

EXSULATION[®] 5000 SYSTEM

Exterior insulation and finish system

DSC5000

Exsulation 5000 Short-form Specification

PART I GENERAL

1.01 Scope

This document covers the minimum requirements for the specification of the Exsulation 5000 system and should be used in conjunction with DSC5001 and/or DSC5002.

1.02 Referenced Documents

A.	Roxul	Specifications for Lamella Insulation
	DSC152	Cleaning and Recoating
	DSC153	Expansion Joints and Sealants
	DSC400	Demandit™ Product Sheet
	DSC410	Color Prime™ Product Sheet
	DSC435	Backstop™ NT Air Barrier Product Sheet
	DSC434	Ameristone™ Product Sheet

1.03 System Description & General Parameters

A. General

1. Dryvit Exsulation 5000 exterior insulated wall finish system is considered a noncombustible cladding utilizing both noncombustible insulation and protective material satisfying the requirements of CAN/ULC-S114. The approved substrate is either of a mass concrete or masonry and/or covered with a continuous trowelled-on Type III air/moisture barrier, Backstop NT as required for sheathing type assemblies, insulated with 6 in x 48 in (152 x 1220 mm) mineral wool (Roxul's® Lamella) adhesive attached with Primus® DM, or ROCKBOARD 80 mechanically attached. Primus DM is then applied to the insulation as a base coat, Standard Plus Mesh is then totally embedded into the Primus DM, and finished with DPR Finish. If Rockboard 80 insulation is used fastening pattern requires 4 fasteners through the insulation board, five fasteners are then installed through the base coat and mesh. Fastener locations are then pre-filled and followed by a complete coat of Primus DM.
2. At all locations, the mineral wool insulation board must be encapsulated by the exterior lamina (base coat and reinforcing mesh and finish [finish not to be applied within sealant/expansion joint locations). No base coat material shall be placed between the insulation boards.
3. The minimum slope of an inclined surface must not be less than 6 in (152 mm) rise in 12 in (305 mm) run.
4. The maximum length of slopes shall not exceed 12 in (395 mm)
5. At the designer's discretion, a drainage layer can be incorporated within the slab insulation option and is considered to be present for Lamellas installations where adhesive is applied in a vertical orientation, utilizing the appropriate notched trowel as noted within installation details.

B. Design Requirements

1. Substrates/Sheathing System
 - a. Must be engineered by others.
 - b. The maximum deflection under full flexural design loads of the substrate must not exceed $L/320$.
 - c. The substrate must be flat within 1/4 in (6.4 mm) in a 4'-0 in (1220 mm) radius.
 - d. It is the contractor's responsibility to ensure that the substrate surface is of a type and condition acceptable for application of the Exsulation 5000.
 - e. Application of the Exsulation 5000 must be to the following recommended substrates:
 - i) Dens-Glass Gold by Georgia Pacific exterior grade gypsum meeting ASTM C1177 requirements at the time of the application of the system.
 - ii) Cement Board by Unifix, "Unipan" or by CGC, "Duracrete" a minimum of 1/2 in (12.7 mm) thickness.
 - iii) Unit masonry, poured or pre-cast concrete, brick veneer, and water resistant cement board.

Note: Contact Dryvit Systems Canada on approval for other substrates.

2. Sealants/Sealant System
 - a. Sealant
 - i) See DSC153 for an updated list of compatible sealants and corresponding primers. Contact the sealant manufacturer for more detailed sealant specifications.
 - ii) The Dryvit materials must be completely dry prior to the installation of sealant (24-48 hours minimum).
 - b. Sealant System: Includes the sealant, closed cell backer rod or equivalent, bond breaker tape, primer and accessories.
3. Expansion Joints
 - a. Expansion joint design and location is the responsibility of the designer.
 - b. Continuous expansion joints in the Exsulation 5000 system must be installed but not limited to the following locations:
 - i) Where expansion joints occur in the substrate system.
 - ii) Where building expansion joints exist.
 - iii) When the Exsulation 5000 system abuts dissimilar materials.
 - iv) At floor lines in wood frame construction.
 - v) Where substrate materials change.
4. Performance Requirements
 - a. Air Barrier
 - i) Freeze-Thaw: ASTM-C67; No deleterious effects after 60 cycles.
 - ii) Tensile Bond: ASTM-C297; Minimum 170 kPa (25 psi).
 - iii) Flame Spread and Smoke Development: ASTM-E84; <25, Class 1.
 - iv) Air Leakage: ASTM-E283; Air leakage rate of 0.02 L/s/m² and classified as a Type III Air Barrier as defined by the NRC Canada.
 5. Insulation Board: Roxul[®] Lamella, Rockboard 80 and Fibrex 1210CR, are the approved insulation for Exsulation 5000.

1.04 Submittals

- A. Submit copies of manufacturer's specifications and installation instructions.
- B. In the case of prefabricated panel installations, Trained Applicators must submit complete shop drawings including erection drawings and details.

1.05 Qualifications

- A. Manufacturer (Dryvit Systems Canada)
Must have marketed exterior insulation and finish systems in the Canada for a minimum of ten (10) years.
- B. Contractor
Shall be knowledgeable in the proper application of Dryvit Exsulation 5000, and shall be experienced and competent in the installation of EIFS.

1.06 Delivery, Storage and Handling

- A. Deliver all materials in original, unopened packages with labels intact.
- B. Protect all Dryvit materials from weather and direct sunlight.
- C. Store all Dryvit materials in a cool, dry location at a temperature not less than 40 °F (4 °C).

1.07 Project Conditions

- A. Existing Conditions: The contractor must have access to electric power, clean water, and a clean work area at the location where the Dryvit materials are to be installed.
- B. Environmental Conditions: The ambient air and wall surface temperature must be a minimum of 40 °F (4 °C) during the time of installation and for at least 24 hours thereafter, or longer if necessary for the materials to cure sufficiently
- C. Protection

1. Adjacent areas/materials must be protected from damage, drops, and spills during the application of Dryvit materials.
 2. The Dryvit materials must be protected by permanent or temporary means from weather and other damage prior to, during, and immediately after application. Care must be taken to prevent condensation and/or heat build-up when using a tarp or plastic to prevent damage to Exsulation 5000 system products and materials.
- D. Sequencing and Scheduling
1. Installation of the Exsulation 5000 system must be coordinated with other construction trades.
 2. Sufficient manpower and equipment must be employed to ensure a continuous operation free of cold joints, scaffold lines, texture variations, etc.

1.08 Limited Materials Warranty

- A. Dryvit Systems Canada will offer a written limited materials warranty upon receipt of a warranty request and completed project form.
- B. Dryvit Systems Canada will not release the final warranty, until the materials supplied for the given project have been paid for in full.

1.09 Design Responsibility

- A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for their intended use. The designer selected by the purchaser must be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings, and the like. Dryvit has prepared guidelines in the form of specifications, application details, installation instructions, and product data sheets to facilitate the design process only. Dryvit Systems Canada is not liable for any errors or omissions in design, detail structural capability, attachment details, shop drawings, or the like, whether based upon the information prepared by Dryvit Systems Canada or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to Dryvit's published comments.

1.10 Maintenance

- A. Maintenance and repair must follow the procedures noted in the Dryvit publication DSC498, Dryvit Care and Maintenance requirements.
- B. All Dryvit Products are designed to be virtually maintenance free. However, as with all building products, depending on location, some cleaning may be required. See Dryvit publication DSC152 on Cleaning and Recoating.

PART II PRODUCTS & MATERIALS

2.01 General

- A. All components of the Exsulation 5000 system must be supplied by Dryvit Systems Canada or its authorized distributors. Substitutions or additions of other materials will void the warranty.

2.02 Materials

- A. Air/Moisture Barrier
 1. Backstop NT: a high performance polymer based material ready mixed
 2. Dryvit Scrim Tape: an open weave self-adhesive fibreglass mesh available in 4 in (100 mm) width by 100 yd. (91 m) long.
 3. Dryvit Flashing Tape™: a high density, polyethylene film backed, rubberized asphalt adhesive tape available in 4 in (100 mm) and 6 in (150 mm) widths, by 100 ft (30.5 m) long. Used to bridge air barrier continuity at openings and junctures.

Note to the Specifier:

- Where the air/moisture barrier is required to have a low vapour permeance (as a vapour barrier), Dryvit Airtulation can be used in lieu of Backstop NT. See DSC45 for further information, or contact a Dryvit Representative.

B. Adhesive and Base Coat Material

1. Primus DM: a high performance polymer based material mixed on site. Field mixed with water to the desired consistency. Used to adhere the insulation to the air barrier. Complies with CAN/ULC S114, M80.

C. Insulation Board

1. The insulation must be Roxul® Lamella strip boards with a nominal density of 6.0 lb./ft³ (96 kg/m³) meeting the current specifications listed here in 1.03.B.6.b.
2. Slab type insulation having a minimum density of 8.0 lb./ft³ (128 kg/m³). ROCKBOARD 80 by Roxul, or 1210CR by Fibrex mechanically secured to the wall system as per DSC5001 EXS 0.0.03.

D. Dryvit Reinforcing Mesh

1. Standard Plus Mesh: Shall weigh a minimum of 6.0 oz/yd² (203 g/m²) and have a minimum tensile strength of 200 lb./in (890 N/2.54cm) of width.
2. Intermediate Mesh: a treated, glass fibre mesh that must weigh a minimum of 11 oz/yd² (370 g/m²) and have a minimum tensile strength of 360 lb./in (634 N/cm) of width.
3. Panzer® 15 Mesh: a treated, glass fibre mesh that must weigh a minimum of 15 oz/yd² (509 g/m²) and have a minimum tensile strength of 700 lb./in (1226 N/cm) of width.
4. Panzer 20 Mesh: a treated, glass fibre mesh that must weigh a minimum of 21 oz/yd² (700 g/m²) and have a minimum tensile strength of 900 lb./in (1575 N/cm) of width.
5. Corner Mesh: a treated, glass fibre mesh that must weigh a minimum of 9.5 oz/yd² (320 kg/m²) and have a minimum tensile strength of 290 lb./in (508 N/m) of width.
6. Detail Mesh™: a treated, glass fibre mesh that must weigh a minimum of 4.5 oz/yd² (152 g/m²) and have a minimum tensile strength of 185 lb./in (325 N/cm) of width.

E. Finishes

1. DPR 100% acrylic finishes

G. Primers

1. Color Prime: a water based pigmented acrylic primer.

H. Coatings

1. Demandit: a non-textured water based acrylic coating.
2. SealClear™: a clear colourless coating for enhanced performance and dirt pick-up resistance for Ameristone Finish.

I. Mechanical Fasteners

1. Mechanical Fasteners: the Wind-Devil plastic washer manufactured by Wind-lock Corporation, together with a corrosion resistant fastener, appropriate for the substrate, is the approved fastening method for the Exsulation 5000. Others must be approved by Dryvit Systems Canada.

2.03 Mixing Materials

- A. Water: must be clear and potable.

2.04 Equipment

- A. All mixing must be done with a clean Goldblatt Jiffler Mixer #15311H7 or approved equivalent, powered by a 1/2 in (13 mm) drill or equivalent at 400-500 rpm.
- B. A high-speed wood router with proper bit(s), a hot knife or hot groover for use in cutting EPS board used in face detailing and optional in compartmentalization.
- C. Hand or power tools associated with the EIFS & plastering trade.

PART III EXECUTION**3.01 Examination of Substrate**

- A. Examine the substrate to ensure that it meets the requirements as set forth in 1.02.B.1 in these specifications.
- B. Gaps in the substrate or damage which exceed 3/8 in (9.5 mm) in any one direction must be repaired by replacing the sheathing material.

3.02 Mixing of Materials

- A. Backstop NT: no on-site additions required. Slight mixing needed if any degree of settlement has occurred.
- B. Primus DM: adhesive and base coat is to be mixed with water.
- C. DPR Finish: mix until material is homogeneous.

3.03 System Installation

A. General

1. Adjacent materials and the Exsulation 5000 system must be protected from weather and other damage during the installation and while curing.

B. Air/Moisture Barrier

1. For sheathing substrates, all vertical and horizontal board joints, exposed edges at terminations, inside and outside corners etc., must be treated with AquaFlash[®] mesh for board joints and corners (starter mesh may be used on inside and outside corners) with the application of Backstop NT.
2. Centre AquaFlash Mesh on the board joint, edges, etc. and embed into wet Backstop NT material.
3. Backstop NT must be applied to the substrate and allowed to dry prior to installing the insulation board. Backstop must be applied whereby a minimum thickness of 5 mils (0.16 mm) is achieved and the coating is continuous.
4. Dryvit Flashing Tape must be applied to Backstop NT only once it is fully cured. Cover all substrate expansion joints with Dryvit Flashing Tape. Use to tape over junctures of Backstop NT with other wall components to make a continuous air barrier system where desired. The AquaFlash system may also be used as illustrated in system details.

C. Drainage Layer

1. The creation of a drainage layer shall be at the design authority's discretion and shall include either:
 - a. Drainage channels created by the application of Primus DM adhesive in continuous vertical ribbons over the substrate using a notch trowel with notches measuring no less than ½ x ½ in and spaced 2 inches apart and allowed to dry. Or,
 - b. Installation if Dryvit's Drainage Mat installed over the field of the wall following barrier application.
 - c. For Lamella applications, a ½ x ½ in (12 mm X 12 mm) notched trowel shall be used with spacing 2 in (50 mm) o/c between ribbons. Adhesive is to be applied to the insulation board, which shall be installed immediately following.

D. Installation of Insulation Board

1. Inspect surface for flatness, damage and deterioration, and make repairs prior to the application of the base coat.
2. Open bag of Primus DM and pour into pail containing pre-measured and appropriate amount of water. Add water until a uniform mixture is obtained. Let stand 5-10 minutes and remix.
3. The insulation must be applied in a running bond pattern with joints offset with respect to substrate joints.
4. Corners on adjacent elevations are to have the boards butt in the same direction so that a uniform backwrap at each corner can be achieved. Consequently, the "joint" created by backwrapping requires that 10 in (250 mm) Corner Mesh is embedded in the base coat with a minimum of 4 in (100 mm) across each face. The specified reinforcing mesh would then be applied.
5. The insulation board must be pre-cut to fit openings, corners, or projections. Board edges must not align with corners of wall openings.
6. Horizontal rows of mineral wool insulation board must be mechanically fastened as illustrated in DSC 5001 or 5002 as applicable.

E. Base and Finish Coat Application

1. Inspect surface for flatness, damage and deterioration due to weathering, and make repairs prior to the application of the base coat.
2. Open bag of Primus DM and pour into pail containing pre-measured and appropriate amount of water. Thoroughly mix until uniformly wetted and smooth. Add water until desired consistency is obtained. Let stand 5-10 minutes and remix. Small amount of additional water may be added at this stage to regain desired consistency.
3. Areas specified to have additional impact resistance (normally grade level walls and high traffic areas) shall have Panzer 15 or 20 embedded into 3/32 in (2.4 mm) of Primus DM. Panzer Mesh shall not be overlapped, rather it is butted to ensure a smooth surface. All areas required to have Panzer Mesh must have Standard Mesh applied over top, conforming to step 4 that follows.
4. Using Dryvit Standard Plus Mesh (or other specified field mesh) apply 1/12 in (2 mm) of Primus DM to entire surface of Dryvit insulation board. Immediately embed Dryvit mesh until it is completely covered and the mesh is not visible. Lap mesh edges 3 in (75 mm) minimum on all sides. All installation will require a second leveling coat of Primus DM. Allow 24 hours to dry.

F. DPR Finishes

1. Finish must be applied using a clean stainless steel trowel using sufficient manpower and equipment to ensure a continuous operation without cold joints, scaffolding lines, etc. Texture finish to match a pre-approved sample.

3.04 Field Quality Control

- A. Dryvit assumes no responsibility for on-site inspections. Dryvit Systems Canada and/or its distributors will provide field service support if reasonably requested by the Applicator. The Designer, General Contractor, or their appointed representative and/or the Dryvit distributor should make periodic on-site inspections to ensure that the Dryvit materials are being installed in strict accordance with Dryvit Specifications. The Applicator shall be responsible for the proper application of the Dryvit materials.
- B. If requested, the Applicator shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures and workmanship.
- C. If requested, the EPS and Mineral Wool Insulation suppliers shall certify in writing that the insulation meets Dryvit Specifications.
- D. If requested, the sealant applicator shall certify in writing that the sealant application is in accordance with Dryvit and sealant manufacturer's recommendations.

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