1. - GENERAL
	1. GENERAL REQUIREMENTS
		1. All conditions of the contract and Division 1, General Requirements apply to this section.
		2. All work shall meet applicable codes and standards, the Occupation Health & Safety Act, manufacturer’s recommendations and good building practice.
		3. System Description: A polymer modified, fibre-reinforced, direct applied, lite coat rendering system that is intended for direct application over monolithic concrete wall surfaces.
		4. The direct applied, lite coat rendering system is intended for use in combustible and noncombustible construction.
	2. COORDINATION
		1. Ensure that the work of this section is coordinated with the work of related sections.
	3. RELATED SECTIONS
		1. Section 03 30 00 Cast-in-Place Concrete
		2. Section 06 10 00 Rough Carpentry
		3. Section 07 62 00 Flashing and Sheet Metal
		4. Section 07 90 00 Joint Protection (Sealants)
		5. Section 08 00 00 Openings
		6. Section 08 50 00 Windows
	4. REFERENCES
		1. American Society for Testing Materials
			1. ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus.
			2. ASTM C1338 Standard Test Method for Determining the Fungi Resistance of Insulation Materials and Facings.
			3. ASTM C1382 Standard Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
			4. ASTM C1481 Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).
			5. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
			6. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials.
			7. ASTM E1131 Standard Test Method for Compositional Analysis by Thermogravimetry.
			8. ASTM E1252 Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis.
			9. ASTM G154 Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials.
			10. ASTM G155-05a Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
		2. Canadian Standards Organization (CSA)
			1. CSA A23.1/A23.2 Concrete Materials and Methods of Concrete construction/Test Methods and Standard Practices for Concrete
			2. CSA A23.3 Design of Concrete Structures
			3. CSA A23.4 Precast Concrete – Materials and Construction
			4. CAN/CSA A3001 Cementitious Materials for Use in Concrete
		3. ULC (Underwriters Laboratories of Canada)
			1. CAN/ULC-S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
			2. CAN/ULC-S114 Standard Method of Test for Determination of Non- Combustibility in Building Materials.
	5. DESIGN CRITERIA
		1. Structural Design
			1. Design professional shall design the back-up wall in full compliance with the requirements of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes. Sufficient details on architectural plans and drawings shall demonstrate compliance to the NBC.
		2. Supporting Substrate
			1. All substrates shall be flat and plumb within 2 mm/m (1/4” per 10’).
			2. All substrates shall be free of surface contamination, including (but not limited to): dirt, form release agents, efflorescence, oil and chalkiness.
			3. All substrates shall be free of any loose materials and cracks greater than 1 mm (1/24”) in width.
		3. Mass Wall Substrates
			1. Mass wall substrates shall be cast-in-place concrete or precast concrete surfaces.
			2. Cast-in-place concrete walls shall be at least 28 days old.

SPEC NOTE: Substrate condition shall be as approved by Durabond Products Ltd. Questionable substrates to be reviewed by Durabond Products Ltd.

* + 1. Code-related Fire Protection
			1. The direct-applied, lite coat rendering system is intended to be used in combustible or noncombustible constructions. When used in non-combustible construction, the base coat shall be in conformance with CAN/ULC S114, Test for Determination of Non-Combustibility in Building Materials”.
			2. Where required to meet the requirements of CAN/ULC S114, the compliant lite coat rendering system shall be listed with an accredit 3rd party certification organization for validating such performance.

SPEC NOTE: Fire protection requirements are subject to provincial variations, refer to specific provincial fire protection code compliance requirements for specific allowances/limitations that may apply.

SPEC NOTE: Refer to manufacturer’s fire protection code compliance report for specific limitations that may apply.

* + 1. Design Details at Terminations
			1. The lite coat rendering system shall not be used on wall surfaces subject to continuous or intermittent water immersion or hydrostatic pressure.
			2. The lite coat rendering system shall be terminated a minimum of 12.7 mm (1/2”) from adjoining materials at interfaces for sealant applications.
		2. Projections and Decorative Elements
			1. Ensure termination of the lite coat rendering system at roof parapet is covered with continuous waterproofing membrane and sheet metal cap that is coordinated with the roofing contractor.
			2. Conform with the following guidelines for length and slope of inclined surfaces:
			3. Minimum slope (6:12), for projection greater than 102 mm (4”).
			4. Minimum slope (3:12), for projection less than 102 mm (4”).
			5. The lite coat rendering system shall not be used for areas defined by codes as roofs.

SPEC NOTE: Metal flashing with drip edge shall be used in areas where the minimum slopes for horizontal projections can’t be executed.

* + 1. Sealant System
			1. Joints in the lite coat rendering system shall be sealed using an elastomeric sealant with a closed-cell foam backer rod or bond breaker tape, as specified in Section 07 90 00 and as tested to ASTM C1382.
			2. Minimum joint width shall be four times greater than the anticipated range of movement. Sealant shall be applied in a width to depth ration of (4:1), (3:1). (2:1) as recommended by the Sealant manufacturer.
			3. Sealant installation shall conform with the requirements of ASTM C1481.

SPEC NOTE: Recommended joint width is 19 mm (3/4”) for expansion joints, however, site and design conditions may require the nominal width to vary.

* + 1. Expansion and Termination Joints
			1. Provide the specified backer rods for sealant joints at all expansion and termination joint locations.
			2. Expansion joints are required at the following locations:
			3. At movement joint locations within the substrate.
			4. At building movement joint locations.
			5. At junctions with different cladding materials and components.
			6. At changes in roof line, building shape or structural system.
			7. At changes in substrate materials.
			8. At all other locations specified or indicated on drawings
			9. Termination joints are required at the following locations:
			10. At windows, doors and through-wall penetrations interfaces.
			11. 50 mm (2”) above roofing system.
		2. Flashing
			1. The lite coat rendering system shall be used in conjunction with flashing conforming to Subsection 9.27.3 of Division B of the National Building Code (NBC) of Canada and/or the equivalent requirements of the related applicable provincial or territorial codes.
			2. Provide corrosion-resistant flashing at all roof-wall intersections, windows and door heads and sills, decks, balconies, chimneys, parapet walls, projecting features and other areas as necessary to direct water to the exterior.
			3. Flashing must be installed in accordance with section 07 62 00 and the applicable building codes.
			4. Flashing shall have a slope of not less than 6% towards the exterior, lap not less than 10 mm (3/8”) vertically over the building element below, terminate in a drip offset not less than 5 mm (3/16”) outward from the outer face of the building and terminate at each end with an end-dam.
		3. Finish
1. The design professional shall assess the design of the building façade to the desired finish textures and colours that could be expected at various sections of the façade.
2. Where the type of texture and the intensity of the selected colours include vibrant, accent and / or mass tone colours that are more susceptible to UV degradation, the designer shall specify the use of Durex Kolor Gard Architectural Coatings to augment and heighten the colour fastness.
3. Sufficient details / notifications on architectural plans and drawings shall demonstrate the required specialized finish texture and colour of the exterior insulation and finish system.
	1. SUBMITTALS
		1. Product Data
			1. Submit lite coat rendering system’s specifications and individual component data sheets to show compliance to the intent of the design specifications, and installation instructions.
			2. Submit approvals and/or evaluations applicable to the system and/or components to be installed.
		2. Shop Drawings
			1. Submit shop drawings in accordance with requirements specified in Division 1.
			2. Clearly indicate dimensions, tolerances and materials in large-scale details for terminations, description of related and abutting components and elevations of units with locations of expansion joints, control joints, and reveals.
		3. Samples
			1. Prior to application of mock-up, submit duplicate 150mm x 200mm (6" x 8") representative colour samples of each colour and finish coat texture.
			2. Maintain an approved sample at the project site.
		4. Closeout Submittals
			1. Provide lite coat rendering system’s maintenance, repair and cleaning procedures.
			2. Provide lite coat rendering system’s material warranty as per section 1.10.
			3. Provide workmanship warranty by stucco applicator as per section 1.10
			4. Provide identification labels of colour batch numbers, water resistive barriers, base coat, finish coats and reinforcing mesh used.
	2. QUALITY ASSURANCE
		1. Qualifications
			1. System Manufacturer: All system components shall be manufactured or sold by the stucco system’s manufacturer and purchased from the system’s manufacturer and/or its authorized distributors.
			2. Contractor: Shall be knowledgeable in the proper installation of the rendering system. Work of this this specification shall be executed in conformance with good trade practices and manufacturer’s installation manual.
		2. Mock-Up
			1. The contractor shall, before installation works, provide the owner/consultant with a mock-up demonstrating the rendering system’s components and application.
			2. The Mock-up shall be constructed to dimensions and in location specified by the Designer.
			3. The mock-up system’s component shall include the base coat and finish coats that would include each colour and texture to be used.
			4. The mock-up shall demonstrate methods of application as well as typical details at opening (windows, doors etc.) and roofing assemblies.
			5. The Mock-up shall serve for initial review purposes by the Consultant and when accepted shall represent the minimum standard for work and the basis for acceptance for the rest of the project.
			6. The mock-up shall be prepared with the same products, components, tools and techniques required for the actual project.
			7. The approved mock-up shall be available at all time at the jobsite and shall form the basis for acceptance for the remainder of the project.
			8. Accepted mock-up may remain as part of the work.

SPEC NOTE: More than one mock-up may be required if more than one coating colour and/or texture is required for the project.

* 1. DELIVERY, STORAGE, HANDLING & PROTECTION
		1. All required materials and components shall be supplied by the manufacturer of the rendering system and shall be delivered to job site in original, unopened packaging with all identifying labels and markers clearly visible and intact. Upon delivery, materials shall be inspected for any damages and the system’s manufacturer shall be advised, in writing of any damaged and/or unacceptable materials. Any defective materials and/or components shall not be used.
		2. Materials shall be stored in a dry, vented, weatherproof enclosures, stacked off the ground, out of direct sunlight and other detrimental conditions. Pail products and liquid materials shall be stored at ambient temperatures above 5ºC and below 35ºC. All materials shall be protected from freezing or overheating.
		3. Protective coverings shall be provided to all freshly-applied coatings to protect them from damages due to rain, inclement weather and/or any other damages until the coatings have fully set and cured.
		4. All capping and flashing shall be immediately and properly installed in co-ordination with the application of the rendering system, unless temporary protection has been provided. If capping and flashing or temporary protection have not been provided, the Architect and General Contractor shall be advised accordingly in writing.
		5. All insulation boards shall be protected from direct sunlight.
	2. PROJECT/SITE CONDITIONS
		1. Prior to installation of the lite coat rendering system, the substrate shall be examined with respect to the following:
			1. The substrate shall be type-approved by system’s manufacturer.
			2. The substrate surface shall be free of any deleterious materials such as oil, dust, direct form-release agents, paint, wax glazing, water, moisture, efflorescence, frost, etc.
			3. The substrate shall be examined for soundness, crumbling, spalling, delamination, voids, loose joints and projections.
			4. The substrate shall be examined for compliance with Contract Documents.
		2. Ambient Conditions
			1. Application shall take place when ambient and substrate temperature are within the specified limits by manufacturer and when the substrate is free from any moisture arising from condensation, frost, and/or rainfall.
			2. Do not proceed with application of materials immediately prior to, during, or immediately after inclement weather conditions, nor if adverse weather is anticipated within 24 hours after application.
			3. Do not apply materials to wet, frozen or frosted surfaces.
			4. Application of base coat and finish coat shall not proceed during rainy conditions or weather conditions with ambient air and/or wall surface temperatures below 5ºC, or above 38ºC. Wet applied coatings shall be protected from rain until they are completely dry.
			5. Avoid coating surfaces that are directly exposed to direct sunlight or windy conditions.
			6. When necessary, provide temporary enclosures for exterior work and ensure that temporary climatized enclosure is provided in the area of work to maintain the required ambient air temperature prior to, during application and for a minimum of 24 hours after application of coating.

SPEC NOTE: Carefully co-ordinate to determine whether or not the General Contractor is to provide temporary enclosure and heat.

* + - 1. Do not apply finish coat in areas where dust is being generated.
			2. Proceed with work only when surfaces and conditions are satisfactory for the production of perfect application.
			3. Protect applied coating from rapid evaporation during dry and hot weather.
			4. Consult system’s manufacturer for recommendations should adverse conditions exist.
	1. WARRANTY
		1. The warranty period stipulated in the General Conditions of the Contractor shall be extended as follows:
		2. The system is eligible for a manufacturer’s warranty from the date of substantial completion, upon written request, against defective material. For full applicable warranty details contact the system manufacturer.
		3. The manufacturer warranty is effective only when materials and workmanship comply with this specification.
		4. The system manufacturer does not warrant workmanship.
		5. The system applicator shall warrant workmanship separately against faulty workmanship.

SPEC NOTE: Substitution of materials and/or components specified in this specification shall void the manufacturer’s warranty.

1. - PRODUCTS
	1. MANUFACTURER
		1. All components of the Durex® Lite Coat - Concrete Surfaces rendering system shall be manufactured and/or distributed by Durabond Products Ltd. or one of its authorized distributors. No substitutes of materials shall be allowed without prior written notice of the manufacturer.
	2. WATER
		1. Water, when used within the rendering mix shall be potable, clean and free from any deleterious substances.
	3. BASE COAT
		1. Durex® Uniplast Medium, a two component, polymer-modified cementitious scratch coat, supplied in 22.7-kg bags. It is mixed with Acrybond S, a water-based 100% acrylic polymer additive in a ratio of 1 bag Durex® Uniplast Medium to 5 l of Durex® Acrybond S.
	4. PRIMER
		1. Durex® Brush Coat Primer, a water-based, 100% acrylic coating, colour-tinted to suit the colour of the final finish coat.

SPEC NOTE: The usage of the primer is recommended for providing uniform substrate absorption and finish colour. The Durex® Brush Coat shall be the same colour number as the Durex® Finish Coat.

* 1. FINISH COAT
		1. Durex® Architectural Coatings, Classic Series, a 100% acrylic, water-based, multi-coloured, textured, protective coating. (Colour and texture to be selected)
		2. Durex® Architectural Coatings, Premium Series, high build, multi-coloured, protective and decorative coating consisting of coloured quartz aggregates and oversized mica flakes embedded in a clear 100% acrylic resin, textured, protective coating. (Colour and texture to be selected)
		3. Durex® Architectural Series, Artisan Series, a 100% acrylic, water-based, high-build, multi-coloured, textured with special patterns and artistic releifs, protective coating. (Colour, texture and finish pattern to be selected)
		4. Durex® Architectural Series, Kolor Gard Series, a 100% acrylic, Fade Resistant Decorative High Build Protective Textured Coating for Accent & Bright Colours. (Colour, texture and finish pattern to be selected)
		5. Durex® Architectural Coatings, Elastomeric FX Series, a 100% acrylic, water-based, high-build, high flexibility, multi-coloured, textured, protective coating. (Colour and texture to be selected)

SPEC NOTE: In cases where the selected colours of the finish texture are of a vibrant accent and/or mass tone nature (Colours that require organic pigments in order to attain and retain the colour intensity), the designer is encouraged to consider specifying, exclusively, the use of Durex® Kolor Gard Series Coatings to augment and heighten the colour fastness of bright and mass tone coloured finishes. This engineered augmented UV fade resistance is limited to the Kolor Gard line of finishes that may result in additional application requirements that should be considered prior to tender.

* 1. TRIM & ACCESSORIES
		1. All metal trims and accessories, expansion and control joints, casing beads/stops, corner beads shall be minimum 26-gauge, hot-dipped galvanized steel G60 coating, zinc alloy and shall be compatible with other metallic surfaces. Trim and accessories shall have a minimum ground of 6.4 mm (1/4”).
		2. PVC trims and accessories shall conform to ASTM D 1784, cell classification 13244C.
		3. Provide all trims and accessories as detailed in shop drawings and/or as required to complete the work in accordance with good trade practices and reference standards.
		4. Mechanical fasteners for trims and accessories shall be as a minimum hot-dipped galvanized corrosion resistant.
		5. Fasteners for trims accessories shall be placed in the crotch of the trim flanges.

SPEC NOTE: The trims and accessories shall be selected by the designer and recommended by Durabond Products Limited.

SPEC NOTE: the depth (ground) of the accessories is dependent on the required thickness of the base coat, without the considering the thickness of the finish coat.

SPEC NOTE: Zinc alloy and PVC trims and accessories are intended to be used in areas exposed to corrosive elements and/or saline environments. The use of galvanized expanded corner beads is strongly not recommended.

* 1. MIXING
		1. Perform all mixing under the conditions set forth in Article 1.9 “PROJECT/SITE CONDITIONS”.
		2. Ensure materials, mixing and application equipment are clean and free of any contamination.
		3. Prepare and mix base coat, finish coat and primer in strict accordance with Durabond’s written instructions to obtain a homogeneous consistency of mixture.
		4. Do not add any other additives, rapid binders, antifreeze, accelerators, fillers, surfactants to the mixture except those permitted by Durabond Products Limited.

SPEC NOTE: Do not use surfactants (household detergent) to modify the working consistency of the mix.

* + 1. Do not use frozen, baked or lumpy materials.
		2. Size batches for complete use within 45 – 60 minutes of its mixing.
		3. Do not over-mix or use excessive mixing speed. Let mixed materials stand for a few minutes until they begin initial stiffening.
	1. EQUIPMENT
		1. All mixing shall be carried out with a clean, rust-free paddle mixer that shall minimize air entrainment, powered by a power-drill at 400-500 rpm maximum speed.
		2. Metal trowels, hawks, utility knives, corner trowels and plastic floats.
	2. SEALANTS
		1. Sealant: a low modulus sealant, as recommended and approved by Durabond Products Ltd. Standard colour shall be selected by consultant.
	3. SEALER
		1. Surface sealer shall be Durex® Wall Seal 15, manufactured by Durabond Products Limited.
1. - EXECUTION
	1. EXAMINATION
		1. Examine surfaces to receive the lite coat rendering system for defects that could adversely affect execution and quality of work.
		2. Ensure substrate surfaces, including base coat are dry, solid and sound, free of weak and powdery surfaces, free from ice, snow and frost, oil, grease, releasing agents and other deleterious materials detrimental to a positive bond.

SPEC NOTE: Deteriorating, weak, powdering or flaking surfaces may require further preparation work prior to installation of the rendering system. Check with the system’s manufacturer for questionable substrate materials and conditions.

* + 1. Ensure substrate tolerance is within 2 mm/m (0.25"/10') in plane and in plumbness.
		2. Ensure that flashing at all openings, roof-wall intersections, terminations and other areas as required, have been installed to divert water away from the exterior of the wall.
		3. Report in writing to Consultant all adverse conditions which will be detrimental to work of this Trade.
		4. Do not start work until all unsatisfactory conditions have been corrected.
		5. Commencement of work shall indicate acceptance of substrate conditions.
	1. PREPARATION
		1. Prepare substrates to receive the lite coat rendering system as recommended in manufacturer’s instructions.
		2. Thoroughly clean and wash (existing) surfaces, including each applied base coat, (and including existing coated surfaces) by wire brushing or other approved methods to remove all dirt, dust, grease, oil, latent, efflorescence, loose coatings and any other deleterious materials.
		3. Where necessary, mask all surrounding surfaces to provide neat, clean, true juncture lines with no over-spray of the coatings on surrounding surfaces.
		4. Co-operate and co-ordinate with other trades penetrating or abutting to the work of this Trade. Ensure that components by other trades are in position before the application of the exterior insulation and finish system.
	2. APPLICATION
		1. General:
			1. Supply experienced and qualified installers and applicators to carry out the work.
			2. Mix materials in accordance with manufacturer’s instructions.
			3. Install the rendering system in strict accordance with the approved mock-up and manufacturer’s printed instructions (and reviewed shop drawings).

SPEC NOTE: Correlate requirements for shop drawings with Article 1.6.

* + 1. Trim Accessories
			1. Install all trim accessories prior to the installation of the base coat, except for external reinforcing beads.
			2. Install all trims uniformly throughout the entire are to the specified substrates.
			3. Install all trims straight, level and plumb to a tolerance of not more than 3 mm in 3.0 m (1/8” in 10’ – 0”)
			4. Discard all trim sections what are damaged in any way.
			5. Secure all trims at not more than 300 mm (12”) o.c.
			6. Install casing beads at all terminations, around all openings and at all control joints and leave a 12.7 mm (1/2”) space for caulking.
		2. Base Coat
			1. Ensure that the substrate is dry and free of loose materials, and dirt and that detail work has been completed.
			2. In hot, dry weather, if the substrate’s surface is exceptionally dry, lightly dampen the surface with a fog mist of clean potable water. Do not over-saturate with water, as it will impair the bonding of the base coat.

SPEC NOTE: The work related to Item 3 in this section is limited to masonry walls

* + - 1. Trowel apply a layer of base coat over the concrete surface, applying sufficient force to ensure full bond with the substrate surface.
			2. Use a straight edge tool to darby the surface and bring it to a straight, even and true surface.
			3. Total thickness of the base coat shall not exceed 2 mm (1/16”).
			4. When the base coat has taken initial set, use a wood or sponge float to work the surface with light circular motions to remove all high points and fill low points.
			5. The final surface shall be smooth, straight and true to a tolerance of not more than 3.2 mm in 3 m (1/8” in 10’-0”). The surface shall be free of trowel marks, irregularities ad visible mesh pattern.
			6. Allow a minimum of 3 days for curing and drying.
		1. Finish Coat Primer
			1. Evenly apply the primer throughout with a high pile roller at a rate of 2.8 m2/l (600 ft2/pail). The substrate shall not be visible through the applied primer.
			2. Avoid excessive build-up in any one area.
			3. If required, re-coat when the first coat is dry to the touch, but in any event not earlier than 2 hours after initial setting.
			4. Allow minimum 4 hours for curing prior to application of finish coat.
		2. Finish Coat
			1. Apply the stucco system’s selected finish coat, within 3 days after application of the system’s selected primer. Longer periods may be scheduled between operations provided that the primed surface is kept clean and in good condition.
			2. Apply the selected finish coat in strict accordance with manufacturer’s printed instructions for the Selected finish.
			3. Apply the finish coat in such a way as to match the colour and texture of the approved site mock-up.
			4. Do not apply the finish coat onto surfaces that are intended to be caulked.

SPEC NOTE: In cases where the selected colour of the finish texture is of a vibrant, accent and/or mass tone nature for which Durex® Kolor Gard Series have been specified, the applicator shall ensure that the products and their respective application procedures are followed and no substitutions are made in product and/or in application. The engineered augmented UV fade resistance is limited to the Durex® Kolor Gard line of finishes that may result in additional application requirements that should be considered prior to tender.

* 1. JOINTS
		1. Provide expansion joints in alignment with building expansion joints.
		2. Install expansion joints at all locations where dissimilar substrates meet.
		3. Install expansion joints at all locations of maximum stress, in the direction as shown on drawings.
		4. Unless otherwise noted, provide all joints 12.7 mm (1/2") wide.
	2. SEALANTS
		1. Seal and caulk all joints in the stucco system with the system’s specified elastomeric sealant that shall be applied over a compatible closed-cell foam backer rod or bond breaker tape.
		2. Seal and caulk all expansion joints between the rendering system and dissimilar abutting building components.
		3. Apply sealant and/or sealant primer in strict accordance with the sealant manufacturers printed instructions.
	3. SPECIAL CLEANING
		1. Clean off all surfaces and work area of foreign materials resulting from material installation and leave work in clean condition.
		2. Entirely reinstate at this Trade’s own expense, any surface not to be coated, but soiled and attributable to this Trade due to spillage, mixing of material or any other cause.
	4. PROTECTION
		1. Protect the installed lite coat rendering system from damage during construction.
		2. Provide protection of installed materials from precipitation, freezing, excessive heat, dust, and dirt during installation and curing of the system.
		3. Provide protection to adjacent materials that could be damaged by the system’s installation.
		4. Post appropriate warning signs while work is in progress and during curing period.
		5. Clean off all surfaces and work area of foreign materials resulting from material installation and leave work in clean condition.

END OF SECTION