Finish
    - a. Ameristone, Stone Mist, Custom Brick.
- B. Prior to applying the Dryvit finish, the Genesis, Primus or Genesis FM base coat shall have cured a minimum of 24 hours (Genesis DM, 10 hours) and shall be dry and hard. Cure time may be longer depending on environmental conditions.
- C. Inspect the base coat for any irregularities such as trowel marks, board lines, rough corners and edges, proper reinforcing mesh embedment as well as presence of efflorescence. **Note: Correct all irregularities prior to applying the Dryvit finish.**
- D. Application
  1. General:
    - a. **Important:** All Dryvit finishes must be installed continuously to a natural break such as corners, expansion joints, or tapeline. Mechanics must maintain a wet edge. Sufficient personnel and scaffolding must be provided to continuously finish a distinct wall area or otherwise cold joints will result. Scaffolding must be spaced a minimum of 460 mm (18 in) from the wall to prevent staging lines. On hot windy days, the wall may be fogged with clean potable water to cool the wall and facilitate finish installation. As with other plaster materials, installation work should precede the sun. For example, work the shady or cool side of the building. If this is not possible, scaffold should be shaded with tarp or nursery shade cloth. Do not introduce water to the finish material once it is installed on the wall. This will cause color variations. Each mechanic must use the same type tool and hand motion to match the texture of the mechanics above, below and on each side. Use finish from a single batch number whenever possible.
  2. Quarzputz, Quarzputz **E**, Sandblast, Weatherlastic Quarzputz, FM QP and FM SB.
    - a. Mix the Dryvit finish as described in Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Finish material.**
    - b. Using a clean stainless steel trowel, apply a coat of the Dryvit finish in a uniform thickness on the dry base coat. **Note: The Dryvit Quarzputz finish shall be applied and leveled to a uniform**

**thickness no greater than the largest aggregate. The Sandblast finish is applied and leveled to a thickness of approximately 1 1/2 times the largest aggregate. Caution: Do not apply finish in sealant joints. Refer to Section VII for proper preparation of sealant joints.**

- c. The texture is achieved by uniform hand motion and/or tool that produces the texture to match the approved sample. Each mechanic must use the same tool and hand motion to ensure that the texture achieved is uniform over the entire wall area.
  3. Sandpebble, Sandpebble **E**, Sandpebble Fine, Sandpebble Fine **E**, Weatherlastic Sandpebble, Weatherlastic Sandpebble Fine, FM SP and FM SPF
    - a. Mix the Dryvit finish as described in Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Finish material.**
    - b. Using a clean, stainless steel trowel, apply an even coat of the finish to a thickness slightly thicker than the largest aggregate size.
    - c. Pull across using a horizontal trowel motion to develop a uniform thickness no greater than the largest aggregate of the material. **Caution: Do not apply finish in sealant joints. Refer to Section VII for proper preparation of sealant joints.**
    - d. The texture is achieved by a uniform hand floating motion with a clean stainless steel trowel; wipe the trowel and wet it lightly. Apply light pressure in a circular motion.
  4. Freestyle
    - a. Mix the Dryvit finish as described in Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Finish material.**
    - b. Using a clean, stainless steel trowel, apply the Freestyle finish on the base coat in a thickness not greater than 1.6 mm (1/16 in). The texture is either pulled out of this base to a thickness of no greater than 6.4 mm (1/4"), or the texture may be achieved by adding more Freestyle finish to the base coat using the same texturing motions that are used with other plaster materials - such as a skip trowel finish. Numerous other aesthetically pleasing textures can be created to match approved samples. **Note: The maximum thickness of any Freestyle finish texture shall not exceed 6.4 mm (1/4 in).**
  5. Weatherlastic Adobe
    - a. Using a brush, roller or airless spray equipment, apply a coat of color coordinated Color Prime at the recommended coverage to the cured base coat and allow to dry.
    - b. Mix the Adobe finish material as described in Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Finish material.**
    - c. Using a stainless steel trowel, apply a coat of Adobe approximately 1.6 mm (1/16 in) to the wall surface. Allow the Adobe finish to take-up.
    - d. Using a stainless steel trowel, apply a second coat of Adobe to obtain the desired texture. **Tip: An atomizing spray bottle may be used to apply a mist of water to the surface in the finishing step. Caution: Do not apply Adobe finish in sealant joints. Refer to Section VII for proper preparation of sealant joints.**
  6. Ameristone
    - a. Apply Ameristone finish in accordance with Ameristone Application Instructions, DUK142. **Caution: Do not apply Ameristone in sealant joints. Refer to Section VII for proper preparation of sealant joints. Warning: Do not apply Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Ameristone finish material.**
  7. Stone Mist
    - a. Apply Stone Mist finish in accordance with Stone Mist Application Instructions, DUK420. **Caution: Do not apply Stone Mist in sealant joints. Refer to Section VII for proper preparation of sealant joints. Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Stone Mist finish material.**
  8. Custom Brick
    - a. Refer to Dryvit Custom Brick Application Instructions, DUK154 and DUK214, for complete usage instructions. **Caution: Do not apply Custom Brick in sealant joints. Refer to Section VII for proper preparation of sealant joints. Warning: Do not apply the Dryvit materials in the rain. The base coat surface must be dry prior to applying the Dryvit Custom Brick finish material.**
- E. Coatings and Primers
1. Demandit and Color Prime
    - a. Mix to a smooth homogeneous consistence in accordance with Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The base coat or finish surface must be dry prior to applying the Dryvit material.**
    - b. Apply with a brush, roller, or airless spray equipment.

- c. When applying with a roller, a maximum 19 mm (3/4 in) nap, polyester or polyester blend with nylon or lambswool, with beveled ends and a phenolic core is recommended. A 460 mm (18 in) wide roller frame with a 57 mm (2-1/4 in) inside diameter is also recommended.
  - d. When applying Demandit, do so in one continuous coat, maintaining a wet edge as the application proceeds to a natural break. The roller cover must be kept fully loaded as the application proceeds.  
**Caution: Do not stretch out the application by rolling with a dry roller. The last leveling roller strokes should always be in the same direction. Do not cut in around openings prior to overall application, but rather, do the cut-in work as the application proceeds. Tips: Application of Demandit should always be done by an experienced, industrial or commercial painting contractor. Porous surfaces may require two coats to obtain a uniform appearance. Changing color requires the application of two coats. Do not allow the Demandit to dry on roller covers. Roller covers with dried coating do not apply the coating evenly.**
2. Revyvit
    - a. Mix the Revyvit to a smooth homogeneous consistency in accordance with Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The finish surface must be dry prior to applying the Dryvit Revyvit material.**
    - b. Apply the Revyvit with a brush or 13 mm - 16 mm (1/2 in - 5/8 in) nap roller.
    - c. Roll or brush in multiple directions and then lightly finish in one direction to ensure that no lap marks remain.
    - d. A second coat may be required for heavy textured surfaces or when there is a contrast of colors. Apply the second coat as described in paragraph b and c above. **Caution: Do not attempt to apply Revyvit in one heavy coat. It is recommended to apply the material in two coats rather than one heavy coat. Apply the second coat only after the first coat is completely dry. Important: Texture changes will exist after Revyvit is applied over existing Dryvit Finishes. The degree of change is a function of the thickness and the number of coats of Revyvit.**
  3. Weatherlastic Smooth
    - a. Mix the Weatherlastic Smooth to a smooth, homogeneous consistency in accordance with Section I.C. **Warning: Do not apply the Dryvit materials in the rain. The finish surface must be dry prior to applying the Dryvit Weatherlast Smooth material.**
    - b. Brush application is recommended only for cutting in and trim, not for entire wall elevation.
      - 1) Nylon bristle brush is recommended.
      - 2) For best performance, a minimum 11 mils dry film thickness (22 mils wet film thickness), shall be applied. This is achieved by applying the Weatherlastic Smooth in two (2) 11 mil coats. Under average drying conditions, 21 °C (70 °F), 50% R.H, two (2) hours drying time between coats should be adequate.
    - c. Roller Application
      - 1) A minimum 250 mm (10") roller cover with a 32 - 38 mm (1-1/4 - 1-1/2 in) nap is recommended.
      - 2) Completely saturate the roller cover and keep the roller loaded with coating to avoid foaming. Do not dry-roll or over-roll as this will cause excessive entrapment of air within the coating.
    - d. Spray Application
      - 1) Application by airless spray equipment or mastic pump and gun allows application of coating at total required application rate with a minimum of stipple or thickness variations.
      - 2) Equipment should have the capacity to pump 7.6 liters (2 gal) of coating per minute.
      - 3) Material hose should be minimum 12 mm (1/2 in) inside diameter for spraying coating through more than a 15 m (50 ft) length. Minimum bursting of 3600 N (800 lbs) is recommended. **Tip: Orifice sizes of 0.53 mm - 0.81 mm (.021 - .032 in) will be required depending on equipment used.**
      - 4) Cross apply coating holding spray gun perpendicular to, and approximately 1 m (3') from the wall surface. Avoid excessive material build-up by holding spray gun away from the wall when pulling the trigger, then bringing gun across area to be coated. Maintain a wet edge, and avoid starting and stopping in the middle of the wall. Do not attempt to overreach spray pattern as this may result in appearance of irregular spray pattern. Place scaffolding and equipment to facilitate quick application without numerous interruptions.
      - 5) 10% loss from overspray should be anticipated.
      - 6) Backrolling over-sprayed areas is recommended to control pinholing on spray applications over porous surfaces.
      - 7) For best performance, a minimum 11 mils dry film thickness (22 mils wet film thickness) shall be applied. This is achieved by applying the Weatherlastic Smooth in two (2) 11 mil coats. Under average drying conditions, 21 °C (70 °F), 50% R.H, two (2) hours drying time between coats should be adequate.

## VII. Sealant Joint Preparation

- A. All sealant joints shall be prepared with either Dryvit Demandit or Color Prime.
1. Stir Demandit or Color Prime to a smooth, homogeneous consistency.
  2. Apply Demandit or Color Prime with a brush on each side of the joint.
  3. Allow the Demandit or Color Prime to dry a minimum of 48-72 hours prior to sealing with recommended sealant as listed in DUK153.

## VIII. Maintenance

- A. Surface Damage
1. Any breaches of the Dryvit surface should be repaired as soon as possible following the instructions listed in Section IX.
- B. General Cleaning
1. Prewet the soiled area with clean water and wash with the following solution:
    - a. 3.8 liters (1 gal) of clean, warm water.
    - b. 236 ml (1 cup) of Trisodium Phosphate (TSP).
  2. Apply the cleaning solution using either a soft bristle brush or power washing equipment. When using a soft bristle brush, lightly scrub the area. **Note: Use of hard scrubbing action or a hard bristle brush will damage the finish.** When power washing, do not exceed 4136 kPa (600 PSI) at the spray tip or 49°C (120°F) solution temperature. **Note: Always use tips which provide at least 40° fan pattern and keep spray tip at least .6 m (2') from the surface being cleaned. Never use water-blasting equipment which delivers pressures in excess of 4136 kPa (600 PSI) at the spray tip. Erosion or damage from water blasting or improper power washing could void the Dryvit warranty and damage the Dryvit finish.**
  3. Thoroughly rinse the surface with clean water.
  4. Alternate cleaning solutions are available from Sentry Chemicals, Max Products, ProSoCo and Surtec, which have been found to be effective in cleaning Dryvit surfaces. Follow manufacturer's instructions for application. **Never use solvent based cleaners as severe damage to the Dryvit products can occur.** Contact Dryvit UK Ltd. if you have any questions.
- C. Mildew or algae growth
1. Protect adjacent materials and vegetation.
  2. Prewet the affected area with clean water and wash with the following solution:
    - a. 3.8 liters (1 gal) of clean, warm water.
    - b. 236 ml (8 oz) of Trisodium Phosphate (TSP).
    - c. .95 liters (1 qt) of household bleach.
  3. Apply the cleaning solution and allow to stand 2-3 minutes. In some cases, the mildew or algae will be removed without the need for scrubbing.
  4. Thoroughly rinse the surface with clean water
  5. An alternate method is to apply the cleaning solution as detailed in Section VIII.B.2.
  6. After treatment, rinse thoroughly with clean water.
  7. Alternate cleaning solutions are available from Sentry Chemicals, Max Products, ProSoCo and Surtec which have been found to be effective in cleaning Dryvit surfaces. Follow manufacturers' instructions for application. **Never use solvent based cleaners as severe damage to the Dryvit Products can occur.**

## IX. Repair Procedure

- A. Using a sharp utility knife, cut through and remove the lamina, exposing a neat uniform-sized area of insulation larger than the damaged area. Use a disk grinder or belt sander to remove the finish to expose the reinforced base coat approximately 75 mm (3 in) around the damaged area. Use an aluminum oxide disk or belt, 20 grit.
- B. Cut out the remaining insulation board carefully.
- C. Inspect the Backstop air/weather barrier and sheathing and repair as necessary
- D. Cut a piece of insulation board to fit tightly into the damaged area. Sand the edges of the insulation board for a precise fit.
- E. Adhere the insulation board to the substrate using the base coat mixture. Make sure that the new insulation board is flush with the surrounding insulation board.
- F. Precisely mask the surrounding area with masking tape. Cut the reinforcing mesh so that it will cover the patch area, lapping onto the original reinforced base coat a minimum of 64 mm (2½ in).
- G. Apply the base coat mixture on the face of the insulation board, taking particular care to keep the base coat mixture off the surrounding original finish edge. Embed the reinforcing mesh in the wet base coat mixture.

- H. Using a small damp brush, smooth out irregularities and feather the edge of the base material mixture. The reinforcing mesh must be totally embedded in the wet mix. When completed, the base coat should be recessed approximately 1.5 mm (1/16 in) from the existing finish coat. This will insure that when the finish is applied, the new finish will be level or on the same plane as the existing finish coat. Wait a minimum of 24 hours to allow the base coat to cure.
- I. If necessary, again, precisely mask the surrounding existing finish with masking tape.
- J. Install the new finish over the patch area and texture to match the surrounding finish.
- K. Allow the finish to dry for a short period of time depending on weather conditions. Remove the masking tape.
- L. Feather the edges of the patch to blend inconspicuously with the surrounding texture. After the patch has dried, there may be a color variation between the patch and the surrounding area. This should become less noticeable as environmental conditions blend the areas together. **Note: The Dryvit finish should be ordered to match the original lot number shipped to the job; however exact matching cannot be guaranteed.**

**DISCLAIMER**

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