

TECHNICAL REQUIREMENTS SCHEDULE

This Technical Requirements Schedule is a schedule to the Pro-Demnity Professional Liability Insurance Policy (the "**Policy**") and is deemed to be an integral part of the Policy.

A. Exterior above-grade wall systems

Any exterior above-grade wall systems designed and constructed in compliance with the requirements set forth below are deemed to meet the water ingress coverage requirements and are exempt from the *Ingress of Precipitation* exclusion in the **Policy**:

- a) Exterior above-grade walls or wall assemblies designed and constructed according to rainscreen principles that include both Primary and Secondary Planes of Protection (water barriers), provision for drying of the assembly, and an air space no less than 10mm deep behind the cladding with positive drainage to the exterior to protect the interior of the building from precipitation that penetrates the Primary Plane of Protection
- b) Windows designed and constructed according to rainscreen principles, inserted into a wall where they are fully supported at the perimeter, where all the components are specified and used in conformity with the structural and installation parameters of the relevant CSA and Canadian Government Specifications Board documents, or other standards referenced in the applicable building code;
- c) Glass and metal curtain wall systems that incorporate both Primary and Secondary Planes of Protection (water barriers) with provision for positive drainage to the exterior in a rainscreen design;
- d) Window Wall Systems used in buildings classified under Part 9 of the Ontario Building Code in force as of the date of construction that incorporate both Primary and Secondary Planes of Protection (water barriers) and ventilated air spaces with provision for positive drainage to the exterior in a rainscreen design;
- e) Pre-Engineered buildings or siding systems incorporating both Primary and Secondary Planes of Protection (water barriers) and provision for drainage to the exterior in a rainscreen design;
- f) Solid masonry or concrete walls, excluding precast concrete panels, where drying of the masonry or concrete is not adversely affected by any other exterior building material;
- g) Assemblies utilizing Precast Concrete panels designed and constructed in a drained system configuration designed and constructed according to rainscreen principles utilizing drained and vented two stage joints methodology and provision for drainage to the exterior of any precipitation that penetrates beyond the outer precast concrete layer or the outer primary weather seal.
- h) Precast Concrete "sandwich" panels designed and constructed according to rainscreen principles utilizing drained and vented two-stage joint methodology, comprising two separate layers of precast concrete, integral insulation, and provision for drainage to the exterior of any precipitation that penetrates beyond the outer precast concrete layer or the outer primary weather seal.

In addition, **We** will cover **You**, pay **Damages**, provide **You** with a defence or make supplementary payments for **Claim(s)** arising out of any **Claim** made against **You**, directly or indirectly arising out of or related to ingress of precipitation, resulting from, or in connection with **Your** design, selection, approval or acceptance of an exterior above-grade wall system utilizing Architectural Precast Concrete Panels or Window Wall Systems that are in buildings not classified under Part 9 of the Ontario Building Code in force as of the date of construction where all of the following conditions are satisfied:

B. with respect to Architectural Precast Concrete Exterior Wall Assemblies (Precast Assemblies):

- a) The Precast Assembly giving rise to a Claim includes as a minimum: drained and vented two stage joint methodology between precast concrete panels and at interfaces with fenestration products and other wall assemblies, an impervious exterior layer, an insulation layer, a continuous air barrier system, and a vapour control layer.
- b) The design, testing, and installation of the Precast Assembly and associated cladding components, insulation, air barrier, vapour control layer, precipitation management, panel anchorage, glazing systems, doors, through-wall penetrations, and the transitions to adjoining assemblies and materials (collectively the "Cladding Components"):
 - i) shall incorporate the recommendations of an Independent Building Envelope Consultant (IBEC) with experience with Precast Concrete claddings who has been specifically engaged as a member of the design team for this purpose on the project;
 - ii) the IBEC has reviewed and accepted **Your** design for the *Precast Assembly* for the specific project as complying with its recommendations respecting the building envelope design issues applicable to the specific project, including any required quality assurance and testing procedures; and
 - iii) **You** have taken reasonable steps to ensure that the *Precast Assembly* as installed on the project is in compliance with **Your** design.
- c) The design and installation of the Precast Assembly and the fenestration systems follows both the guidelines in the CPCI – Architectural Precast Concrete Walls – Best Practice Guide (2017), and the requirements in CSA A440.6:20, High Exposure Fenestration Installation, including critical barrier continuity at interfaces between wall panels and fenestration products.
- d) Joint seal design (materials and profiles) and installation follows seal manufacturers' requirements, ASTM C1193-16 Standard Guide for Use of Joint Sealants for liquid- applied sealants (when liquid sealants are used), the guidelines in CPCI – Architectural Precast Concrete Wall Best Practice Guide (2017), and the requirements in CSA A440.6:20.
- e) The manufacturer of the precast concrete panels supplied and installed for the project meets the requirements of the CPCQA Canadian Precast Concrete Quality Assurance Program as of the date of design and construction.
- f) The manufacturer of the precast concrete panels provides shop drawings for the Precast Assembly that have been specifically prepared for the project for review by the contractor, You, the IBEC, and the structural engineer engaged on the project, that have been prepared and sealed by a professional engineer retained by the precast manufacturer. These drawings

must include joint details that follow the guidelines as set out in the CPCI – Architectural Precast Concrete Walls – Best Practice Guide (2017), and the requirements in CSA A440.6:20.

- g) Prior to the commencement of Precast Assembly installation, the Constructor has submitted a Quality Assurance and Quality Control Procedure for the installation and testing of the joint seals that has been reviewed by You and the IBEC.
- h) A full-scale mock-up of the Precast Assembly designed for use on the project has been constructed to confirm constructability of the proposed assembly, and successfully field reviewed and field-tested respecting air leakage (qualitative or quantitative) and rainwater infiltration as determined, reviewed, and accepted by You and the IBEC.
- i) A representative sample of the completed Precast Assembly and interfaces with other Cladding Components has been successfully tested in situ respecting water infiltration to the satisfaction of the IBEC. This is in addition to condition B. h) above.
- j) The variations in service life and maintenance requirements for components of the Precast Assembly including precast concrete panels, anchorage and joint seals are reviewed in communication in writing between You and Your client, in accordance with the requirements of OBC Division B, Sentence 5.1.4.2.(3) and / or the principles of CSA S478-19 Durability in Buildings, whichever applies at the time of design, and incorporated in a Durability Plan for the Precast Assembly.
- k) The manufacturer of the precast concrete panels, the sealant manufacturer and the sealant installer provide the project owner with a maintenance manual specifically prepared for the project respecting the Precast Assembly and its components. Content and adequacy of the content of the maintenance manual shall be subject to review and approval by You and the IBEC.
- l) The entire Precast Assembly and associated Cladding Components as constructed and installed including seals to adjoining assemblies and materials is warranted respecting air leakage and water ingress for a period not less than five (5) years following substantial performance of the project, or registration in the case of condominium, whichever comes later. The warranty is to cover all the labour and materials required to repair or replace the Precast Assembly and associated Cladding Components should water ingress beyond the inner seals occur during the warranty period.

C. with respect to Window Wall Systems:

- a) The Window Wall System giving rise to a Claim includes primary and secondary planes of protection (water barriers) and ventilated air spaces with provision for positive drainage to the exterior in a rainscreen design.
- b) The design, testing and installation of the Window Wall System including framing members, glazing units, anchorage, slab edge covers, opening units, doors, and transitions and seals to the adjoining assemblies and materials:
 - i) shall incorporate the recommendations of an Independent Building Envelope Consultant (IBEC) (architect, or professional engineer), having expertise with the design and installation of Window Wall Systems who has been specifically engaged as a member of the design team for this purpose on the project;

- ii) the IBEC has reviewed and accepted **Your** design for the Window Wall System for the specific project;
 - iii) **You** have taken reasonable steps to ensure that the Window Wall System as installed on the project is in compliance with **Your** design; and
 - iv) the installation meets the requirements of CSA A440.6. High Exposure Fenestration Installation.
- c) The manufacturer of the Window Wall System provides shop drawings for the Window Wall System to be used on the specific project in compliance with CSA A440.6 High Exposure Fenestration Installation, including transitions and seals to adjoining assemblies and materials, for review by You and the IBEC; and the final shop drawings have been sealed by a professional engineer retained by the manufacturer respecting structural integrity, air barrier continuity and water ingress management.
- d) The manufacturer of the Window Wall System provides You and the IBEC with test reports for air leakage and water penetration in compliance with the requirements of CSA A440.6, High Exposure Fenestration Installation or other standard applicable at the time and place of construction, and both You and the IBEC have each reviewed and accepted these reports as appropriate/representative for the specific project.
- e) A full-scale mock-up of the specific or representative Window Wall System for the project, including framing members, glazing units, anchorage, slab edge covers, opening units, doors, and transitions, including seals to adjoining assemblies and materials, has been successfully field reviewed and field tested in accordance with CSA A440.6 High Exposure Fenestration Installation as determined, reviewed, and accepted by the IBEC.
- f) The completed Window Wall System on the project has been successfully tested in situ respecting air and water infiltration to the satisfaction of the IBEC and in accordance with CSA A440.6 High Exposure Fenestration Installation. This is in addition to requirement C. e) above.
- g) The entire Window Wall System as designed, constructed, and installed, including transitions and seals to adjoining assemblies and materials, is warranted respecting air leakage and water ingress by the Window Wall manufacturer for a period of not less than five (5) years following substantial performance or registration in the case of a condominium, whichever comes later. The warranty provided is to cover all the labour and materials required to repair or replace the Window Wall System should water ingress occur during the warranty period.

Definitions and Interpretation

For the purposes of this Schedule:

- i) "**CPCI**" means the Canadian Precast/Prestressed Concrete Institute;
- ii) "**CSA**" means the CSA Group;
- iii) "**Curtain Wall System**" A curtain wall is considered to be a continuous wall cladding assembly (which may include fenestration and opaque portions) that is hung away from the edge of the primary floor structure. Curtain wall assemblies do not generally support vertical loads other than their own weight. Anchorage is typically provided by anchors that connect back to the floor structure. Curtain wall assemblies can be either "stick built"

- meaning each main unit is assembled on-site, or a "unitized" system, meaning factory-assembled main units are installed and connected together on-site.
- iv) **"Designed and constructed according to Rainscreen principles"** means provision of both Primary and Secondary Planes of Protection (water barriers), provision for drying of the assembly, and an air space no less than 10mm deep behind the cladding with positive drainage to the exterior to protect the interior of the building from precipitation that penetrates the Primary Plane of Protection;
 - v) **"Drained and vented two-stage joint technology"** means a joint comprising an outer primary exposed weather seal, a defined drainage channel behind the primary weather seal, a secondary inner protected seal and air barrier, with provision for drainage to the exterior of any water that penetrates the outer seal via periodic drainage and vent openings in the outer primary weather seal;
 - vi) **"IBEC"** means an Independent Building Envelope Consultant which is an architect holding a Certificate of Practice, or professional engineer holding a Certificate of Authorization with relevant Precast Concrete building envelope or Window Wall experience that:
 - i. has demonstrated experience with the use of Precast Concrete Wall Assemblies or Window Wall Assemblies respectively;
 - ii. maintains professional liability insurance with claim limits not less than the limits maintained by You, and in no case less than \$1,000,000 per claim, \$2,000,000 in the aggregate;
 - iii. is engaged as a member of the design team for the project, either by the client or by **You**;
 - iv. is not a principal or employee of **Your** practice, unless:
 - a. the principal or employee of **Your** practice acting as the IBEC on the project holds a recognized Building Science Specialist designation (BSS) administered by the Building Science Specialist Board of Canada (BSSB);
 - b. they were not the principal or employee of **Your** practice who prepared **Your** design; and
 - c. independent documentation of their provision of recommendations and review of **Your** design within the meaning of clauses B., b), i) and ii) and C., b), i) and ii) above, is maintained in this schedule; and
 - v. is not a principal or employee of an entity providing Tarion Registrar Bulletin 19 services on the project;
 - vii) **"Ontario Building Code"** means the *Building Code*, O. Reg. 332/12, as may be amended, extended or modified from time-to-time;
 - viii) **"Precast Concrete"** means a construction product produced by casting concrete in a reusable mold or "form" which is then cured in a controlled environment, transported to the construction site and maneuvered into place; examples include precast beams, and wall panels for tilt up construction;

- ix) **"Precast Assembly"** means Architectural Precast Concrete Exterior Wall Assemblies utilizing precast concrete panels;
- x) **"Primary and Secondary Planes of Protection"** shall, regardless of the building code classification of the project, have the meaning given to "First and Second Planes of Protection" respectively by sections, 9.27.2.3 (1)(a), (1)(b) and (1)(c) of the Ontario Building Code;
- xi) **"Solid masonry or concrete walls"** shall not include Insulated Concrete Form (ICF) systems or Precast Concrete panels; and
- xii) **"Window Wall Systems"** means a window wall considered to be a wall cladding assembly (which may include fenestration and opaque portions) that spans from the top of a primary floor structure to the underside of the next higher primary floor structure. Window wall assemblies do not generally support vertical loads other than their own weight. Primary provision for anchorage occurs at head and sill connections with the adjoining floor structure. Window wall assemblies may include separate or integral floor edge covers.

Any reference to a statute, regulation, or standard referenced in a building code shall be to such statute, regulation, or standard referenced in a building code, as may be amended, modified, or extended.