claimspro
SPECIALTY RISK DIVISION
COMPLEX, COMMERCIAL & INDUSTRIAL

April 17, 2019

ClaimsPro File No: #: 31110-039814 SRR

Sent via email only

TO: All Firms

RE: Ottawa-Carleton Standard Condo Corp. No. 934
Invitation to Tender – Community Building Reconstruction

Dear Contractors,

With reference to the above noted invitation to tender, please acknowledge the following as **Addendum Number 7.** This addendum forms part of the official Bid Documents and the costs shall form part of your Bid price. The purpose of this addendum is to provide Question 24 and its answer (and also includes the attached “Adex Information” package).

Question 1:
Specification section 05-50-00 part 2.17.2 refers to shelf angles cast into edge of floor slabs to support brick veneer cladding. Where are these angles located?
Answer 1:
The reference to cast in shelf angles is part of the base Section 05 50 00 specification and was not edited out - there should be no cast in shelf angles required on this project.

Question 2:
Mechanical Drawings show DW1 and W1 but there is no mention of these in any of the Schedules. Are we to assume these appliances are merely on the drawings for reference and supplied by owner?
Answer 2:
The insurance company will provide an allowance directly to the condominium corporation for the replacement and installation of the appliances. The mechanical and electrical drawings show the standard connections for residential appliances so connections are provided by the contractor.

Question 3:
Will consideration be given for an alternate proposal for an ADEX EIFS system in lieu of the specified Dryvit system?
Answer 3:
An ADEX EIFS system can be considered provided it meets the requirements noted in "Part 1 General" of Section 07 24 00:

Dryvit PD / NC EIFS System is the standard of acceptance only and alternatives proposed must meet or exceed the properties of the base system. Alternate systems will be considered only on the basis they very clearly demonstrate similarity to the specified Dryvit system and conformance to the “Pro Demnity” exclusion published September 16, 2009 and CCMC approvals and testing before acceptance. *Manufacturers of alternate EIFS systems are responsiblefor clearly demonstrating*

compliance with all subsections of thisspecification section. The work of this section describes a systemwhich is to be single source / single responsibility.

Question 4:
Who will be responsible for the removal of all the existing temporary tarping, insulation and related framework within the footprint of the new building?
Answer 4:
The contractor who is awarded the project will responsible for the removal and disposal of the temporary tarps, framing, and insulation, along with any and all associated costs.

Question 5:
Will we be allowed to hook up a distro panel for temporary power to the existing building's power supply?
Answer 5:
The contractor who is awarded the project will be able to connect a distribution panel for temporary power to the existing building's power supply provided the power usage does not interfere with the north and south tower unit owners and does not cause breaker interference. However,it is recommended that the contractor have a generator on standby for potential issues. It will be the responsibility of the contractor to provide compensation to the Condominium Corporation for their increased cost of electrical consumption.

Question 6:
Will we be able to tie into the existing DCW supply for use during construction?
Answer 6:
The contractor who is awarded the project will be allowed to use the building's water supply. It will be the responsibility of the contractor to provide compensation to the Condominium Corporation for its increased cost of water consumption.

Question 7:
Please provide Specifications for the Granite Hearth and Surround at the fireplace.
Answer 7:
Allow for 19mm thick Cambrian Black granite.

Question 8:
What would be the earliest start date for the project?
Answer 8:
The contractor who is awarded the project is expected to start any pre-work and order all materials for the earliest possible start in accordance with the Proposed Project Start Date. The project must still be completed before the Proposed Project Elapse Time.

Question 9:
There is a note on the Electrical Drawings to provide a separate unit price to replace all the exit signs in the existing apartment building. Please provide specifications and quantities.
Answer 9:
We are awaiting reply from the architect. However, additional costs for upgrades and/or change orders to replace all the exit signs beyond those damaged by this fire will be costed separately and is the responsibility of the Condominium Corporation beyond their insurance claim. The contractor is responsible to obtain written authorization from the condominium corporation prior to undertaking this work.

Question 10:
The instruction to tenders references the owners timeline and liquidated damages that are tied to milestones. I didn't see a schedule of milestones in the new project documents, did I overlook them or would we be able to get them.
Answer 10:
The milestones include all project activities and interim steps needed to implement the project. The proposed schedule and gantt chart is to be provided by the contractor and is to be included in the Bid package. Milestones are required for the planning, development, construction phases, evaluation, reporting of substantial completion, and turnover to the property owner. The milestone dates are projected dates which commence with the tender award.

Question 11:
The answer for question 10 didn't really give any new information, the owner seems to have a fast track timeline they would like to meet as per the excerpt below from the instruction to tenders. To accurately price the work we will need to know when we need to have it substantially complete by so if the schedule we propose doesn't match up with the owners and our bid is scored lower because of it.
"The work will have an aggressive schedule to meet the Owner's timelines"
Answer 11:
This project has an proposed timeline of +/- 8 months from the date the Condominium Corporation signs a contract/authorization with the contractor. The Condominium Corporation requires the Contractor to provide a gantt chart so the Condominium Corporation can monitor the progress of the project and provide updates to the residents.

Question 12:
Has a building permit been received.
Answer 12:
A building permit has been received and is attached as Appendix A to this package.

Question 13:
Better clarity is required as to whether or not the parking garage is to be used during the repairs.
Answer 13:
It was always the intention that the parking garage be available to the unit owners if so authorized by the AHJ. It was also recognized there was no guarantee the AHJ would allow full or partial use of the parking garage and they could, in their sole discretion, even rescind any permission they may grant.

Article 27.2.5 of the Instructions to Bidders will be replaced with the following:

"All reasonable efforts are to be made to obtain all necessary approvals to allow for use of the residential parking garage throughout the duration of the project. The contractor shall seek approval from the Authorities Having Jurisdiction ("AHJ") to ensure continued use of the parking garage. If approved by the AHJ, and after each owner, tenant and board member have signed a waiver releasing the contractor from all liability resulting from damages and injury to body or property during construction, the parking garage will remain open with the following additional terms:

a) No access is to be granted for owner, tenant or contractor use until the proper approval and documentation is received from AHJ for the project;

b) Contractor will remain responsible for the security and accessibility of all zoned areas of the property, identified and demarcated as "Construction" areas during the reconstruction phase of the development;

c) Once the Contractor has secured approval for residential access and use of the parking garage, it shall secure the overhead parking garage entrance from all potential falling objects. Contractor **must** also notify the board members and post notification signs up with enough notice of intent, when the underground parking area would not be accessible for residential parking during construction. **Any such garage closure to be the minimum possible duration in all of the circumstances;**

d) Execution of the waiver by the owners, tenants and Board Members does not remove the obligation of the contractor to act reasonably and with the care and skill required;

e) Notwithstanding the foregoing, the AHJ has the sole discretion to allow either ongoing or intermittent use of the parking garage. The AHJ has the right, at any time and without warning, to suspend or terminate use of the parking garage."

Question 14:
Please provide Division 32 Specifications.
Answer 14:
The landscaping specifications are attached as Appendix B to this package.

Question 15:
Are we able to access the East side of the elevated landscaped area via a temporary access road from either Tallwood Drive or Chrysalis Way? If so, should an allowance be carried for reinstatement of any softscape for said access road?
Answer 15:
If a contractor requires access to the East side of the elevated landscaped area, the Condominium Corporation agrees to such access. However, the contractor agrees to undertake and be directly responsible for all logistics, tasks, and costs associated with this access such as, but not necessarily limited to:

- Obtaining all necessary permits from Authorities Having Jurisdiction;
- Obtaining utility locates;
- Verifying existence of underground sprinkler pipes, water and sewer services;
- Verifying existence of above ground utilities;
- Obtaining written permission from adjacent property owners as necessary;
- Construction, maintenance, and removal of the temporary access road;
- Traffic control, signage, safety fencing;
- Reinstatement of all areas affected by the temporary access road;
- Repair of all damages to property of the Condominium Corporation and others

Question16:
Do we know which company did the original landscaping? If so, please forward their contact info.
Answer 16:
The original landscape contractor is identified as:

Davis Landscape and Design
14 Grenfell Crescent
Nepean, ON
613-225-5656

Question 17:
There is a Roof Access Ladder to access the RTU but is there an Attic Access required as well? If so, please provide Details and Specs as well as the location.
Answer 17:
A standard residential type 550mm x 900mm attic access panel is to be provided in the ceiling of Stor-1 (Room 113).

Question 18:
Is there a Grease Interceptor required for the Kitchen? If so, please provide Details and Specs as well as the location.
Answer 18:
No requirement for a grease interceptor has been identified - all of the appliances in the kitchen will be standard residential units and the kitchen is only intended to be used for residential type cooking, as was the case with the original building.

Question 19:
Additional details are required regarding the movable partition doors and how they attach.
Answer 19:
The additional details related to the movable partition doors and how they attach at the end of the pocket are attached as Appendix C to this package.

Question 20:
Can we get a detail on how is the junction between the existing membrane behind masonry to remain (BVE and STE) below the new masonry (BVN) as shown on elevation 1/A3.1
Answer 20:
There is an existing precast band and a section of existing brick between that precast and the stone band below that are called up as new masonry on the elevation. When the existing masonry is removed we are anticipating that the new membrane can be lapped over the existing one but this will need to be verified once the masonry is removed.

Question 21:
Would it be possible to get more information on the concrete block back-up for the 2 columns at the West Elevation, a plan detail and detailing of the taper. The assembly on A2.02 seems a little different than typical.
Answer 21:
The concrete block backup on drawing A2.02 is shown as it would be at the very top of the tapered pier. Alternate backup block layouts can be considered once a masonry contractor is selected.

Question 22:
Is there any repairs or tie in details required to the existing masonry to remain at both links.
Answer 22:
There are a couple of bricks on one pier on the courtyard side that could be replaced using salvaged brick if available. Other than this the masonry at the links should only require cleaning.

Question 23:
Is there any chance you can give us a few more days, even if just till Thursday of that week it is closing?
Answer 23:
It is agreed the bid submission date and time will be changed to Thursday, April 25, 2019, 2:00pm.

Question 24:
One of our EIFS Contractors has requested an ADEX system to be used as an alternate system to the Dryvit system on the above mentioned project. Please see their formal proposal below and attached. Apparently this system has been approved on a few of Hobin's other projects.
Answer 24:
See the attached Package "Adex Information" along with the following:
The ADEX-RS EIFS system, as described in the submitted materials, is acceptable as an approved alternate to the specified Dryvit Outsulation PD assembly subject to the following requirements:

1. Applicator will meet the qualification requirements noted in item 1.5.2, under Quality Assurance, of the Adex-RS System Specification.

2. Applicator to provide a letter from Adex certifying that the applicator is an Adex approved applicator, knowledgeable in the proper installation of the Adex-RS System and provide confirmation that the personnel to be involved in the installation of the system have passed the required training available from Adex for this specific system.

You are requested to acknowledge receipt of Addendum Number 7 in your Bid.

ClaimsPro Inc.

Scott Rolofs, CIP, CFEI(C)
Senior General Adjuster
scott.rolofs@scm.ca
Direct: 613-443-1206

De : Kaylen Bao [mailto:kaylen.bao@adex.ca]
Envoyé : 4 avril 2019 08:36
Objet : ADEX Equal Request - 3 Meridian Place - EIFS 07 24 00

Good afternoon,

Here is the necessary information pertaining to the equal request of section 07 24 00 for which takes into consideration the specific points to demonstrate the ADEX-RS EIFS system is equal to the Dryvit Outsulation PD assembly for the 3 Meridian Place project.

Attached is the following;

1. 3D of the ADEX-RS assembly including the components such as the 10mm deep geometrically designed insulation (as per Pro-Demnity requirements), liquid applied WRB, adhesive, non-combustible base-coat (CAN/ULC-S114), fiberglass mesh, 100% acrylic based primer & 100% acrylic based finish coat.

2. Letter from our technical director presenting the conformance to the OAA Pro-Demnity Insurance (To the attention of Hobin Architecture). Including the 2016 revision and not limited to the September 2009 version. (Also, please note that this assembly has been used countless times in Ontario since the provisions appeared)

3. Image of the back-side of the EPS-GD used, showing the 10mm deep drainage cavity with a diagonal cut-out. This ensures that the sheets will provide positive drainage in all directions regardless of installing the sheets vertically or horizontally as well as shifts in the sheets, a major benefit to the ADEX-RS assembly in comparison to the Dryvit assembly.

4. The ADEX-RS is also supported by a CCMC evaluation (12913-R). As required by CAN/ULC-S716.1. (The complete CCMC report is attached).

5. The ADEX-RS assembly is also in full compliance with the OBC 2012 standard, CAN/ULC-S716.1. (See compliance letter attached).

6. The ADEX-RS system specification & typical details. (File 2. ADEX-RS EN 2015-CCMC)

7. Additionally and in comparison, ADEX is a Canadian company with the materials manufactured in Canada. We are distributed by our own store in the Ottawa area called ADEXMAT Ottawa on Hawthorne road.

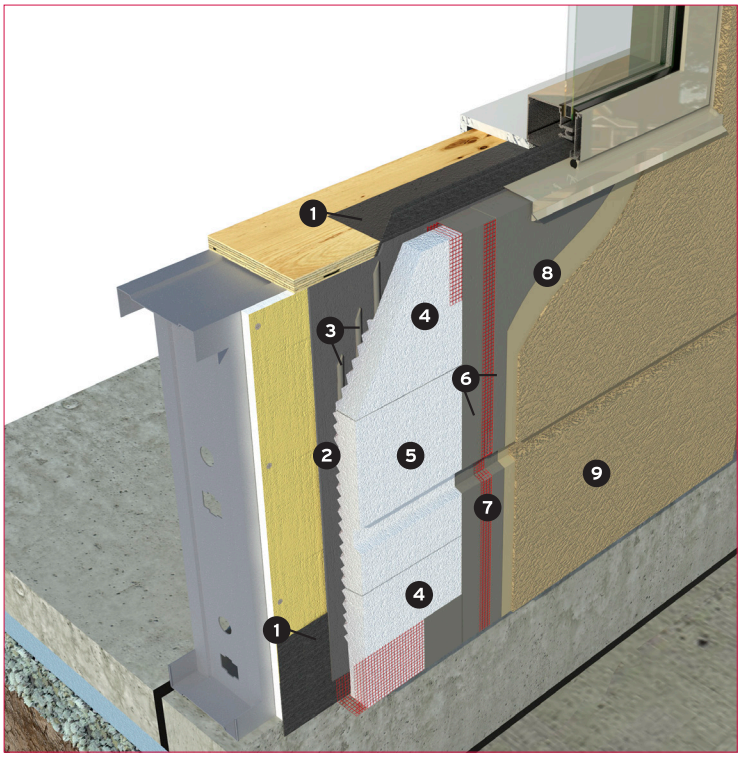
8. For additional system, information, please view the link https://www.adex.ca/documentations/adex-rs/

Therefore, we ask that the ADEX-RS system be deemed, at a minimum, equal to the Outsulation PD(NC) system proposed as all compliances, tests & regulations are also equally passed.

Feel free if you require any additional information or samples.

Kindest regards,

Kaylen Bao
Architectural Representative
Représentant architectural
kaylen.bao@adex.ca
C 905-550-6623 | C 514-567-2617



1. EIFS TAPE & PRIMER
2. HYDROFLEX STD MEMBRANE
3. ADEX ADHESIVE / BASE
4. GD-CONTOUR BOARD
5. EPS-GD INSULATION
6. ADEX BASECOAT
7. STANDARD MESH
8. PRIMEX PRIMER
9. FINISH COAT

Description

The adex-RS system is a water-managed exterior insulation and finish system that has been favourably evaluated by CCMC (12913-R) including use over wood substrates. The system incorporates a secondary weather resistant barrier (WRB), a vertical drainage plane and a geometrically designed EPS board with 10mm grooves. The adex-RS system is in full compliance with CAN/ULC-S716.1 "Exterior Insulation and Finish Systems (EIFS) – Materials and Systems".

THE adex-RS SYSTEM, OR ITS MAJOR COMPONENTS MEET THE FOLLOWING NON-COMBUSTIBILITY STANDARDS:

CAN/ULC S134 : Fire Test of Exterior Wall Assemblies;

CAN/ULC S114 : Method of Test for Determination of Non-Combustibility in Building Materials;

CAN/ULC S101 : Fire Endurance Tests of Building Construction and Materials.

Benefits

- Provides a monolithic blanket of insulation; reduces energy use
- Seals the building envelope and ensures seamless protection of the substrate
- Allows for the drainage of incidental moisture
- Lightweight, durable and flexible
- Architectural design flexibility
- Resists dirt, fading, and abrasion
- Non-combustible rated as per the National Building Code

Features

- EPS-GD insulation
- Vertical ribbon fastening
- Seamless substrate protection
- Non-combustible basecoat
- CCMC evaluated (12913-R)
- Also evaluated by CCMC (12913-R) for use over wood
- Dual barrier
- Unlimited colour selection
- Compliant with CAN/ULC-S716.1

Please refer to adex.ca for the latest version of this document, specifications (PDF + Word), technical drawings, product technical sheets, warranties, maintenance guide....and much more.

adex**SYSTEMS**
SYSTÈMESadex

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Wednesday, April 3rd, 2019

HOBIN ARCHITECTURE
Mr. Sandy Davis,

Subject: Conformity of ADEX-RS cladding assembly to Pro-Demnity Insurance

Dear Mr. Davis,

As requested, this letter is to confirm the compliance of our "ADEX-RS" moisture drainage Exterior Insulation and Finish System (EIFS), to the following provisions stated by Pro-Demnity:

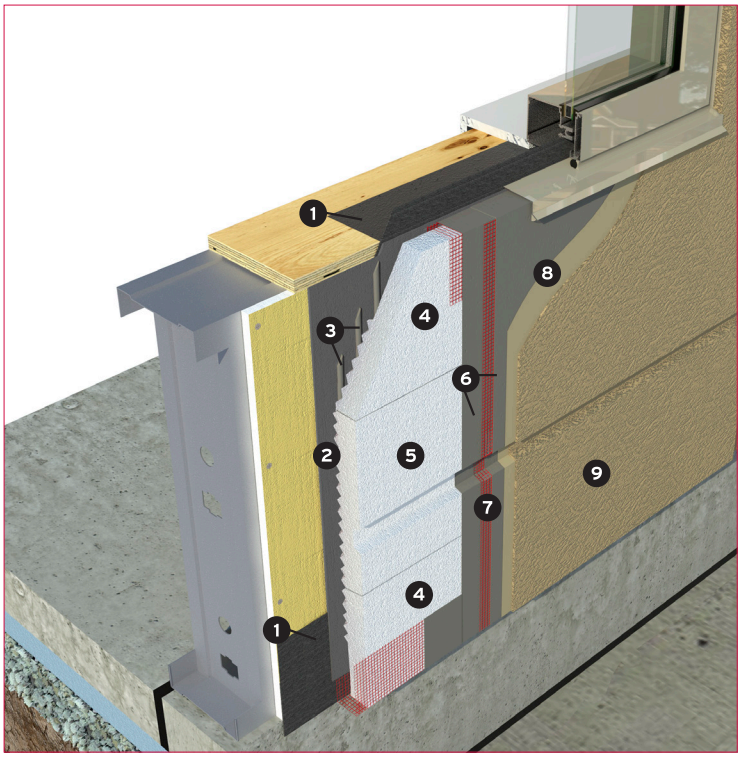
- Exterior above-grade walls or wall assemblies are designed according to rainscreen principles that include both Primary and Secondary Planes of Protection (water barriers), with
- Provisions for drying of the assembly, and
- An air-space of no less than 10mm deep behind the cladding with positive drainage towards the exterior to protect the interior of the building from precipitation that may penetrate the Primary Plane of Protection.

The "ADEX-RS" assembly is a moisture managed, dual barrier cladding system comprised of a drainage cavity with a unique 10mm geometrically designed EPS insulation board that ensures all provisions stated above are met. Moreover, "ADEX-RS" and its components were successfully evaluated by the Canadian Construction Materials Centre (CCMC), bearing evaluation report #12913-R. The same assembly received confirmation of compliance by the National Research Council of Canada (NRC) to "CAN/ULC S-716.1: *Exterior insulation and Finish Systems (EIFS): Materials and Systems*"; the most recent standard that was introduced and enforced into the 2012 Ontario Building Code affecting Part 3, 5 and 9.

Please do not hesitate to contact with me if you have any additional questions.

Regards,

Dave Barriault, B.Eng.
Technical Director, LEED® A.P.



1. EIFS TAPE & PRIMER
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Description

The adex-RS system is a water-managed exterior insulation and finish system that has been favourably evaluated by CCMC (12913-R) including use over wood substrates. The system incorporates a secondary weather resistant barrier (WRB), a vertical drainage plane and a geometrically designed EPS board with 10mm grooves. The adex-RS system is in full compliance with CAN/ULC-S716.1 "Exterior Insulation and Finish Systems (EIFS) – Materials and Systems".

THE adex-RS SYSTEM, OR ITS MAJOR COMPONENTS MEET THE FOLLOWING NON-COMBUSTIBILITY STANDARDS:

CAN/ULC S134 : Fire Test of Exterior Wall Assemblies;

CAN/ULC S114 : Method of Test for Determination of Non-Combustibility in Building Materials;

CAN/ULC S101 : Fire Endurance Tests of Building Construction and Materials.

Benefits

- Provides a monolithic blanket of insulation; reduces energy use
- Seals the building envelope and ensures seamless protection of the substrate
- Allows for the drainage of incidental moisture
- Lightweight, durable and flexible
- Architectural design flexibility
- Resists dirt, fading, and abrasion
- Non-combustible rated as per the National Building Code

Features

- EPS-GD insulation
- Vertical ribbon fastening
- Seamless substrate protection
- Non-combustible basecoat
- CCMC evaluated (12913-R)
- Also evaluated by CCMC (12913-R) for use over wood
- Dual barrier
- Unlimited colour selection
- Compliant with CAN/ULC-S716.1

Please refer to adex.ca for the latest version of this document, specifications (PDF + Word), technical drawings, product technical sheets, warranties, maintenance guide....and much more.

SYSTEM SPECIFICATION
SECTION 07 24 13:
EXTERIOR INSULATED FINISH SYSTEM

PART 1 GENERAL

1.1 RELATED SECTIONS

1. Section 01 40 00: Quality Requirements
2. Section 03 30 00: Cast-in-Place Concrete
3. Section 04 20 00: Unit Masonry
4. Section 05 40 00: Cold-Formed Metal Framing
5. Section 06 10 00: Rough Carpentry
6. Section 07 20 00: Thermal Protection
7. Section 07 25 00: Weather Barriers (Vapour / Air Barriers)
8. Section 07 60 00: Flashing and Sheet Metal
9. Section 07 90 00: Joint Protection
10. Section 08 00 00: Openings
11. Section 09 28 00: Backing Boards and Underlayments
12. Section 09 90 00: Painting and Coating

1.2 DESCRIPTION

1.2.1 The adex-RS is an Exterior Insulation and Finish System (EIFS) composed of a continuous water resistive barrier (air and/or vapour barrier) installed over an approved substrate, a 10mm deep geometrically-designed EPS board providing an effective thermal insulation and drainage plane, adhesive for attachment of insulation board, glass fibre reinforcement mesh embedded in a non-combustible acrylic basecoat on the insulation board face, an acrylic primer and finish coat as defined by CAN/ULC S716.1-09.

1.2.2 The adex-RS assembly has been favourably evaluated by the Canadian Construction Materials Centre (CCMC) as described in the evaluation report #12913-R.

1.2.3 The adex-RS system or its major components meet the National Building Code non-combustibility requirements of Articles 3.1.5.5, 3.2.3.7 and 3.2.3.8 for commercial and high rise construction projects due to the favourable evaluation reports listed below:

1.2.3.1 CAN/ULC S134: Fire Test of Exterior Wall Assemblies;

1.2.3.2 1.2.3.2CAN/ULC S114: Method for Determination of Non-Combustibility;

1.2.3.3 CAN/ULC S101: Fire Endurance Tests of Building Construction and Materials.

1.2.4 The adex-RS system is in full compliance with CAN/ULC-S716.1 "Exterior Insulation and Finish Systems (EIFS) – Materials and Systems".

1.3 REFERENCE STANDARDS

1.3.1 ASTM International

1.3.1.1 ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus;

1.3.1.2 ASTM C203: Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation;

1.3.1.3 ASTM C518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus;

1.3.1.4 ASTM C666: Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing;

1.3.1.5 ASTM D522: Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings;

1.3.1.6 ASTM D523: Standard Test Method for Specular Gloss;

1.3.1.7 ASTM D570: Standard Test Method for Water Absorption of Plastics;

1.3.1.8 ASTM D822: Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings;

1.3.1.9 ASTM D1621: Standard Test Method for Compressive Properties Of Rigid Cellular Plastics;

1.3.1.10 ASTM D1623: Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics;

1.3.1.11 ASTM D1784: Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds;

1.3.1.12 ASTM D2126: Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging;

1.3.1.13 ASTM D2370: Standard Test

Method for Tensile Properties of Organic Coatings;
1.3.1.14 ASTM D2523: Standard Practice for Testing Load-Strain Properties of Roofing Membranes;
1.3.1.15 ASTM D2842: Standard Test Method for Water Absorption of Rigid Cellular Plastics;
1.3.1.16 ASTM D4541: Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers;
1.3.1.17 ASTM D5034: Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test);
1.3.1.18 ASTM D5420: Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact);
1.3.1.19 ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials;
1.3.1.20 ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen;
1.3.1.21 ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference;
1.3.1.22 ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference;
1.3.1.23 ASTM E1131: Standard Test Method for Compositional Analysis by Thermogravimetry;
1.3.1.24 ASTM E1252: Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis;
1.3.1.25 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;
1.3.1.26 ASTM G 155: Standard Practice for Operating-Xenon Arc Light Apparatus, for Exposure of Non-metallic Materials.

1.3.2 CSA International
1.3.2.1 CAN/CSA A3000: Cementitious materials compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

1.3.3 National Research Council of Canada (NRC)
1.3.3.1 Canadian Construction Materials Centre (CCMC): Technical Guide for EIFS.

1.3.4 Underwriters' Laboratories of Canada (ULC)
1.3.4.1 1CAN/ULC S101: Fire Endurance Tests of Building Construction and Materials;
1.3.4.2 CAN/ULC S102: Surface Burning Characteristics of Building Materials and Assemblies;
1.3.4.3 CAN/ULC S114: Method for Determination of Non-Combustibility;
1.3.4.4 CAN/ULC S134: Fire Test of Exterior Wall Assemblies;
1.3.4.5 CAN/ULC S701: Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering;
1.3.4.6 CAN/ULC S716.1: Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems;
1.3.4.7 CAN/ULC S716.2: Standard for Exterior Insulation and Finish Systems (EIFS) – Installation of EIFS components and Water Resistive Barrier;
1.3.4.8 CAN/ULC S716.3: Standard for Exterior Insulation and Finish Systems (EIFS) – Design Application.

1.4 DESIGN REQUIREMENTS

1.4.1 All work must comply with CCMC requirements as outlined in its evaluation report #12913-R.
1.4.2 All work undertaken must comply with the current codes and norms, best practice guides, as well as the manufacturer's installation instructions.
1.4.3 The substrate shall be engineered to withstand all applicable loads, including live, dead, seismic, suction, etc..
1.4.4 On horizontal surfaces, the minimum slope of the system shall be a 6:12 pitch with a maximum length of 250mm (10").
1.4.5 The substrate shall be protected with a waterproofing membrane sealed at all joints and openings.
1.4.6 The substrate shall be one of the following:
a) Brick, masonry or concrete;
b) Fibre cement board;
c) Glass-mat faced gypsum board;
d) Plywood or OSB board.
1.4.7 Expansion joints that allow for natural building movement shall be installed in the following locations:
1.4.7.1 At expansion joints that occur in the substrate;
1.4.7.2 At any abutment of the system with other materials;

1.4.7.3 Where the substrate changes;
1.4.7.4 Where significant structural movement occurs;
1.4.7.5 At a maximal distance of 10m (30ft), to counter thermal expansion;
1.4.7.6 Where deflections that might be in excess of L/240 are expected;
1.4.7.7 At the floor line in wood frame construction (may not be required when using engineered wood beams.

1.4.8 Expansion joints, or fire-breaks, shall extend through the EIFS and shall include proper flashing attached to the substrate (horizontal joints).

1.5 QUALITY ASSURANCE

1.5.1 Manufacturers
1.5.1.1 EIFS manufacturer shall be Adex Systems Inc.
1.5.1.2 Be a member of and in good standing with the EIFS Council of Canada.
1.5.1.3 All other third-party material manufacturers shall be recognized by Adex Systems Inc.

1.5.2 Applicators
1.5.2.1 Applicators shall have the necessary permits.
1.5.2.2 Applicator shall have a minimum of (2) two-years of experience in applying EIF systems and employ sufficient, knowledgeable personnel to complete work on schedule.
1.5.2.3 Applicator shall follow all EIFS manufacturer's directions when installing system components.

1.6 DELIVERY & STORAGE

1.6.1 Deliver materials to the job site in their original unopened packages, clearly marked with the manufacturer's name, and description of contents.

1.6.2 Store in a clean, dry, well-ventilated area at a temperature not less than 5ºC (41ºF).

1.6.3 Protect materials from the elements of weather, and keep away from excessive heat (temperatures above 32ºC (90ºF)).

1.7 ARCHITECTURAL SAMPLES

1.7.1 Upon request, Adex or its distributor will provide a minimum 200mm x 200mm (8"x8") sample for colour and texture approval.

1.7.2 Do not start any final work until the Consultant gives final approval of sample(s).

1.8 JOB MOCK-UP

1.8.1 Construct a mock-up panel on site as part of the actual wall on an area as indicated by the Consultant. The approved mock-up panel shall form a standard for the project and no work of inferior quality will be accepted. The mock-up shall match sample panel(s) submitted to the Consultant as described in paragraph 1.7 of this Section.

1.9 JOB CONDITIONS

1.9.1 Ambient and surface temperatures shall be minimum 5ºC (41ºF) during installation.

1.9.2 When installing in climatic temperatures below 5ºC (41ºF), tarping, heating and ventilation shall be provided to maintain proper installation temperatures.

1.9.3 Ambient temperature shall be maintained above 5ºC (41ºF) for a minimum of 24 hours after installation to ensure that drying is complete. Allow for extended drying times in cool, higher humidity conditions.

1.9.4 Installation of Adex materials shall be co-ordinated with other construction trades.

1.10 ALTERNATIVES

1.10.1 Systems considered equivalent to adex-RS shall be evaluated by CCMC according to Master Format #07 24 13.01, and shall be approved by the architect, in writing, at least ten (10) working days prior to the project bid date.

1.11 WARRANTY

1.11.1 Upon request, the manufacturer shall provide a (10) ten-year limited warranty, stating that materials conform to specifications and are free of manufacturing defects.

PART 2 PRODUCTS

2.1 MANUFACTURER

2.1.1 All components of the adex-RS system shall be obtained from Adex Systems Inc. or its authorised distributors. No substitution or addition of other material is permitted without written consent from the manufacturer.

2.2 PRODUCTS

2.2.1 Weather Resistant Barrier

2.2.1.1 Shall be 100% acrylic, such as

a) Vapour permeable membranes:
- HYDROFLEX STD mixed 1:1 by weight with Type GU cement or;
- HYDROFLEX WO or;
- HYDROFLEX AD.

b) Vapour barrier membranes:
- HYDROFLEX-GUARD, mixed 1:1 by weight with Type GU cement or;
- HYDROFLEX VB.

2.2.1.2 Shall meet UEAct article 3.3.1.1 for water permeability;

2.2.1.3 Shall meet ASTM E-283 for air permeability;

2.2.1.4 Shall be supplied by Adex Systems Inc.

Design and location of all air and vapour barriers is the responsibility of the Design Professional.

2.2.2 GD-Contour Board:

2.2.2.1 Shall be made by a manufacturer approved by Adex Systems Inc. Please contact your Adex representative to select the appropriate EPS Board design.

2.2.2.2 Shall conform to CAN-ULC S701-97, Type 1 and be made from virgin material with a nominal density of 16Kg/m3 (1Lb/ft3).

2.2.2.3 Shall be geometrically grooved to a 10mm minimum depth.

2.2.2.4 Minimum board thickness shall be 38mm (1-1/2").

2.2.2.5 Shall be supplied by Adex Systems Inc.

2.2.3 Adhesive

2.2.3.1 Shall be a 100%-acrylic polymer based material.

2.2.3.2 ADEX BASECOAT mixed with an approximately equal weight of Type GU Portland cement (weight ratio is 1:1).

2.2.3.3 Adhesive shall be applied onto the approved membrane on the wall when using ADEX EPS-GD INSULATION using a 3/8"x1/2"x1-1/2" U-notched trowel (typical).

2.2.4 Insulation Board

2.2.4.1 ADEX EPS-GD INSULATION made by a manufacturer approved by Adex Systems Inc. Please contact your Adex representative to select the appropriate EPS Board design.

2.2.4.2 Shall conform to CAN-ULC S701-01, Type 1 and be made from virgin material with a nominal density of 16 Kg/m^3 (1 Lb/ft^3).

2.2.4.3 Shall be grooved at the back with 10mm deep grooves according to specifications of Adex Systems Inc.

2.2.4.4 ADEX EPS-GD INSULATION thickness shall range between 38mm and 125mm (1.5" and 5") and maximum board size shall be 600mm x 1200mm (24" x 48").

2.2.4.5 Shall be sold by Adex Systems Inc. or by one of its authorised distributors.

2.2.5 Basecoat

2.2.5.1 Shall be a 100% acrylic-based, asbestos-free product, manufactured by Adex Systems Inc. such as Adex Basecoat.

2.2.5.2 Adex Basecoat mixed with an approximately equal weight of Type GU Portland cement (Weight ratio = 1:1).

2.2.5.3 Shall conform the norm: CAN/ULC S114: Method for Determination of Non-Combustibility;

2.2.6 Reinforcing Fibreglass Mesh

2.2.6.1 Shall be purchased from Adex Systems Inc. or from one of its authorised distributors.

2.2.6.2 Shall meet ASTM D-5034 standards.

2.2.6.3 Shall have different weights according to specific needs:

a) QUICK TAPE MESH: 65g/m^2 (2 oz/yd^2)
b) STARTER MESH: 150g/m^2 (4.5 oz/yd^2)
c) STANDARD MESH (DESIGN): 150g/m^2 (4.5 oz/yd^2)
d) STANDARD MESH PLUS: 190g/m^2 (6 oz/yd^2)
e) INTERMEDIATE MESH: 375g/m^2 (11 oz/yd^2)
f) ARMOUR MESH:500g/m2 (15 oz/yd^2)
g) CORNER MESH: 305g/m^2 (9 oz/yd^2)

2.2.7 Primer

2.2.7.1 Shall be a tinted, acrylic-based, roll-on priming agent, such as PRIMEX PRIMER, manufactured by Adex Systems Inc. PRIMEX PRIMER is not mandatory but highly recommended as it will enhance the depth of colour, increase the yield of finish coat, and enhance the longevity of the finish coat.

2.2.8 Finish Coat
- **2.2.8.1** Shall be a factory-mixed, 100% acrylic-based Adex Finish Coat, containing integral colour and texture.
- **2.2.8.2** The texture shall be [See the Adex Specification Binder or visit www.adex.ca to view the various textures].

2.3 OTHER MATERIALS

2.3.1 Portland Cement
- **2.3.1.1** Shall be lump-free, Type GU (Type 10) Portland cement conforming to CSA-A3001 standards.

2.3.2 Water
- **2.3.2.1** Shall be clean, potable, and free of sediment.

2.3.3 Mechanical Fasteners
- **2.3.3.1** Shall be ADEXLOC for usage with steel studs or wood substrate. Screws must be galvanized or have an approved coating with tips designed to fasten to steel studs or wood studs.
- **2.3.3.2** Shall be ADEXTEC for usage with substrate such as concrete or masonry.

2.3.4 Transition Membrane
- **2.3.4.1** Shall be a flexible, self-adhesive composite material tested for adhesion to itself and to Adex components. Suitable material includes Adex EIFS TAPE (4"-12" rolls) used with the appropriate primer or the A-FLEX SEALANT AND MESH. All other materials must be approved by Adex Systems Inc.

2.3.5 PVC trims (if necessary):
- **2.3.5.1** Shall meet ASTM-D1784 standards for exterior use.

2.3.6 Backer Rod & Sealant
- **2.3.6.1** Refer to Section 07 90 00.
- **2.3.6.2** Backer rod must be closed pore type.
- **2.3.6.3** Use only low-modulus caulking with long service lives. Products should meet ASTM C1481 - 12 Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS).

2.4 TESTS

2.4.1 Tests performed by an independent laboratory on the specified materials can be requested.
- **2.4.1.1** Properties shall meet or exceed the following values when tested by the methods listed:

TEST METHOD
DURABILITY UNDER CLIMATIC CONDITIONS: CCMC TG APPENDICE A2 (60 CYCLES)
No cracking, leaking or bubbling of base coat. No delamination or cracking of finish coat.
ACCELERATED WEATHER RESISTANCE: ASTM G155 (EXPOSED 2000 HOURS)
No deleterious effect.
SALT SPRAY RESISTANCE: ASTM-B117 (EXPOSED 300 HOURS)
No deleterious effect.
MILDEW AND FUNGUS RESISTANCE: CCMC 6.8
No mildew or fungal growth.
WATER PERMEABILITY: CCMC 6.6
≥ 2 hours.
WATER ABSORPTION: CCMC 6.7
≤ 20 %.
BOND TEST: CCMC 6.4
After 2 hours drying: ≥ 100 kPa.After 7 days drying: ≥ 300 kPa.
BOND TEST: CCMC 6.5 (LAMINA)
After 2 hours drying: ≥ 100 kPa.After 7 days drying: ≥ 300 kPa.
WATER VAPOUR TRANSMISSION:ASTM E96-95:
≥ 170 ng/Pa.s.m^2.
IMPACT RESISTANCE: ASTM E5420
Pass
WIND LOAD RESISTANCE: ASTM E330
Pass

FIRE TEST OF EXTERIOR WALL ASSEMBLIES CAN/ULC-S134:
≥ Pass
FIRE ENDURANCE TESTS OF BUILDING CONSTRUCTION AND MATERIALS: CAN/ULC-S101:
≥ The adex-RS systems assembly, with 5 inch insulation boards, stayed in place for the 15 minute fire test.

Test Method
Result

PART 3 EXECUTION

3.1 INSPECTION

3.1.1 Inspect the substrate to verify that it is structurally sound and solid, ensuring there are no irregular voids or projections.

3.1.2 Inspect all metal flashing to ensure that they are properly installed, making certain that moisture will be deflected to the exterior of the system.

3.1.3 The architect and general contractor shall be advised of any discrepancies. Work shall not proceed until unsatisfactory conditions are corrected.

3.2 PREPARATION

3.2.1 Ensure conduit pipes, cables and outlets are adequately covered before commencing with installation.

3.2.2 Adjacent finish work (such as brick, siding, concrete, etc.) must be protected from damage during the installation of Adex materials.

3.3 MIXING

3.3.1 HYDROFLEX STD membrane

3.3.1.1 Mix the contents of the HYDROFLEX pail until thoroughly blended. This will remove any settling of the contents due to storage.

3.3.1.2 In a clean container, mix HYDROFLEX and Type GU Portland cement at a ratio (by weight) of one-to-one. Add Portland cement in small increments to prevent lumps from occurring.

3.3.1.3 Allow mixture to set up for 5 minutes and mix again to break the initial set.

3.3.1.4 Small amounts of water may be added to adjust the consistency. All other additives (such as rapid binder, anti-freeze, accelerator or others) are strictly prohibited.

3.3.2 HYDROFLEX GUARD membrane

3.3.2.1 Mix the contents of the HYDROFLEX pail until thoroughly blended. This will remove any settling of the contents due to storage.

3.3.2.2 In a clean container, mix HYDROFLEX and Type GU Portland cement at a ratio (by weight) of one-to-one. Add Portland cement in small increments to prevent lumps from occurring.

3.3.2.3 Allow mixture to set up for 5 minutes and mix again to break the initial set.

3.3.2.4 Small amounts of water may be added to adjust the consistency. All other additives (such as rapid binder, anti-freeze, accelerator or others) are strictly prohibited.

3.3.3 ADEX BASECOAT basecoat/adhesive

3.3.3.1 Mix the contents of the Adex BASECOAT pail until thoroughly blended. This will remove any settling of the contents due to storage.

3.3.3.2 In a clean container, combine Adex BASECOAT with fresh, lump-free Type GU Portland cement at a ratio of 1:1 by weight. Thoroughly mix to a homogenous state using a paddle mixer and electric drill. Add Portland cement in small increments to prevent lumps from occurring.

3.3.3.3 Allow mixture to set up for 5 minutes, then mix again to break the initial set.

3.3.3.4 Small amounts of water may be added to adjust the consistency. All other additives (antifreeze, accelerators, or otherwise) are strictly forbidden.

3.4 INSTALLATION

3.4.1 Flashing

3.4.1.1 Refer to Section 07 60 00, Flashing.

3.4.1.2 Ensure flashing is installed where specified on the construction documents. Flashing must be installed at through-wall breaks, at the baseline of walls, and anywhere else the system is to drain to the exterior.

3.4.1.3 Apply EIFS TAPE or A-FLEX SEALANT AND MESH over the flashing leg and apply the trowel-on membrane directly to the membrane surface.

3.4.2 Sheathing Joint Treatment

3.4.2.1 Complete sheathing joint treatments as per the Weather

Resistant Barrier (WRB) data sheets.

3.4.3 Weather Resistant Barrier

3.4.3.1 Ensure transition membranes (EIFS TAPE or A-FLEX SEALANT and MESH) are installed, sealing all junctions between the substrate and other materials (wall penetrations, openings, and dissimilar materials).

3.4.3.2 The Weather Resistant Barrier (WRB) shall be joined to other components of the system so that the air barrier is continuous in three dimensions.

3.4.3.3 Read the Weather Resistant Barrier data sheets for complete installation instructions.

3.4.3.4 Two-coat applications are required over oriented strand board (OSB) substrates.

3.4.3.5 ADEX HYDROFLEX STD, HYDROFLEX VB, HYDROFLEX AD or ADEX HYDROFLEX WO:

a) Ensure flexible membranes are installed, sealing all junctions between the substrate and other materials (openings, wall penetrations, etc.).

b) Apply a layer of HYDROFLEX membrane over all sheathing joints and immediately embed STARTER/DETAIL MESH into the membrane.

c) Apply HYDROFLEX membrane over the entire surface ensuring a minimal thickness of 1.6mm (1/16").

3.4.3.6 HYDROFLEX GUARD membrane:

a) STANDARD MESH is embedded into the HYDROFLEX GUARD membrane to help dictate proper thickness as well as treat the sheathing joints.

b) Trowel HYDROFLEX GUARD over the substrate to an approximate thickness of 2mm (3/16").

c) Immediately embed the STANDARD MESH into the wet HYDROFLEX GUARD membrane. Trowel from the centre of the mesh outwards to prevent wrinkles from forming in the mesh. Smooth out the membrane to eliminate trowel lines.

d) The final thickness of the HYDROFLEX GUARD membrane shall be such that the STANDARD MESH is fully embedded and not visible. If mesh is visible, apply an additional skim coat of HYDROFLEX GUARD.

3.4.3.7 Allow the Weather Resistant Barrier (WRB) to fully cure before adhering insulation boards over the membrane.

3.4.3.8 Note: Hydroflex STD and Hydroflex AD membranes applied at a thickness of 2.2 mm may serve as both second coat membrane and adhesive, as long as they are installed over a first coat of membrane. The EPS-GD insulation must be installed immediately after the membrane is applied.

3.4.4 Stay-In-Place Mechanism

3.4.4.1 At the top of wall sections, STARTER MESH shall be adhered to the Weather Resistant Barrier (min. 100mm (4")) with ADEX BASECOAT. The mesh will be wrapped to the front face of the EPS insulation board during the wall mesh application. This will create a "stay-in-place" mechanism.

3.4.4.2 Required for projects needing to meet CAN/ULC-S101.

3.4.5 Backwraps

3.4.5.1 Edges of ADEX EPS INSULATION that meet dissimilar substrates, terminations, wall openings, etc. shall be backwrapped.

3.4.5.2 Basecoat/mesh backwrap method

a) Spread ADEX BASECOAT (mixed with Portland cement) over the end and onto the face of the board wide enough to adhere minimum 76mm (3") of mesh. Wrap the mesh around the board edge so it extends minimum 76mm (3") onto the opposite surface.

b) Allow the basecoat/mesh backwrap to dry prior to installation.

3.4.5.3 GD-CONTOUR BOARD method

a) Pre-wrapped GD-CONTOUR BOARD shall be installed at the perimeter of walls and openings (this includes system terminations, where dissimilar substrates meet, at expansion joints, at doors and windows, etc.).

b) See section 3.4.6 for details on the insulation board installation.

3.4.6 Insulation Boards

3.4.6.1 Apply ADEX BASECOAT adhesive as vertical ribbons onto the approved membrane on the wall using a 3/8" x 1/2" x 1-1/2" U-notched trowel.

3.4.6.2 ADEX EPS-GD INSULATION boards shall be placed horizontally on the walls starting with edge wrapped boards at the base of the wall. Apply firm pressure over the entire surface of the board to ensure complete contact of the adhesive to the substrate. Ensure the adhesive does not dry prior to installation of the insulation boards.

3.4.6.3 EPS Boards shall be butted tightly together to eliminate any thermal breaks. Care must be taken to prevent adhesive from getting between the joints of the ADEX EPS-

GD INSULATION boards.

3.4.6.4 Gaps between insulation boards shall be packed with slivers of EPS foam or filled with an expanding spray-foam compatible with the insulation board.

3.4.6.5 Stagger vertical joints and interlock insulation boards at all inside and outside corners.

3.4.6.6 Stagger insulation board and sheathing board joints at least 150mm (6") apart from each other.

3.4.6.7 Where the adex-RS system meets dissimilar substrates and/or terminates (vertically) the ADEX EPS-GD INSULATION shall be backwrapped (as per paragraph 3.4.5 of this Section).

3.4.6.8 ADEX EPS-GD INSULATION boards shall be rasped to achieve a smooth even surface, create better adhesion, and remove possible ultra-violet damage and/or other surface pollutants.

3.4.6.9 The entire surface of the ADEX EPS-GD INSULATION boards shall be clean prior to the application of the ADEX BASECOAT and reinforcing mesh.

3.4.7 Aesthetic Details

3.4.7.1 V-grooves/Reveals shall be installed as per the construction documents (after the insulation boards have been rasped). Aesthetic details create visual enhancements, ease finish coat applications, and provide drip edges to soffit areas.

3.4.7.2 V-grooves/Reveals shall be completed using a hot-wire knife to ensure tight, crisp lines are maintained. The inset areas shall be finished with mesh and basecoat.

3.4.7.3 A minimum thickness of 19mm (3/4") of EPS insulation, between the substrate and base of any reveal, shall be maintained.

3.4.7.4 V-grooves/Reveals shall not be in alignment with insulation board joints or with the corners of openings.

3.4.8 Batten & Foam Details

3.4.8.1 All battens made of expanded polystyrene (EPS) shall be installed by bonding them with ADEX BASECOAT adhesive, or with spray polyurethane such as Wind-lock's Foam-2-Foam, or by mechanically fastening them to the structure.

3.4.8.2 Foam battens shall be locked to the ADEX EPS-GD INSULATION by embedding the mesh "wings" of the batten into ADEX BASECOAT.

3.4.8.3 All batten details extending more than 50mm (2") beyond the basecoat must have an outward-facing slope (minimum of 22º degrees) to prevent moisture from accumulating on them.

3.4.8.4 All cornice and parapet details shall be cap-flashed regardless of slope.

3.4.9 Basecoat & Reinforcing Mesh

3.4.9.1 Apply ADEX BASECOAT over the ADEX EPS-GD INSULATION surface to a uniform thickness of approximately 1.6 mm (1/16"). Work horizontally or vertically in strips of 1016mm (40"), and immediately embed Adex STANDARD MESH into the wet basecoat.

3.4.9.2 Install an additional 300mm (12") long piece of STARTER/DETAIL MESH (at a 45º-degree angle) at the corners of all wall openings.

3.4.9.3 STANDARD MESH shall be double lapped not less than 200mm (8") at all corners and overlapped not less than 63mm (2.5") at mesh joints. Avoid wrinkles from forming in the mesh.

3.4.9.4 The final thickness of the basecoat shall be such that the REINFORCING MESH is fully embedded and not visible. Apply additional skim coats as required.

a) ARMOUR MESH is advised in high traffic areas (Optional).

b) Install ARMOUR MESH as per locations noted in the construction drawings.

c) Apply ADEX BASECOAT to the surface of the insulation boards to a thickness of 2.4mm (3/32") and embed ARMOUR MESH (vertical application is preferred). Smooth the surface until the mesh is fully embedded.

d) ARMOUR MESH shall be abutted and not lapped.

e) The ARMOUR MESH shall be installed to heights indicated in the plans.

f) All layers of ARMOUR MESH shall be covered with a layer of STANDARD MESH.

3.4.9.5 CORNER MESH is recommended at all major inside/outside corners (Optional). Install CORNER MESH on exposed interior/exterior corners as noted in the construction documents.

3.4.9.6 Allow the basecoat to dry before applying the primer and finish coat (24-hours).

3.4.10 Primer

3.4.10.1 Apply an even coat of Adex PRIMEX PRIMER (tinted to the same colour as the finish coat) with a good-quality paintbrush, 10mm (3/8") nap roller, or sprayer.

3.4.10.2 Allow PRIMEX PRIMER to dry before commencing with the Finish Coat.

3.4.11 Finish Coat

3.4.11.1 Trowel-apply a tight coat of Adex Finish Coat, texture [see www.adex.ca or Adex Specification Binder] to a thickness not greater than the largest aggregate. Apply the finish coat with a stainless steel trowel in a continuous fashion, maintaining a wet edge. Levelling and texturing shall take place in one operation to give the Adex Finish Coat a uniform appearance.

3.4.11.2 Avoid applications in direct sunlight.

3.4.11.3 Avoid applying finish coat at locations where caulking will be installed.

3.4.11.4 Weather conditions will be a factor in the application and drying time of the Finish Coat.

3.4.12 Caulking

3.4.12.1 Refer to Section 07 90 00, Sealant.

3.4.12.2 Caulking shall be installed in a timely manner. Protect open joints from water intrusion during the construction period with backer rod until permanently sealed.

3.5 PROTECTION

3.5.1 Ensure that the general contractor protects all work against moisture infiltration and other damages by installing the necessary flashing and caulking in a timely manner.

3.5.2 Provide protection against dirt, moisture, high humidity, and freezing temperatures until materials are fully dry.

3.6 CLEAN UP

3.6.1 After completion, remove waste and leftover materials (used in this Section) from the job site.

3.6.2 Clean all adjacent materials and surfaces, and repair any defects to this application or any defects to any other work caused by this application, all to the approval of the consultant.

ALL REQUESTS FOR APPLICATION PROCEDURAL CHANGES MUST BE AUTHORIZED IN WRITING BY ADEX SYSTEMS INC.

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www.**adex.ca**
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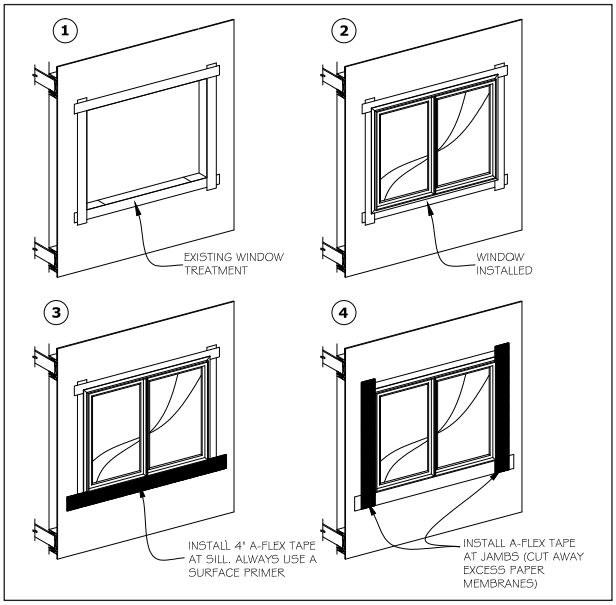
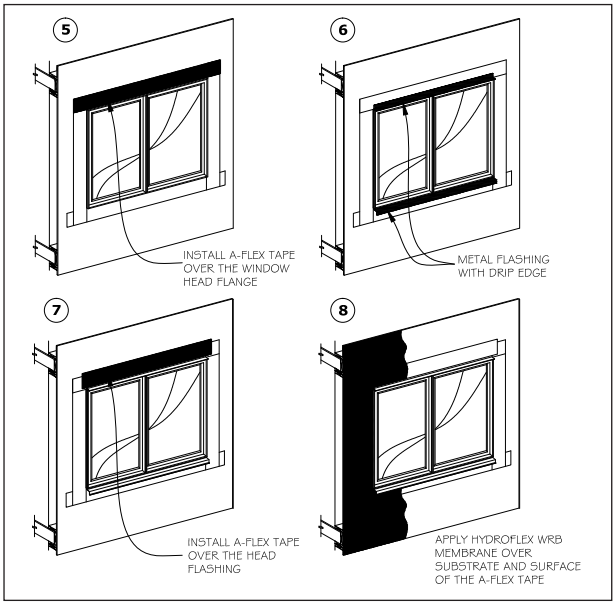
June 2015

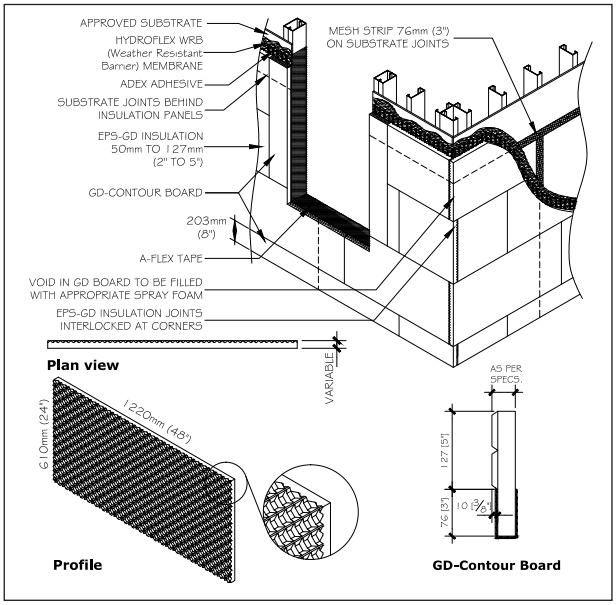
Technical Drawings



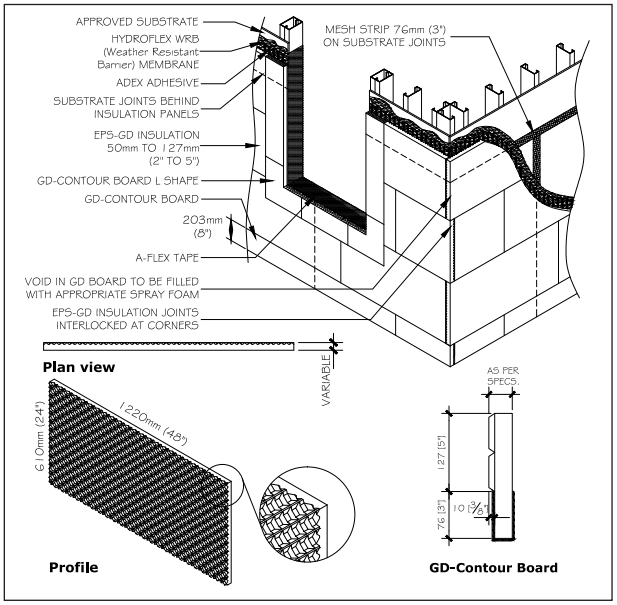
WINDOW TREATMENT - PART 1



WINDOW TREATMENT - PART 2

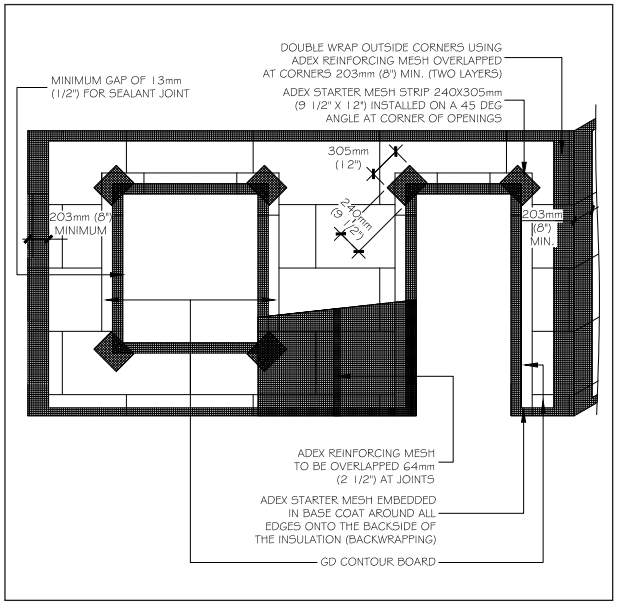


INSULATION INSTALLATION - METHOD 1

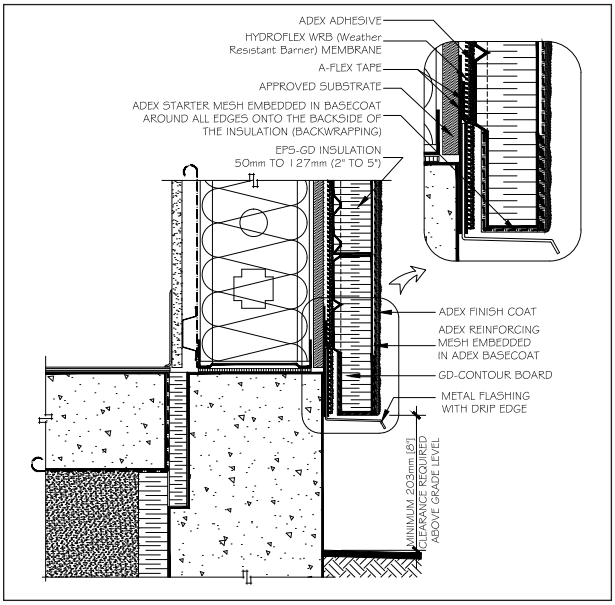


INSULATION INSTALLATION - METHOD 2

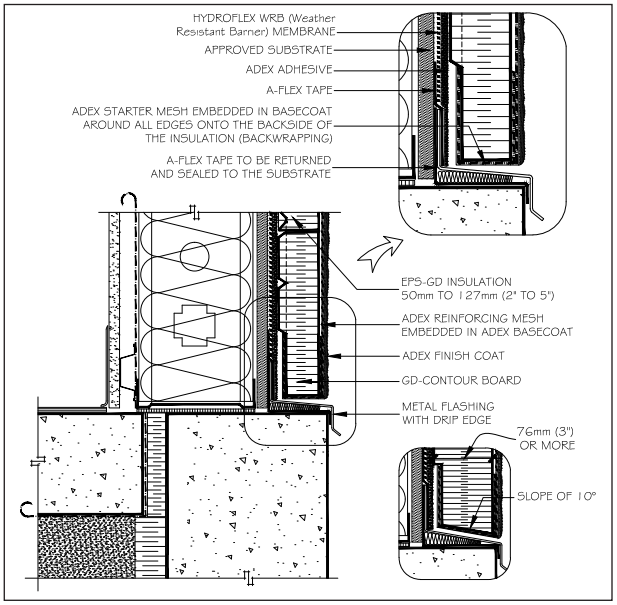
Technical Drawings



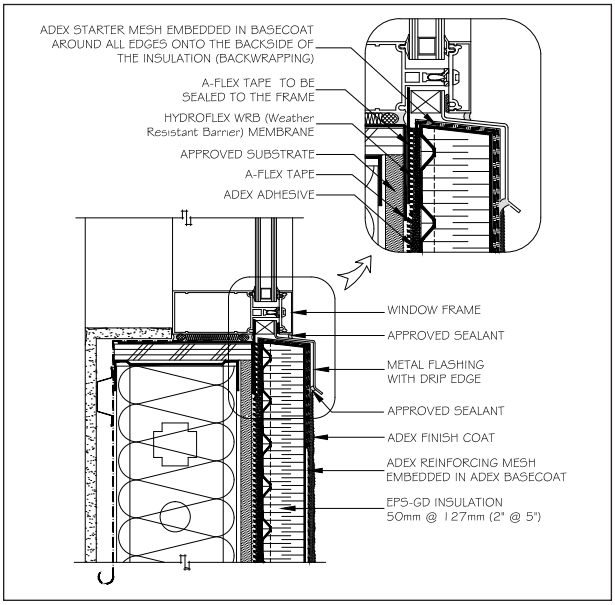
REINFORCING MESH INSTALLATION



TERMINATION AT GRADE - METHOD A

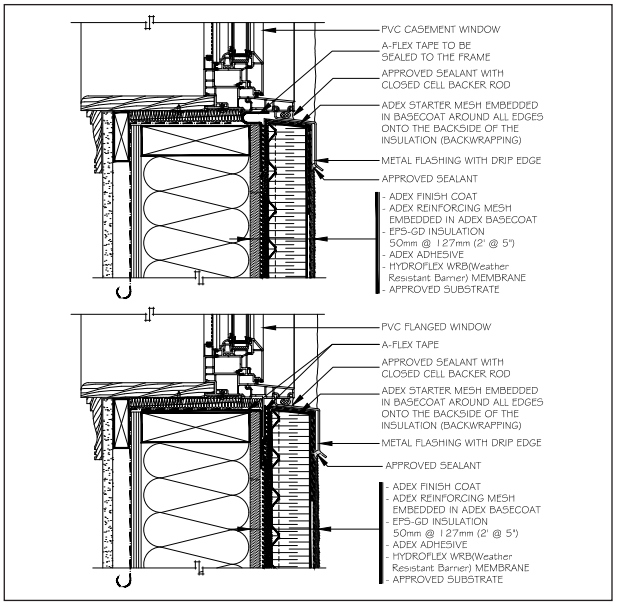


TERMINATION AT GRADE - METHOD B

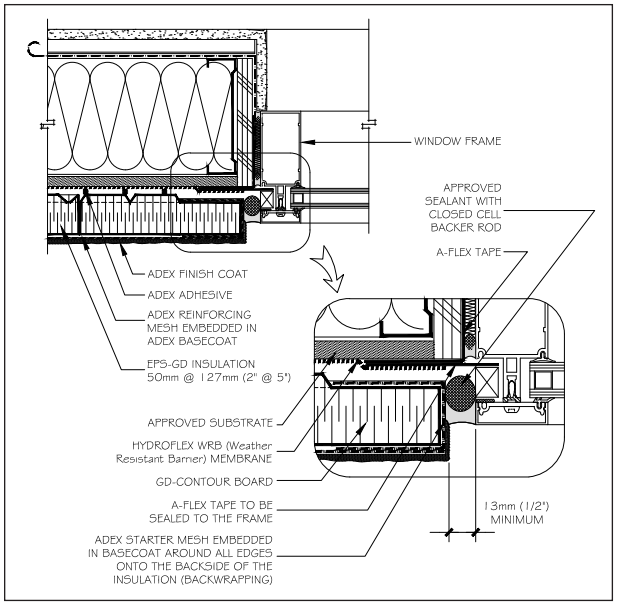


WINDOW SILL (ALUMINUM WINDOW)

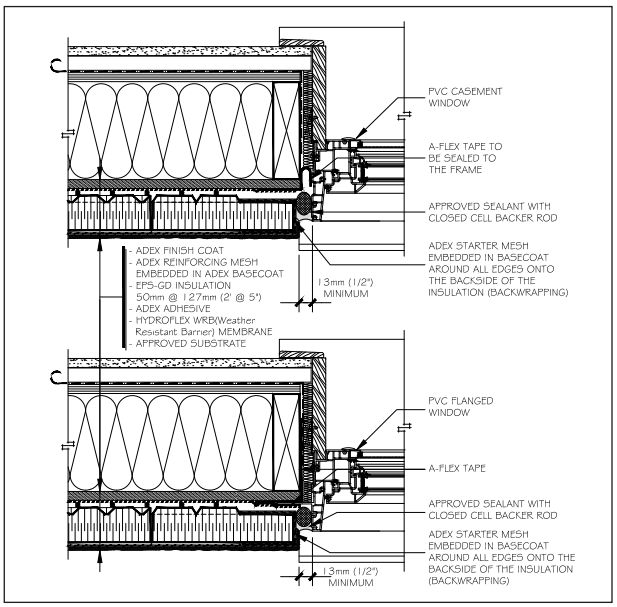
Technical Drawings



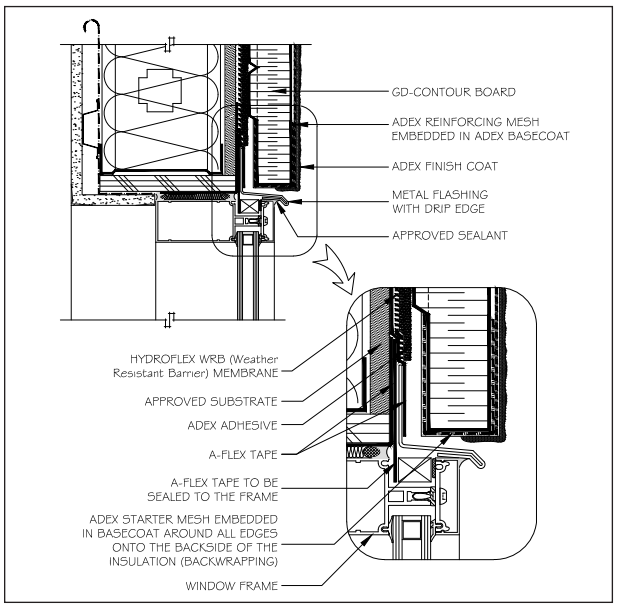
WINDOW SILL (PVC WINDOW)



WINDOW JAMB (ALUMINUM WINDOW)

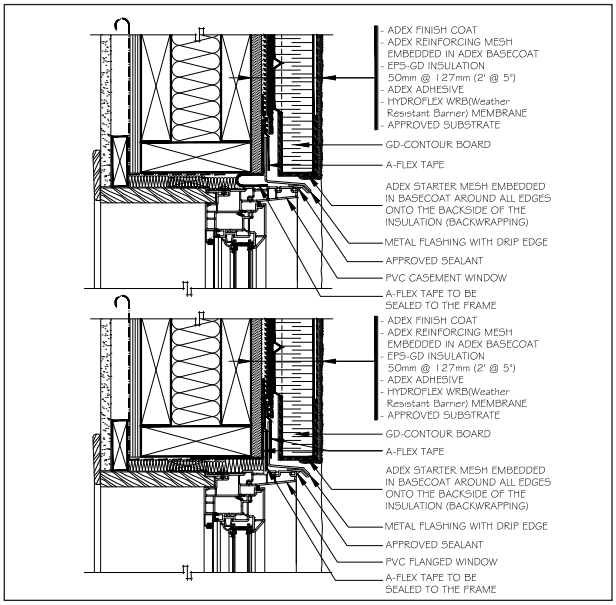


WINDOW JAMB (PVC WINDOW)



WINDOW HEAD (ALUMINUM WINDOW)

Technical Drawings



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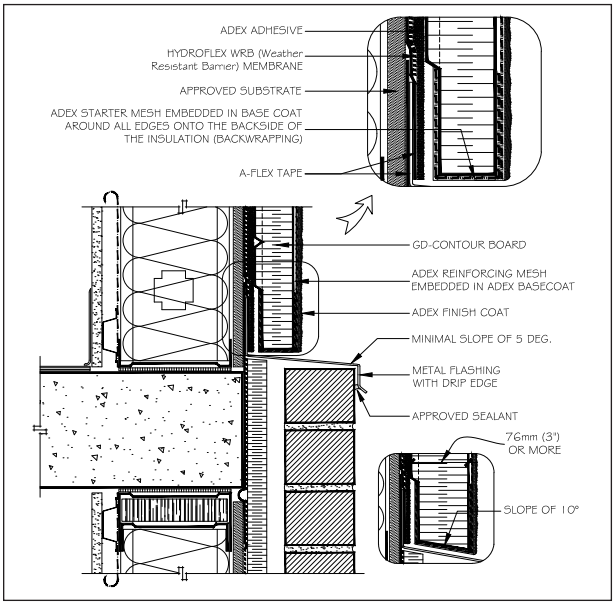
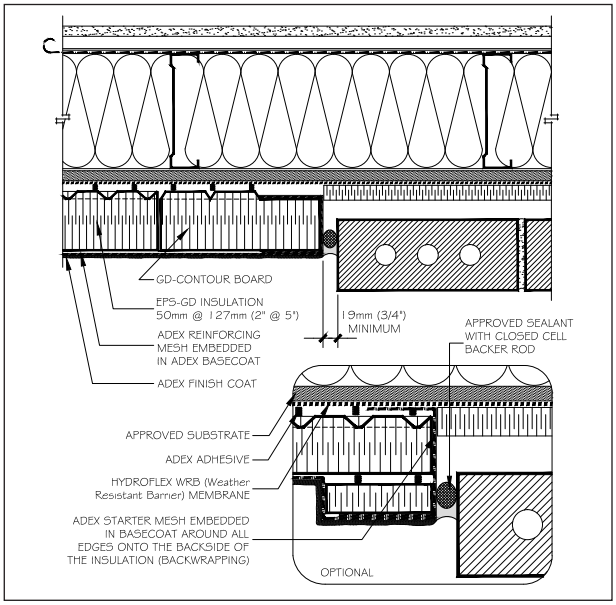
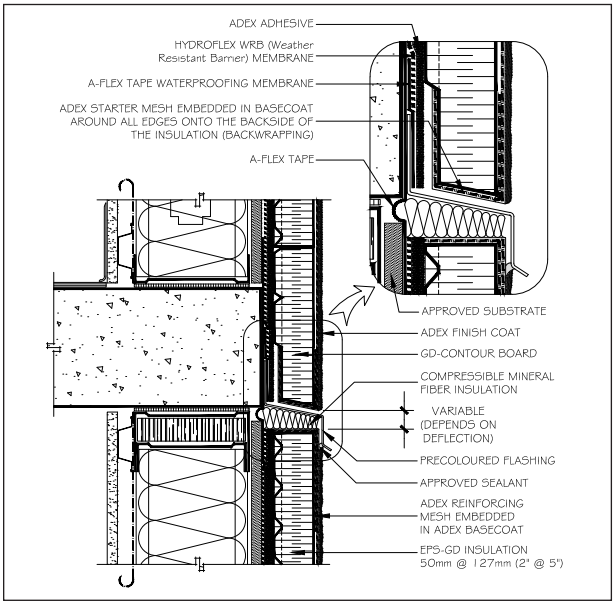


HORIZONTAL JUNCTION

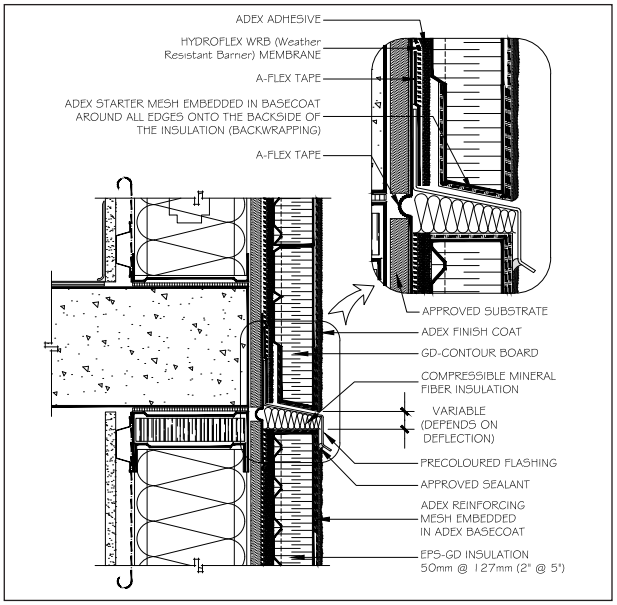


VERTICAL JUNCTION



HORIZONTAL CONTROL JOINT - METHOD A

Technical Drawings



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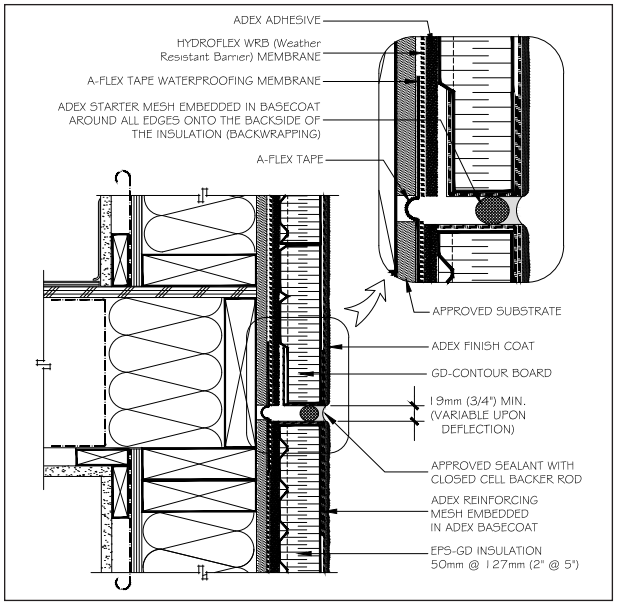

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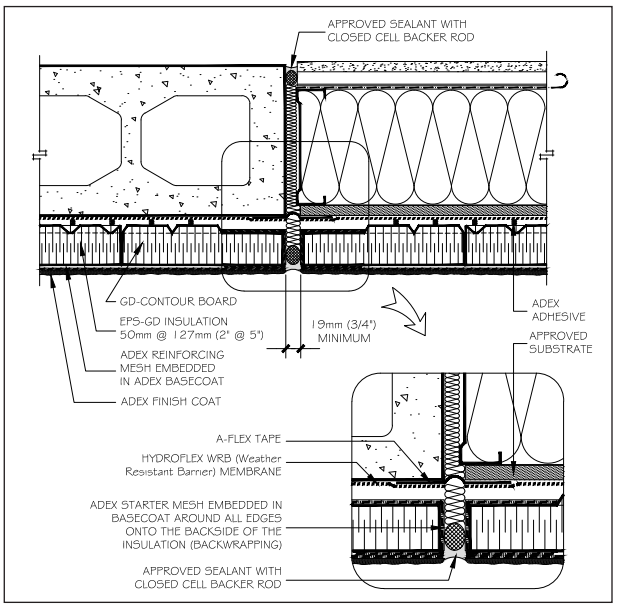
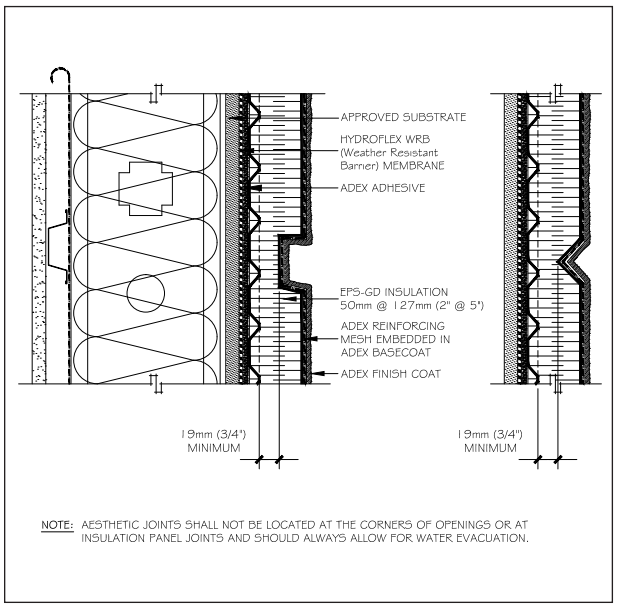
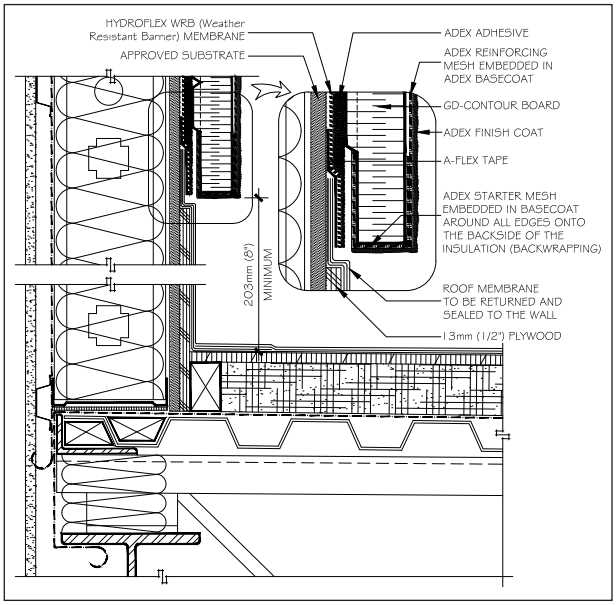


VERTICAL EXPANSION JOINT

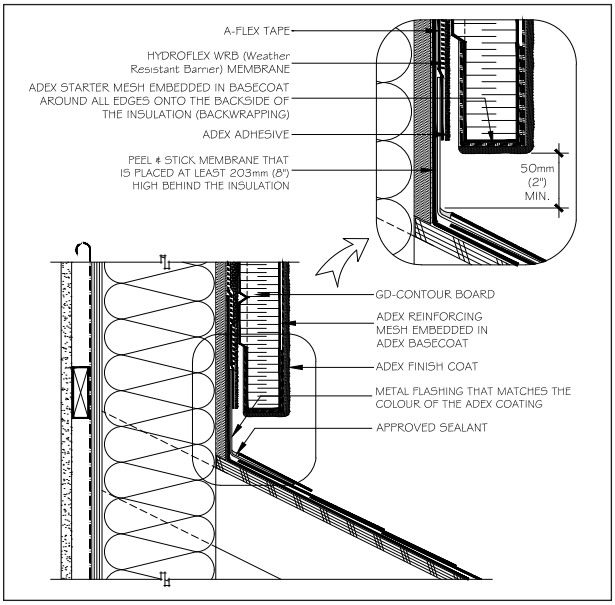


AESTHETIC JOINT

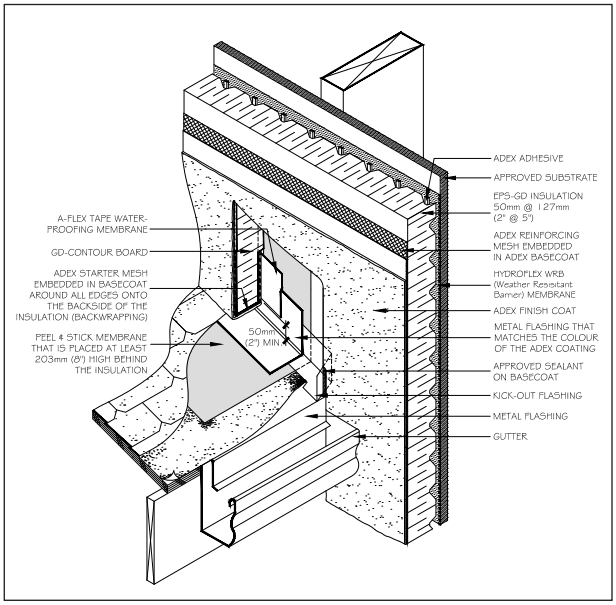
Technical Drawings



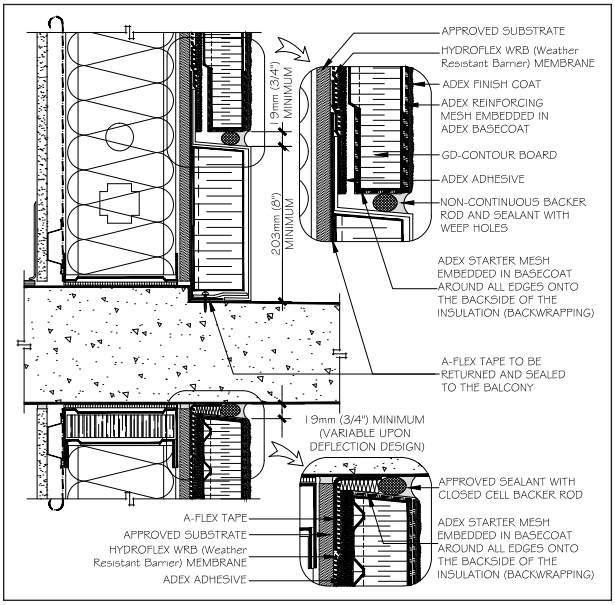
WALL/ROOF JUNCTION - FLAT ROOF



WALL/ROOF JUNCTION - SLOPED ROOF



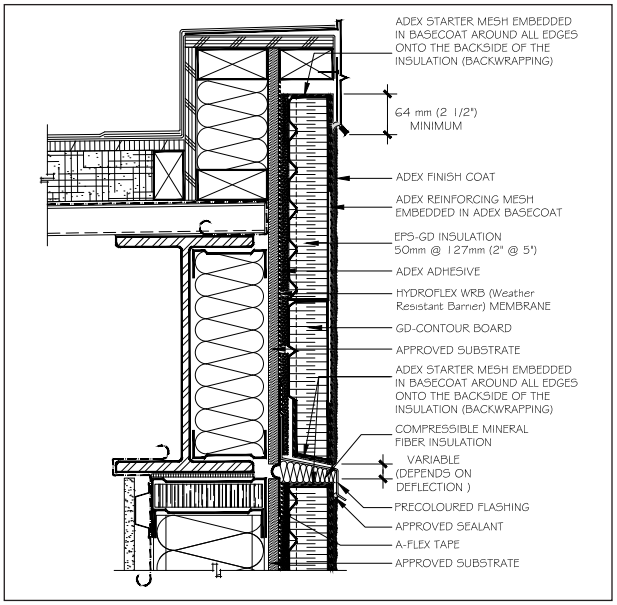
WALL/ROOF JUNCTION - ISOMETRY



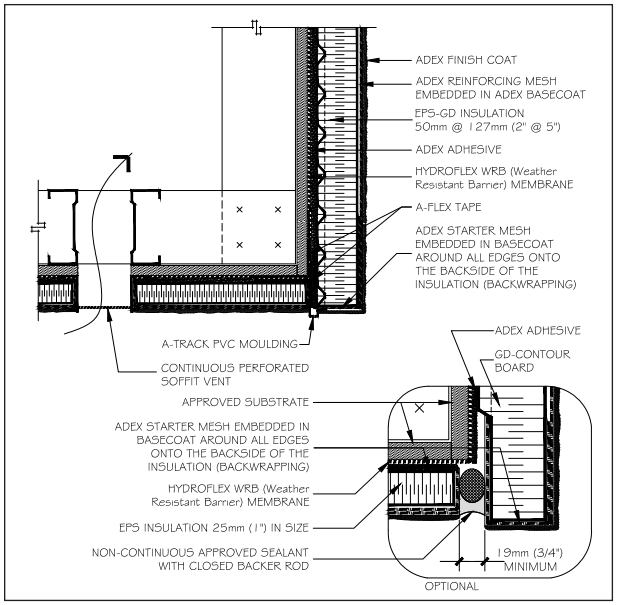
BALCONY JUNCTION

Information in this document contains the current recommendations for the installation of the adex-RS system. It is only provided as a guide and is subject to modifications at any time without notice. ADEX Systems Inc. reserves the right to make any modification according to technological progress. Specialised designers, architects, engineers or other professionals that choose to make any use of this information bear the complete responsibility, whatever it be, direct or indirect, that could follow from such use. ADEX Systems Inc. does not bear any responsibility that could give way to damages, defaults, defects, deficiencies, prejudices, loss or decrease of profit, be they direct or indirect, resulting from such use of this information by specialised designers, architects, engineers or other professionals. Please refer to www.adex.ca for the latest version of this document.

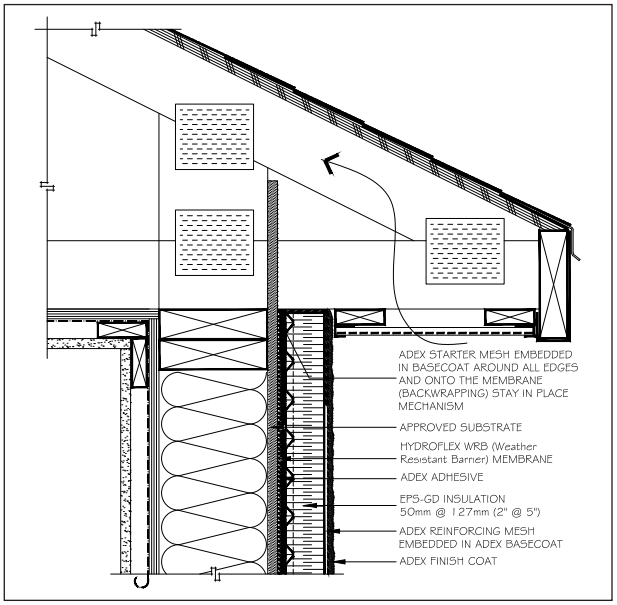
Technical Drawings



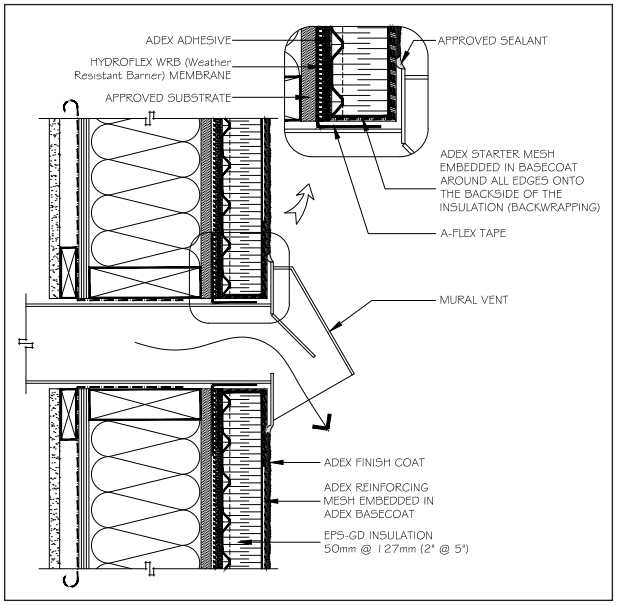
PARAPET



SOFFIT

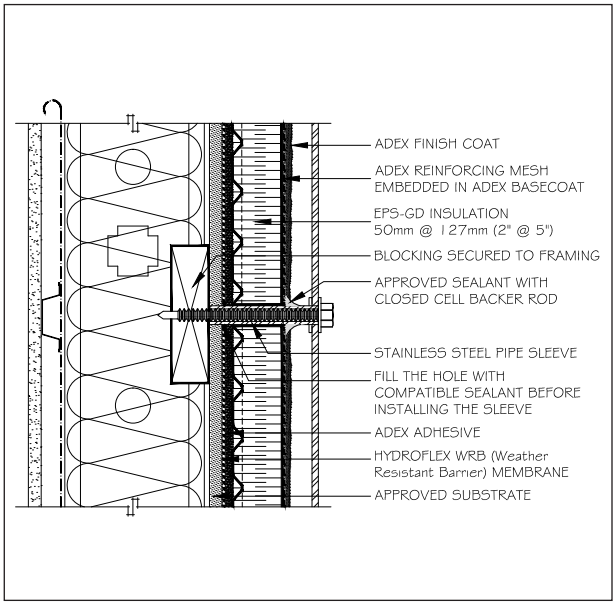


EAVE SOFFIT JUNCTION - SLOPED ROOF

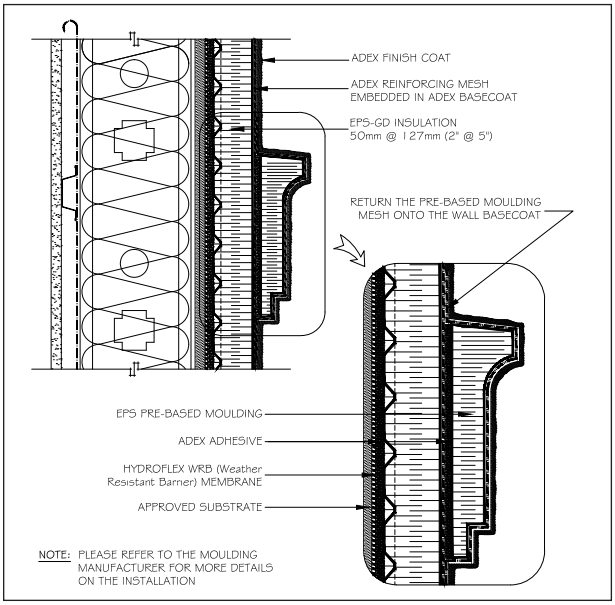


WALL PENETRATIONS

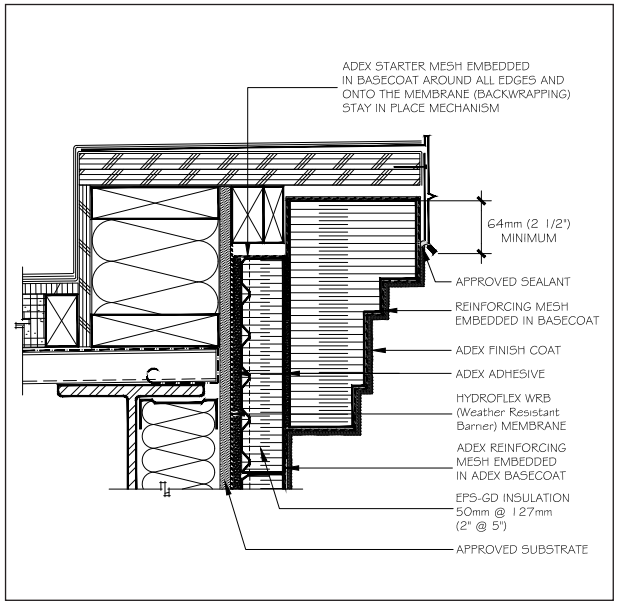
Technical Drawings



ACCESSORIES ATTACHMENT



DECORATIVE MOULDING



PARAPET MOULDING

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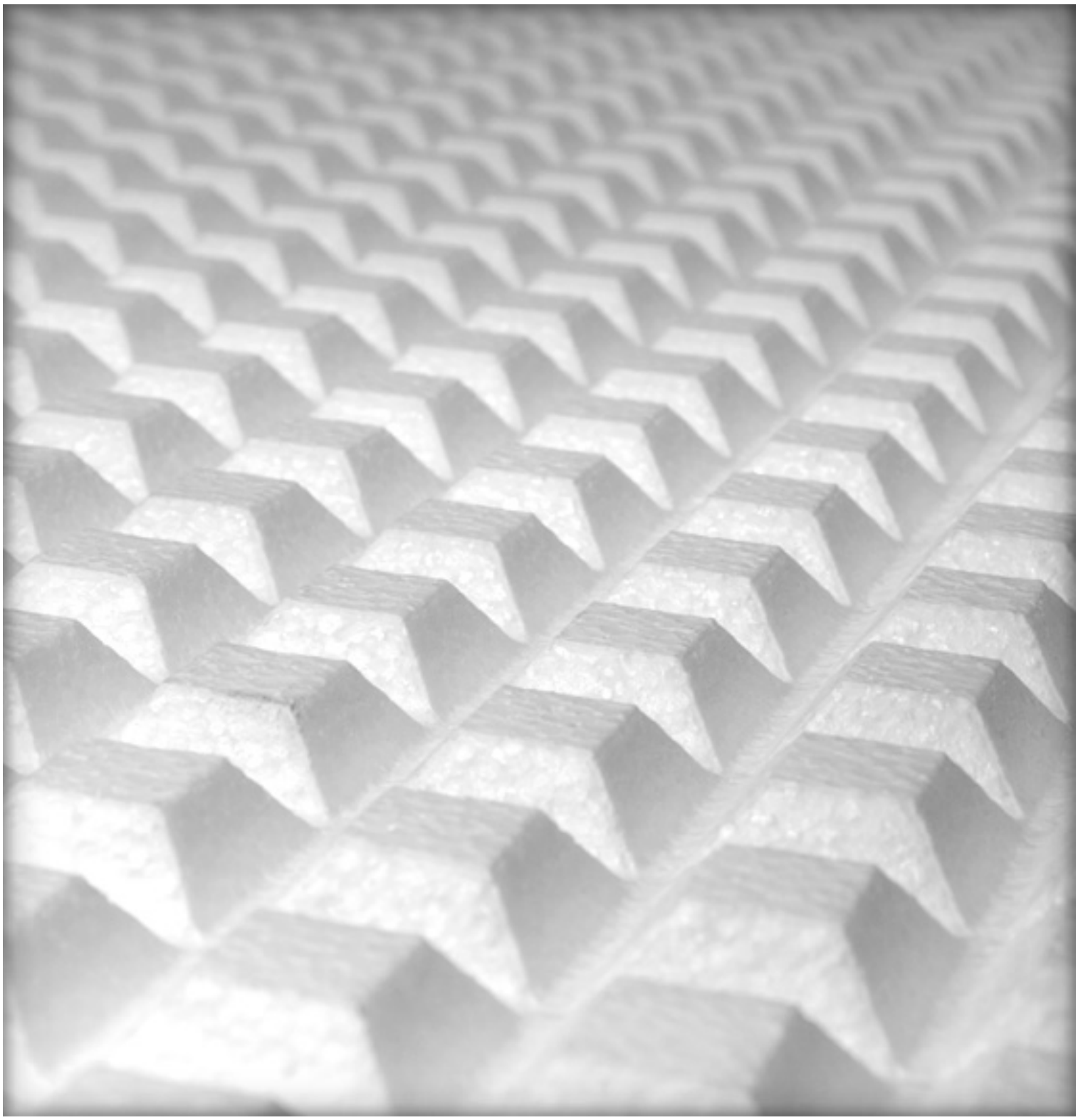

Evaluation Report CCMC 12913-R
Adex-RS / Adex-VCA / Adex-MFS

MasterFormat:	07 24 13.01
Evaluation issued:	2002-08-08
Re-evaluated:	2016-04-13
Revised:	2018-07-11

1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that "Adex-RS / Adex-VCA / Adex-MFS" exterior insulation and finish systems, when used as an exterior wall cladding that is designed to provide additional thermal insulation and a weather barrier for new and retrofit construction in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code (NBC) of Canada 2010:

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
  - Article 3.1.5.5., Combustible Components for Exterior Walls[1]
  - Clause 3.1.5.12.(3)(d), Combustible Insulation and its Protection
  - Clause 3.2.3.8.(1)(b), Protection of Exterior Building Face[1]
  - Sentence 5.6.1.1.(1), Required Protection from Precipitation
  - Clause 9.25.2.2.(1)(c), Insulation Materials
  - Sentence 9.27.1.1.(5), General (Cladding)
  - Article 9.27.2.1., Minimizing and Preventing Ingress and Damage
  - Sentence 9.27.2.2.(4), Minimum Protection from Precipitation Ingress
  - Sentence 9.27.2.2.(6), Minimum Protection from Precipitation Ingress
  - Sentence 9.27.2.3.(1), First and Second Planes of Protection

- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
  - Article 9.27.3.1., Elements of the Second Plane of Protection
  - Sentence 9.27.5.1.(1), Attachment (Attachment of Cladding)

The product has also been deemed to comply with the following standard:

- CAN/ULC-716.1-12, "Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems."

This opinion is based on CCMC's evaluation of the technical evidence in Section 4 provided by the Report Holder.

1 See Section 4.1.27, Fire Performance of this Report.

Ruling No. 17-05-342 (12913-R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 2017-05-04 pursuant to s.29 of the Building Code Act, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

2. Description

The products are non-loadbearing exterior and insulation finish systems (EIFS) that can be assembled in panels under factory-controlled conditions or field-applied. The products are composed of the following key components:

- substrate;
- water penetration barrier coating;
- adhesive or mechanical fastener attachment;
- insulation board; and
- coating system (lamina).[2]

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2 Lamina refers to all the coats (base coats and finish coat) that are applied to the outer face of the insulation board together with the glass-fibre mesh reinforcement.

A detailed description of the different product components of the system are discussed in the following sections.

Substrate

For applications falling under the scope of this Report, the substrate can be brick, masonry, monolithic concrete walls, and/or cementitious panels, glass-mat-surfaced gypsum boards, plywood, or oriented strandboard (OSB) over wood or steel framing. Gaps between the sheathing boards of framed walls must not exceed 3.2 mm.

Water Penetration Barrier

The water penetration barrier (WPB) is a trowelled-on coating or a self-adhered modified bituminous membrane that is installed to provide a continuous membrane over water-sensitive substrates and around penetrations and openings to provide, along with other built-in features, the second line of defence against water infiltration reaching the structure.

In case of systems with a WPB consisting of a trowelled-on coating, the continuity of the second plane of protection across joints and junctions at openings, penetrations and expansion joints must be maintained through accessories such as self-adhering membranes, tapes, etc. as specified by the manufacturer, prior to the installation of these systems. Furthermore, in order to provide the intended level of protection against water infiltration, the trowelled-on coating (WPB) must be installed in a two-coat application in which the first coat must have sufficient time to cure before the second coat is applied.

In the case of systems with a WPB consisting of a single layer of a self-adhered modified bituminous membrane that is installed over the substrate and around penetrations and openings, the insulation boards must be attached using mechanical fasteners to the studs or to the substrate that would have been designed to support the cladding.

Trowelled-on Coating (WPB)

“Adex Hydroflex AD” is a ready-to-use polymer-based liquid coating that is integrally reinforced with polypropylene fibres. “Adex Hydroflex AD” is supplied in 27.3-kg pails and is trowel applied in a continuous layer over the substrate to a wet thickness of 2.2 mm, which results in a dry thickness of 1.4 mm.

“Adex Hydroflex WO” is a rubber-based liquid-applied coating, supplied in 27.3-kg pails. It is applied using a trowel to a wet thickness of 1.3 mm, which results in a dry thickness of 0.8 mm.

“Adex Hydroflex VB” is a rubber-based liquid coating, supplied in 18-kg pails. It is applied using a trowel to a wet thickness of 0.7 mm, which results in a dry thickness of 0.4 mm.

“Adex Hydroflex STD” is a polymer-based wet mix coating that is supplied in 27.2-kg pails and is mixed on-site with Type GU Portland cement (1:1 by weight). “Adex Hydroflex STD” is applied in a continuous layer over the substrate to achieve a minimum wet thickness of 1.6 mm.

Self-Adhered Modified Bituminous Membrane

“SOPRASEAL STICK 1100T” or its equivalent would meet the waterproof characteristics of CGSB 37-GP-56M, Membrane, Modified, Bituminous, Prefabricated and Reinforced for Roofing.” “SOPRASEAL STICK 1100T” is a self-adhered 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 and has a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 1 mm.

Adhesives

Adhesives are used for bonding the insulation to the substrate coated with the WPB. They are generally available in the following forms: a dry powder mix requiring the addition of water on-site, or a wet paste that does not require any additives.

“Adex Basecoat” is a polymer-based adhesive supplied in 27-kg pails. The adhesive is mixed on-site with Type GU Portland cement (1:1 by weight). Workability may be adjusted by the addition of a maximum of one (1) cup of clean potable water.

“Adex Basecoat” is applied in a continuous layer over the WPB using a stainless steel U-shaped notched trowel and rendered in such a way as to align the adhesive in vertical ribbons. The spacing between the ribbons must be 38 mm and the size of the notches must be 9 mm wide and 13 mm deep.

Mechanical Fasteners

Mechanical fasteners are used for attaching the insulation to the substrate in systems having a self-adhered modified bituminous membrane as the WPB.

“Adex mechanical fasteners” consist of a corrosion resistant anchoring screw, incorporating a low-profile, high density polypropylene washer that is used to secure the insulation. The spacing and frequency of fasteners will vary depending on the type of substrate. The outside face of the low-profile plastic washer must be always flush with the outside face of the EPS insulation board.

Insulation

“Adex Flat Board” and “Adex EPS-GD Board” are Type 1 or Type 2 polystyrene foam insulation boards that are made from 100% virgin materials and manufactured and packaged by an Adex Systems Inc. approved and licensed manufacturer/moulder. The insulation boards are aged in ambient air for a minimum of five weeks or kiln-dried.

“Adex Flat Board” is a typical flat EPS board.

“Adex EPS-GD Board” is an EPS board that features a proprietary drainage design consisting of diamond-shaped EPS protrusions. See Figure 1.

“Adex Flat Board” and “Adex EPS-GD Board” insulation boards must conform to the following:

- CAN/ULC-S701-01 and CAN/ULC-S701-05, “Thermal Insulation, Polystyrene, Boards and Pipe Covering”;
- Minimum board thickness of 25 mm when using “Adex Flat Board”;
- Minimum board thickness of 38 mm, when using “Adex EPS-GD Board”;
- Maximum board thickness:
  - As designed, when used in combustible construction, and
  - 127 mm, when used in non-combustible construction.
- Maximum board size is 600 mm × 1 219 mm;
- Average density of 16 kg/m^3 for Type 1 and 24 kg/m^3 for Type 2 EPS; and
- Flame-spread rating: 25–500, per CAN/ULC-S102.2-03, “Test for Surface Burning Characteristics of Building Materials and Assemblies.”

Synthetic Coating System (Lamina)

The synthetic coating system (lamina) consists of the reinforcing mesh, which is embedded with the base coat, a primer and a finish coat.

Base Coat

“Adex Basecoat” is a polymer-based adhesive supplied in 27-kg pails. “Adex Basecoat” is mixed on-site with Type GU Portland cement (1:1 by weight). Workability may be adjusted by the addition of a maximum of one (1) cup of clean potable water.

“Adex Basecoat” is applied in a continuous layer over the entire surface of the EPS insulation boards to a uniform dry thickness not less than 1.6 mm, using a stainless steel trowel. The final thickness of “Adex Basecoat” must be sufficient enough so that the “Adex reinforcing mesh” is fully embedded in the base coat and not visible.

Reinforcing Mesh

“Adex Standard Mesh” is an alkali-resistant, glass-fibre reinforcing fabric that has a minimum nominal weight of 142 g/m^2 when using reinforcing mesh manufactured by both Gavazzi S.A. and Saint Gobain Adfor Canada Ltd. The mesh has trimmed edges to minimize the build-up on overlapping seams. Gavazzi S.A. manufactures mesh rolls that are red in colour and are 1 m wide and 44 m long. The mesh rolls made by Saint Gobain Adfor Canada Ltd. are 965 mm, 318 mm or 241 mm wide and 45.7 m long. Starter mesh for rendering surface articulations and terminations is available in rolls that are 240 mm wide.

The reinforcing mesh comes in the following six grades, represented in ascending order of strength:

- "Adex Standard Mesh" and "Adex Starter Mesh," minimum 142 g/m^2;
- "Adex Standard Mesh SG," minimum 201 g/m^2;
- "Adex Standard Mesh Plus," minimum 190 g/m^2;
- "Adex Intermediate Mesh," minimum 375 g/m^2; and
- "Adex Armour Mesh," minimum 500 g/m^2.

Primer

"Primex is a ready-mix, polymer-based, slightly textured and coloured acrylic primer that provides a uniformly absorbent surface for selected "Adex Finish" coats. "Primex" is supplied in 24-kg pails. It is thoroughly mixed using a paddle mixer with an electric drill, and is applied using a long-bristled roller or a paintbrush.

Finish Coat

"Adex Finish" is a ready-mix, polymer-based finish coat supplied in 30-kg pails. It is factory-tinted to a desired colour. The finish coats provide a texture that is determined by the aggregate size as well as the trowel motion used to render the wall surface. The following represents the different textures offered and their respective coating thickness: "Siena" (2 coats), "Elasticoat Fine," "Sands and Classix" (0.85 mm); "Medium," "Elasticoat Medium," "Mistral," "Quartex" and "Monaco" (1.14 mm); "Platene," "Micatex" and "Coarse" (1.20 mm).

Table 2.1 System Components of "Adex-RS / Adex-VCA / Adex-MFS"

System	Component						
	Insulation	**Intended Substrate**	**Water Penetration Barrier**	**Adhesive**	**Base Coat**	**Primer**	**Finish Coat**
Adex-RS	**Adex EPS-GD Board**	**concrete masonry cement board glass-mat gypsum**	Adex Hydroflex VB Adex Hydroflex WO Adex Hydroflex STD Adex Hydroflex AD	Adex Basecoat	Adex Basecoat	Primex	Adex Finish
		plywood/OSB	Adex Hydroflex WO	Adex Basecoat	Adex Basecoat	Primex	Adex Finish
Adex-VCA	**Adex Flat Board**	**concrete masonry cement board glass-mat gypsum**	Adex Hydroflex VB Adex Hydroflex WO Adex Hydroflex STD Adex Hydroflex AD	Adex Basecoat	Adex Basecoat	Primex	Adex Finish
	Adex Flat Board	**plywood/OSB**	Adex Hydroflex WO	Adex Basecoat	Adex Basecoat	Primex	Adex Finish
Adex-MFS	**Adex Flat Board Adex EPS-GD Board**	**concrete masonry cement board glass-mat gypsum plywood/OSB**	Self-adhered modified bituminous membrane	Mechanical fasteners	Adex Basecoat	Primex	Adex Finish

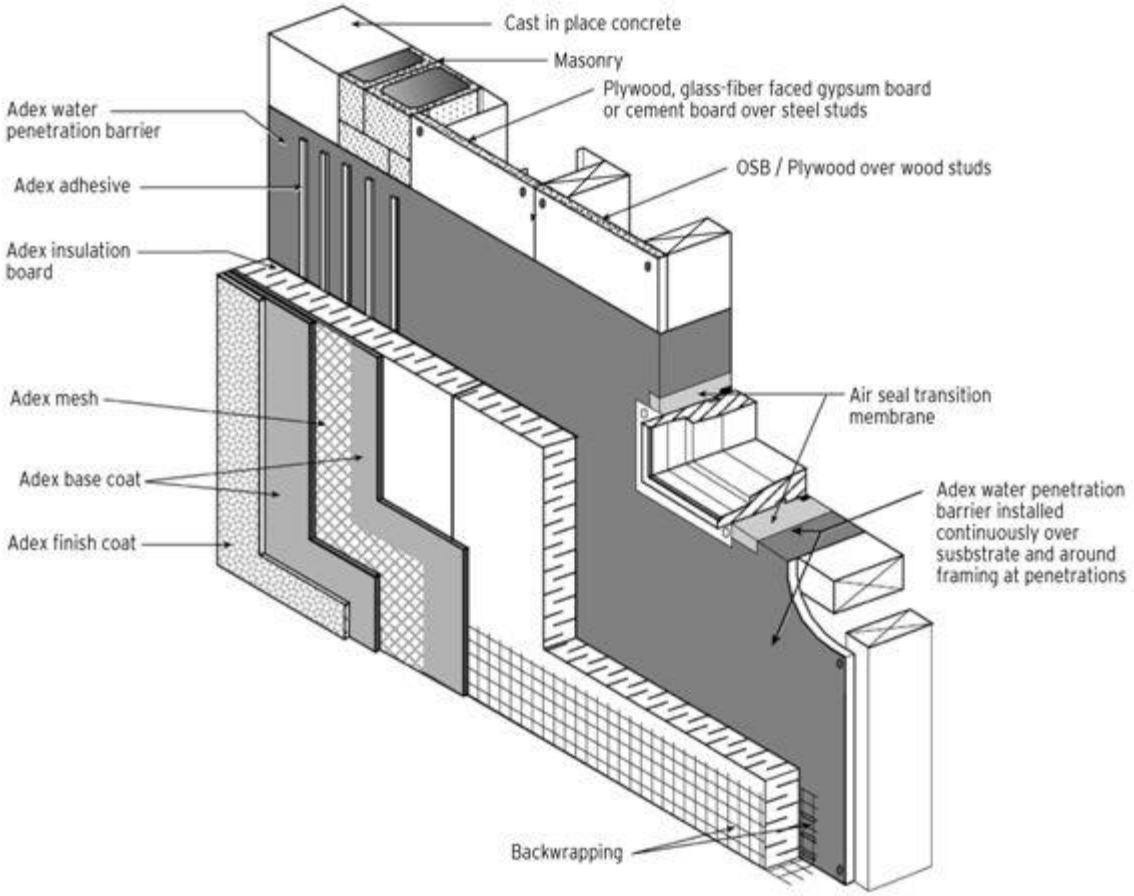

Figure 1. "Adex-RS / Adex-VCA / Adex-MFS" EIFS over plywood/OSB

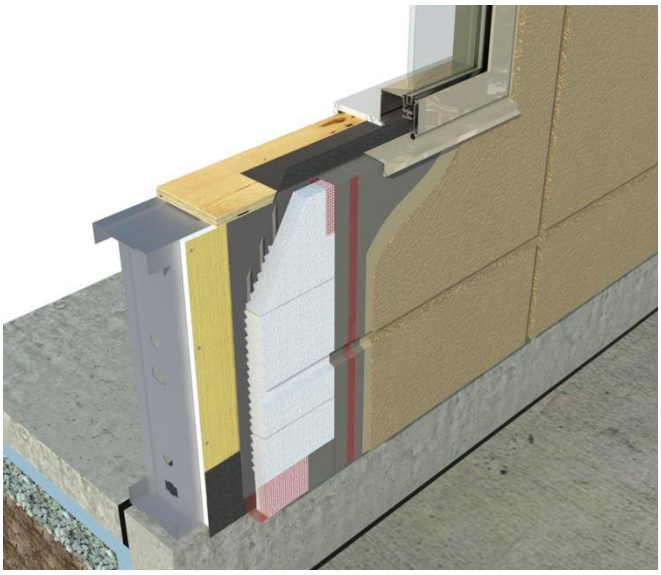

Figure 2a. "Adex-RS" system with a water penetration barrier over glass-fibre-faced gypsum

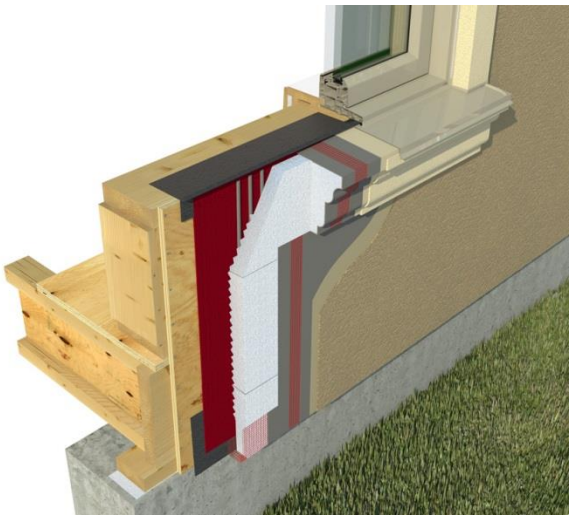

Figure 2b. "Adex-RS" system with a water penetration barrier over plywood/OSB

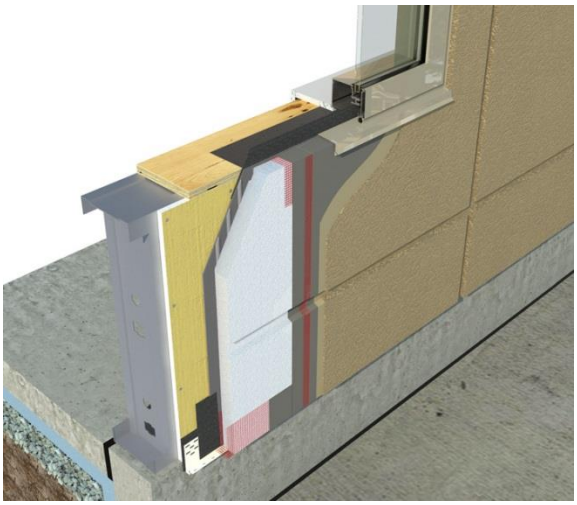

Figure 3a. "Adex-VCA" system with a water penetration barrier over glass-fibre-faced gypsum

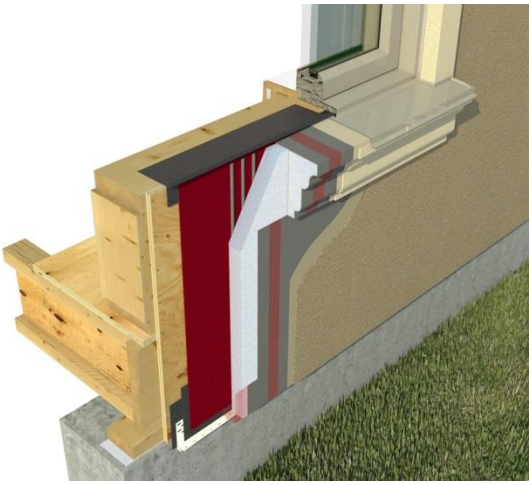

Figure 3b. "Adex-VCA" system with a water penetration barrier over plywood/OSB

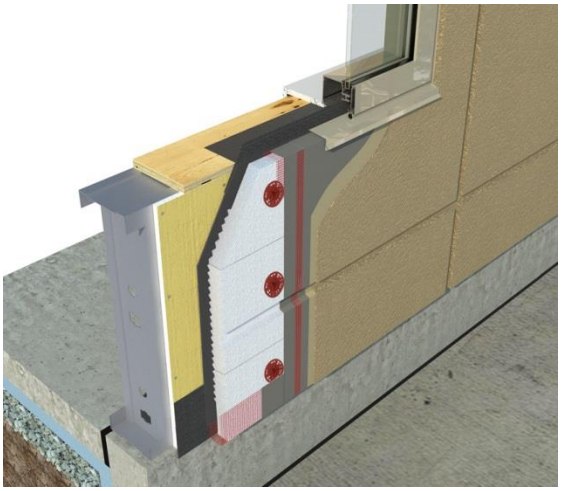

Figure 4. "Adex-MFS" system over a modified bituminous membrane on glass-fibre-faced gypsum

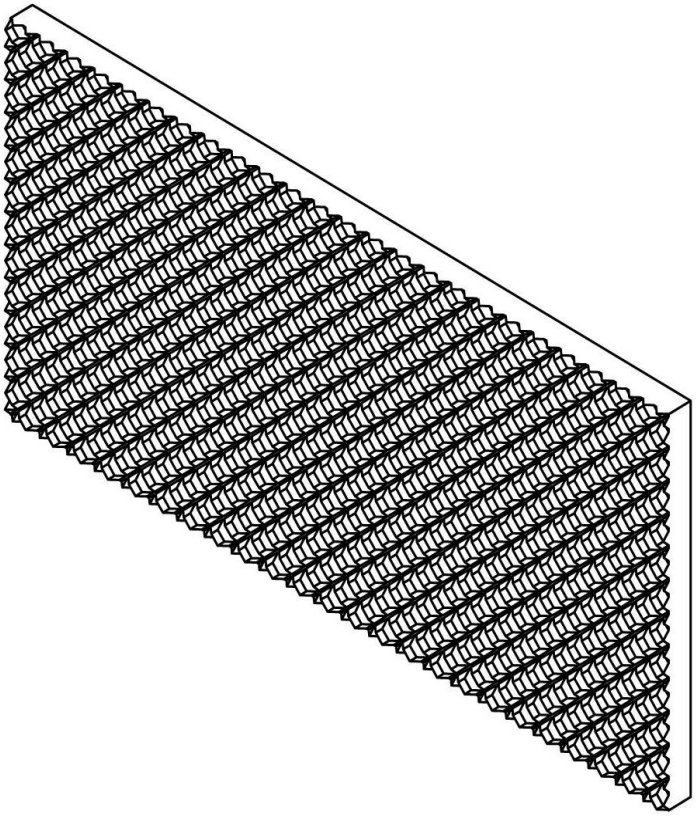

Figure 5. "Adex EPS-GD Board" insulation drainage board

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the "Adex-RS / Adex-VCA / Adex-MFS" being used in accordance with the conditions and limitations set out below:

- The products are intended for use as an exterior insulation and finish wall system applied directly to vertical walls of brick, masonry, monolithic concrete walls and/or cementitious, glass-mat-surfaced gypsum, plywood or OSB sheathing boards installed over wood or steel framing.
- Gaps between the sheathing boards of framed walls must not exceed 3.2 mm.

- The products are acceptable for use on new and existing exterior vertical walls. The system is not acceptable for use on horizontal surfaces.
- When the products are part of a prefabricated panel system that incorporates structural components, the prefabricated panel system must be designed by a professional engineer or architect in accordance with the manufacturer's criteria and the requirements of the NBC 2010.
- The products are not suitable for use as a structural sheathing for bracing purposes.
- The products are not intended for use as below-grade insulation and should terminate at least 200 mm above grade level.
- The WPB is a self-adhered modified bituminous membrane that must meet the waterproofing characteristics of CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing."
- Use of the products with the mechanical fasteners indicated in Table 2.1 is limited to geographical areas where the wind design value is $Q_{50} < 1.00$ kPa.
- The possibility of moisture accumulation within the wall construction is mainly a function of the wall assembly to deflect bulk water entry. The physical properties of the cladding being installed and its impact on the thermal air leakage and vapour diffusion characteristics of the existing wall must be in accordance with Appendix Note A-5.1.2.1.(1), Application (environmental separation), of Division B of the NBC 2010.
- When used in new construction, the design of the inboard/outboard insulation of "Adex-RS / Adex-VCA / Adex-MFS" must be in accordance with the requirements of Section 9.25., Heat Transfer, Air Leakage and Condensation Control, of Division B of the NBC 2010.
- In retrofit constructions the addition of thermal insulation onto existing exterior walls will increase the thermal efficiency and airtightness of the wall. Deficiencies in flashing and other elements in the building assembly, including mechanical systems, may result in detrimental effects of moisture accumulation as highlighted in Appendix Note A-9.25.2.4.(3), Loose-Fill Insulation in Existing Wood-Frame Walls, of Division B of the NBC 2010. As a result, existing exterior walls that are intended to be retrofitted with EIFS must meet the requirements of the NBC 2010 for heat transfer, air leakage and condensation control.
- The products can provide additional thermal insulation to the wall assembly in retrofit construction with no detrimental effects if properly installed with knowledge of the existing wall configuration and performance.
- The products alone may not provide the full amount of the required wall insulation. The thermal resistance of the wall system must conform to the energy requirements of the applicable building code. The wall system may have to conform to the Model National Energy Code of Canada for Buildings 2011.
- Where allowed by the Code through conformance to Article 3.1.5.5., Combustible Components for Exterior Walls, of Division B of the NBC 2010, the systems having "Adex Hydroflex VB"/"Adex Hydroflex WO"/"Adex Hydroflex STD"/"Adex Hydroflex AD" as a water penetration barrier; "Adex Basecoat" as an adhesive and base coat; "Adex EPS-GD Board" as a Type 1 EPS insulation, 101 mm thick; "Adex Standard Mesh" with a minimum 150g/m^2 and minimum of 64-mm mesh overlap; and "Adex Finish" as a finish coat is acceptable for use in buildings required to be of noncombustible construction that are not more than three storeys in height if not sprinklered, and to greater than three storeys in height if sprinklered throughout, provided the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.12.(3), Combustible Insulation and its Protection of Division B of the NBC 2010. For a detailed description of the compliance of the related system to the requirements of Article 3.1.5.5. of Division B of the NBC 2010, please refer to Intertek Listing RS-ASI-DAFS 15-01, Project No. 100958464TOR-001B.
- Where allowed by the Code through conformance to Clause 3.2.3.8.(1)(b), Protection of Exterior Building Face, of Division B of the NBC 2010, "Adex-RS" having "Adex Hydroflex VB"/"Adex Hydroflex WO"/"Adex Hydroflex STD"/"Adex Hydroflex AD" as a water penetration barrier; "Adex Basecoat" as an adhesive and base coat; "Adex EPS-GD Board" as a Type 1 EPS insulation, 127 mm thick; "Adex Standard Mesh" with a minimum 150g/m^2 and minimum of 64-mm mesh overlap; and "Adex Finish" as a finish coat is acceptable for use in the exposed face of buildings that are required to be of noncombustible construction, provided the interior surfaces of the wall assembly are protected by a thermal barrier conforming to Sentence 3.1.5.12.(3), Combustible Insulation and its Protection, of Division B of the NBC 2010. For a detailed description of the compliance of the related system to the requirements of Clause 3.2.3.8.(1)(b) of the NBC 2010, please refer to Intertek Listing RS-ASI-DAFS 15-01, Project No. 100958464TOR-001A.
- When used in noncombustible construction, the polystyrene insulation must be protected from the inside of the building in accordance with Sentence 3.1.5.12.(2) of Division B of the NBC 2010.
- When used in combustible construction, the polystyrene insulation must be protected from the inside of the building in accordance with Clauses 3.1.4.2.(1)(c), Protection of Foamed Plastics, and 9.10.17.10.(1)(c), Protection of Foamed Plastics, of Division B of the NBC 2010.
- The system should be kept at least 50 mm, or as required in building regulations and safety codes, from heat-emitting devices, such as recessed light fixtures and chimneys.
- The requirements of the NBC 2010 regarding fire blocks must be implemented.
- The polystyrene thermal insulation must have a flame-spread rating of not more than 500 when tested in accordance with the requirements of CAN/ULC-S102.2-07, "Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies."

- Expansion joints must be carried through the cladding. Movement joints are required to accommodate expansion and contraction of building materials due to thermal changes, moisture, wind, gravity, vibration and seismic activity. Expansion joints must be used in the following situations:
    - at joints that occur in the substrate,
    - at any abutment of the system with other materials,
    - where the substrate changes,
    - where significant structural movement occurs,
    - where deflections in excess of L/240 are expected, and
    - at the floor line in wood-frame construction (may not be required when using engineered wood beams).
- Closed cell backer rods should be used at expansion joints so that the low modulus sealant may be installed as per the sealant manufacturer's instructions.
- Wet materials must be applied at temperatures above 4°C and maintained above 4°C for a period not less than 24 hours. The substrate must be maintained above 4°C for a period not less than 24 hours. Cool and humid climatic conditions may extend drying time beyond 24 hours. Temporary protection and heat must be provided during colder conditions. Materials must be stored at temperatures between 5°C and 32°C. Previously frozen materials must not be used.
- Wet finished surfaces must be protected from rain and wind-driven moisture until the materials have set and hardened.
- The products must be installed with suitable flashing to drain any incidental water from the drainage cavity to the exterior and to protect the exposed top edge of the cladding. Cap flashing must be installed immediately after completion of the finish coat or temporary protection must be provided.
- Glass-mat gypsum sheathing must be in compliance with the requirements of ASTM C 1177/C 1177M-04e1, "Glass Mat Gypsum Substrate for Use as Sheathing," or have been evaluated by CCMC.
- Specifications and a description of surface sealers must be provided by the manufacturer.
- OSB and/or plywood sheathing boards used in conjunction with the products must comply with the requirements of CSA O437 SERIES-93 (R2011), "OSB and Waferboard" (in the case of OSB) and CSA O121-08, "Douglas Fir Plywood," CSA O151-M1978, "Canadian Softwood Plywood," CSA O153-M1980 (R2008), "Poplar Plywood" or CSA O325.0-07, "Construction Sheathing" (in the case of plywood). The OSB and/or plywood sheathing boards must have a minimum thickness of 11.1 mm and 12.7 mm, respectively. The boards must have their principal strength-direction across the studs, must be continuously supported by framing, and must be gapped at least 2 mm and not more than 3 mm.
- OSB and/or plywood sheathing boards used in conjunction with the products must be fastened to the framing in conformance with Article 9.23.3.5. of Division B of the NBC 2010.
- When used in coastal areas for residential occupancies for buildings falling under the scope of Part 9 of Division B of the NBC 2010, the products must be installed in conjunction with a capillary break conforming to Sentence 9.27.2.2.(1), Minimum Protection from Precipitation Ingress, of Division B of the NBC 2010. Coastal areas are defined by the NBC 2010 as areas where:
    - the number of degree-days is less than 3 400 and the moisture index is greater than 0.90, or
    - the number of degree-days is 3 400 or more, and the moisture index is greater than 1.0.
- When used in non-coastal areas or non-residential occupancies, the WPB coating must be installed in a two-coat application.
- Using the products with the adhesives indicated in Table 2.1 is limited to geographical areas where the wind design value is $Q_{50} < 0.75$ kPa.
- When the products have a self-adhered modified bituminous membrane as a water penetration barrier, their use is limited to geographical locations where the wind design value is $Q_{50} < 1.00$ kPa.
- The moisture content of lumber and/or wood sheathing must not be more than 19% at the time of the application of the WPB.
- The drainage cavity created by the use of the notched trowel adhesive ribbons and/or the protrusions in the EPS (in the case of "Adex EPS-GD Board") must remain unobstructed by any other obstructions so as to form a clear drainage cavity behind the insulation boards. When using notched trowel adhesive ribbons as the drainage mechanism, the application of the ribbons must be conducted in a way as to form clear and parallel drainage paths behind the insulation boards and to avoid the creation of any V grooves. (V grooves refer to ribbons touching and closing the drainage path.)
- When using flat EPS insulation over plywood/OSB sheathing boards, the notched trowel adhesive ribbons must be 9 mm wide, 9 mm deep and 38 mm apart. The first 50 mm from the vertical edges of the EPS boards must remain free from any adhesive ribbons to avoid the creation of V grooves.
- The products must be installed according to Adex Systems Inc. specifications, as referenced on www.adex.ca, by applicators authorized by the manufacturer.

4. Technical Evidence

The Report Holder has submitted technical documentation for CCMC's evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

4.1 Performance Requirements

Table 4.1.1 Results of Testing the Ash Content in the Products

Property	Component	Unit	Requirement	Result
Ash content	**Adex Hydroflex STD**	%	Report value	57.4
	Adex Hydroflex VB			49.5
	Adex Hydroflex WO			49.3
	Adex Hydroflex AD			67.4
	Adex Basecoat (base coat)			57.8
	Adex Finish (finish coat)			75.0

Table 4.1.2 Results of Testing the Adhesion of the WPB to Substrates Other Than Plywood/OSB

Property			Unit	Requirement – No Detachment at Bonding Plane at	Result
Adhesion bond to cement board	**Adex Hydroflex STD**	**dry state**	MPa	0.3	0.42
		2-h drying		0.1	0.16
		7-d drying		0.3	0.37
	Adex Hydroflex VB	**dry state**		0.3	0.48
		2-h drying		0.1	0.28
		7-d drying		0.3	0.53
	Adex Hydroflex WO	**dry state**		0.3	0.46
		2-h drying		0.1	0.38
		7-d drying		0.3	0.42
	Adex Hydroflex AD	**dry state**		0.3	0.60
		2-h drying		0.1	0.31
		7-d drying		0.3	0.36

Table 4.1.3 Results of Testing the Adhesion Bond of the Adhesive to the WPB

Property			Unit	Requirement – No Detachment at Bonding Plane at	Result
Adhesion bond strength of adhesive Adex Basecoat to WPB	Adex Hydroflex STD	dry state	MPa	0.3	0.77
		2-h drying		0.1	0.29
		7-d drying		0.3	0.48
	Adex Hydroflex VB	dry state		0.3	0.49
		2-h drying		0.1	0.16
		7-d drying		0.3	0.48
	Adex Hydroflex WO	dry state		0.3	0.55
		2-h drying		0.1	0.39
		7-d drying		0.3	0.50
	Adex Hydroflex AD	dry state		0.3	0.48
		2-h drying		0.1	0.24
		7-d drying		0.3	0.28

Table 4.1.4 Results of Testing the Adhesion Bond of the Adhesive to Insulation

Property			Unit	Requirement – No Detachment at Bonding Plane at	Result
Adhesion bond strength of adhesive Adex Basecoat to insulation	ADEX Basecoat to EPS	dry state	MPa	0.1	0.36
		2-h drying		0.1	0.34
		7-d drying		0.1	0.42

Table 4.1.5 Results of Testing the Adhesion Bond of Adhesive to Insulation (Base Coat to Finish Coat to Insulation)

Property			Unit	Requirement – No Detachment at Bonding Plane at	Result
Adhesion bond strength of adhesive Adex Basecoat to insulation	Adex Finish to Adex Basecoat to EPS	dry state	MPa	0.1	0.75
		2-h drying		0.1	0.45
		7-d drying		0.1	0.86

Table 4.1.6 Results of Testing the Water Vapour Transmission (WVT) of the WPB

Property	Component	Unit	Requirement	Result
Water vapour transmission of WPB	Adex Hydroflex STD	ng/(Pa·s·m^2)	Report value	802.7
	Adex Hydroflex VB[1]			94
	Adex Hydroflex WO[1]			55
	Adex Hydroflex AD			243

Note to Table 4.1.6:

1 The results are based on the WVT testing on substrates other than wood.

Table 4.1.7 Results of Testing the WVT of Lamina

Property	Component	Unit	Requirement	Result
WVT of lamina	**Adex Basecoat**	ng/(Pa·s·m^2)	Report value	344
	lamina (Adex Basecoat/Adex Finish)			101

Table 4.1.8 Results of Testing the Water Absorption

Property	Component	Unit	Requirement	Result
Water absorption of base coat	**Adex Basecoat**	kg/(m^2·s^2)	≤ 20% of the dry weight	2.95
	lamina "optional" (Adex Basecoat/Adex Finish)			4.15

Table 4.1.9 Results of Testing the Water Absorption Coefficient (WPB)

Property	Component	Unit	Requirement	Result
Water absorption coefficient (WPB) at 72 h	**Adex Hydroflex STD**	kg/(m^2·s^2)	≤ 0.004	0.0007
	Adex Hydroflex VB			0.0008
	Adex Hydroflex WO			0.0019
	Adex Hydroflex AD			0.0006

Table 4.1.10 Results of Testing the Impermeability to Water

Property	Component	Unit	Requirement	Result
Water absorption of base coat	**Adex Basecoat**	Hours	No water penetration in less than 2 h	Pass
	lamina "optional" (Adex Basecoat/ Adex Finish)			Pass

Table 4.1.11 Results of Testing the Mildew and Fungus Resistance

Property	Component	Requirement	Result
Mildew and fungus resistance	**Adex Finish Coat**	No growth	Pass

Table 4.1.12 Results of Testing the Accelerated Weathering Resistance

Property	Component	Requirement	Result
Accelerated weathering resistance of lamina at 2 000 h	**Adex Basecoat/Adex Finish**	No cracking, flaking or deleterious effects	Pass

Table 4.1.13 Results of Testing the Salt Spray Resistance

Property	Component	Requirement	Result
Salt spray resistance at 300 h	**Adex Basecoat/Adex Finish**	No cracking, flaking or deleterious effects	Pass

Table 4.1.14 Results of Testing the Durability Under Environmental Cyclic Conditions

Property		Unit	Requirement		Result
Preconditioning (drainage evaluation)		Litres	Report water quantity	Introduced	13.5
				Drained	9.60
				Retained	3.90
Environmental cycling (60 cycles)		—	No cracking, blistering or sagging of base coat, and no detachment or crazing of finish coat		Pass
Adhesive bond strength after environmental cycling	**base coat**	MPa	≥ 0.1		0.32
	finish coat				0.67

Table 4.1.15 (a) Results of Testing the Physical Characteristics of the Glass Fibre Reinforcement made by Saint Gobain Adfor Canada Ltd.

Property	Unit	Requirement	Result	
Ash content	%	Report value	14.0	
Mass per unit area	g/m^2	Report value	1 420	
Mesh dimension	mm	< 10	**Warp**	**Weft**
			3.91	4.11
Weight of glass	g/m^2	Report value	122.0	
Elongation	%	Report value	**Warp**	**Weft**
Initial			5.1	5.12
After alkali resistance test[1]			3.0	3.0
Tensile strength	N/mm		**Warp**	**Weft**
Initial		≥ 35	41.0	39.9
After alkali resistance test		≥ 20	22.2	29.8

Note to Table 4.1.15 (a):

1 Alkaline test based on 28-day immersion in tri-alkali solution.

Table 4.1.15 (b) Results of Testing the Physical Characteristics of the Glass Fibre Reinforcement made by Gavazzi S.A.[1]

Property	Unit	Requirement	Result	
Mass per unit area	g/m^2	Report value	155.0	
Tensile strength	N/mm		**Warp**	**Weft**
Initial		≥ 35	50	68
After alkali resistance test		≥ 15[2]	37	37

Notes to Table 4.1.15 (b):

1 Gavazzi S.A. mesh, in compliance with ash content, mesh dimensions, weight of glass and elongation, is based on CSTB R2EM/EM12-118 Certification.

2 Alkaline test based on 90-day immersion in cement solution that requires a 60% residual strength of at least 15 N/mm in comparison with the immersion in tri-alkali solution that requires a 50% residual strength of at least 20 N/mm.

Table 4.1.16 Results of Testing the Impact Resistance

Property			Requirement	Result
Impact resistance	**Adex Basecoat/ Adex Finish**	**10 joules**	Six of 10 free-fall drops must show no perforation (broken mesh).	9/10 Pass
	Adex Basecoat/ Adex Finish	**3 joules**	Six of 10 free-fall drops must show no cracks.	9/10 Pass

Table 4.1.17 Results of Testing the Wind Load Resistance of "Adex-RS"[1]

Reference Wind Pressure (kPa)	Sustained		Cycling		Gust		Deflection Test		
	P_1, P'_1 (Pa)		P_2, P'_2 (Pa)		P_3, P'_3 (Pa)		Test Pressure (Pa) 3.3 P_1, P'_1	Measured Maximum Net Mid-span Deflections (mm)	
								Stud Height 3 050 mm	Stud Spacing 406 mm
$Q_{10} < 0.40$	±400	Pass	±530	Pass	±800	Pass	+1 320	8.6	0.5
							–1 320	8.1	0.9
$Q_{10} < 0.60$	±600	Pass	±800	Pass	±1 200	Pass	+1 980	11.8	1.1
							–1 980	10.7	2.0
$Q_{10} < 0.80$	±800	Pass	±1 060	Pass	±1 600	Pass	+2 640	16.9	2.7
							–2 640	16.1	3.8
Maximum test pressure at L/180 deflection							+2 700	16.9	—
							–2 810		
Ultimate structural test pressure							+3 223	OK	
							–2 970	Sheathing separation from steel studs occurred	

Note to Table 4.1.17:

1 The wind load testing on "Adex-VCA" has been conducted based on the "one in ten" (Q_{10}) wind pressure loading. The $Q_{10} < 0.80$ tested wind design pressures would correspond roughly to $Q_{50} < 0.75$ where the maximum positive and negative pressures of sustained, cyclic and gust loads are P_1, P'_1 = 750 Pa, P_2, P'_2 = 1 090 Pa and P_3, P'_3 = 1 630 Pa. The maximum deflection is measured at the D 0.75 at 1 630 Pa.

Table 4.1.18 Results of Testing the Adhesion of the WPB to Plywood/OSB Substrates

Property	Component		Unit	Requirement	Result
Adhesion bond to OSB	**Adex Hydroflex VB**	**dry state**	MPa	0.3	0.956
		1-h soaking		0.3	1.0228
		24-h soaking		0.3	0.829

Table 4.1.19 Results of Testing the Joint Disruption Resistance

Property	Unit	Requirement	Result		
			Joint Width		
Joint disruption resistance	—	The WPB at joints on 2 assemblies must show no cracking, delaminating or any other deleterious effects at a transverse bending of L/180.	2 mm	4 mm	Pass
Joint extension at L/180	mm	Report value	0.11	0.15	

Table 4.1.20 Results of Testing the Joint Relaxation Resistance

Property	Unit	Requirement	Sample No.	Result
Joint relaxation resistance	$kg/m^2 \cdot s$	Five WPB-coated OSB specimens subjected to a 1.3-mm extension following exposure to 15 24-h environmental cycles must have a maximum average WTR rate of 2×10^{-7} $kg/m^2 \cdot s$.	1	0.85×10^{-7}
			2	0.45×10^{-7}
			3	0.55×10^{-7}
			4	1.92×10^{-7}
			5	0.84×10^{-7}

Table 4.1.21 Results of Testing the Water Transmission Resistance

Property	Unit	Requirement	Sample No.	Result
Water transmission resistance (WTR)	kg/m^2·s	Five WPB-coated OSB specimens subjected to a 25-mm head of water must have a maximum average WTR rate of 2 x 10^{-7} kg/m^2·s measured at 10 days.	1	1.73×10^{-7}
			2	1.66×10^{-7}
			3	1.32×10^{-7}
			4	0.61×10^{-7}
			5	1.35×10^{-7}
Average				1.33×10^{-7}

Table 4.1.22 Results of Testing the Water Vapour Transmission

Property	Unit	Requirement	Result		
			Sample No.	Coated	Uncoated[1]
Water vapour transmission (WVT)	ng/Pa·s·m^2	Report value of the WVT rate of the WPB in combination with the OSB applied at the maximum thickness and the OSB alone.	1	68	116
			2	58	130
			3	55	127
Average				60.3	124.3

Note to Table 4.1.22:

1 The tested WVT of the OSB is specific to the product and thickness used in the test. For typical values of WVT rates of OSB, see Table A-9.25.5.1.(1) of Division B of the NBC 2010.

Table 4.1.23 Results of Testing the Accelerated Weathering Resistance of the WPB

Property	Requirement	Sample No.	Result
Accelerated weathering resistance	The WPB applied over the OSB must show no cracking, delamination, flaking or any deleterious effects following 250 hours of exposure to a Xenon arc.	1	Pass
		2	Pass
		3	Pass
		4	Pass
		5	Pass
		6	Pass

Table 4.1.24 Results of Testing the Drainage Capacity

Property	Requirement		Result	
			Retained Water (g) Per Unit Area (g/m^2)	Drainage Capacity (%) After 1 h
Drainage capacity	The unit-retained water (based on the projected drainage area) following 1 hour of drainage period must not be greater than 40 g/m^2 for any single test specimen. The drainage capacity must not be less than 98% of the water mass delivered into the EIFS wall specimen.	Panel 1 total (g)	21.2	99.7
		Panel 2 total (g)	20.5	99.7
		Panel 3 total (g)	19.4	99.8
		Panel 4 total (g)	18.6	99.8

Table 4.1.25 Results of Testing the Nail Popping Resistance

Property	Requirement	Sample No.	Result
Nail popping resistance	There must be no cracking or delamination of the WPB following a 1-mm nail protrusion from the nail original preset of 1 mm below the surface of the OSB substrate.	1	Pass
		2	Pass
		3	Pass
		4	Pass
		5	Pass
		6	Pass

4.1.2 Fire Performance

"Adex Basecoat" is in compliance with CAN/ULC S114-05, "Standard Method of Test for Determination of Non-Combustibility in Building Materials." Please see Intertek Testing Services NA Ltd. Report No. 3192482COQ-002, issue date October 28, 2009, revised date November 4, 2009.

Adex exterior insulation and finish systems having "Adex Hydroflex VB"/"Adex Hydroflex WO"/"Adex Hydroflex STD"/"Adex Hydroflex AD" as a water penetration barrier; "Adex Basecoat" as an adhesive and base coat; "Adex EPS-GD Board" as a Type 1 EPS insulation, 101 mm thick; "Adex Standard Mesh" with a minimum 150 g/m^2 and minimum of 64-mm mesh overlap; and "Adex Finish" as a finish coat conform to Article 3.1.5.5., Combustible Components for Exterior Walls, of Division B of the NBC 2010. For detailed information on the compliance of the above systems to the requirements of Article 3.1.5.5., please refer to Intertek Listing RS-ASI-DAFS 15-01, Project No. 100958464TOR-001B.

"Adex-RS" having "Adex Hydroflex VB"/"Adex Hydroflex WO"/"Adex Hydroflex STD"/"Adex Hydroflex AD" as a water penetration barrier; "Adex Basecoat" as an adhesive and base coat; "Adex EPS-GD Board" as a Type 1 EPS insulation, 127 mm thick; "Adex Standard Mesh" with a minimum 150 g/m^2 and minimum of 64-mm mesh overlap; and "Adex Finish" as a finish coat conform to the requirements of Clause 3.2.3.8.(1)(b), Protection of Exterior Building Face, of Division B of the NBC 2010. For detailed information on the compliance "Adex-RS" to the requirements of Clause 3.2.3.8.(1)(b), please refer to Intertek Listing RS-ASI-DAFS 15-01, Project No. 100958464TOR-001A.

Report Holder

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Canadian Construction Materials Centre

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CNRC construction

Centre canadien de matériaux de construction

9410/CCMC 12913-R
12-0125

26 March 2014

Mr. Rafaël Bao
President, CEO
Theka Industries
7911, avenue Marco-Polo
Montéal, QC
Canada
H1E 1N8

RE: **Confirmation of compliance of "*adexICI-RS*" EIFS to CAN/ULC –S 716.1**

Dear Mr. Bao:

This letter is to confirm that your "*adexICI-RS*" exterior insulation and finish systems (EIFS), as covered in CCMC Evaluation Report No. 12913-R are considered to be in full compliance with CAN/ULC-S716.1 "Exterior Insulation and Finish Systems (EIFS) – Materials and Systems".

The confirmed compliance will appear explicitly in the new version of your CCMC Evaluation Report 12913-R. The present letter could be used to substantiate evidence of conformance to CAN/ULC – S 716.1 pending finalizing the new version of the report.

We trust that this is to your satisfaction. In the meantime, we remain prepared to respond to any question with respect to the above. Should you require any further clarifications, please don't hesitate to contact the undersigned.

Yours truly,

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