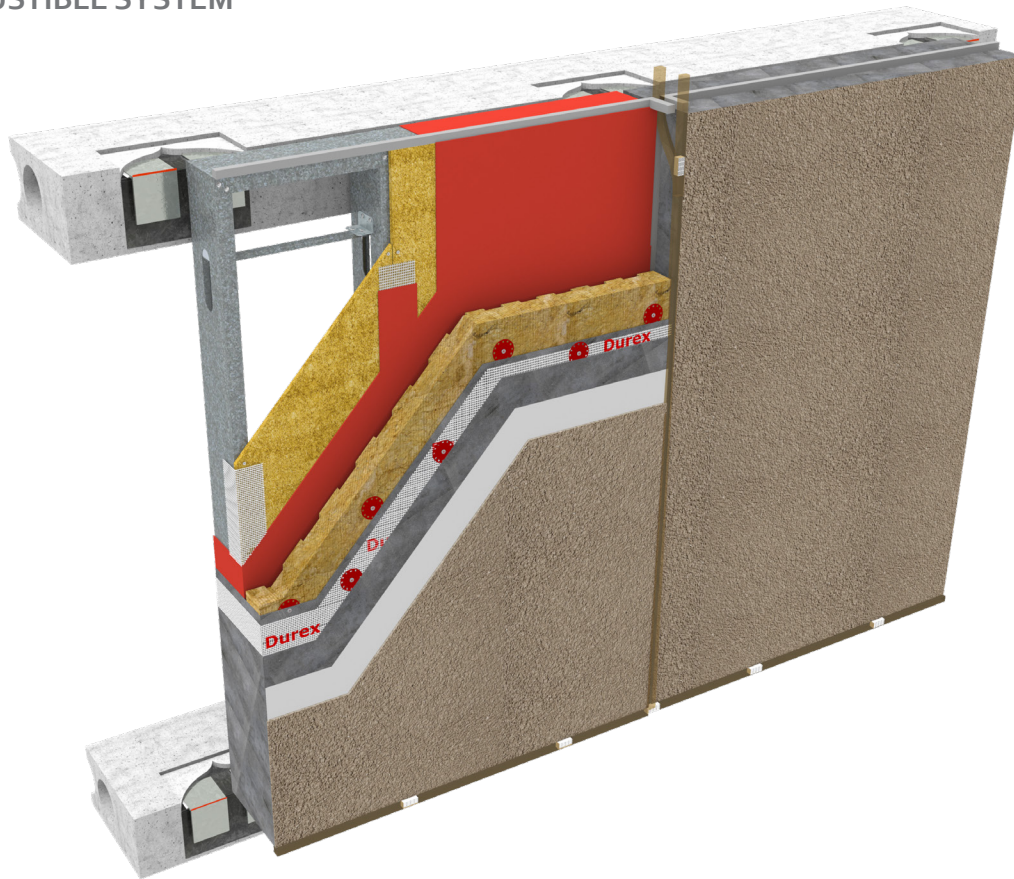


# Durex®

## IBS Equalite Select

NON-COMBUSTIBLE SYSTEM

Prefabricated Curtain Wall Panel System  
Non-Combustible



**CCMC 13103-R**

**CAN/ULC S716.1 Materials**

**CAN/ULC S716.2 Installations**

**CAN/ULC S716.3 Design Application**

**G.D.D.C Factor = 25%**

**C.I Factor = 0.70 RSI/Inch Semi-Rigid Mineral**



Prefab Building



Non-Combustible



Drained



Fire Rated

Protect. Enhance. Outperform.

**DURABOND**   
1-877-387-2266 info@durabond.com  
www.durabond.com

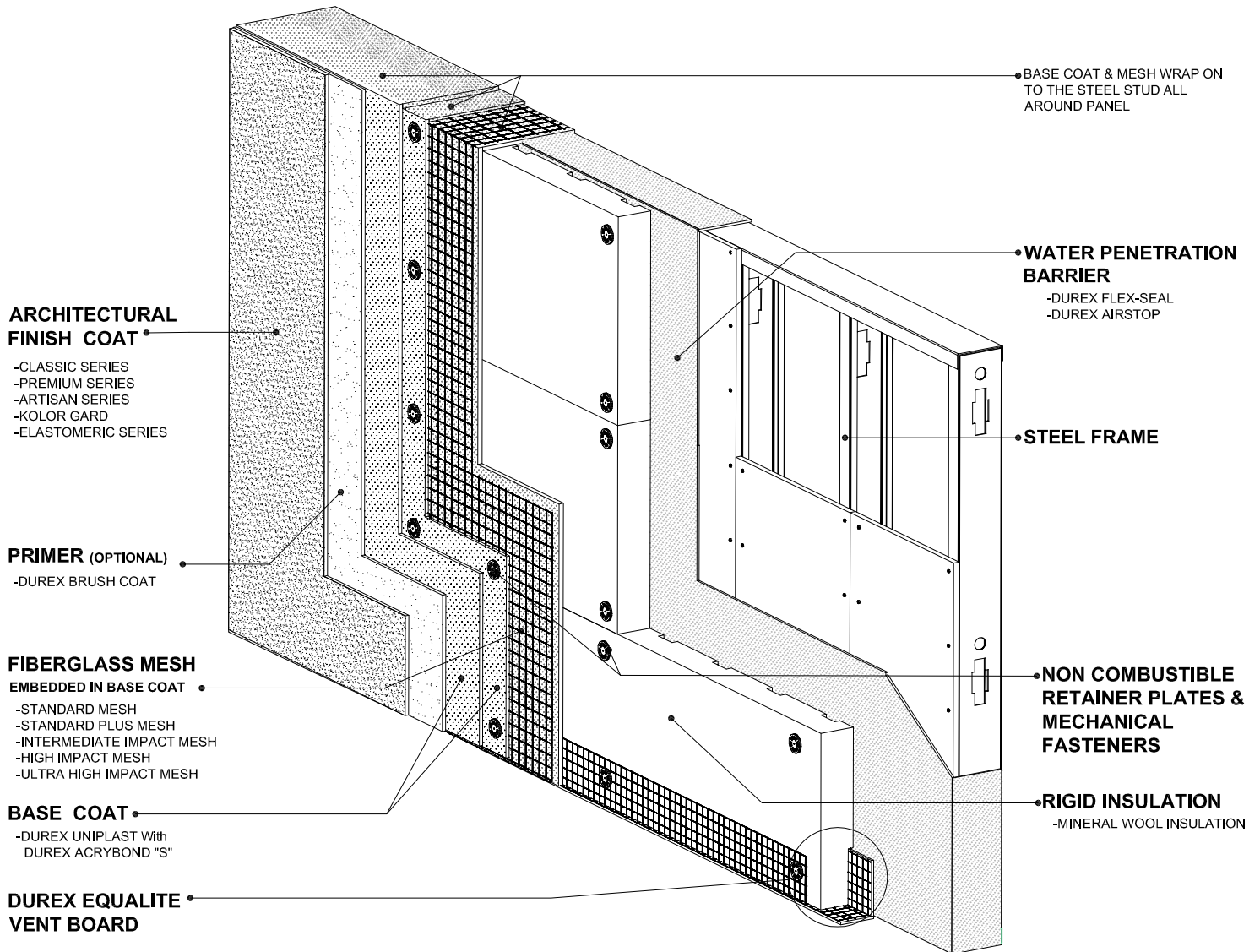
**ISOMETRIC & SPECIFICATIONS**

# Durex®

*Prefabricated Panels - Non Combustible System*

## IBS Equalite Select

NON COMBUSTIBLE SYSTEM



# DURABOND

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Durabond details are offered to assist in the development of project specific details; principles and variables incorporated in all details are the sole responsibility of the project professional(s).

## *System Isometric & Components*

## **PART 1: - GENERAL**

### **1.1 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 pre-engineered, prefabricated, lightweight, mineral fibre-insulated wall panel system consisting of a light-weight steel framing (LSF) that is made of structural, cold-formed steel members, engineered specifically for a set of specified design loads, spans, sectional configurations, on which a pressure moderated, Geometrically Defined Drainage Cavity (GDCC) exterior insulation and finish system that includes a dens-glass substrate is applied. The weather resistive barrier that forms part of the exterior insulation and finish system serves as well as an air/vapor barrier of the building system. The prefabricated, lightweight, mineral fibre-insulated wall panel system is intended for use on buildings where the Building Code requires the use of noncombustible fire-tested wall assemblies.
- .4 The Designer must decide whether the wall assembly of the structure requires an air barrier or an air/vapour barrier.

### **1.2 COORDINATION**

- .1 Ensure that the work of this section is coordinated with the work of other related sections.

### **1.3 RELATED SECTIONS**

- |     |                  |                                |
|-----|------------------|--------------------------------|
| .1  | Section 03 30 00 | Cast-in-Place Concrete         |
| .2  | Section 04 20 00 | Unit Masonry                   |
| .3  | Section 05 41 00 | Structural Metal Stud Framing  |
| .4  | Section 06 10 00 | Rough Carpentry                |
| .5  | Section 07 20 00 | Thermal Protection             |
| .6  | Section 07 26 00 | Vapour Retarders               |
| .7  | Section 07 27 00 | Air Barrier                    |
| .8  | Section 07 62 00 | Flashing and Sheet Metal       |
| .9  | Section 07 84 00 | Firestopping                   |
| .10 | Section 07 90 00 | Joint Protection (Sealants)    |
| .11 | Section 08 00 00 | Openings                       |
| .12 | Section 08 50 00 | Windows                        |
| .13 | Section 09 28 00 | Backing Board and Underlayment |

### **1.4 REFERENCES**

- .1 American Society for Testing Materials
  - .1 ASTM A6 Standard Specification For General Requirements For Rolled Structural Steel Bars, Plates, Shapes, And Sheet Piling.
  - .2 ASTM A283 Standard Specification For Low And Intermediate

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**[DATE]**

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**[PROJECT LOCATION]**

.3	ASTM A167	Tensile Strength Carbon Steel Plates.
.4	ASTM A653	Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
.5	ASTM A666	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
.6	ASTM A715	Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
.7	ASTM A792	Standard Specification For Steel Sheet, High-Strength, Low-Alloy, Hot-Rolled, And Steel Sheet, Cold-Rolled, High-Strength, Low-Alloy, With Improved Formability.
.8	ASTM A1003	Standard Specification For Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated By The Hot-Dip Process.
.9	ASTM A1008	Standard Specification For Steel Sheet, Carbon, Metallic- And Nonmetallic-Coated For Cold-Formed Framing Members.
.10	ASTM A1008	Standard Specification For Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy With Improved Formability, Solution Hardened, And Bake Hardenable.
.10	ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus.
.11	ASTM C612	Standard Specifications for Mineral Fibre Block of Board Thermal Insulation
.12	ASTM C954	Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
.13	ASTM C955	Standard Specification for Cold-Formed Steel Structural Framing Members.
.14	ASTM C578	ASTM C578-19 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
.15	ASTM C1002	Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
.16	ASTM C1177/C 1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
.17	ASTM C1325	Standard Specification for Fibre-Mat Reinforced Cementitious Backer units.
.18	ASTM C1338	Standard Test Method for Determining the Fungi Resistance of Insulation Materials and Facings.
.19	ASTM C1382	Standard Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
.20	ASTM C1397	Standard Practice for Application of Class PB Exterior Insulation and finish Systems (EIFS) and EIFS with Drainage.
.21	ASTM C1481	Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).
.22	ASTM D1623	Standard Test Method for Tensile and Tensile Adhesion

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**[DATE]**

**[PROJECT NAME]**  
**[PROJECT LOCATION]**

- .23 ASTM D5035 Properties of Rigid Cellular Plastics.  
Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method).
- .24 ASTM D5420 Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of Striker Impacted by Falling Weight (Gardner Impact).
- .25 ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- .26 ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials.
- .27 ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .28 ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- .29 ASTM E283 Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors.
- .30 ASTM E1131 Standard Test Method for Compositional Analysis by Thermogravimetry.
- .31 ASTM E1252 Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis.
- .32 ASTM E2098 Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution.
- .33 ASTM E2178 Standard Test Method for Air Permeance of Building Materials.
- .34 ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- .35 ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS).
- .36 ASTM F410 Standard Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement.
- .37 ASTM G154 Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Non-metallic Materials.
- .38 ASTM G155-05a Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
- .2 American Iron and Steel Institute (AISI)  
.1 AISI 303 North American Specification for the Design of Cold-Formed Steel Structural Members.
- .3 Canadian Construction Materials Centre (CCMC)  
.1 CCMC Technical Guide for the Evaluation of EIFS MF # 07 24 13.01.
- .4 Canadian Standards Organization (CSA)  
.1 CAN/CSA A 23.4 Precast concrete – Materials and Construction.  
.2 CAN/CSA S136 North American Specification for the Design of Cold-

- .3 CSA S16 Formed Steel Structural Members
- .4 CSA W59 Design of Steel Structures.
- .5 CSA W186 Welded steel Construction.
- .5 CSA W186 Welding of Reinforcing Bars in Reinforced Concrete construction.
- .5 Canadian Sheet Steel Building Institute (CSSBI)
  - .1 CSSBI Design Manual.
- .6 International Organization for Standardization (ISO)
  - .1 ISO 7892 Vertical Building Elements – Impact Resistance Tests – Impact Bodies and General Test Procedures.
  - .2 ISO 7895 Façades made of components - Tests for resistance to positive and negative static pressure generated by wind.
  - .3 ISO 15148 Hygrothermal performance of building materials and products - Determination of water absorption coefficient by partial immersion.
- .7 ULC (Underwriters Laboratories of Canada)
  - .1 CAN/ULC-S101 Standard Methods of Fire Endurance Tests of Building Construction and Materials.
  - .2 CAN/ULC-S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .3 CAN/ULC-S114 Standard Method of Test for Determination of Non-Combustibility in Building Materials.
  - .4 CAN/ULC-S702 Standard for Mineral Fiber Thermal Insulation for Buildings.
  - .5 CAN/ULC S716.1 Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems.
  - .6 CAN/ULC-S716.2 Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier.
  - .7 CAN/ULC-S716.3 Standard for Exterior Insulation and Finish Systems (EIFS) - Design Application.

## **1.5 DESIGN CRITERIA**

- .1 Structural Design
  - .1 A design professional shall design the light-gauge steel framing of the back-up wall to the specified design loads, spans and sectional configurations in full compliance with the requirements of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
- .2 Engineering Calculations and Submission
  - .1 Detailed architectural plans, drawings and engineering calculations shall be submitted to demonstrate compliance to the NBC.
  - .2 The Engineering calculation submission shall include:
    - .1 Cladding Panels design criteria.
    - .2 Wind load design criteria based on project specific conditions.
    - .3 Wind load calculations.
    - .4 Allowable load capacity of fasteners.
    - .5 Allowable load capacity of connections.

- .6 Analysis of load capacity of steel studs.
  - .7 Analysis of load transfers to structure per connection used.
  - .8 Analysis of worst-case load conditions per connection.
  - .9 Individual panel load analysis of actual worst-case condition to maximum allowable loads per connection.
- .3 Supporting Building Frame
- .1 The building's structural framing members and connections shall be designed to have sufficient structural capacity and structural integrity to safely and effectively resist all applicable loads and effects of loads and influences that may reasonably be expected during the service life of the building in accordance with the requirements of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
  - .2 The building's structural framing members and connections shall be designed for serviceability in accordance with the requirements of Part 4 of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
  - .3 The Building's structural framing members, floors and slabs which would be in contact with the integrated building system shall be straight, true, plumb, level, and flat within the permissible tolerances of ACI 117 in case of concrete structures and ASTM A6, AISC 303 and CSA S16 for steel structures.
  - .4 The integrated building system (IBS) panel shall be designed for a maximum deflection not exceeding  $l/240$  of the panel's clear span under positive or negative wind loads.
  - .5 Design all connections for the steel stud framed units of the integrated building system to be electric fusion welded or mechanically fastened in compliance with the project's specific shop drawings.
  - .6 Design the integrated building system (IBS) panels to include means of hoisting for transportation and site erection.
  - .7 Design, locate and seal all required control joints and expansion joints of the structure.
  - .8 Design the integrated building system (IBS) panel in such a way as to be capable to interface with all other components of the exterior wall systems to form a continuous air/vapour barrier.
  - .9 All interfaces with the Integrated building system (IBS) shall be free of any loose materials and cracks greater than 2 mm ( $1/12''$ ) in width, and free of surface contamination, including (but not limited to): dirt, form release agents, efflorescence, oil and chalkiness.
- .4 Air/Vapour/Moisture Resistive Barrier
- .1 The air/vapour/moisture control shall be designed using the specified, designated control membrane. Continuity of these membranes shall be maintained at all wall and floor interfaces.
  - .2 The use, location and performance of the air barrier shall be determined by the design professional.
  - .3 The use and location of the vapour retarder within the wall assembly shall comply with the requirements of Part 5 of the National Building Code (NBC) of Canada and/or the applicable provincial or territorial building codes.
  - .4 Water Resistive Barrier
    - .1 A self-adhered, modified bituminous, composite, waterproof membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound, which is integrally laminated to a woven polyethylene film on

- one side with a film-covered, adhesive undersurface on the reverse side.
- .2 All sheathing and/or water damage susceptible substrates shall be protected with the specified Durex® water resistive barrier and as shown on the drawings.
  - .3 The designated water resistive barrier system shall include the specific sheathing joint transition membrane.
  - .4 The water resistive barrier shall be applied in conformance with the exterior insulation and finish system manufacturer's instructions.
  - .5 The continuity of water resistive barrier shall be maintained across windows, openings, joints and all other wall interfaces.
  - .6 The second plane of protection for moisture management shall be made using the specified exterior insulation and finish system's water resistive barrier and drained air space.
  - .7 The drained air space behind the insulation board, as provided by the GDDC insulation and/or the adhesive notched trowel shall remain unobstructed and shall terminate in such a way as not to obstruct the drainage of any incidental moisture to the exterior.
- .5 Air/Vapour/Moisture Transition Membrane
- .1 The continuity of the air/vapour/moisture control elements shall be maintained across joints, windows, openings and all other wall interfaces using the specified transition membranes.
  - .2 Through wall penetrations and openings shall be sealed to the water resistive barrier with transition membranes.
  - .3 Transition membranes shall be installed at all movement joints, roof junctions and window and door interfaces.
  - .4 Transition membranes shall be installed in conformance with manufacturers' instructions.
  - .5 Transition membranes shall be as listed in Part 2, "Products" of this specification. No other generic transition membranes should be permitted.

*SPEC NOTE: Allowance for use of generic transition membranes could result in membranes that may not be compatible with the exterior insulation and finish system's adhesives.*

- .6 Insulation
- .1 Taking into consideration the physical and mechanical properties of mineral fibre insulation, the minimum thickness of the GDDC mineral fibre insulation board shall not be less than 76mm (3").
  - .2 The design of the thermal resistance of the wall assembly must be in accordance with the requirements of Section 9.25, Heat Transfer, Air Leakage and Condensation Control of Division B of the NBC 2015 or the equivalent requirements of the related applicable provincial or territorial codes. The design of the of the inboard/outboard insulation of the wall assembly shall be in conformance with minimum ratio of outboard to inboard thermal resistance of Article 9.25.5.2 of Division B of the NBC 2015.
  - .3 The design of the of the thermal resistance of the wall assembly must be in accordance with the requirements of the National Energy Code of Canada for Buildings (NECB) or the equivalent requirements of the related applicable provincial or territorial codes. The insulation type and thickness shall be designed with respect to the minimum effective thermal resistance and continuous insulation requirements of the NECB or the equivalent



- requirements of the related applicable provincial or territorial codes.
- .4 The exterior insulation and finish system can provide additional thermal insulation to the wall assembly with no detrimental effects if properly installed with knowledge of the existing wall configuration and performance.

*SPEC NOTE: The thermal resistance requirements for the Effective Thermal Resistance ( $E_{eff}$ ) and Continuous Insulation (CI) vary depending on building occupancy, climatic zone and structural substrate components. Consult the exterior insulation and finish system's manufacturer for assistance and recommendations on the thickness of insulation boards that would be required to meet the project's specific thermal energy requirements.*

*SPEC NOTE: Allowance for use of generic transition membranes could result in membranes that may not be compatible with the exterior insulation and finish system's adhesives.*

*SPEC NOTE: The thermal resistance requirements for the Effective Thermal Resistance and Continuous Insulation vary depending on building occupancy, climatic zone and structural substrate components. Consult the exterior insulation and finish system's manufacturer for assistance and recommendations on the thickness of insulation boards that would be required to meet the project's specific thermal energy requirements.*

.7 Code-related Fire Protection

- .1 The exterior insulation and finish system is intended to be used in noncombustible constructions and/or in combustible constructions requiring non-combustible claddings, as allowed by the Code through conformance to Article 3.2.3.7. and Article 9.10.15.5. of Division B of the National Building Code (NBC) of Canada and/or the equivalent requirements of the related applicable provincial or territorial codes.

*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.*

.8 Impact Resistance

- .1 Design professional shall design the building façade to the desired Impact Resistance Levels that could be expected at various sections of the façade.
- .2 The required impact resistance level may vary for the various sections of the façade, based on the type, level and frequency of exposure to expected energy levels associated to impact loads. Sufficient details on architectural plans and drawings shall demonstrate compliance to the required Impact Resistance Level of the exterior insulation and finish system.
- .3 Table 1.5.9 below shall be utilized to establish and to specify the Impact Resistance Levels of the exterior insulation and finish system.

**Table 1.5.9 – Impact Resistance in accordance with ASTM E 2486**

Impact Resistance Classification	Reinforcing Mesh <sup>(1)(3)(4)</sup>			Impact Resistance	
	Layer 1	Layer 2	Layer 3	Retention of Physical Properties (No Cracks / Damage)	Retention of Performance (No Breakage of Reinforcing Mesh)
Standard Impact Resistance <sup>(2)</sup>	Standard Mesh	n/a	n/a	3 N.m	10 N.m
Medium Impact Resistance	Intermediate Mesh	n/a	n/a	8 N.m	15 N.m
High Impact Resistance	Standard Mesh	Standard Mesh	n/a	13 N.m	20 N.m
Ultra High Impact Resistance	High Impact Mesh	Standard Mesh	n/a	20 N.m	30 N.m
Extreme Impact Resistance	High Impact Mesh	High Impact mesh	Standard Mesh	25 N.m	40 N.m
<p>(1) Each layer of reinforcing mesh shall be fully embedded in the base coat and allowed to individually cure.</p> <p>(2) "Standard" is the minimum mesh grade that could be used in conjunction with EPS-based EIFS.</p> <p>(3) Refer to section 2.7 of this specification for reinforcing mesh details.</p> <p>(4) Other combinations of reinforcing mesh layers may be utilized to achieve the desired Impact Resistance Level based on confirmed tested performance by accredited laboratory.</p>					

*SPEC NOTE: Ultra High Impact Resistance shall be provided to a minimum height of 2.0 meters above finished grade and at all areas accessible to pedestrian traffic and/or exposed to abnormal impact loads. Refer to manufacturer's guidelines for the recommended Impact Resistance Levels relative to the building code occupancy classification.*

- .9 Design Details at Terminations
  - .1 The integrated building system (IBS) shall not be used on wall surfaces subject to continuous or intermittent water immersion or hydrostatic pressure.
  - .2 The integrated building system (IBS) shall be terminated a minimum of 12.7 mm (1/2") from adjoining materials at interfaces for sealant applications.
  - .3 Ensure the use of higher-grade glass reinforced mesh for higher impact resistance at locations indicated on architectural drawings.
- .10 Projections and Reveals
  - .1 Conform with the following guidelines for minimum thickness of system's

insulation when reveals form part of façade aesthetics:

- .1 When three-dimensional architectural designs are desired by cutting into the insulation, a minimum thickness of 25 mm (1"), exclusive of any pattern or drainage grooves cut into the back of the insulation shall be maintained.

*SPEC NOTE: The use of three-dimensional architectural designs by cutting into the insulation is a common practice and an ideal feature of the exterior insulation and finish system. When designing for such aesthetic reveals the overall thickness of the system's selected insulation shall be equal or greater than "depth of reveal + 25 mm + 10 mm GDDC". Thicker insulation can be used to accommodate deeper reveals.*

.11 Sealant System

- .1 Joints between system's panels and at terminations/interfaces 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:
  - .1 19 mm (3/4") between system's panels.
  - .2 Four times greater than the anticipated range of movement.
  - .3 13 mm (1/2") at fenestrations and openings.
  - .4 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.*

.12 Expansion and Termination Joints

- .1 Provide two stage sealant joints at all joints between panels and at termination joint locations. Project's specific shop drawings shall include details of expansion and termination joints.
- .2 Sealant Joint Venting  
All two stage sealant joints shall be vented:
  - .1 Horizontal joints shall be vented at not greater than 1.2 m (4'-0") on center.
  - .2 Vertical joints shall be vented at not greater than 3 m (10'-0") on center and/or at not greater than 50 mm (2") below the intersection of vertical and horizontal joints.

*SPEC NOTE: The designer shall determine the spacing and amount of drainage and/or venting required for a particular system. Note, the venting is only required at points where gravity-induced drainage is expected to occur, hence, roof parapets and/or the underside of window sill flashing would not require sealant vents.*

.13 Flashing

- .1 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 and to prevent water entry behind the cladding.
- .2 Flashing must be installed in accordance with section 07 60 00 and the applicable building codes.
- .3 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.

- .14 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.

## **1.6 SUBMITTALS**

- .1 Product Data
  - .1 Submit the integrated building system (IBS) 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, drainage/venting, description of related and abutting components and elevations of units with locations of expansion joints, control joints, and reveals.
  - .3 Each shop drawing submitted shall bear the signature and stamp of a qualified registered and licensed professional engineer
- .3 Samples
  - .1 Prior to application of mock-up, submit duplicate 600 mm x 600 mm (24" x 24") representative samples of the integrated building system (IBS), including steel stud, sheathing board, air barrier, insulation, reinforcing mesh, colour and texture of the coating finish in accordance with the requirements of Division 1.
- .4 Mock-Up
  - .1 Provide the owner/consultant with a mock-up demonstrating the integrated building system's components and methods of attachment and typical connections at different interfaces.
  - .2 The mock-up shall be constructed as per drawings and specifications to dimensions and in location specified by the Designer.
  - .3 The mock-up system's component shall include the water resistive barrier, adhesive, insulation, reinforcing mesh, base coat and finish coats that would include each colour and texture to be used.
  - .4 The Mock-up shall serve for initial review purposes by the Consultant and

- when accepted shall represent the minimum standard for work and quality.
- .5 The mock-up shall be prepared with the same products, components, tools, techniques and details required for the actual project.
  - .6 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.
  - .7 Accepted mock-up may remain as part of the work.
- .5 Closeout Submittals
- .1 Provide maintenance, repair and cleaning procedures for the integrated building system (IBS) work for incorporation into Maintenance Manual specified in Division 1.
  - .2 Provide the integrated building system (IBS) material warranty as per section 1.10.
  - .3 Provide identification labels of colour batch numbers, water resistive barriers, adhesives, base coat, finish coats and reinforcing mesh used.

### **1.7 QUALITY ASSURANCE**

- .1 Qualifications (General)
  - .1 All Integrated Building System components shall be supplied by Durabond Products Limited.
  - .2 The fabricator of the integrated building system (IBS) shall be authorized by Durabond Products Limited and knowledgeable in the fabrication of IBS.
- .2 Qualifications of Applicator
  - .1 Work of this Trade shall be executed by a qualified fabricator/installer, approved by Durabond Products Limited. The IBS fabricator shall be the IBS installer. All fabricators and installers shall have been trained by Durabond Products Limited on the most recent installation procedures of this type of work and will have proper equipment and skilled personnel to expediently complete of this trade in an efficient and very best workmanship manner.
- .3 Manufacturer's Supervision and Installer
  - .1 Arrange for Durabond Products Limited to have a qualified technical representative visit the site, prior to commencement of work, to discuss with the General Contractor, Installer and Architect, the installation procedures to be used in order that alternative recommendations may be made to Architect should adverse conditions exist.
  - .2 Arrange for the qualified technical representative to visit the site at regular intervals during installation and upon completion of work to ensure adherence to specifications and to check quality of completed work.
  - .3 The above supervision shall be at no extra cost to the Owner.

### **1.8 DELIVERY, STORAGE, HANDLING & PROTECTION**

- .1 Transport, handle and store Integrated building system units by approved methods to prevent damage, such as chipping, cracking, distortion and/or breaking.
- .2 Store prefabricated units on pallets raised above the ground. Protect the prefabricated units from weather, and where possible store units in a dry, waterproof location.

- .3 Provide protective coverings to protect the prefabricated units from damage due to inclement weather and other construction work.

### 1.9 PROJECT/SITE CONDITIONS

- .1 Do not proceed with installation of prefabricated units immediately prior to, during nor immediately after inclement weather conditions, or when wet weather conditions are anticipated within 24 hours after installation.
- .2 Proceed with work only when surfaces and conditions are satisfactory for production of a flawless and to the perfection installation. Consult system's manufacturer for recommendations should adverse conditions exist.

### 1.10 WARRANTY

- .1 The warranty period stipulated in the General Conditions of the Contractor shall be extended as follows:
  - .1 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.
  - .2 The manufacturer warranty is effective only when materials and workmanship comply with this specification.
  - .3 The system manufacturer does not warrant workmanship.
  - .4 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.*

## PART 2: - PRODUCTS

### 2.1 MANUFACTURER

- .1 All components of the Durex® Integrated Building System shall be manufactured, supplied and/or distributed by Durabond Products Ltd. No substitution or addition of other materials shall be permitted. Fabrication and installation of the units shall be executed by locally approved fabricators and installers.

### 2.2 STEEL STUDS, TRACKS AND BRACINGS

- .1 Carbon steel studs, tracks and bracings shall be cold-formed from sheet steel meeting the requirements of ASTM A446, metallic-coated with zinc or aluminum-zinc meeting the requirements of ASTM A653 and ASTM A792 respectively. Galvanized sheet steel components shall have a zinc coating not less than the G90 [Z275] coating designation, or a 55% aluminum-zinc coating not less than the AZM150 coating designation.
- .2 Stainless steel components, if used shall be made from austenitic Stainless Steel conforming to ASTM A666.

### 2.3 CONNECTION ANGLES ANCHORS AND PLATES

- .1 Connection angles, anchors and plates used to secure the integrated building system units to the structural framing shall have a zinc coating not less than 610 g/m<sup>2</sup>.
- .2 Stainless Steel connection angles, anchors and plates, if used shall be made from austenitic Stainless Steel austenitic type, Grade 304 or 316 in compliance with ASTM A167 and ASTM A666 standards.

### 2.4 FASTENERS FOR CONECTION ANGLES, ANCHORS AND PLATES

- .1 Fasteners used in conjunction with the connectors, angles or plates shall have a corrosion protection at least equivalent to the said components.

### 2.5 FASTENERS FOR SHEATHING BOARDS TO STEEL FRAMING

- .1 Fasteners for securing sheathing boards to the steel framing shall be self-tapping screws for steel. All fasteners shall be corrosion resistant, coated in conformance with ASTM C1002, ASTM C954 and ASTM A548. Fastener plates shall be Durex WDP plastic plates distributed by Durabond Products Limited.

### 2.6 SHEATHING

- .1 Fiber-Mat Reinforced Cementitious Boards conforming to ASTM C1325.
- .2 Glass-Mat Surfaced Gypsum Board conforming to ASTM C1177/C1177M.

### 2.7 SHEATHING JOINT REINFORCING

- .1 Durex® Barrier Seam Tape, a polyester reinforcing mesh supplied in rolls 100 mm (4").

*SPEC NOTE: When Durex® Flexseal Membrane and Durex® Flexseal Membrane VP are used continuously over the field of the wall, no additional joint treatment in the substrates is required.*

### 2.8 WATER RESISTIVE BARRIER (WRB)

- .1 Durex® Flexseal Membrane, a self-adhered, modified bituminous membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound which is integrally laminated to a tri-laminated woven polyethylene film on one side with a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 1 mm (40 mil) and available in rolls 910 mm (36"), 450 mm (18"), 300 mm (12"), 225 mm (9"), 150 mm (6"), 100 mm (4") wide and 22.9 m long.
- .2 Durex® Flexseal Membrane VP, a self-adhered, vapour permeable, modified bituminous membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound which is integrally laminated to a woven polyethylene film on one side with a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 0.6 mm (24 mil) and available in rolls 950 mm (37"), 300 mm (12"), 230 mm (9"), 150 mm (6") wide and 30 m long.

*SPEC NOTE: All Durex® Flexseal Membrane side and end lap joints shall overlap a minimum of 50 mm (2"), while Durex® Flexseal Membrane VP side lap joints shall overlap a minimum of 50 mm (2") and end lap joints a minimum of 75 mm (3").*

- .3 Durex® Flexseal Membrane and Durex® Flexseal Membrane VP shall be installed in a single overlap formation to provide a continuous moisture barrier to flash out any incidental water intrusion.
- .4 Durex AirStop, a ready to use, single component, silicone modified acrylic copolymer water/air barrier.

*SPEC NOTE: Durex® Flexseal Primer is composed of SBS synthetic rubber and adhesive enhancing solvent-based resins, specifically designed to enhance the adhesion of Durex® Flex-Seal Membrane, Durex® EIFS Tape and Durex® EIFS Tape Super Stick TM on porous surfaces such as concrete, glass-mat gypsum and/or cementitious boards, cementitious coatings, wood and metal surfaces.*

*SPEC NOTE: The water resistive barrier system may also be designed to act as the wall assembly air barrier and/or vapour barrier material as determined by the consultant of the wall assembly.*

## 2.9 TRANSITION MEMBRANE

- .1 Durex® EIFS Tape, a 30 mil thick, self-adhering, Styrene Butadiene Styrene (SBS) modified rubberized asphalt membrane with a polyester top surface. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® EIFS Tape requires the use of Durex® Flex-Seal Primer for proper adhesion.
- .2 Durex® EIFS Tape Super Stick TM, a 17 mil, self-adhering, high performance tape with a polyester fabric top layer. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® Super Stick TM requires the use of Durex® Flex-Seal primer for proper adhesion.
- .3 Durex® Flex-Seal Membrane, a 40 mil thick, self-adhering, rubberized asphalt membrane with high density cross-laminated polyethylene reinforcement. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® Flex-Seal Membrane requires the use of Durex® Flex-Seal Primer.

*SPEC NOTE: Durex® Flex-Seal Primer, a primer specifically designed to enhance the adhesion of Durex® Flex-Seal Membrane and Durex® EIFS Tape on porous surfaces and cementitious coatings at temperatures above -30°C. It is composed of SBS synthetic rubbers, adhesive enhancing resins and volatile solvents. Durex® Flex-Seal Primer can be used on exterior gypsum boards, wood, metal and concrete.*

## 2.10 INSULATION ATTACHEMENT

- .1 Mechanical fasteners for concrete, masonry, wood or steel studs framing, supplied by Durabond Products Limited shall be corrosion resistant, coated in conformance with ASTM C1002, ASTM C954 and/or ASTM A548.



- .2 Fasteners shall be sized to be embedded into the substrate a minimum of 25 mm (1") for masonry substrates, 19 mm (3/4") for wood stud framing and substrates, and 9 mm (3/8") for steel stud framing with a minimum of 3 threads protruding through the steel member.
- .3 Fasteners plates supplied by Durabond Products Limited shall be Durex® Equalite noncombustible plates.

*SPEC NOTE: Refer to fastener manufacturer's literature for fastener type, minimum penetration, and fastener pull-out resistance relative to design wind pressures.*

- .4 Durex® Kolor Gard Series Coatings, a 100% acrylic, water-based, high-build, multi-coloured, textured, protective coatings that include fade-resistant pigmentation technology for attaining and retaining vibrant accent and mass tone colours.

*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.*

## 2.11 INSULATION

- .1 Durex® Equalite Select Board: A noncombustible mineral fibre insulation board made from basalt rock and slag, conforming to CAN/ULC S702 and ASTM C 612 Type IVB, measuring 1.2 m (4'-0") by 0.6 m (2'-0"), minimum density of 128 kg/m<sup>3</sup> (8 lbs/ft<sup>3</sup>), and a recommended minimum thickness of 75 mm (3"). The recommended total thickness of the board shall not be greater than 127 mm (5"). The board is pre-machined with rectangular drainage channels parallel to the short edge of the board to ensure vertical alignment of the channels required for positive drainage. The drainage channels are 50 mm (2") wide, 150 mm (6") apart, not less than 10 mm (3/8") deep and/or as required by the project specifications or drawings.
- .2 Durex® Equalite Select Board shall be noncombustible mineral fibre insulation board in conformance with CAN/ULC S114 and ASTM E84.

*SPEC NOTE: Thicker or thinner insulation thicknesses could be used depending on specific project's requirements. Consult manufacturer for project-specific thickness requirements.*

- .3 Durex® Equalite Vent Board: A mineral fibre insulation board conforming to CAN/ULC S702, measuring 200 mm (8") wide by 1.2 m (4'-0") long with a minimum thickness of 75 mm (3"). The Durex® Equalite Vent Board is pre-machined with rectangular, vertical drainage channels parallel to the short edge of the board, 50 mm wide, 150 mm (6") apart and not less than 10mm (3/8") deep or as required by the project specifications or the drawings. Durex® Equalite Vent Board is supplied complete with pre-back-wrapped, factory applied base coat and reinforcing mesh.
- .4 Durex® Equalite Boundary Board: A flat, mineral fibre insulation board, conforming to CAN/ULC S702, measuring 200 mm (8") wide by 1.2 m (4'-0") long with a minimum thickness of 75 mm (3"). The Durex® Equalite Boundary Board is pre-back

wrapped with factory applied base coat and reinforcing mesh.

*SPEC NOTE: Durex® Equalite Vent Board and Durex® Equalite Boundary Board have the same fire resistance characteristics as the Durex® Equalite Select Board.*

## 2.12 INSULATION FOR PREFABRICATED SHAPES

- .1 Insulation for prefabricated shapes shall be made of mineral fiber insulation, conforming to CAN/ULC S 702, having a minimum thickness that corresponds to the minimum specified outboard thermal resistance.
- .2 The insulation for prefabricated shapes shall have its internal surface pre-machined with rectangular drainage channels parallel to the short edge of the insulation board that are 50 mm wide, 150 mm (6") apart, with a depth not less than 10 mm (3/8") or as required by the project specifications and/or the drawings.

## 2.13 REINFORCING MESH

- .1 Durex® Adhesive Detail Mesh. A nominal 152 g/m<sup>2</sup> (4.5 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 241 mm (9.5") wide by 45.7 m (150') long rolls. Used for corner reinforcement and aesthetic detailing applications.
- .2 Durex® Intermediate Mesh (6.0 oz): A nominal 203 g/m<sup>2</sup> (6.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 45.7 m (150') long rolls. Used for application over the field of the wall, providing a moderately high-duty impact resistance.
- .3 Durex® Intermediate Plus Mesh (11.0 oz): A nominal 373 g/m<sup>2</sup> (11.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing an intermediate high-duty impact resistance.
- .4 Durex® High Impact mesh (15.0 oz): A nominal 509 g/m<sup>2</sup> (15.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline resistant glass fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing a high-duty impact resistance.
- .5 Durex® Ultra Impact mesh (21.0 oz): A nominal 695 g/m<sup>2</sup> (21.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing an ultra-high-duty impact resistance.

*SPEC NOTE: All areas requiring Impact Resistance Levels higher than "standard", as defined by Table 1.5.8 of this specification, shall be detailed in the project architectural drawings and shop drawings where applicable and described in the contract documents clearly identifying the Impact Resistance Classification, inclusive of the specific layers of reinforcing mesh applicable.*

## 2.14 Base Coat

- .1 Durex® Uniplast, a noncombustible, two components polymer-modified cementitious base coat mixed with Acrybond S, a water-based, 100% acrylic polymer additive at a

ratio of 1 bag Durex® Uniplast to 5 liters of Durex® Acrybond S.

*SPEC NOTE: Consult your Durabond Products Ltd. for further assistance in the selection of the appropriate base coat.*

## 2.15 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: Except for special finishes, the Primer is an optional component of the EIFS where its usage is recommended for providing uniform substrate absorption and finish colour*

## 2.16 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 reliefs, 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.*

## 2.17 TRIM ACCESSORIES

- .1 As selected by the Consultant and recommended by Durabond Products Ltd.

## 2.18 ACCESSORY PRODUCTS

- .1 Sealant: a low modulus sealant, as recommended and approved by Durabond Products Ltd. Standard colour shall be selected by consultant.

- .2 Foamed-in-place Insulation: Class 1, single or two components, polyurethane foam, moisture cured with flame-spread rating of  $\leq 25$ , fuel contribution 0 and smoke developed  $\leq 20$ , as per (ULC S710.1). Must be ozone friendly and containing no fluorocarbons and have a density  $\geq 27.2 \text{ kg/m}^3$  ( $1.75 \text{ lb/ft}^3$ ) and a minimum "RSI" value of 0.91 per 25 mm ("R" value of 5 per inch) thickness.

## 2.19 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 Sharp cutting knife or blades and appropriately sized sleds.
- .3 Metal trowels, corner trowels, featheredge/darby, edge tool, hawks, utility knives, and plastic floats.

## PART 3: - EXECUTION

### 3.1 FABRICATION GENERAL

- .1 Fabricate Durex® Integrated Building System (IBS) to suit field conditions, and structure's dimensions in full conformance with the reviewed shop drawings.
- .2 Fabricate Durex® Integrated Building System (IBS) in sufficient time and in proper sequence to ensure adequate curing before shipping and installation.
- .3 Mark the back or on the unexposed edge of each prefabricated unit with an identification mark that would correspond to the location of the unit on related shop drawings.
- .4 Mark each prefabricated unit with date of fabrication.
- .5 Provide all openings and reveals where indicated.

### 3.2 CUTTING OF STEEL STUD SECTIONS AND TOLERANCES

- .1 Inspect and verify that all steel sections are in conformance with the reviewed shop drawing requirements for dimensions, thickness and galvanization prior to commencing construction of panels.
- .2 Refer only to reviewed shop drawings for guidance in dimensions and tolerances for the construction of the panels.
- .3 Make shop drawings readily available, at all time, to fabricating personnel, during fabrication by keeping one original set of reviewed shop drawings at the fabricator's construction facility.
- .4 Prefabricated panels shall conform to the following dimensional tolerances:
  - Length  $\pm 3 \text{ mm}$  ( $1/8''$ )
  - Width  $\pm 3 \text{ mm}$  ( $1/8''$ )

- Thickness  $\pm 3$  mm (1/8")

### 3.3 FABRICATION OF STEEL STUD FRAMEWORK

- .1 Fabricate the stud framework in jigs with framing members laid out as per shop drawings.
- .2 Touch up all welded area completely with corrosion preventive Zinc-rich primer.
- .3 Fabricate steel stud framework to conform with specified tolerances, true and straight.
- .4 Discard all bent or damaged framing sections and components.
- .5 Handle and store framework with care to prevent damages to any framing member or any welded joint.

### 3.4 APPLICATION

- .1 Sheathing Board Installation
  - .1 Fasten the sheathing board along the length of each stud at 300 mm (12") o/c.
  - .2 Secure fasteners along tacks around edge of panels and around all sides of openings at not more than 50 mm (2") from edge and spaced not more than 200 mm (8") o/c.
  - .3 Ensure all vertical joints of sheathing boards are placed over a framing member. Provide one fastener on each side of the sheathing board edge, spaced at not more than 300 mm (12") o/c. taking care not to damage the edge of the sheathing board. Stagger vertical joints of the sheathing boards to avoid joint alignment.
  - .4 Install sheathing boards with its strong axis perpendicular to the framing members.
  - .5 Solidly fasten all fasteners directly to the framing members. Remove and replace all loose or improperly installed fasteners.
- .2 Water Resistive Barrier (WRB)
  - .1 Water Resistive Barrier (WRB) [Durex Flexseal & Flexseal VP]
    - .1 Apply the selected insulation and finish system's water resistive barrier as per the manufacturer's application instructions.
    - .2 Prime substrate surfaces and install the self-adhering membrane over the entire surface of the substrate.
    - .3 Install the water resistive barrier in an overlapping shingle pattern to ensure water not getting behind the membrane.
    - .4 Roll the installed self-adhered membrane to ensure positive contact to the primed surfaces.
    - .5 Apply the exterior insulation and finish system's moisture transition membrane at all openings, fenestration and interfaces to maintain the continuity of the water resistive barrier at these locations.
    - .6 Tie-in the specified water resistive transition membranes to window frames, door frames, spandrel panels, roofing system and at interfaces of dissimilar materials as indicated in drawings.

*SPEC NOTE: Refer to manufacturer's standard details.*

- .7 Extend the water resistive membrane beyond the limits of the exterior insulation and Finish system not less than 100 mm (4") and seal termination interface. Coordinate end-damming of drainage cavity at interface with other cladding types.
- .2 Water Resistive Barrier (WRB) [Durex Air Stop]
  - .1 Apply the exterior insulation and finish system's moisture transition membrane at all vertical and horizontal sheathing board joints and all sheathing board corners.
  - .2 Apply the selected insulation and finish system's water resistive barrier as per the manufacturer's application instructions, over the entire substrate surface, applying sufficient pressure in the troweling process to ensure full contact with the substrate.
  - .3 Allow a minimum of 24 hours for drying and curing.
  - .4 At all locations where the substrate material changes, install a 30 mm (12") strip of the system's moisture barrier transition membrane in strict accordance with the manufacturer's printed instructions to maintain continuity of the water resistive barrier.

*SPEC NOTE: Correlate requirements with shop drawings as per Article 1.10. Coordinate with trades responsible for the placement and installation of framing materials for wall openings such as window, door frames, louvers, and other mechanical penetrations.*

- .3 Insulation Board
  - .1 Install full size exterior insulation and finish system's insulation board over the water resistive barrier membrane with the specified mechanical fasteners, beginning at one end to form an uninterrupted thermal barrier. Coordinate placement of the insulation boards with the system's pre-wrapped Vent board and Boundary board.
  - .2 Using full insulation boards only, install the insulation boards over the substrate with the long fibres vertical, in a running bond pattern and interlocking board joints at all corners.
  - .3 Butt the insulation boards to a moderately tight fit, avoiding gaps between the boards. Fill any incidental gap with pieces cut to fit.
  - .4 Offset the running insulation boards a minimum of 200 mm (8") from sheathing joints.
  - .5 Organize board placement to align vertical edges with framing members or appropriate support system.
  - .6 Install insulation boards in an "L-shape" around fenestration and openings to avoid alignment of insulation joints with corners of openings.
  - .7 Mark out alignment and cut reveals in insulation boards as per architectural drawings. Ensure reveals are true to size, straight, plumb and level throughout.
- .4 Vent Board
  - .1 Install the pre-wrapped exterior insulation and finish system's Vent Board at all heads of openings such as windows, doors, louvers etc., at the bases of the walls and at all horizontal interfaces/terminations between the exterior insulation and finish system and other cladding systems such as brick, stone, metal cladding, precast, metal flashing etc. Install the Vent Board by applying the specified fasteners. Allow an approximate 12.7 mm (1/2") space

between the exterior insulation and finish system and the specified cladding system.

*SPEC NOTE: Lap the reinforcing mesh of the Vent Board onto the front face of the insulation board by 100 mm (4"). Press the fabric of the Vent Board into a bed of base coat and smooth out ensuring that the reinforcing mesh is well embedded into the base coat.*

.5 Boundary Board

- .1 Install the Boundary Board, with long fibres vertical, at the top of the wall and at all vertical interfaces with dissimilar substrates, jambs and sills of fenestrations, at minor penetrations and other terminations by using the specified mechanical fasteners:

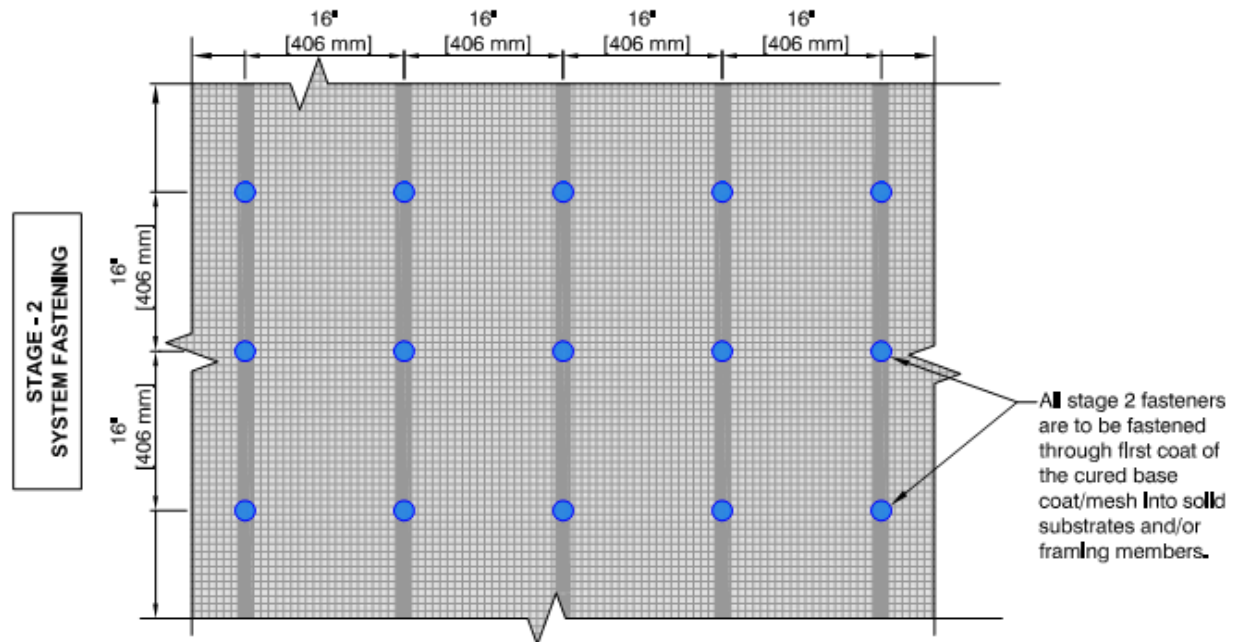
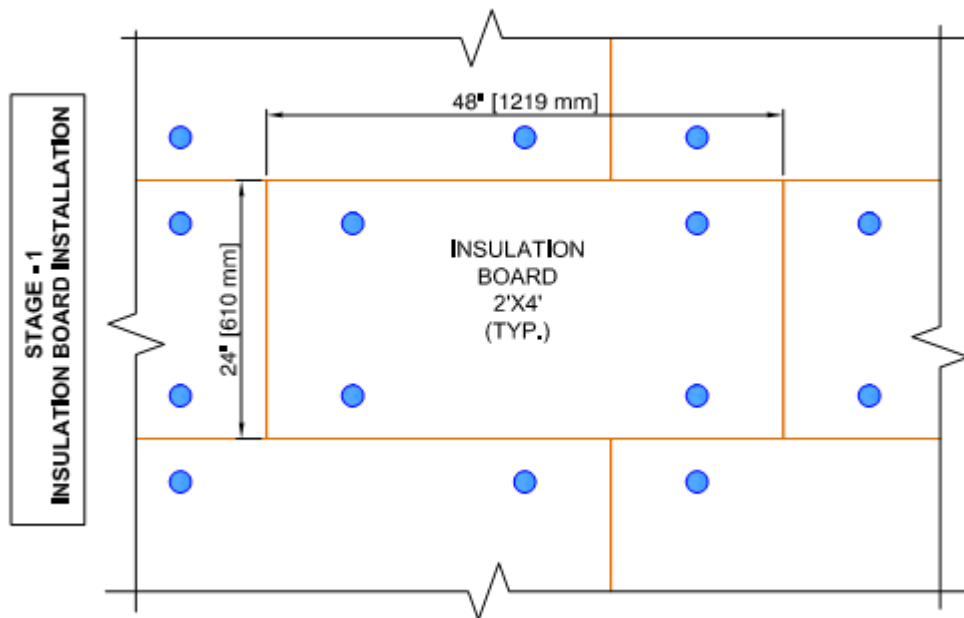
*SPEC NOTE: Lap the reinforcing mesh of the Boundary Board onto the front face of the insulation board by 100 mm (4"). Press the fabric of the Boundary Board into a bed of base coat and smooth out ensuring that the reinforcing mesh is well embedded into the base coat.*

*SPEC NOTE: The Boundary Board should only be placed at the head of horizontal applications and not at the base.*

.6 Insulation Fasteners

- .1 Install the exterior insulation and finish system's insulation boards with mechanical fasteners and anchor plate washers specified by the manufacturer.
- .2 The insulation boards shall be fastened by applying uniform pressure at all fasteners. Install the fasteners with the anchor plates/washers flush and slightly recessed below the surface of the insulation board. Do not remove any fasteners once they have been installed.
- .3 The mechanical fasteners shall be applied in a two-stage application into the structural substrate and/or framing members.
- .4 Secure the insulation boards to the substrate using 4 fasteners per 600 x 1200 mm (2' x 4') board, followed by the application of the base coat and reinforcing glass fibre mesh over the insulation board.
- .5 Once the first application of the base coat has cured, apply the second stage of fasteners through the cured base coat into the framing members.
- .6 Ensure that the second stage fasteners are aligned with the structural framing members at a maximum vertical and horizontal spacing of 406 mm (16") o/c. both horizontally and vertically.
- .7 When anchoring into masonry or concrete substrates, use only the bits supplied with the fasteners for the attachment of the insulation board. Pre-drill holes to a minimum depth of 25 mm (1") deeper than the length of the fastener.
- .8 Install fasteners within 100 mm (4") of the pre-back-wrapped Boundary and Vent boards with a spacing not exceeding 200 mm (8") o/c.

*SPEC NOTE: The insulation thickness and the fastener pattern determine the related wind load resistance levels. Refer to the sketches herein for fasteners spacing requirements.*



*SPEC NOTE: The above fastening pattern addresses recommended fastener placement for typical wall installations. Consult Durabond Building Products Ltd. for project-specific installations.*

- .7 Base Coat and Reinforcing Mesh
  - .1 Ensure that the surface of the insulation boards is dry and free of loose insulation, dirt, planar irregularities, etc. and that detail work has been completed.
  - .2 At all areas where detail reinforcing mesh has been installed, apply a layer of base coat to the exposed edges and face of the insulation boards. Pull the



- detail reinforcing mesh into the base coat so that it is fully embedded. Using an edging tool, smooth the corner to render it square.
- .3 Reinforce all corners of openings where no control joints are detailed with an additional strip of detail reinforcing mesh, 230 mm by 305 mm (9" by 12") installed diagonally across the corners.
  - .4 Apply a layer of base coat over the insulation surface, not less than 2 mm, applying sufficient pressure in the trowelling process to ensure full contact with the insulation. Immediately place the reinforcing mesh onto the wet base coat and trowel the mesh from the centre to the edges, filling all voids in the mesh until the mesh is completely embedded.
  - .5 Provide high impact reinforcing mesh where indicated on drawings. Tightly abut the edges; do not lap high impact mesh. Embed the mesh into the wet base coat and trowel the mesh from the centre to the edges, filling all voids in the mesh until the mesh is completely embedded. Allow the high impact mesh-reinforced base coat to dry before applying the successive reinforcing mesh.
  - .6 When applying additional layer of reinforcing mesh for higher impact resistance, each layer of the reinforcing mesh shall be fully embedded in the base coat and the first layer shall be allowed to dry before applying the second layer.
  - .7 Install the reinforcing mesh tight, straight and free of wrinkles, ripples and waves.
  - .8 Embed the intermediate reinforcing mesh into the base coat, over the entire surface of the dry, embedded high impact mesh, with joints overlapped a minimum of 102 mm (4") and double wrapping inside and outside corners a minimum of 203 mm (8").
  - .9 Overlap detail reinforcing mesh with intermediate reinforcing mesh 100 mm (4") at all locations where detail reinforcing mesh has been installed.

*SPEC NOTE: When applying high impact reinforcing meshes, do not overlap high impact mesh, the joints between meshes shall just be tightly butted.*

*SPEC NOTE: The required backwrap of the insulation boards shall be made with the intermediate mesh only. Do not backwrap high impact reinforcing meshes.*

- .8 Final Base Coat
  - .1 In hot, dry weather, if the scratch coat surface is exceptionally dry, lightly dampen the surface with a fog mist of clean potable water. Do not oversaturate with water, as it will impair the bonding of the base coat.
  - .2 Trowel apply the base coat, applying sufficient pressure to ensure full bond with the base coat.
  - .3 Use a straight edge tool to featheredge the surface and bring it to a straight, even and true surface.
  - .4 Total thickness of base coat shall be achieved at an application rate not less than 7.2 kg/m<sup>2</sup> (1.5 lb/ft<sup>2</sup>).
  - .5 When the base coat has taken initial set, use a wood or sponge float and work the surface with light circular motions to remove all high points and to fill low points.
  - .6 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"). Surface shall be free of trowel marks,

- irregularities and visible mesh pattern.
- .7 Allow a minimum of 3 days for curing and drying.

*SPEC NOTE: Do not over-saturate with water as it will impair the bonding of the base coat.*

*SPEC NOTE: The use of a straight edge tool to darby the base coat is essential and required to obtain a straight, even and true surface of the base coat.*

- .9 Finish Coat Primer
  - .1 Evenly apply the primer throughout with a high pile roller at a rate of 2.8 m<sup>2</sup>/l (600 ft<sup>2</sup>/pail). The substrate shall not be visible through the applied primer.
  - .2 Avoid excessive build-up in any one area.
  - .3 Allow minimum 4 hours for curing prior to application of finish coat.
- .10 Finish Coat
  - .1 Apply the 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.*

### 3.5 EXAMINATION

- .1 Examine the structure to receive Durex® Integrated Building System (IBS) for defects and out of tolerance components which will adversely affect execution and quality of work.
- .2 Report in writing to Architect all adverse conditions which will be detrimental to work of this trade. Such conditions shall include discrepancies in panel sizes, structure irregularities and variances from reviewed shop drawings.
- .3 Do not start work until unsatisfactory conditions have been corrected.
- .4 Commencement of work shall indicate acceptance of all conditions.

### 3.6 ERECTION

- .1 Supply anchor bolts, structural steel inserts, plates and the like to be casted into cast-in-place concrete required for the connection or the support of the prefinished panel units to concrete sub-trade for installation. Supply layout drawings locating accurately the position of all cast-in-place items to be installed by Concrete Sub-trade.
- .2 Install Durex® Integrated Building System (IBS) in accordance with approved mock-up, Durabond's printed instructions and reviewed shop drawings.
- .3 Provide proper equipment and erect work using labourers skilled in this trade.
- .4 Erect components without damage to shape or finish. Replace or repair damaged panels.
- .5 Erect components level, square and plumb within allowable tolerances.
- .6 Provide and install sufficient temporary bracing to brace Durex® IBS panels adequately at all stages of construction, so that panels will safely withstand loads to which they may be subjected. This temporary bracing shall remain in position until the required connections have been completed. Any bracing required for the structural frame supporting the Durex® IBS panels is to be provided by the General Contractor.
- .7 Align and maintain uniform horizontal and vertical joints, as erection progresses.
- .8 When components require adjustment beyond design or tolerance criteria, discontinue affected work, advise Contractor and/or Consultant.
- .9 Anchor Durex® Integrated Building System (IBS) units to the building structure in a manner which will allow the structure to deform due to the acceptable load deflections, inter-storey movements, creep and thermal movements without imparting additional loads to the structure or units.
- .10 Fasten and/or weld components securely in place. Perform welding in accordance with CSA-W59 for welding to steel structures and CSA-W186 for welding or reinforcement. Where fasteners are used for installation, tighten with equal torque.

### 3.7 ERECTION TOLERANCES AND JOINTS

- .1 Erect members level, square and plumb, within allowable tolerances as per CSA A 23.4.
- .2 Erect members allowing for joints at all locations and in the direction as shown on shop drawings.
- .3 All horizontal joints shall be two-stage and vented at intervals not greater than 1.2 m (4'-0") on centre. All vertical joints shall be vented at not greater than 3 m (10'-0") on center and/or not greater than 50 mm (2") below the intersection of vertical and horizontal joints.

- .4 Unless otherwise noted, provide all joint width to be minimum 19 mm (3/4") wide.

*SPEC NOTE: As a rule of thumb, fulfill requirements 1 and 2 and then arrange the other requirements to best suit the intended aesthetics of the building.*

### 3.8 CONTINUITY OF AIR/VAPOUR BARRIER

- .1 The continuity of the wall air/vapour barrier shall be provided as follows:
- .1 At all joints between panels, the inner sealant shall be continuous.
  - .2 At all terminations and interfaces at fenestration, units' joints shall include either a continuous inner sealant and/or shall incorporate tie-in membranes to ensure continuity of the air/vapour barrier.
  - .3 At all terminations between Durex® Integrated Building System (IBS) and concrete slab, apply a 300 mm (12") wide strip of Durex® Flex-Seal Air/Vapour Barrier Membrane. Apply a coat of Durex® Flex-Seal Primer to concrete surfaces prior to application of membrane.

### 3.9 SEALANTS

- .1 Internal Seal
- .1 Apply sealant and joint backing in accordance with Section 07 90 00 and as per details in Contract documents. All exterior joints are to be vented.
- .2 External Seal
- .1 Seal and caulk all joints in the exterior insulation and finish 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 exterior insulation and finish system and dissimilar abutting building components.
  - .3 Apply sealant and/or sealant primer in strict accordance with the sealant manufacturers printed instructions.

*SPEC NOTE Apply sealant and/or sealant primer to base coat only.*

### 3.10 SURFACE SEALER (OPTIONAL)

- .1 After complete installation of the Durex® Integrated Building System (IBS) apply one coat of surface sealer to the exterior face of the panels. Apply sealer in strict accordance with Dermabond's printed instructions.

### 3.11 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.

### 3.12 PROTECTION

- .1 Protect the installed Durex® Integrated Building System (IBS) from damage during construction and/or erection operations performed by work of this trade.

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- .2 Provide protection to adjacent materials that could be damaged by the system's installation.
- .3 Post appropriate warning signs while work is in progress.
- .4 Clean off all surfaces and work area of foreign materials resulting from material installation and leave work in clean condition.

END OF SECTION

## **PART 1: - GENERAL**

### **1.1 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 pre-engineered, prefabricated, lightweight, mineral fibre-insulated wall panel system consisting of a light-weight steel framing (LSF) that is made of structural, cold-formed steel members, engineered specifically for a set of specified design loads, spans, sectional configurations, on which a pressure moderated, Geometrically Defined Drainage Cavity (GDCC) exterior insulation and finish system that includes a dens-glass substrate is applied. The weather resistive barrier that forms part of the exterior insulation and finish system serves as well as an air/vapor barrier of the building system. The prefabricated, lightweight, mineral fibre-insulated wall panel system is intended for use on buildings where the Building Code requires the use of noncombustible fire-tested wall assemblies.
- .4 The Designer must decide whether the wall assembly of the structure requires an air barrier or an air/vapour barrier.

### **1.2 COORDINATION**

- .1 Ensure that the work of this section is coordinated with the work of other related sections.

### **1.3 RELATED SECTIONS**

- |     |                  |                                |
|-----|------------------|--------------------------------|
| .1  | Section 03 30 00 | Cast-in-Place Concrete         |
| .2  | Section 04 20 00 | Unit Masonry                   |
| .3  | Section 05 41 00 | Structural Metal Stud Framing  |
| .4  | Section 06 10 00 | Rough Carpentry                |
| .5  | Section 07 20 00 | Thermal Protection             |
| .6  | Section 07 26 00 | Vapour Retarders               |
| .7  | Section 07 27 00 | Air Barrier                    |
| .8  | Section 07 62 00 | Flashing and Sheet Metal       |
| .9  | Section 07 84 00 | Firestopping                   |
| .10 | Section 07 90 00 | Joint Protection (Sealants)    |
| .11 | Section 08 00 00 | Openings                       |
| .12 | Section 08 50 00 | Windows                        |
| .13 | Section 09 28 00 | Backing Board and Underlayment |

### **1.4 REFERENCES**

- .1 American Society for Testing Materials
  - .1 ASTM A6 Standard Specification For General Requirements For Rolled Structural Steel Bars, Plates, Shapes, And Sheet Piling.
  - .2 ASTM A283 Standard Specification For Low And Intermediate

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.3	ASTM A167	Tensile Strength Carbon Steel Plates.
.4	ASTM A653	Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
.5	ASTM A666	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
.6	ASTM A715	Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar.
.7	ASTM A792	Standard Specification For Steel Sheet, High-Strength, Low-Alloy, Hot-Rolled, And Steel Sheet, Cold-Rolled, High-Strength, Low-Alloy, With Improved Formability.
.8	ASTM A1003	Standard Specification For Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated By The Hot-Dip Process.
.9	ASTM A1008	Standard Specification For Steel Sheet, Carbon, Metallic- And Nonmetallic-Coated For Cold-Formed Framing Members.
.10	ASTM A1008	Standard Specification For Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy With Improved Formability, Solution Hardened, And Bake Hardenable.
.10	ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus.
.11	ASTM C612	Standard Specifications for Mineral Fibre Block of Board Thermal Insulation
.12	ASTM C954	Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
.13	ASTM C955	Standard Specification for Cold-Formed Steel Structural Framing Members.
.14	ASTM C578	ASTM C578-19 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
.15	ASTM C1002	Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
.16	ASTM C1177/C 1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
.17	ASTM C1325	Standard Specification for Fibre-Mat Reinforced Cementitious Backer units.
.18	ASTM C1338	Standard Test Method for Determining the Fungi Resistance of Insulation Materials and Facings.
.19	ASTM C1382	Standard Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
.20	ASTM C1397	Standard Practice for Application of Class PB Exterior Insulation and finish Systems (EIFS) and EIFS with Drainage.
.21	ASTM C1481	Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).
.22	ASTM D1623	Standard Test Method for Tensile and Tensile Adhesion

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- .23 ASTM D5035 Properties of Rigid Cellular Plastics.  
Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method).
- .24 ASTM D5420 Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of Striker Impacted by Falling Weight (Gardner Impact).
- .25 ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- .26 ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials.
- .27 ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .28 ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- .29 ASTM E283 Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors.
- .30 ASTM E1131 Standard Test Method for Compositional Analysis by Thermogravimetry.
- .31 ASTM E1252 Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis.
- .32 ASTM E2098 Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution.
- .33 ASTM E2178 Standard Test Method for Air Permeance of Building Materials.
- .34 ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- .35 ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS).
- .36 ASTM F410 Standard Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement.
- .37 ASTM G154 Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Non-metallic Materials.
- .38 ASTM G155-05a Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
- .2 American Iron and Steel Institute (AISI)  
.1 AISI 303 North American Specification for the Design of Cold-Formed Steel Structural Members.
- .3 Canadian Construction Materials Centre (CCMC)  
.1 CCMC Technical Guide for the Evaluation of EIFS MF # 07 24 13.01.
- .4 Canadian Standards Organization (CSA)  
.1 CAN/CSA A 23.4 Precast concrete – Materials and Construction.  
.2 CAN/CSA S136 North American Specification for the Design of Cold-



- .3 CSA S16 Formed Steel Structural Members  
Design of Steel Structures.
- .4 CSA W59 Welded steel Construction.
- .5 CSA W186 Welding of Reinforcing Bars in Reinforced Concrete construction.
  
- .5 Canadian Sheet Steel Building Institute (CSSBI)
  - .1 CSSBI Design Manual.
  
- .6 International Organization for Standardization (ISO)
  - .1 ISO 7892 Vertical Building Elements – Impact Resistance Tests – Impact Bodies and General Test Procedures.
  - .2 ISO 7895 Façades made of components - Tests for resistance to positive and negative static pressure generated by wind.
  - .3 ISO 15148 Hygrothermal performance of building materials and products - Determination of water absorption coefficient by partial immersion.
  
- .7 ULC (Underwriters Laboratories of Canada)
  - .1 CAN/ULC-S101 Standard Methods of Fire Endurance Tests of Building Construction and Materials.
  - .2 CAN/ULC-S102 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .3 CAN/ULC-S114 Standard Method of Test for Determination of Non-Combustibility in Building Materials.
  - .4 CAN/ULC-S702 Standard for Mineral Fiber Thermal Insulation for Buildings.
  - .5 CAN/ULC S716.1 Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems.
  - .6 CAN/ULC-S716.2 Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier.
  - .7 CAN/ULC-S716.3 Standard for Exterior Insulation and Finish Systems (EIFS) - Design Application.

## 1.5 DESIGN CRITERIA

- .1 Structural Design
  - .1 A design professional shall design the light-gauge steel framing of the back-up wall to the specified design loads, spans and sectional configurations in full compliance with the requirements of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
  
- .2 Engineering Calculations and Submission
  - .1 Detailed architectural plans, drawings and engineering calculations shall be submitted to demonstrate compliance to the NBC.
  - .2 The Engineering calculation submission shall include:
    - .1 Cladding Panels design criteria.
    - .2 Wind load design criteria based on project specific conditions.
    - .3 Wind load calculations.
    - .4 Allowable load capacity of fasteners.
    - .5 Allowable load capacity of connections.

- .6 Analysis of load capacity of steel studs.
  - .7 Analysis of load transfers to structure per connection used.
  - .8 Analysis of worst-case load conditions per connection.
  - .9 Individual panel load analysis of actual worst-case condition to maximum allowable loads per connection.
- .3 Supporting Building Frame
- .1 The building's structural framing members and connections shall be designed to have sufficient structural capacity and structural integrity to safely and effectively resist all applicable loads and effects of loads and influences that may reasonably be expected during the service life of the building in accordance with the requirements of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
  - .2 The building's structural framing members and connections shall be designed for serviceability in accordance with the requirements of Part 4 of the National Building Code (NBC) of Canada and/or applicable provincial or territorial building codes.
  - .3 The Building's structural framing members, floors and slabs which would be in contact with the IBS Equalite shall be straight, true, plumb, level, and flat within the permissible tolerances of ACI 117 in case of concrete structures and ASTM A6, AISC 303 and CSA S16 for steel structures.
  - .4 The IBS Equalite panel shall be designed for a maximum deflection not exceeding  $l/240$  of the panel's clear span under positive or negative wind loads.
  - .5 Design all connections for the steel stud framed units of the IBS Equalite to be electric fusion welded or mechanically fastened in compliance with the project's specific shop drawings.
  - .6 Design the IBS Equalite panels to include means of hoisting for transportation and site erection.
  - .7 Design, locate and seal all required control joints and expansion joints of the structure.
  - .8 Design the IBS Equalite panel in such a way as to be capable to interface with all other components of the exterior wall systems to form a continuous air/vapour barrier.
  - .9 All interfaces with the IBS Equalite shall be free of any loose materials and cracks greater than 2 mm ( $1/12''$ ) in width, and free of surface contamination, including (but not limited to): dirt, form release agents, efflorescence, oil and chalkiness.
- .4 Air/Vapour/Moisture Resistive Barrier
- .1 The air/vapour/moisture control shall be designed using the specified, designated control membrane. Continuity of these membranes shall be maintained at all wall and floor interfaces.
  - .2 The use, location and performance of the air barrier shall be determined by the design professional.
  - .3 The use and location of the vapour retarder within the wall assembly shall comply with the requirements of Part 5 of the National Building Code (NBC) of Canada and/or the applicable provincial or territorial building codes.
  - .4 Water Resistive Barrier
    - .1 A self-adhered, modified bituminous, composite, waterproof membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound, which is integrally laminated to a woven polyethylene film on

- one side with a film-covered, adhesive undersurface on the reverse side.
- .2 All sheathing and/or water damage susceptible substrates shall be protected with the specified Durex® water resistive barrier and as shown on the drawings.
  - .3 The designated water resistive barrier system shall include the specific sheathing joint transition membrane.
  - .4 The water resistive barrier shall be applied in conformance with the exterior insulation and finish system manufacturer's instructions.
  - .5 The continuity of water resistive barrier shall be maintained across windows, openings, joints and all other wall interfaces.
  - .6 The second plane of protection for moisture management shall be made using the specified exterior insulation and finish system's water resistive barrier and drained air space.
  - .7 The drained air space behind the insulation board, as provided by the GDDC insulation and/or the adhesive notched trowel shall remain unobstructed and shall terminate in such a way as not to obstruct the drainage of any incidental moisture to the exterior.
- .5 Air/Vapour/Moisture Transition Membrane
- .1 The continuity of the air/vapour/moisture control elements shall be maintained across joints, windows, openings and all other wall interfaces using the specified transition membranes.
  - .2 Through wall penetrations and openings shall be sealed to the water resistive barrier with transition membranes.
  - .3 Transition membranes shall be installed at all movement joints, roof junctions and window and door interfaces.
  - .4 Transition membranes shall be installed in conformance with manufacturers' instructions.
  - .5 Transition membranes shall be as listed in Part 2, "Products" of this specification. No other generic transition membranes should be permitted.

*SPEC NOTE: Allowance for use of generic transition membranes could result in membranes that may not be compatible with the exterior insulation and finish system's adhesives.*

- .6 Insulation
- .1 Taking into consideration the physical and mechanical properties of mineral fibre insulation, the minimum thickness of the GDDC mineral fibre insulation board shall not be less than 76mm (3").
  - .2 The design of the thermal resistance of the wall assembly must be in accordance with the requirements of Section 9.25, Heat Transfer, Air Leakage and Condensation Control of Division B of the NBC 2015 or the equivalent requirements of the related applicable provincial or territorial codes. The design of the of the inboard/outboard insulation of the wall assembly shall be in conformance with minimum ratio of outboard to inboard thermal resistance of Article 9.25.5.2 of Division B of the NBC 2015.
  - .3 The design of the of the thermal resistance of the wall assembly must be in accordance with the requirements of the National Energy Code of Canada for Buildings (NECB) or the equivalent requirements of the related applicable provincial or territorial codes. The insulation type and thickness shall be designed with respect to the minimum effective thermal resistance and continuous insulation requirements of the NECB or the equivalent

- requirements of the related applicable provincial or territorial codes.
- .4 The exterior insulation and finish system can provide additional thermal insulation to the wall assembly with no detrimental effects if properly installed with knowledge of the existing wall configuration and performance.

*SPEC NOTE: The thermal resistance requirements for the Effective Thermal Resistance ( $E_{eff}$ ) and Continuous Insulation (CI) vary depending on building occupancy, climatic zone and structural substrate components. Consult the exterior insulation and finish system's manufacturer for assistance and recommendations on the thickness of insulation boards that would be required to meet the project's specific thermal energy requirements.*

*SPEC NOTE: Allowance for use of generic transition membranes could result in membranes that may not be compatible with the exterior insulation and finish system's adhesives.*

*SPEC NOTE: The thermal resistance requirements for the Effective Thermal Resistance and Continuous Insulation vary depending on building occupancy, climatic zone and structural substrate components. Consult the exterior insulation and finish system's manufacturer for assistance and recommendations on the thickness of insulation boards that would be required to meet the project's specific thermal energy requirements.*

.7 Code-related Fire Protection

- .1 The exterior insulation and finish system is intended to be used in noncombustible constructions and/or in combustible constructions requiring non-combustible claddings, as allowed by the Code through conformance to Article 3.2.3.7. and Article 9.10.15.5. of Division B of the National Building Code (NBC) of Canada and/or the equivalent requirements of the related applicable provincial or territorial codes.

*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.*

.8 Impact Resistance

- .1 Design professional shall design the building façade to the desired Impact Resistance Levels that could be expected at various sections of the façade.
- .2 The required impact resistance level may vary for the various sections of the façade, based on the type, level and frequency of exposure to expected energy levels associated to impact loads. Sufficient details on architectural plans and drawings shall demonstrate compliance to the required Impact Resistance Level of the exterior insulation and finish system.
- .3 Table 1.5.9 below shall be utilized to establish and to specify the Impact Resistance Levels of the exterior insulation and finish system.

**Table 1.5.9 – Impact Resistance in accordance with ASTM E 2486**

Impact Resistance Classification	Reinforcing Mesh <sup>(1)(3)(4)</sup>			Impact Resistance	
	Layer 1	Layer 2	Layer 3	Retention of Physical Properties (No Cracks / Damage)	Retention of Performance (No Breakage of Reinforcing Mesh)
Standard Impact Resistance <sup>(2)</sup>	Standard Mesh	n/a	n/a	3 N.m	10 N.m
Medium Impact Resistance	Intermediate Mesh	n/a	n/a	8 N.m	15 N.m
High Impact Resistance	Standard Mesh	Standard Mesh	n/a	13 N.m	20 N.m
Ultra High Impact Resistance	High Impact Mesh	Standard Mesh	n/a	20 N.m	30 N.m
Extreme Impact Resistance	High Impact Mesh	High Impact mesh	Standard Mesh	25 N.m	40 N.m
<p>(1) Each layer of reinforcing mesh shall be fully embedded in the base coat and allowed to individually cure.</p> <p>(2) "Standard" is the minimum mesh grade that could be used in conjunction with EPS-based EIFS.</p> <p>(3) Refer to section 2.7 of this specification for reinforcing mesh details.</p> <p>(4) Other combinations of reinforcing mesh layers may be utilized to achieve the desired Impact Resistance Level based on confirmed tested performance by accredited laboratory.</p>					

*SPEC NOTE: Ultra High Impact Resistance shall be provided to a minimum height of 2.0 meters above finished grade and at all areas accessible to pedestrian traffic and/or exposed to abnormal impact loads. Refer to manufacturer's guidelines for the recommended Impact Resistance Levels relative to the building code occupancy classification.*

- .9 Design Details at Terminations
  - .1 The IBS Equalite shall not be used on wall surfaces subject to continuous or intermittent water immersion or hydrostatic pressure.
  - .2 The IBS Equalite shall be terminated a minimum of 12.7 mm (1/2") from adjoining materials at interfaces for sealant applications.
  - .3 Ensure the use of higher-grade glass reinforced mesh for higher impact resistance at locations indicated on architectural drawings.
- .10 Projections and Reveals
  - .1 Conform with the following guidelines for minimum thickness of system's insulation when reveals form part of façade aesthetics:

- .1 When three-dimensional architectural designs are desired by cutting into the insulation, a minimum thickness of 25 mm (1"), exclusive of any pattern or drainage grooves cut into the back of the insulation shall be maintained.

*SPEC NOTE: The use of three-dimensional architectural designs by cutting into the insulation is a common practice and an ideal feature of the exterior insulation and finish system. When designing for such aesthetic reveals the overall thickness of the system's selected insulation shall be equal or greater than "depth of reveal + 25 mm + 10 mm GDDC". Thicker insulation can be used to accommodate deeper reveals.*

.11 Sealant System

- .1 Joints between system's panels and at terminations/interfaces 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:
  - .1 19 mm (3/4") between system's panels.
  - .2 Four times greater than the anticipated range of movement.
  - .3 13 mm (1/2") at fenestrations and openings.
  - .4 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.*

.12 Expansion and Termination Joints

- .1 Provide two stage sealant joints at all joints between panels and at termination joint locations. Project's specific shop drawings shall include details of expansion and termination joints.
- .2 Sealant Joint Venting  
All two stage sealant joints shall be vented:
  - .1 Horizontal joints shall be vented at not greater than 1.2 m (4'-0") on center.
  - .2 Vertical joints shall be vented at not greater than 3 m (10'-0") on center and/or at not greater than 50 mm (2") below the intersection of vertical and horizontal joints.

*SPEC NOTE: The designer shall determine the spacing and amount of drainage and/or venting required for a particular system. Note, the venting is only required at points where gravity-induced drainage is expected to occur, hence, roof parapets and/or the underside of window sill flashing would not require sealant vents.*

.13 Flashing

- .1 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 and to prevent water entry behind the cladding.
- .2 Flashing must be installed in accordance with section 07 60 00 and the applicable building codes.
- .3 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.

- .14 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.

## **1.6 SUBMITTALS**

- .1 Product Data
  - .1 Submit the IBS Equalite 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, drainage/venting, description of related and abutting components and elevations of units with locations of expansion joints, control joints, and reveals.
  - .3 Each shop drawing submitted shall bear the signature and stamp of a qualified registered and licensed professional engineer
- .3 Samples
  - .1 Prior to application of mock-up, submit duplicate 600 mm x 600 mm (24" x 24") representative samples of the IBS Equalite, including steel stud, sheathing board, air barrier, insulation, reinforcing mesh, colour and texture of the coating finish in accordance with the requirements of Division 1.
- .4 Mock-Up
  - .1 Provide the owner/consultant with a mock-up demonstrating the integrated building system's components and methods of attachment and typical connections at different interfaces.
  - .2 The mock-up shall be constructed as per drawings and specifications to dimensions and in location specified by the Designer.
  - .3 The mock-up system's component shall include the water resistive barrier, adhesive, insulation, reinforcing mesh, base coat and finish coats that would include each colour and texture to be used.
  - .4 The Mock-up shall serve for initial review purposes by the Consultant and when accepted shall represent the minimum standard for work and quality.
  - .5 The mock-up shall be prepared with the same products, components, tools,

- techniques and details required for the actual project.
- .6 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.
- .7 Accepted mock-up may remain as part of the work.
  
- .5 Closeout Submittals
  - .1 Provide maintenance, repair and cleaning procedures for the IBS Equalite work for incorporation into Maintenance Manual specified in Division 1.
  - .2 Provide the IBS Equalite material warranty as per section 1.10.
  - .3 Provide identification labels of colour batch numbers, water resistive barriers, adhesives, base coat, finish coats and reinforcing mesh used.

### **1.7 QUALITY ASSURANCE**

- .1 Qualifications (General)
  - .1 All IBS Equalite components shall be supplied by Durabond Products Limited.
  - .2 The fabricator of the IBS Equalite shall be authorized by Durabond Products Limited and knowledgeable in the fabrication of IBS.
  
- .2 Qualifications of Applicator
  - .1 Work of this Trade shall be executed by a qualified fabricator/installer, approved by Durabond Products Limited. The IBS fabricator shall be the IBS installer. All fabricators and installers shall have been trained by Durabond Products Limited on the most recent installation procedures of this type of work and will have proper equipment and skilled personnel to expediently complete of this trade in an efficient and very best workmanship manner.
  
- .3 Manufacturer's Supervision and Installer
  - .1 Arrange for Durabond Products Limited to have a qualified technical representative visit the site, prior to commencement of work, to discuss with the General Contractor, Installer and Architect, the installation procedures to be used in order that alternative recommendations may be made to Architect should adverse conditions exist.
  - .2 Arrange for the qualified technical representative to visit the site at regular intervals during installation and upon completion of work to ensure adherence to specifications and to check quality of completed work.
  - .3 The above supervision shall be at no extra cost to the Owner.

### **1.8 DELIVERY, STORAGE, HANDLING & PROTECTION**

- .1 Transport, handle and store IBS Equalite panels by approved methods to prevent damage, such as chipping, cracking, distortion and/or breaking.
  
- .2 Store prefabricated units on pallets raised above the ground. Protect the prefabricated units from weather, and where possible store units in a dry, waterproof location.
  
- .3 Provide protective coverings to protect the prefabricated units from damage due to inclement weather and other construction work.

### **1.9 PROJECT/SITE CONDITIONS**



- .1 Do not proceed with installation of prefabricated units immediately prior to, during nor immediately after inclement weather conditions, or when wet weather conditions are anticipated within 24 hours after installation.
- .2 Proceed with work only when surfaces and conditions are satisfactory for production of a flawless and to the perfection installation. Consult system's manufacturer for recommendations should adverse conditions exist.

### **1.10 WARRANTY**

- .1 The warranty period stipulated in the General Conditions of the Contractor shall be extended as follows:
  - .1 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.
  - .2 The manufacturer warranty is effective only when materials and workmanship comply with this specification.
  - .3 The system manufacturer does not warrant workmanship.
  - .4 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.*

## **PART 2: - PRODUCTS**

### **2.1 MANUFACTURER**

- .1 All components of the Durex® IBS Equalite shall be manufactured, supplied and/or distributed by Durabond Products Ltd. No substitution or addition of other materials shall be permitted. Fabrication and installation of the units shall be executed by locally approved fabricators and installers.

### **2.2 STEEL STUDS, TRACKS AND BRACINGS**

- .1 Carbon steel studs, tracks and bracings shall be cold-formed from sheet steel meeting the requirements of ASTM A446, metallic-coated with zinc or aluminum-zinc meeting the requirements of ASTM A653 and ASTM A792 respectively. Galvannealed sheet steel components shall have a zinc coating not less than the G90 [Z275] coating designation, or a 55% aluminum-zinc coating not less than the AZM150 coating designation.
- .2 Stainless steel components, if used shall be made from austenitic Stainless Steel conforming to ASTM A666.

### **2.3 CONNECTION ANGLES ANCHORS AND PLATES**

- .1 Connection angles, anchors and plates used to secure the IBS Equalite panels to the structural framing shall have a zinc coating not less than 610 g/m<sup>2</sup>.

- .2 Stainless Steel connection angles, anchors and plates, if used shall be made from austenitic Stainless Steel austenitic type, Grade 304 or 316 in compliance with ASTM A167 and ASTM A666 standards.

## 2.4 FASTENERS FOR CONECTION ANGLES, ANCHORS AND PLATES

- .1 Fasteners used in conjunction with the connectors, angles or plates shall have a corrosion protection at least equivalent to the said components.

## 2.5 FASTENERS FOR SHEATHING BOARDS TO STEEL FRAMING

- .1 Fasteners for securing sheathing boards to the steel framing shall be self-tapping screws for steel. All fasteners shall be corrosion resistant, coated in conformance with ASTM C1002, ASTM C954 and ASTM A548. Fastener plates shall be Durex WDP plastic plates distributed by Durabond Products Limited.

## 2.6 SHEATHING

- .1 Fiber-Mat Reinforced Cementitious Boards conforming to ASTM C1325.
- .2 Glass-Mat Surfaced Gypsum Board conforming to ASTM C1177/C1177M.

## 2.7 SHEATHING JOINT REINFORCING

- .1 Durex® Barrier Seam Tape, a polyester reinforcing mesh supplied in rolls 100 mm (4").

*SPEC NOTE: When Durex® Flexseal Membrane and Durex® Flexseal Membrane VP are used continuously over the field of the wall, no additional joint treatment in the substrates is required.*

## 2.8 WATER RESISTIVE BARRIER (WRB)

- .1 Durex® Flexseal Membrane, a self-adhered, modified bituminous membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound which is integrally laminated to a tri-laminated woven polyethylene film on one side with a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 1 mm (40 mil) and available in rolls 910 mm (36"), 450 mm (18"), 300 mm (12"), 225 mm (9"), 150 mm (6"), 100 mm (4") wide and 22.9 m long.
- .2 Durex® Flexseal Membrane VP, a self-adhered, vapour permeable, modified bituminous membrane, consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound which is integrally laminated to a woven polyethylene film on one side with a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 0.6 mm (24 mil) and available in rolls 950 mm (37"), 300 mm (12"), 230 mm (9"), 150 mm (6") wide and 30 m long.

*SPEC NOTE: All Durex® Flexseal Membrane side and end lap joints shall overlap a minimum of 50 mm (2"), while Durex® Flexseal Membrane VP side lap joints shall overlap a minimum of 50 mm (2") and end lap joints a minimum of 75 mm (3").*

- .3 Durex® Flexseal Membrane and Durex® Flexseal Membrane VP shall be installed in a

single overlap formation to provide a continuous moisture barrier to flash out any incidental water intrusion.

- .4 Durex AirStop, a ready to use, single component, silicone modified acrylic copolymer water/air barrier.

*SPEC NOTE: Durex® Flexseal Primer is composed of SBS synthetic rubber and adhesive enhancing solvent-based resins, specifically designed to enhance the adhesion of Durex® Flex-Seal Membrane, Durex® EIFS Tape and Durex® EIFS Tape Super Stick TM on porous surfaces such as concrete, glass-mat gypsum and/or cementitious boards, cementitious coatings, wood and metal surfaces.*

*SPEC NOTE: The water resistive barrier system may also be designed to act as the wall assembly air barrier and/or vapour barrier material as determined by the consultant of the wall assembly.*

## 2.9 TRANSITION MEMBRANE

- .1 Durex® EIFS Tape, a 30 mil thick, self-adhering, Styrene Butadiene Styrene (SBS) modified rubberized asphalt membrane with a polyester top surface. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® EIFS Tape requires the use of Durex® Flex-Seal Primer for proper adhesion.
- .2 Durex® EIFS Tape Super Stick TM, a 17 mil, self-adhering, high performance tape with a polyester fabric top layer. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® Super Stick TM requires the use of Durex® Flex-Seal primer for proper adhesion.
- .3 Durex® Flex-Seal Membrane, a 40 mil thick, self-adhering, rubberized asphalt membrane with high density cross-laminated polyethylene reinforcement. Available in rolls 914 mm (36"), 457 mm (18"), 225 mm (9"), 152 mm (6") and 102 mm (4") wide. Durex® Flex-Seal Membrane requires the use of Durex® Flex-Seal Primer.

*SPEC NOTE: Durex® Flex-Seal Primer, a primer specifically designed to enhance the adhesion of Durex® Flex-Seal Membrane and Durex® EIFS Tape on porous surfaces and cementitious coatings at temperatures above -30°C. It is composed of SBS synthetic rubbers, adhesive enhancing resins and volatile solvents. Durex® Flex-Seal Primer can be used on exterior gypsum boards, wood, metal and concrete.*

## 2.10 INSULATION ATTACHEMENT

- .1 Mechanical fasteners for concrete, masonry, wood or steel studs framing, supplied by Durabond Products Limited shall be corrosion resistant, coated in conformance with ASTM C1002, ASTM C954 and/or ASTM A548.
- .2 Fasteners shall be sized to be embedded into the substrate a minimum of 25 mm (1") for masonry substrates, 19 mm (3/4") for wood stud framing and substrates, and 9 mm (3/8") for steel stud framing with a minimum of 3 threads protruding through the steel member.

- .3 Fasteners plates supplied by Durabond Products Limited shall be Durex® Equalite noncombustible plates.

*SPEC NOTE: Refer to fastener manufacturer's literature for fastener type, minimum penetration, and fastener pull-out resistance relative to design wind pressures.*

- .4 Durex® Kolor Gard Series Coatings, a 100% acrylic, water-based, high-build, multi-coloured, textured, protective coatings that include fade-resistant pigmentation technology for attaining and retaining vibrant accent and mass tone colours.

*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.*

## 2.11 INSULATION

- .1 Durex® Equalite Select Board: A noncombustible mineral fibre insulation board made from basalt rock and slag, conforming to CAN/ULC S702 and ASTM C 612 Type IVB, measuring 1.2 m (4'-0") by 0.6 m (2'-0"), minimum density of 128 kg/m<sup>3</sup> (8 lbs/ft<sup>3</sup>), and a recommended minimum thickness of 75 mm (3"). The recommended total thickness of the board shall not be greater than 127 mm (5"). The board is pre-machined with rectangular drainage channels parallel to the short edge of the board to ensure vertical alignment of the channels required for positive drainage. The drainage channels are 50 mm (2") wide, 150 mm (6") apart, not less than 10 mm (3/8") deep and/or as required by the project specifications or drawings.
- .2 Durex® Equalite Select Board shall be noncombustible mineral fibre insulation board in conformance with CAN/ULC S114 and ASTM E84.

*SPEC NOTE: Thicker or thinner insulation thicknesses could be used depending on specific project's requirements. Consult manufacturer for project-specific thickness requirements.*

- .3 Durex® Equalite Vent Board: A mineral fibre insulation board conforming to CAN/ULC S702, measuring 200 mm (8") wide by 1.2 m (4'-0") long with a minimum thickness of 75 mm (3"). The Durex® Equalite Vent Board is pre-machined with rectangular, vertical drainage channels parallel to the short edge of the board, 50 mm wide, 150 mm (6") apart and not less than 10mm (3/8") deep or as required by the project specifications or the drawings. Durex® Equalite Vent Board is supplied complete with pre-back-wrapped, factory applied base coat and reinforcing mesh.
- .4 Durex® Equalite Boundary Board: A flat, mineral fibre insulation board, conforming to CAN/ULC S702, measuring 200 mm (8") wide by 1.2 m (4'-0") long with a minimum thickness of 75 mm (3"). The Durex® Equalite Boundary Board is pre-back wrapped with factory applied base coat and reinforcing mesh.

*SPEC NOTE: Durex® Equalite Vent Board and Durex® Equalite Boundary Board have the same fire resistance characteristics as the Durex® Equalite Select Board.*

## 2.12 INSULATION FOR PREFABRICATED SHAPES

- .1 Insulation for prefabricated shapes shall be made of mineral fiber insulation, conforming to CAN/ULC S 702, having a minimum thickness that corresponds to the minimum specified outboard thermal resistance.
- .2 The insulation for prefabricated shapes shall have its internal surface pre-machined with rectangular drainage channels parallel to the short edge of the insulation board that are 50 mm wide, 150 mm (6") apart, with a depth not less than 10 mm (3/8") or as required by the project specifications and/or the drawings.

## 2.13 REINFORCING MESH

- .1 Durex® Adhesive Detail Mesh. A nominal 152 g/m<sup>2</sup> (4.5 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 241 mm (9.5") wide by 45.7 m (150') long rolls. Used for corner reinforcement and aesthetic detailing applications.
- .2 Durex® Intermediate Mesh (6.0 oz): A nominal 203 g/m<sup>2</sup> (6.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 45.7 m (150') long rolls. Used for application over the field of the wall, providing a moderately high-duty impact resistance.
- .3 Durex® Intermediate Plus Mesh (11.0 oz): A nominal 373 g/m<sup>2</sup> (11.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing an intermediate high-duty impact resistance.
- .4 Durex® High Impact mesh (15.0 oz): A nominal 509 g/m<sup>2</sup> (15.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline resistant glass fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing a high-duty impact resistance.
- .5 Durex® Ultra Impact mesh (21.0 oz): A nominal 695 g/m<sup>2</sup> (21.0 oz/yd<sup>2</sup>), flexible, open-weave, alkaline-resistant glass-fibre adhesive mesh, supplied in 965 mm (38") wide by 22.8 m (75') long rolls. Used for application over the field of the wall, providing an ultra-high-duty impact resistance.

*SPEC NOTE: All areas requiring Impact Resistance Levels higher than "standard", as defined by Table 1.5.8 of this specification, shall be detailed in the project architectural drawings and shop drawings where applicable and described in the contract documents clearly identifying the Impact Resistance Classification, inclusive of the specific layers of reinforcing mesh applicable.*

## 2.14 Base Coat

- .1 Durex® Uniplast, a noncombustible, two components polymer-modified cementitious base coat mixed with Acrybond S, a water-based, 100% acrylic polymer additive at a ratio of 1 bag Durex® Uniplast to 5 liters of Durex® Acrybond S.

*SPEC NOTE: Consult your Durabond Products Ltd. for further assistance in the selection of the appropriate base coat.*

## 2.15 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: Except for special finishes, the Primer is an optional component of the EIFS where its usage is recommended for providing uniform substrate absorption and finish colour*

## 2.16 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 reliefs, 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.*

## 2.17 TRIM ACCESSORIES

- .1 As selected by the Consultant and recommended by Durabond Products Ltd.

## 2.18 ACCESSORY PRODUCTS

- .1 Sealant: a low modulus sealant, as recommended and approved by Durabond Products Ltd. Standard colour shall be selected by consultant.
- .2 Foamed-in-place Insulation: Class 1, single or two components, polyurethane foam,

moisture cured with flame-spread rating of  $\leq 25$ , fuel contribution 0 and smoke developed  $\leq 20$ , as per (ULC S710.1). Must be ozone friendly and containing no fluorocarbons and have a density  $\geq 27.2 \text{ kg/m}^3$  ( $1.75 \text{ lb/ft}^3$ ) and a minimum "RSI" value of 0.91 per 25 mm ("R" value of 5 per inch) thickness.

## 2.19 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 Sharp cutting knife or blades and appropriately sized sleds.
- .3 Metal trowels, corner trowels, featheredge/darby, edge tool, hawks, utility knives, and plastic floats.

## PART 3: - EXECUTION

### 3.1 FABRICATION GENERAL

- .1 Fabricate Durex® IBS Equalite to suit field conditions, and structure's dimensions in full conformance with the reviewed shop drawings.
- .2 Fabricate Durex® IBS Equalite in sufficient time and in proper sequence to ensure adequate curing before shipping and installation.
- .3 Mark the back or on the unexposed edge of each prefabricated unit with an identification mark that would correspond to the location of the unit on related shop drawings.
- .4 Mark each prefabricated unit with date of fabrication.
- .5 Provide all openings and reveals where indicated.

### 3.2 CUTTING OF STEEL STUD SECTIONS AND TOLERANCES

- .1 Inspect and verify that all steel sections are in conformance with the reviewed shop drawing requirements for dimensions, thickness and galvanization prior to commencing construction of panels.
- .2 Refer only to reviewed shop drawings for guidance in dimensions and tolerances for the construction of the panels.
- .3 Make shop drawings readily available, at all time, to fabricating personnel, during fabrication by keeping one original set of reviewed shop drawings at the fabricator's construction facility.
- .4 Prefabricated panels shall conform to the following dimensional tolerances:
  - Length  $\pm 3 \text{ mm}$  ( $1/8''$ )
  - Width  $\pm 3 \text{ mm}$  ( $1/8''$ )
  - Thickness  $\pm 3 \text{ mm}$  ( $1/8''$ )

### 3.3 FABRICATION OF STEEL STUD FRAMEWORK

- .1 Fabricate the stud framework in jigs with framing members laid out as per shop drawings.
- .2 Touch up all welded area completely with corrosion preventive Zinc-rich primer.
- .3 Fabricate steel stud framework to conform with specified tolerances, true and straight.
- .4 Discard all bent or damaged framing sections and components.
- .5 Handle and store framework with care to prevent damages to any framing member or any welded joint.

### 3.4 APPLICATION

- .1 Sheathing Board Installation
  - .1 Fasten the sheathing board along the length of each stud at 300 mm (12") o/c.
  - .2 Secure fasteners along tacks around edge of panels and around all sides of openings at not more than 50 mm (2") from edge and spaced not more than 200 mm (8") o/c.
  - .3 Ensure all vertical joints of sheathing boards are placed over a framing member. Provide one fastener on each side of the sheathing board edge, spaced at not more than 300 mm (12") o/c. taking care not to damage the edge of the sheathing board. Stagger vertical joints of the sheathing boards to avoid joint alignment.
  - .4 Install sheathing boards with its strong axis perpendicular to the framing members.
  - .5 Solidly fasten all fasteners directly to the framing members. Remove and replace all loose or improperly installed fasteners.
- .2 Water Resistive Barrier (WRB)
  - .1 Water Resistive Barrier (WRB) [Durex Flexseal & Flexseal VP]
    - .1 Apply the selected insulation and finish system's water resistive barrier as per the manufacturer's application instructions.
    - .2 Prime substrate surfaces and install the self-adhering membrane over the entire surface of the substrate.
    - .3 Install the water resistive barrier in an overlapping shingle pattern to ensure water not getting behind the membrane.
    - .4 Roll the installed self-adhered membrane to ensure positive contact to the primed surfaces.
    - .5 Apply the exterior insulation and finish system's moisture transition membrane at all openings, fenestration and interfaces to maintain the continuity of the water resistive barrier at these locations.
    - .6 Tie-in the specified water resistive transition membranes to window frames, door frames, spandrel panels, roofing system and at interfaces of dissimilar materials as indicated in drawings.



*SPEC NOTE: Refer to manufacturer's standard details.*

- .7 Extend the water resistive membrane beyond the limits of the exterior insulation and Finish system not less than 100 mm (4") and seal termination interface. Coordinate end-damming of drainage cavity at interface with other cladding types.
- .2 Water Resistive Barrier (WRB) [Durex Air Stop]
  - .1 Apply the exterior insulation and finish system's moisture transition membrane at all vertical and horizontal sheathing board joints and all sheathing board corners.
  - .2 Apply the selected insulation and finish system's water resistive barrier as per the manufacturer's application instructions, over the entire substrate surface, applying sufficient pressure in the troweling process to ensure full contact with the substrate.
  - .3 Allow a minimum of 24 hours for drying and curing.
  - .4 At all locations where the substrate material changes, install a 30 mm (12") strip of the system's moisture barrier transition membrane in strict accordance with the manufacturer's printed instructions to maintain continuity of the water resistive barrier.

*SPEC NOTE: Correlate requirements with shop drawings as per Article 1.10. Coordinate with trades responsible for the placement and installation of framing materials for wall openings such as window, door frames, louvers, and other mechanical penetrations.*

- .3 Insulation Board
  - .1 Install full size exterior insulation and finish system's insulation board over the water resistive barrier membrane with the specified mechanical fasteners, beginning at one end to form an uninterrupted thermal barrier. Coordinate placement of the insulation boards with the system's pre-wrapped Vent board and Boundary board.
  - .2 Using full insulation boards only, install the insulation boards over the substrate with the long fibres vertical, in a running bond pattern and interlocking board joints at all corners.
  - .3 Butt the insulation boards to a moderately tight fit, avoiding gaps between the boards. Fill any incidental gap with pieces cut to fit.
  - .4 Offset the running insulation boards a minimum of 200 mm (8") from sheathing joints.
  - .5 Organize board placement to align vertical edges with framing members or appropriate support system.
  - .6 Install insulation boards in an "L-shape" around fenestration and openings to avoid alignment of insulation joints with corners of openings.
  - .7 Mark out alignment and cut reveals in insulation boards as per architectural drawings. Ensure reveals are true to size, straight, plumb and level throughout.
- .4 Vent Board
  - .1 Install the pre-wrapped exterior insulation and finish system's Vent Board at all heads of openings such as windows, doors, louvers etc., at the bases of the walls and at all horizontal interfaces/terminations between the exterior insulation and finish system and other cladding systems such as brick, stone, metal cladding, precast, metal flashing etc. Install the Vent Board by applying the specified fasteners. Allow an approximate 12.7 mm (1/2") space

between the exterior insulation and finish system and the specified cladding system.

*SPEC NOTE: Lap the reinforcing mesh of the Vent Board onto the front face of the insulation board by 100 mm (4"). Press the fabric of the Vent Board into a bed of base coat and smooth out ensuring that the reinforcing mesh is well embedded into the base coat.*

.5 Boundary Board

- .1 Install the Boundary Board, with long fibres vertical, at the top of the wall and at all vertical interfaces with dissimilar substrates, jambs and sills of fenestrations, at minor penetrations and other terminations by using the specified mechanical fasteners:

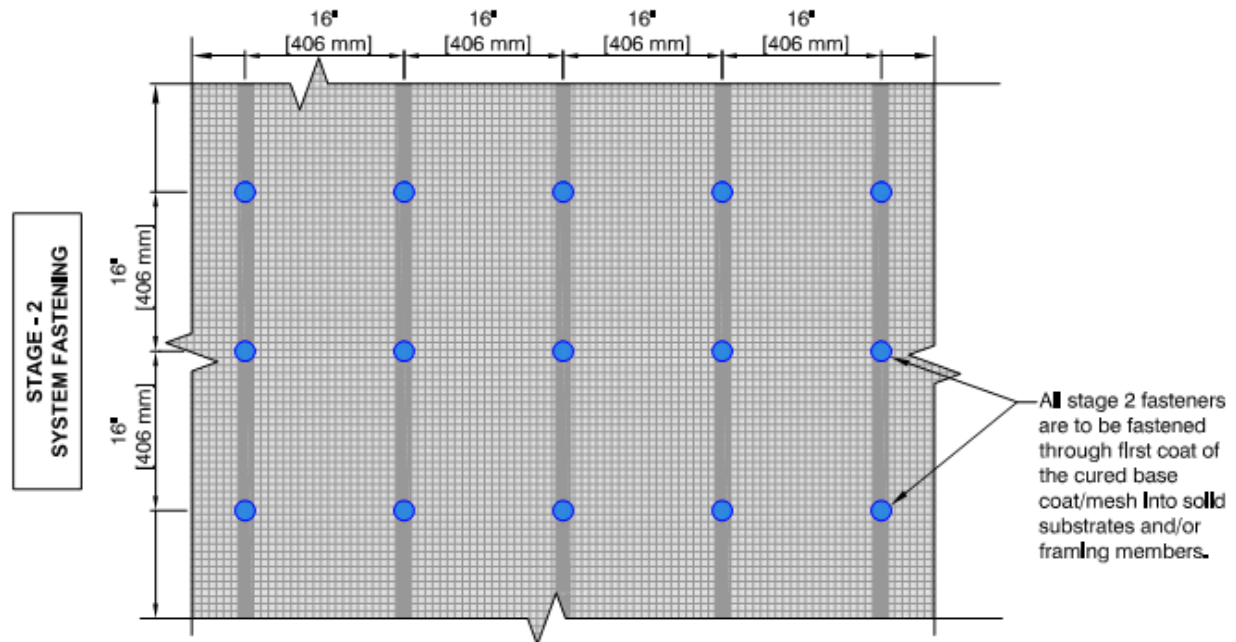
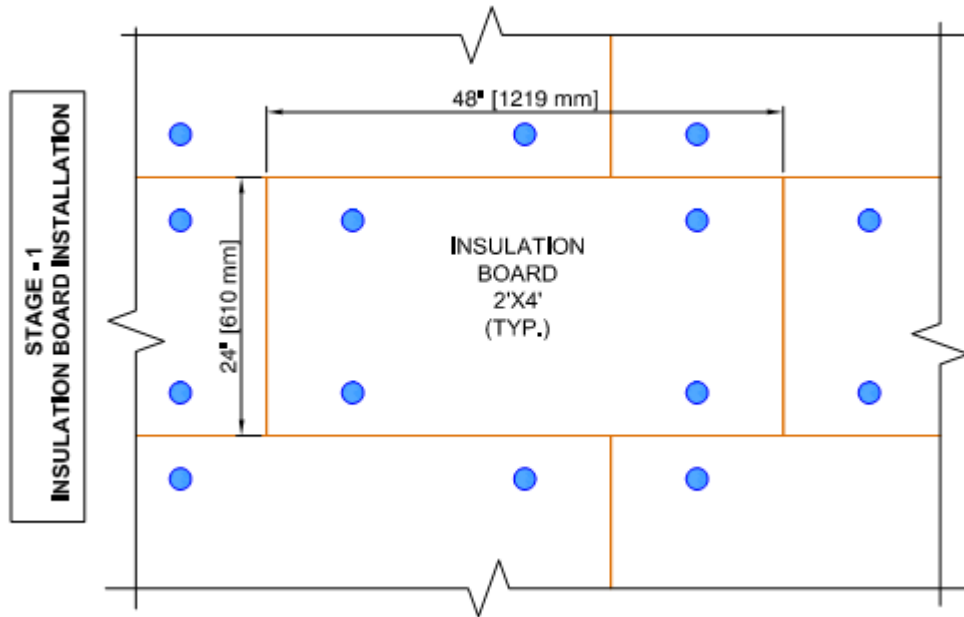
*SPEC NOTE: Lap the reinforcing mesh of the Boundary Board onto the front face of the insulation board by 100 mm (4"). Press the fabric of the Boundary Board into a bed of base coat and smooth out ensuring that the reinforcing mesh is well embedded into the base coat.*

*SPEC NOTE: The Boundary Board should only be placed at the head of horizontal applications and not at the base.*

.6 Insulation Fasteners

- .1 Install the exterior insulation and finish system's insulation boards with mechanical fasteners and anchor plate washers specified by the manufacturer.
- .2 The insulation boards shall be fastened by applying uniform pressure at all fasteners. Install the fasteners with the anchor plates/washers flush and slightly recessed below the surface of the insulation board. Do not remove any fasteners once they have been installed.
- .3 The mechanical fasteners shall be applied in a two-stage application into the structural substrate and/or framing members.
- .4 Secure the insulation boards to the substrate using 4 fasteners per 600 x 1200 mm (2' x 4') board, followed by the application of the base coat and reinforcing glass fibre mesh over the insulation board.
- .5 Once the first application of the base coat has cured, apply the second stage of fasteners through the cured base coat into the framing members.
- .6 Ensure that the second stage fasteners are aligned with the structural framing members at a maximum vertical and horizontal spacing of 406 mm (16") o/c, both horizontally and vertically.
- .7 When anchoring into masonry or concrete substrates, use only the bits supplied with the fasteners for the attachment of the insulation board. Pre-drill holes to a minimum depth of 25 mm (1") deeper than the length of the fastener.
- .8 Install fasteners within 100 mm (4") of the pre-back-wrapped Boundary and Vent boards with a spacing not exceeding 200 mm (8") o/c.

*SPEC NOTE: The insulation thickness and the fastener pattern determine the related wind load resistance levels. Refer to the sketches herein for fasteners spacing requirements.*



*SPEC NOTE: The above fastening pattern addresses recommended fastener placement for typical wall installations. Consult Durabond Building Products Ltd. for project-specific installations.*

- .7 Base Coat and Reinforcing Mesh
  - .1 Ensure that the surface of the insulation boards is dry and free of loose insulation, dirt, planar irregularities, etc. and that detail work has been completed.
  - .2 At all areas where detail reinforcing mesh has been installed, apply a layer of base coat to the exposed edges and face of the insulation boards. Pull the

- detail reinforcing mesh into the base coat so that it is fully embedded. Using an edging tool, smooth the corner to render it square.
- .3 Reinforce all corners of openings where no control joints are detailed with an additional strip of detail reinforcing mesh, 230 mm by 305 mm (9" by 12") installed diagonally across the corners.
  - .4 Apply a layer of base coat over the insulation surface, not less than 2 mm, applying sufficient pressure in the trowelling process to ensure full contact with the insulation. Immediately place the reinforcing mesh onto the wet base coat and trowel the mesh from the centre to the edges, filling all voids in the mesh until the mesh is completely embedded.
  - .5 Provide high impact reinforcing mesh where indicated on drawings. Tightly abut the edges; do not lap high impact mesh. Embed the mesh into the wet base coat and trowel the mesh from the centre to the edges, filling all voids in the mesh until the mesh is completely embedded. Allow the high impact mesh-reinforced base coat to dry before applying the successive reinforcing mesh.
  - .6 When applying additional layer of reinforcing mesh for higher impact resistance, each layer of the reinforcing mesh shall be fully embedded in the base coat and the first layer shall be allowed to dry before applying the second layer.
  - .7 Install the reinforcing mesh tight, straight and free of wrinkles, ripples and waves.
  - .8 Embed the intermediate reinforcing mesh into the base coat, over the entire surface of the dry, embedded high impact mesh, with joints overlapped a minimum of 102 mm (4") and double wrapping inside and outside corners a minimum of 203 mm (8").
  - .9 Overlap detail reinforcing mesh with intermediate reinforcing mesh 100 mm (4") at all locations where detail reinforcing mesh has been installed.

*SPEC NOTE: When applying high impact reinforcing meshes, do not overlap high impact mesh, the joints between meshes shall just be tightly butted.*

*SPEC NOTE: The required backwrap of the insulation boards shall be made with the intermediate mesh only. Do not backwrap high impact reinforcing meshes.*

- .8 Final Base Coat
  - .1 In hot, dry weather, if the scratch coat surface is exceptionally dry, lightly dampen the surface with a fog mist of clean potable water. Do not oversaturate with water, as it will impair the bonding of the base coat.
  - .2 Trowel apply the base coat, applying sufficient pressure to ensure full bond with the base coat.
  - .3 Use a straight edge tool to featheredge the surface and bring it to a straight, even and true surface.
  - .4 Total thickness of base coat shall be achieved at an application rate not less than 7.2 kg/m<sup>2</sup> (1.5 lb/ft<sup>2</sup>).
  - .5 When the base coat has taken initial set, use a wood or sponge float and work the surface with light circular motions to remove all high points and to fill low points.
  - .6 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"). Surface shall be free of trowel marks,

- irregularities and visible mesh pattern.
- .7 Allow a minimum of 3 days for curing and drying.

*SPEC NOTE: Do not over-saturate with water as it will impair the bonding of the base coat.*

*SPEC NOTE: The use of a straight edge tool to darby the base coat is essential and required to obtain a straight, even and true surface f the base coat.*

- .9 Finish Coat Primer
  - .1 Evenly apply the primer throughout with a high pile roller at a rate of 2.8 m<sup>2</sup>/l (600 ft<sup>2</sup>/pail). The substrate shall not be visible through the applied primer.
  - .2 Avoid excessive build-up in any one area.
  - .3 Allow minimum 4 hours for curing prior to application of finish coat.
- .10 Finish Coat
  - .1 Apply the 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.*

### 3.5 EXAMINATION

- .1 Examine the structure to receive Durex® IBS Equalite(IFS) for defects and out of tolerance components which will adversely affect execution and quality of work.
- .2 Report in writing to Architect all adverse conditions which will be detrimental to work of this trade. Such conditions shall include discrepancies in panel sizes, structure irregularities and variances from reviewed shop drawings.
- .3 Do not start work until unsatisfactory conditions have been corrected.
- .4 Commencement of work shall indicate acceptance of all conditions.

### 3.6 ERECTION

- .1 Supply anchor bolts, structural steel inserts, plates and the like to be casted into cast-in-place concrete required for the connection or the support of the prefinished panel units to concrete sub-trade for installation. Supply layout drawings locating accurately the position of all cast-in-place items to be installed by Concrete Sub-trade.
- .2 Install Durex® IBS Equalite(IBS) in accordance with approved mock-up, Durabond's printed instructions and reviewed shop drawings.
- .3 Provide proper equipment and erect work using labourers skilled in this trade.
- .4 Erect components without damage to shape or finish. Replace or repair damaged panels.
- .5 Erect components level, square and plumb within allowable tolerances.
- .6 Provide and install sufficient temporary bracing to brace Durex® IBS panels adequately at all stages of construction, so that panels will safely withstand loads to which they may be subjected. This temporary bracing shall remain in position until the required connections have been completed. Any bracing required for the structural frame supporting the Durex® IBS panels is to be provided by the General Contractor.
- .7 Align and maintain uniform horizontal and vertical joints, as erection progresses.
- .8 When components require adjustment beyond design or tolerance criteria, discontinue affected work, advise Contractor and/or Consultant.
- .9 Anchor Durex® IBS Equalite(IBS) units to the building structure in a manner which will allow the structure to deform due to the acceptable load deflections, inter-storey movements, creep and thermal movements without imparting additional loads to the structure or units.
- .10 Fasten and/or weld components securely in place. Perform welding in accordance with CSA-W59 for welding to steel structures and CSA-W186 for welding or reinforcement. Where fasteners are used for installation, tighten with equal torque.

### **3.7 ERECTION TOLERANCES AND JOINTS**

- .1 Erect members level, square and plumb, within allowable tolerances as per CSA A 23.4.
- .2 Erect members allowing for joints at all locations and in the direction as shown on shop drawings.
- .3 All horizontal joints shall be two-stage and vented at intervals not greater than 1.2 m (4'-0") on centre. All vertical joints shall be vented at not greater than 3 m (10'-0") on center and/or not greater than 50 mm (2") below the intersection of vertical and horizontal joints.
- .4 Unless otherwise noted, provide all joint width to be minimum 19 mm (3/4") wide.

*SPEC NOTE: As a rule of thumb, fulfill requirements 1 and 2 and then arrange the other requirements to best suit the intended aesthetics of the building.*

### **3.8 CONTINUITY OF AIR/VAPOUR BARRIER**

- .1 The continuity of the wall air/vapour barrier shall be provided as follows:
  - .1 At all joints between panels, the inner sealant shall be continuous.
  - .2 At all terminations and interfaces at fenestration, units' joints shall include either a continuous inner sealant and/or shall incorporate tie-in membranes to ensure continuity of the air/vapour barrier.
  - .3 At all terminations between Durex® IBS Equalite(IFS) and concrete slab, apply a 300 mm (12") wide strip of Durex® Flex-Seal Air/Vapour Barrier Membrane. Apply a coat of Durex® Flex-Seal Primer to concrete surfaces prior to application of membrane.

### **3.9 SEALANTS**

- .1 Internal Seal
  - .1 Apply sealant and joint backing in accordance with Section 07 90 00 and as per details in Contract documents. All exterior joints are to be vented.
- .2 External Seal
  - .1 Seal and caulk all joints in the exterior insulation and finish 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 exterior insulation and finish system and dissimilar abutting building components.
  - .3 Apply sealant and/or sealant primer in strict accordance with the sealant manufacturers printed instructions.

*SPEC NOTE Apply sealant and/or sealant primer to base coat only.*

### **3.10 SURFACE SEALER (OPTIONAL)**

- .1 After complete installation of the Durex® IBS Equalite(IFS) apply one coat of surface sealer to the exterior face of the panels. Apply sealer in strict accordance with Dermabond's printed instructions.

### **3.11 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.

### **3.12 PROTECTION**

- .1 Protect the installed Durex® IBS Equalite from damage during construction and/or erection operations performed by work of this trade.

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**[DATE]**

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- .2 Provide protection to adjacent materials that could be damaged by the system's installation.
- .3 Post appropriate warning signs while work is in progress.
- .4 Clean off all surfaces and work area of foreign materials resulting from material installation and leave work in clean condition.

END OF SECTION