# General

**RoD SPEC NOTE:** Use this Section to specify requirements that are common to most or all technical Specifications sections, thus negating the need to repeat these types of requirements in technical Sections.

## Summary

* + 1. Except where otherwise specified in technical trade Sections or otherwise indicated on Drawings, comply with requirements of this Section.
    2. The Work of this Section includes, but is not limited to the following:
       1. Concealment;
       2. Fastenings;
       3. Location of fixtures;
       4. Examination;
       5. Structural alignment reports;
       6. Protection of completed Work;
       7. Installation tolerances;
       8. Starting and adjusting;
       9. Remedial and defective Work;
       10. Cold weather working.

## Manufacturer’s instructions

* + 1. Install, erect, or apply Products in strict accordance with manufacturer's instructions.
    2. Notify Consultant, in writing, of conflicts between Contract Documents and manufacturer’s instructions where, in Contractor’s opinion, conformance with Contract Documents instead of the manufacturer’s instructions may be detrimental to the Work or may jeopardize the manufacturer’s warranty.
    3. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
    4. Provide manufacturer’s representatives with access to the Work at all times. Render assistance and facilities for such access so that manufacturer’s representatives may properly perform their responsibilities.

## Concealment

* + 1. Conceal pipes, ducts, and wiring in floors, walls and ceilings in finished areas:
       1. After review by Consultant and authority having jurisdiction, and
       2. Where locations differ from those shown on Drawings, after recording actual locations on as-built drawings.
    2. Provide incidental furring or other enclosures as required.
    3. Notify Consultant in writing of interferences before installation.

## Fastenings - general

* + 1. Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials.
    2. Prevent electrolytic action and corrosion between dissimilar metals and materials by using suitable non-metallic strips, washers, sleeves, or other permanent separators to avoid direct contact.
    3. Use non-corrosive fasteners and anchors for securing exterior Work and in spaces where high humidity levels are anticipated.
    4. Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.
    5. Keep exposed fastenings to a minimum, spaced evenly, install neatly, and in an organized pattern. Provide exposed metal fastenings of same material, texture, colour and finish as metal on which they occur.
    6. Do not use fastenings or fastening methods that may cause spalling or cracking of material to which anchorage is made.
    7. Use only approved driven fasteners.
    8. At fastenings that penetrate metal roof deck, ensure that penetrations are sealed airtight with approved sealant.
    9. Where installation of devices is in Work of other Sections, deliver devices in ample time for installation, locate devices for other Sections and co-operate with other Sections as they require.

## Fastenings ‑ equipment

* + 1. Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
       1. Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
       2. Bolts may not project more than one diameter beyond nuts.
       3. Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.
          1. Anchors for systems, pipes, conduits and equipment, hangers and support systems, and connections to building structure shall be the responsibility of the installing Subcontractor.
          2. Retain a professional engineer registered in Province of the Work to review/design anchor installation to ensure that all anchors and attachments to the structure are suitable for the purposes intended.
       4. Submit proof of load carrying capacity for standard anchors and hanger supports used in construction when requested by the Consultant or Contractor.
    2. Do not use powder actuated tools on site without prior written authorization from Consultant. Comply with requirements of the local Occupational Health and Safety Act, general safety regulations when powder actuated tools are used.

## Location of fixtures, outlets and devices

* + 1. Consider location of fixtures, outlets, and devices indicated on Drawings as approximate.
    2. Locate fixtures, outlets, and devices to provide minimum interference, maximum usable space, and as required to meet safety, access, maintenance, acoustic, and regulatory, including barrier free, requirements.
    3. Promptly notify Consultant in writing of conflicting installation requirements for fixtures, outlets, and devices. If requested, indicate proposed locations and obtain approval for actual locations.
    4. Electrical conduit (and other piping) shall not be run on top of roof decks or within concrete toppings of floors, except where specifically shown.

## Examination

* + 1. Examine site and ensure that each trade performing Work related to site conditions has examined it, so that all are fully informed on all particulars which affect the Project Work (thereon and at the place of the building, and in order that construction proceeds competently and expeditiously).
    2. Ensure by examination that all physical features at the Work, and working restrictions and limitations which exist are known, and are reported to the Owner’s Representative and Consultant upon discovery, so that the Owner is not restricted in their use of the premises.
    3. Previously completed Work:
       1. Where dimensions are required for proper fabrication, verify dimensions of completed Work in place before fabrication and installation of Work to be incorporated with it.
       2. Verify that previously executed Work and surfaces are satisfactory for installation or application, or both, and that performance of subsequent Work will not be adversely affected.
       3. Ensure that Work installed in an unsatisfactory manner is rectified by those responsible for its installation before further Work proceeds.
       4. Commencement of Work will constitute acceptance of site conditions and previously executed Work as satisfactory.
       5. Defective Work resulting from application to, or installation on, or incorporation with, unsatisfactory previous Work will be considered the responsibility of those performing the later Work.
    4. Construction measurements:
       1. Where new Work is affected by existing Work already completed, take site dimensions of existing Work before commencing incorporation of new Work.
       2. Before commencing installation of Work, verify that its layout is accurate in accordance with intent of Drawings, and that positions, levels, and clearances to adjacent Work are maintained.
       3. Before commencing Work, verify that all clearances required by authorities having jurisdiction can be maintained.
       4. If Work is installed in wrong location, rectify it before construction continues.
       5. Where dimensions are not available before fabrication commences, the dimensions required shall be agreed upon between the trades concerned.
       6. All measurements shall be SI (metric), with Imperial measurements in brackets.
    5. Installation:
       1. Locate Work and components of the Work accurately, in correct alignment and elevation.
       2. Make vertical Work plumb and make horizontal Work level.
       3. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
       4. Conceal pipes, ducts, and wiring in finished areas, unless indicated specifically as being exposed as architectural features:
          1. In rooms or areas having no finished ceiling; pipes, conduits and ducts will generally be left exposed, except where indicated on the Mechanical Drawings as built into walls or behind furring. Electrical conduit and fittings shall be built into walls.
          2. In the event of conflicts occurring between equipment shown in concealed areas, the following order of priority shall be observed:

Structural elements;

Plumbing drains;

Sprinkler piping;

Ductwork;

Heating piping;

Plumbing piping;

Electrical conduit.

* + - * 1. Maintain minimum headroom clearance of 2440mm (8’) in spaces without a suspended ceiling.
      1. Underside of structure: Underside of structure is defined to mean the underside of roof decking or floor slab and as follows:
         1. Horizontal structures supporting roof decking and floor slab are required to penetrate vertical elements and partitions.
         2. Provide sufficient clearance around penetrating components; such as beams, joists, purlins and similar horizontal components to account for structural deflection and packing of ancillary materials required for the following:

Fire rating;

Smoke separation;

Acoustic separation;

Environmental separation;

Other conditions requiring separation between two adjacent spaces.

* + 1. Install Products in accordance with manufacturer’s written instructions and recommendations; notify Consultant of any modifications or adjustments to installation requirements where project conditions differ from manufacturer’s written instructions.
    2. Install Products at the time and under conditions that will ensure the best possible results. Maintain conditions required for Product performance until Substantial Performance.
    3. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
    4. Do not use tools or equipment that produce harmful noise levels unless appropriate Personal Protection Equipment and safety instructions to personnel have been provided, as indicated in Section 01 35 43.
       1. Notify adjacent properties where tools or equipment having harmful noise levels will be in use.
       2. Schedule use of equipment having harmful noise levels at a time that will cause the least disturbance to adjacent properties.
    5. Be responsible for obtaining manufacturer’s literature and for correct roughing‑in and hook‑up of all equipment, fixtures and appliances, as required.
    6. Inform the Consultant of impending installation of fixtures, switches and attachments and confirm actual locations prior to final installation:
       1. Location of fixtures, apparatus or outlets shown or specified shall be considered as approximate only. The actual location shall be as directed and required to suit conditions at the time of installation as defined by Consultant.
       2. Locations noted on Drawings are diagrammatic only.
       3. Note furring requirements and limitations shown on the Drawings.
       4. Make allowance for the possibility that indications and locations shown on mechanical and electrical Drawings are diagrammatic.
       5. Inform the Consultant before any masonry, concrete forming, or installation Work is carried out where the Contractor determines that furring allowances described above cannot be obtained.
    7. Inform the Consultant before proceeding with the Work where the location of holes in the structure could affect the nature or strength of the structure.

**RoD SPEC NOTE:** Delete the following article if Structural Alignment Reports are not required on this Project.

## Structural alignment reports

* + 1. Have a qualified instrument technician check alignment of perimeter slab edge, and alignment of concrete cores as Work progresses.
    2. Check alignment at each floor and submit a written report, under signature of instrument technician and Contractor, stating conditions at that floor, prior to concrete pour of next floor.
    3. State in reports variations from plumb, from horizontal alignment, and from elevations (level) shown in Contract Documents. Report on variations affecting structural steel connections and connections of components in building envelope.
    4. Include a listing of data submitted in previous reports.
    5. Make particular mention in each report to alignment and dimensions of elevator hoist ways, and to exterior faces of core wall construction which will provide substrate for applied finishes in public areas.
    6. Correct deviations from allowable tolerances as directed by Consultant.
    7. Submit reports to Consultant and to Subcontractors affected by concrete Work, including but not limited to Subcontractors for following trades as applicable, structural steel, architectural precast concrete cladding, curtain wall, elevator, plastering and/or gypsum board.

## Protection of completed Work and Work in progress

* + 1. Adequately protect the Work at all stages and maintain the protection until the Work is completed. Remove and replace any Work and materials damaged that cannot be satisfactorily repaired at no extra cost.
    2. Promptly remove, replace, clean, or repair, as directed by Consultant, Work damaged as a result of inadequate protection.
    3. Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the safety or integrity of the Work.
    4. Erect suitable safety barriers as required for security and to make the site safe for pedestrians.
    5. Supply and erect temporary hoarding and barricades where required. Provide a temporary hoarding plan.
    6. Remove the barriers from the site at the completion of the Work or when directed by the Owner.
    7. Motorized equipment shall be powered electrically or by battery only. Internal combustion powered equipment shall not be permitted within construction areas unless approved in writing by the Owner.

## Tolerances for installation of Work

* + 1. Unless acceptable tolerances are otherwise specified in a Section or a reference standard or are otherwise required for proper functioning of equipment, site services, and mechanical and electrical systems:
       1. "plumb and level" shall mean plumb or level within 3mm in 3048mm (1/8" in 10').
       2. "square" shall mean not in excess of 10 seconds lesser or greater than 90 degrees.
       3. "straight" shall mean within 3mm (1/8") under a 3048mm (10') long straight edge.

## Starting and adjusting

* + 1. Coordinate requirements for starting and adjusting equipment with requirements of Mechanical and Electrical Divisions. Implement a starting and adjusting program generally consisting of, but not limited to, the following:
       1. Start equipment and operating components to confirm proper operation;
       2. Remove malfunctioning units, replace with new units, and retest;
       3. Adjust operating components for proper operation without binding;
       4. Adjust equipment for proper operation;
       5. Test each piece of equipment to verify proper operation;
       6. Test and adjust controls and safeties;
       7. Replace damaged and malfunctioning controls and equipment.

## Remedial Work

* + 1. Notify Consultant of, and perform remedial Work required to, repair or replace defective or unacceptable Work.
    2. Ensure that properly qualified workers perform remedial Work. Coordinate adjacent affected Work as required.

## Defective Work

* + 1. Where factual evidence exists that defective workmanship has occurred or that Work has been carried out incorporating defective materials, the Consultant may have tests, inspections or surveys performed, analytical calculation of structural strength made, and the like, in order to help determine whether the Work must be replaced.
    2. Testing, retesting, inspections or surveys carried out under these circumstances will be made at the Contractor's expense, regardless of their results, which may be such that, in the Consultant's opinion, the Work may be acceptable.
    3. All testing shall be conducted in accordance with the requirements of the Consultant.
    4. Defective Work discovered before expiration of the warranty period specified in the General Conditions of the Contract, as may be extended in this Specification, will be rejected, whether or not is has been previously inspected.
    5. If rejected, defective materials or Work incorporating defective materials or workmanship shall be promptly removed and replaced or repaired to the satisfaction of the Consultant, at no expense to the Owner.

## Work on public property

* + 1. Protect adjacent private and public property from damage and, if damaged, make good immediately. Make good private property to match in all details its original condition in material and finishes as approved, and public property in accordance with requirements specified and/or instructed by its Owner or as directed by the Consultant.
    2. Include curb cuts and making good of existing property to provide fully paved and finished approaches to requirements of Authorities having Jurisdiction.
    3. Include making good of existing curbs, walks, paving and soft landscaping on adjacent property.

**RoD SPEC NOTE:** The following article on Cold Weather Construction is required when outdoor work is required in **winter months**. Colder weather will result in slower production, additional expenses for temporary heating and heating of any concrete delivered to the site.

**RoD SPEC NOTE:** Delete the following article when Cold Weather Working is not part of this Project.

## Cold weather working

* + 1. Particular attention is drawn to the requirement that the Contractor shall commence Work immediately the Contract is awarded and shall continue full scale operations throughout the winter months and thereafter until the Work is completed and accepted by the Consultant.
    2. It is understood that the Contract Price includes sufficient funds for the provisions of temporary heating, temporary shelters and all other necessary cold weather measures to enable all trades to proceed without delay regardless of weather.

# Products – not used

# Execution – not used

End of section