

OUTSULATION RAIL SYSTEM™



External Insulation and Finish System

DUK664

Outsulation Rail System Application Instructions

REFERENCE LIST OF DRYVIT BROCHURES AND PUBLICATIONS

Ameristone™ DUK434
 Backstop™ DUK435
 Backstop NT™-Smooth DUK455
 Backstop NT™-Texture DUK453
 Color Prime™ DUK410
 Custom Brick™ DUK227
 Demandit® DUK400
 Dryflex® DUK430
E™ Finishes DUK468
 EPS Specification DUK131
 Expansion Joints and Sealants DUK153
 Finishes DUK416
 Genesis® DUK417
 Genesis DM™ DUK452
 NCB™ DUK402
 Outsulation® System Details DUK107
 Rail System Manufacturer's Specification DUK662
 Rail System Details DUK663
 Panel Set Adhesive™ DUK431
 Primus® DUK414
 Primus DM™ DUK405
 Prymit® DUK424
 Reinforcing Meshes DUK413
 Revyvit® DUK415
 SealClear™ DUK426
 Stone Mist® DUK420
 Substrates DUK156
 Weatherlastic™ Finishes DUK418
 Weatherlastic Smooth™ DUK433
 Weatherprime™ DUK436

I. Inspection of the Substrate

- A. Acceptable substrates for application of the Outsulation Rail System are listed in the Outsulation Rail System Specification, DUK662.
- B. Wall sheathing must be securely fastened per applicable building code requirements.
- C. The substrate must be structurally sound, free of loose material, voids, projections, hot spots, release agents, coatings or other materials that may affect adhesion.
- D. There shall be no planar irregularities greater than 6.3 mm (1/4 in) within any 1.2 m (4 ft) radius.
- E. The substrate, method of attachment, and any flashing must comply with all contract documents.

Notify the General Contractor and/or Architect and/or Owner of all discrepancies. Do not proceed until all unsatisfactory conditions have been corrected.

II. Mixing Instructions

- A. Weather Resistive Barrier (if required)
 1. Backstop
 - a. Use a mixing ratio of 1 part Backstop to 1 part Portland cement. The mix is allowed to set for 5 minutes and then remixed to break the set. Refer to Backstop product sheet DUK435 for complete instructions.
 2. Backstop NT
 - a. Due to shipping and storage, there may be some settling of materials. Prior to using, mix the material to a smooth homogeneous consistency.
 - b. Can be applied using a roller, trowel, or spray equipment (with backrolling) over the approved substrates. Refer to Backstop NT product sheets DUK455 and DUK453.
 3. Sheet Type
 - a. Shall be installed in a weather board fashion in accordance with code and manufacturer's requirements.
- B. Adhesive (where required) and Base Material
 1. Primus, Genesis
 - a. 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 Wind-lock B-M1 mixing blade or equivalent powered by a 13 mm (1/2 in) drill, 700-1000 rpm only. **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.**
 - b. Pour 1/2 of the freshly mixed material [approximately 13.5 kg (30 lbs)] into a clean plastic container.
 - c. Add 1/3 of a bag [approximately 13.5 kg (30 lbs)] of fresh, lump free Type I or II Portland cement. Either grey or white cement is acceptable. Add cement slowly and mix thoroughly. **Do not add large quantities of cement at one time.**
 - 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. **Do not over-water as this will degrade the performance of the Rail System and promote efflorescence.**
NOTE: Genesis requires more water than Primus. Add .950 ml (1 qt) of water prior to adding Portland cement. Additional water may be added to adjust workability.

NOTE: It is advisable to mix the Primus or Genesis 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 any Portland cement material. 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. Primus DM
 - a. Pail Mixing
 - 1) One 23 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.
 - 2) Add Primus DM slowly while mixing using a Wind-lock B-M1 mixing blade or equivalent, powered by a 13 mm (1/2 in) drill, 700-1000 RPM.
 - 3) Thoroughly mix until uniformly wetted, adjusting consistency with a small amount of water or Primus DM material.

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

b. Mortar Mixer

- 1) Add 5.7 L (1.5 gal) of clean potable water for each 23 kg (50 lb) bag of Primus DM into a clean mortar mixer.
- 2) Add the Primus DM while the mixer is running. Let mix 3 to 5 minutes, shut mixer off for 5 minutes, then run mixer for another 2 to 3 minutes to break the set. A small amount of water may be added if necessary to adjust the workability.

3. Genesis DM

a. Pail Mixing

- 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.
- 2) Add the Genesis DM slowly while constantly mixing with a Jiffler Mixer at 450-500 rpm.
- 3) Thoroughly mix until uniformly wetted, adjusting consistency with a small amount of water or Genesis DM.
- 4) Let set for 10 minutes. Retemper, adding a small amount of water if necessary. Material must be free of lumps before using.

b. Mortar Mixer

- 1) Genesis DM can be mixed in a mortar mixer by first adding 5.7-6.6 L (6-7 qts) of water for each 23 kg (50 lb) bag.
- 2) Add the Genesis DM while the mixer is running. Let mix 3-5 minutes, shut the mixer off for 10 minutes, run mixer for another 2-3 minutes to break set and add a small amount of water if necessary. The pot life is 1-3 hours depending on weather. Small amounts of water can be added during this period to adjust workability.

C. Base Material Only

1. NCB

- a. Mix NCB to a smooth, homogeneous consistency with a Wind-lock B-M1 mixing blade. A small amount of clean potable water may be added to adjust workability.

2. Dryflex

- a. Due to shipping and storage, there may be some separation of materials. Prior to splitting the material and adding Portland cement, remix the material thoroughly. Use a Wind-lock B-M1 mixing blade or equivalent powered by a 13 mm (1/2 in) drill, 700-1000 rpm only. **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.**
- b. Pour 1/2 of the freshly mixed material [approximately 10.21 kg (22.5 lbs)] into a clean plastic container.
- c. Add 1/4 of a bag [approximately 10.21 kg (22.5 lbs)] of fresh, lump free Type I or II Portland cement. Either grey or white cement is acceptable. Add cement slowly and mix thoroughly. **Do not add large quantities of cement at one time.**
- 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. **Do not over-water as this will degrade the performance of the Rail System and promote efflorescence.**

NOTE: It is advisable to mix the Dryflex 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 any Portland cement material. 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.

D. Dryvit Finish

1. Quarzputz[®], Sandblast[®], Freestyle[®], Sandpebble[®], Sandpebble Fine[™], and Weatherlastic[™] Finishes

- a. Thoroughly mix the factory-prepared Dryvit finish with a Wind-lock B-M1 or B-M8 mixing blade (or equivalent) until a uniform homogeneous consistency is attained. A small amount of clean potable water may be added to adjust workability. **Always add the same amount of water to each pail within a given lot to avoid colour variation.**

2. Specialty Finishes

- a. Ameristone and Stone Mist (For Ameristone refer to DUK142 for complete application instructions)
 - 1) Mix the factory prepared finish for approximately 1 minute using a Goldblatt Jiffler Mixer powered by a 13 mm (1/2 in) drill at 400-500 rpm, just prior to application. Do not overmix. Overmixing can result in air entrapment that will affect application and colour. **Tip: Mix each bucket of material for the same length of time.**
- b. Custom Brick
 - 1) Refer to Dryvit Custom Brick Application Instructions, DUK154 and DUK214, for complete mixing and usage instructions.

E. Dryvit Coatings, Primers and Sealers

- 1. Demandit, Revyvit, Weatherlastic Smooth, Weatherprime, Prymit, Color Prime, and SealClear
 - a. Mix material with a Wind-lock B-M1 or B-M8 mixing blade (or equivalent) to a homogeneous consistency.

III. Preparation of Rough Openings

Please refer to relevant standard Outsulation Rail Installation Details, DUK663, or bespoke project details if provided.

A. Sill Pan Flashing (Exposed)

- 1. Install a seamless pan flashing at all sill locations.
 - a. The flashing shall extend between the framing members of the rough opening and shall be sized to protect the sill, sheathing and the surface of the Rail System. It must include vertical legs at the back and sides to ensure weather protection. Refer to standard Outsulation System Details OS 0.0.05 and OS 0.0.06, in addition to Outsulation Rail System Details RS 0.0.09, RS 0.0.10, RS 0.0.11, RS 0.0.12, RS0.0.13, RS 0.0.14, RS 0.0.15 and RS 0.0.16.

Note: All flashing shall continuous, have watertight seams, and shall be configured to shed all water to the exterior of the system.

- b. The flashing shall extend a minimum of 65 mm (2 ½ in) over the surface of the Rail System.

B. Dryvit Flashing Tape (**Caution: The Dryvit Flashing Tape must be handled properly. Refer to the Material Safety Data Sheets for proper handling, storage, health and environmental considerations.**)

Note: Coordinate the Flashing Tape application with insulation board installation. Apply only enough Flashing Tape that can be covered with insulation board in the same work period.

- 1. Dryvit Flashing Tape must be installed in order to maintain a continuous weather barrier from the sheathing substrate onto the framing edges at discontinuities and terminations such as openings, expansion joints, tops of parapets, etc. Refer to Outsulation Rail System Installation Details, DUK663.
- 2. Surface Preparation
 - a. Apply only when air and surface temperatures are above 4 °C (40 °F).
 - b. The Surface to receive the Dryvit Flashing Tape must be clean, dry, smooth and free of any other condition that will hinder adhesion.
 - c. Clean loose dust or dirt from the surface by wiping with a clean, dry cloth or brush.
 - d. If good initial adhesion cannot be obtained because of surface dust, cold temperatures, 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 colour. 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. Jambs of rough openings
 - a. Cut the Dryvit Flashing Tape to the appropriate length [rough opening plus 50 mm (2 in)].
 - b. The tape shall be positioned so that it covers the sheathing substrate 50 mm (2 in).
 - c. Peel the release paper to expose the rubberised asphalt adhesive and align the tape into position before touching the wall.

- d. Begin at the base of the opening and adhere the Flashing Tape over the vertical leg of the sill pan. Continue to adhere the Flashing Tape along the jamb being careful to avoid wrinkles or fish mouths along the edges. The tape shall extend 50 mm (2 in) beyond the head of the rough opening.
- e. Cut the Flashing Tape at the head/jamb intersection as shown in Outsulation Detail OS 0.0.04 and Rail System Installation Detail RS 0.0.16.
- f. Apply firm pressure with a hand roller to the tape, ensuring continuous contact with the rough opening and sheathing substrate.

Note: The Flashing Tape shall completely cover the stud edges to the inside edge of the rough opening. Additional strips of Flashing Tape may be required.

2. Flashing Tape Splices at Head/Jamb Location

- a. Cut the Dryvit Flashing Tape equal to the width of the rough opening including the sheathing plus 50 mm (2 in).
- b. Centre the Dryvit Flashing Tape at the head/jamb intersection and adhere the splice piece to the previously installed jamb Flashing Tape and to the rough opening at the head.

3. Heads of Rough Openings

- a. Cut the Dryvit Flashing Tape to the appropriate length [rough opening plus 100 mm (4 in)].
- b. The tape shall be positioned so that it covers the sheathing substrate 50 mm (2 in) and the previously installed Flashing Tape that extended from the jambs above the head.
- c. Cut the Flashing Tape at the head/jamb intersection as shown in Outsulation Detail OS 0.0.04 and Rail System Installation Detail RS 0.0.16.
- d. Apply firm pressure with a hand roller to the tape, ensuring continuous contact with the rough opening and sheathing substrates.

Note: The Flashing tape shall completely cover the stud edges to the inside edge of the rough opening. Additional strips of Flashing Tape may be required.

IV. Insulation Board Installation

A. System Terminations

- 1. Along the base of the system, level and attach the starter track with weeps to the wall (standard detail RS.0.0.08). The starter track must be sized to receive the selected EPS insulation thickness. Fasten the starter track at minimum 300 mm (12 in) centres with suitable fixings for the given substrate. Where a cavity is required, install the correct sized shim as per the standard detail.
- 2. Attach Detail[®] mesh around the perimeter of all openings, penetrations, and other system terminations as outlined in the standard Outsulation Rail System Installation Details, DUK663, or bespoke project details if provided.
- 3. Position the Detail mesh so that a minimum of 64 mm (2 ½ in) extends onto the insulation board. Keep the mesh, which is not embedded, clean.

B. Inspection of the Insulation Board

- 1. Prior to installing the insulation board, it shall be checked to ensure that:
 - a. The insulation board has been supplied by Dryvit UK Ltd. only and to ensure that the insulation boards measure 500 mm x 500 mm (20 in x 20 in) with a minimum thickness of 40 mm (1 ½ in) (refer to standard detail RS 0.0.04).
 - b. The insulation board shall meet 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 25.4 mm (1 in), plus 1.6 mm (1/16 in) minus 0 for boards less than or equal to 25.4 mm (1 in).
 - 4) Squareness: Shall not deviate from square by more than 0.75 mm (1/32 in) in 305 mm (12 in) of total length.
 - 5) Edge Trueness: Shall not deviate more than 0.75 mm (1/32 in) in 305 mm (12 in).
 - 6) Face Flatness: Shall not exhibit any bowing of more than 0.75 mm (1/32 in) in 305 mm (12 in).

WARNING: Any insulation board not meeting the above requirements should be rejected and not installed.

C. Insulation Board Installation

Please refer to Outsulation Rail System Installation Details, DUK663, outlined below or relevant bespoke project details if provided.

- 1. Apply the first row of 500 mm X 500 mm (20 in x 20 in) specially grooved EPS boards into the starter track so that the board sits completely inside the profile. As each board is installed, a “T” Spline (standard detail RS 0.0.06) should be placed in the vertical butt joint between adjacent boards.

2. Prior to installing the next row of EPS, install the horizontal holding track(standard detail RS 0.0.0.05) by inserting into the grooves on the top edge of the first row of EPS boards, then fastening the holding track to the substrate with suitable fixings for the given substrate, and fixing at 300 mm (12 in) centres. Where a cavity is required, the correct sized shim should be installed with the fixing as shown in the standard details. If the substrate is uneven, then this can be levelled with plastic shims at the fixing points. When using shims, care should be taken to ensure that sufficient penetration of the load-bearing substrate by the fixing is maintained.
3. Apply the second row of 500 mm x 500 mm (20 in x 20 in) EPS boards into the top of the holding track. Ensure that, with the factory edges of the boards exposed, vertical joints between rows are staggered in a running bond pattern as shown in standard detail RS 0.0.03. Again, a “T” Spline should be placed in the vertical butt joints of adjacent boards. Continue edges of the EPS boards onto the flanges of the PVC horizontal tracks. Interlock EPS boards at all inside and outside corners.
4. Continue in the same manner for each course of EPS, installing subsequent rows of insulation board in a running bond pattern (vertical joints staggered). Installation in this manner will reduce the potential for cracks to develop. Make sure the corners are straight and plumb.
5. All EPS board joints shall be butted tightly together to prevent any thermal breaks in the Outsulation Rail System.
6. If for any reason the insulation board joints are not butted tightly, slivers of insulation board or approved expanding foam must be installed to fill any gaps. ALL GAPS GREATER THAN 1.6 mm (1/16 in) MUST BE FILLED. GAPS GREATER THAN 6 mm (1/4 in) MUST BE SLIVERED. **Tip: When installing slivers, 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.**
7. Dryvit UK Ltd. does not approve the use of nails, screws, or any other type of non-thermal mechanical fasteners, metal corner beads, stopbeads, etc.
8. When specified, fire barriers are fixed at the desired positions in the system. Please refer to standard Outsulation Rail System Details, DUK663, for fire barrier options.
9. In situations, such as high-rise buildings, where the insulated surfaces are subjected to high negative wind loads, it may be necessary to introduce supplementary fixings to achieve the necessary factors of safety. This is achieved by substituting the loose vertical “T” Splines with lengths of holding track cut to approximately 470 mm (18.5 in) long and fixed to the substrate with suitable fixings.
10. Windows, Doors, Mechanical Equipment and All Wall Penetrations – Please refer to standard Outsulation Rail System Installation Details, DUK663.
 - a. Set out holding track as per standard detail RS 0.0.16 at all penetrations.
 - b. At penetrations, align the insulation boards so that the edges (vertical and horizontal joints) do not coincide with the corners of the opening. This will reduce stresses on the base coat and minimize the potential for cracking (standard detail RS 0.0.15).
 - c. Detail mesh shall be attached around the perimeter of the opening or as described in Section IV.A.1 and 2.
 - d. 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 standard Outsulation Rail System Installation Details, DUK663.
11. Expansion Joints
 - a. When abutting dissimilar materials, Termination Track and Detail Mesh are used to construct the required expansion joint (refer to standard detail RS 0.0.17). The Detail mesh shall be attached to the substrate as described in Section IV.A.1 and 2. 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.
12. Any irregularities in the insulation board surface must be sanded (rasped) 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, electric or air rasps. Use OSHA required masks to protect against inhaling EPS dust. **NOTE: Do not sand parallel to the board joints.**
13. Remove all loose pieces of insulation board and dust from the sanding operation using a brush, broom, or compressed air. Use OSHA required masks to protect against inhaling EPS dust.
14. All Detail mesh that was previously installed for backwrapping the insulation board shall be embedded in the base material mixture at this time.
 - a. With a stainless steel trowel, apply the Primus, Genesis, Primus DM, Genesis DM, NCB, or Dryflex base material mixture to the edge and face of the insulation board and embed the Detail Mesh in the wet mixture.
15. Aesthetic Reveals

- a. To install an aesthetic reveal, snap a straight line using a chalk line to mark the position.
- b. 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 joint must not be less than 40 mm (1 ½ in). Thicknesses equal to or greater than 40 mm (1 ½ in) minimize crack development at the base of the joint.**
- c. The reinforcing mesh must be continuous through aesthetic joints. 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 (2-1/2 in) on each side of the reveal.
 - 1) Apply the base material mixture in the reveal and on the adjacent insulation board surfaces.
 - 2) Embed the Detail mesh on one side of the joint only.
 - 3) Using a sled or special tool for the reveal, embed the Detail Mesh into the reveal being careful not to cut the mesh.
 - 4) 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.
 - 5) Using 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 (2-1/2 in) overlap exists.
- 16. 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.
- 17. Corners of all openings such as windows, doors, mechanical equipment and all penetrations shall be reinforced with Detail mesh placed diagonally to the opening as illustrated in Figure No. 1 below. This will reduce the potential for cracking at these high stress areas.

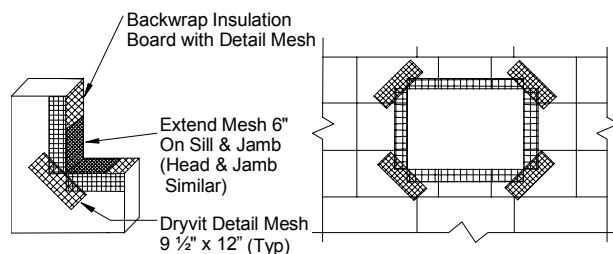
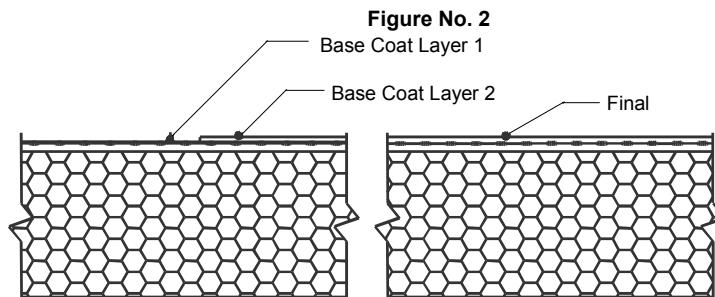


Figure No. 1

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.D.13. **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 II. **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 mesh is available in the following widths and lengths:
 - 1. Standard™ - 1.2 m x 45.7 m (48 in x 150 ft); 1.8 m x 45.7 m (72 in x 150 ft)
 - 2. Standard Plus, Intermediate® - 1.2 m x 45.7 m (48 in x 150 ft)
 - 3. Panzer® 15 - 1.2 m x 22.9 m (48 in x 75 ft)
 - 4. Panzer 20 - 1.2 m x 22.9 m (48 in x 75 ft)
 - 5. Corner™ - 235 mm x 45.7 m (9 ¼ in x 150 ft)
 - 6. Detail® - 241 mm x 45.7 m (9 ½ in x 150 ft)

- E. Installation of Dryflex base coat in high exposure areas such as sloped surfaces, window sills etc.
 - 1. Mix the Dryflex material as described in Section II.C.2. **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 152 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 centre 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 II.A or C.
 - 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 centre 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 (2 ½ in). Do not lap the reinforcing mesh within 203 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. 2). 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.



- d. Single pass method (optional)
- e. Protect completed work from water penetration and run-off.
- f. Allow the base coat to cure a minimum of 24 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 centre 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 203 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

- A. The following Dryvit finishes are acceptable for exterior use as part of the Rail System.
 1. Standard DPR (Dirt Pick-up Resistant) Finishes
 - a. Quarzputz, Sandblast, Sandpebble, Sandpebble Fine and Freestyle.
 2. **E™** Finishes
 - a. Sandpebble **E** and Sandpebble Fine **E**
 3. Elastomeric DPR (Dirt Pick-up Resistant) Finishes
 - a. Weatherlastic Quarzputz, Weatherlastic Sandpebble, Weatherlastic Sandpebble Fine, Weatherlastic Adobe™ and Weatherlastic Smooth.
 4. Medallion Series PMR™ (Proven Mildew Resistance)
 - a. Quarzputz, Sandblast, Sandpebble, Sandpebble Fine and Freestyle.
 5. Specialty Finishes
 - a. Ameristone, Stone Mist and Custom Brick
 6. Coatings, Primers, and Sealers
 - a. Demandit, Revyvit, Weatherprime, Color Prime, Prymit and SealClear
- B. Prior to applying the Dryvit finish, the base coat shall have cured a minimum of 24 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 efflorescence. **NOTE: Correct all irregularities and remove all efflorescence 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. Whenever possible, order enough material in a single batch to complete the project to avoid potential colour variations from batch to batch. 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 a tarp or nursery shade cloth. Do not introduce water to the finish material once it is installed on the wall. This will cause colour variations. Each mechanic must use the same tool and hand motion and match the texture of the mechanics above, below and on each side. Use finish from a single batch number whenever possible.
 2. Quarzputz, Sandblast and Weatherlastic Quarzputz
 - a. Mix the Dryvit finish as described in Section II.D.1.a. **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 levelled to a uniform thickness no greater than the largest aggregate. The Sandblast finish is applied and levelled 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, and Weatherlastic Sandpebble Fine
 - a. Mix the Dryvit finish as described in Section II.D.1.a. **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 II.D.1.a. **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 6.3 mm (1/4 in) 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 6.3 mm (1/4 in). CAUTION: Do not apply finish in sealant joints. Refer to Section VII for proper preparation of sealant joints.**
5. Weatherlastic Adobe
- a. Using a brush, roller or airless spray equipment, apply a coat of colour 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 II.D.1.a. **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 atomising 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. Mix the Ameristone finish as described in Section II.D.2.a.
 - b. 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. Mix the Stone Mist finish as described in Section II.D.2.a.
 - b. Apply Stone Mist finish in accordance with Stone Mist Specification, DUK121. **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, Primers and Sealers
1. Demandit, Color Prime and Weatherprime
 - a. Mix to a smooth homogeneous consistency in accordance with Section II.E.1.a. **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 lambs wool, with bevelled 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. Apply 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 levelling 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 should always be done by an experienced, industrial or commercial painting contractor. Porous surfaces may require two coats to obtain a uniform appearance. Changing colour requires the application of two coats. Do not allow the material 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 II.E.1.a. **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 colours. Apply the second coat as described in paragraph b and c above. **CAUTION: Do not attempt to apply Revyvit in one heavy coat. Two coats are recommended. 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 II.E.1.a. **Warning: Do not apply the Dryvit materials in the rain. The finish surface must be dry prior to applying the Dryvit Weatherlastic 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 254 mm (10 in) roller cover with a 32 - 38 mm (1-1/4 in - 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 litres (2 gal) of coating per minute.
 - 3) Material hose should be minimum 13 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 in - .032 in) will be required depending on equipment used.**
 - 4) Cross apply coating holding spray gun perpendicular to, and approximately 1 m (3 ft) 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 over spray should be anticipated.
 - 6) Backrolling over-sprayed areas is recommended to control pin holing 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.

4. Prymit
 - a. Mix Prymit to a smooth, homogeneous consistency in accordance with Section II.E.1.a. **Warning: Do not apply the Dryvit materials in the rain.**
 - b. Prymit shall be applied using a ¼" to 3/8" nap roller or a wide nylon bristle brush. Apply a liberal coat of Prymit to the prepared painted surface. Allow to dry fully before installing the Dryvit system.
5. SealClear
 - a. Mix SealClear to a smooth, homogeneous consistency in accordance with Section II.E.1.a. **Warning: Do not apply the Dryvit materials in the rain. The finish surface must be dry prior to applying the Dryvit SealClear material.**
 - b. For application instructions, please refer to the SealClear product data sheet, DUK426.

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 24 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. Pre-wet the soiled area with clean water and wash with the following solution:
 - a. 3.8 litres (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 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 using washing equipment, 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. Low pressure cleaning techniques work best on Dryvit finishes. **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. Pre-wet the affected area with clean water and wash with the following solution:
 - a. 3.8 L (1 gal) of clean, warm water.
 - b. 236 ml (1 cup) of Trisodium Phosphate (TSP).
 - c. 950 ml (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. Low pressure cleaning techniques work best on Dryvit finishes. **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 76 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. Cut a piece of insulation board to fit tightly into the damaged area. Sand the edges of the insulation board for a precise fit.
- D. Adhere the insulation board to the substrate using the appropriate adhesive. Make sure that the new insulation board is flush with the surrounding insulation board.

- E. 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 (2 ½ in).
- F. 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.
- G. 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 1.6 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.
- H. If necessary, again, precisely mask the surrounding existing finish with masking tape.
- I. Install the new finish over the patch area and texture to match the surrounding finish.
- J. Allow the finish to dry for a short period of time depending on weather conditions. Remove the masking tape.
- K. Feather the edges of the patch to blend inconspicuously with the surrounding texture. After the patch has dried, there may be a colour 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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Dryvit UK Ltd.
Unit 4 Wren Park
Hitchin Road
Shefford, Bedfordshire
SG17 5JD
01462 819555

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