

PART - 1 GENERAL

1.1 SUMMARY

- .1 Section Includes: Labour, Products, equipment and services necessary to complete the work of this Section.

1.2 RELATED REQUIREMENTS

- .1 Read and comply with Conditions of the Contract and Division 01 - General Requirements.

1.3 ACTION SUBMITTALS

- .1 Product Data: Submit product data for each type of product.
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for gypsum board assemblies and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Fire-rated assembly listings:
 - .1 Submit fire-rated assembly listings for each required fire resistance rated assembly for work of this section.
- .3 Samples: For the following products:
 - .1 Trim Accessories: Full size sample in 300 mm long length for each trim accessory indicated.
- .4 Engineered Shop drawings:
 - .1 Submit engineered shop drawings and associated design calculations bearing the stamp and signature of the registered professional engineer, licensed to practice in the Province of Ontario, responsible for the design of this Section.
 - .2 Engineered submittals shall include associated design calculations and load diagrams, complete with references to codes and standards used in such calculations, supporting the proposed design represented by the submittal. Prepare calculations in a clear and comprehensive manner so that they can be properly reviewed.
 - .3 Submit Engineered Shop drawings including but not limited to the following elements:
 - .1 Interior metal support systems;
 - .2 Horizontal framing of ceilings and bulkheads;
- .5 Shop Drawings for cove base/solid surface and wall base: Submit the shop drawings indicating the following:
 - .1 Special conditions affecting installation;
 - .2 Locations of transitions and intersections between different materials;
 - .3 Widths, details, and locations of joints in finished surfaces;
 - .4 Locations and configuration of inserts and edging details.

1.4 **ADMINISTRATIVE REQUIREMENTS**

- .1 Pre-installation meeting:
 - .1 Two (2) weeks prior to commencing work of this Section, arrange for manufacturer's technical representative to visit the site and review preparatory and installation procedures to be followed, conditions under which the work will be done, and inspect the surfaces to receive the work of this Section.
 - .2 Establish a procedure to maintain optimum working conditions and to coordinate this work with related and adjacent work.
 - .3 Review products, conditions, and other performance requirements.
 - .4 Advise the Consultant of the date and time of the meeting.

1.5 **QUALITY ASSURANCE**

- .1 Installer Qualifications: Subcontractor executing the work of this section shall have a minimum of 10 years continuous experience in successful installation of work of type and quality indicated and specified.
- .2 Install work level to tolerance of 3 mm in 3000 mm.
- .3 Select studs with maximum deflection of L/360 at lateral force of 240 Pa for maximum heights indicated.
- .4 Fire test response characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- .5 Sound transmission characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by a qualified independent testing agency.

1.6 **ENVIRONMENTAL REQUIREMENTS**

- .1 When the outdoor temperature is less than 13°C ensure that heat is introduced in sufficient time, before work commences, to bring surrounding materials up to these temperatures; and maintained until materials installed by this Section have cured.
- .2 Do not install paper-faced gypsum panels until installation areas are fully enclosed and conditioned.
- .3 Maintain temperature between 10 degree C and 21 degree C both day and night, 24 hours before, during and after entire gypsum board joint finishing and until the permanent heating system is in operation or the building is occupied.
- .4 Do not install work in any area unless satisfied that work in place has dried out, and that no further installation of damp materials is contemplated.
- .5 Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - .1 Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - .2 Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- .2 Store materials on the job site in their original packaging until ready for actual use.
- .3 Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.
- .4 Handle gypsum products with care to avoid damage.
- .5 Do not store joint compounds for extended periods, as they are subject to aging.

PART - 2 PRODUCTS

2.1 PERFORMANCE/DESIGN CRITERIA

- .1 Single source responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.
- .2 Fire resistance rating: Where gypsum board systems with fire resistance ratings are indicated or required, provide materials and installations that are identical with those of applicable assemblies tested by fire testing laboratories acceptable to authorities having jurisdiction.
- .3 Follow applicable requirements of ASTM C754 for installation of steel framing.
- .4 Design system members to withstand own dead load, super-imposed dead loads, to maximum allowable deflection of L/240, without permanent deformation.
- .5 Seismic Bracing: Provide in accordance with OBC requirements for the project location and building Importance Category.
- .6 Sheet metal thicknesses indicated herein pertains to the "minimum base steel thickness exclusive of coating".

2.2 MATERIALS

- .1 Gypsum board: ASTM C1396/C1396M, paper faced, regular and fire rated Type X core, 1200 mm wide x maximum practical length, ends square cut, square edged base layer and taper edged face layer, thickness as indicated.
- .2 Moisture Resistant (Water/mold resistant) Gypsum Board:
 - .1 High-performance interior panels, with non-combustible water and mould-resistant core encased in a moisture-resistant fiberglass mat on both sides, with tapered long edges, Regular and Type X as required, mould-resistant with a rating of 10 when tested in accordance with ASTM D3273, thickness as indicated
 - .2 Product: CGC Sheetrock Brand Glass-Mat Panels Mold Tough, Regular and Type X as required, or equivalent.
- .3 Steel studs: ASTM C645, minimum 20 gauge studs (0.792 mm design thickness) base metal, hot-dipped galvanized to ASTM A653/A653M G60 (Z180) zinc coating, roll formed, widths as indicated, with knock-out holes for mechanical and electrical services.
- .4 Steel studs at door jambs and where indicated: 1.720 mm (0.0677") minimum thickness.

- .5 Floor and ceiling tracks (runners): ASTM C645, metal thickness to match studs, hot-dipped galvanized to ASTM A653/A653M G60 (Z180) zinc coating, roll formed, width to suit studs.
 - .1 For openings wider than 914 mm (36"), provide 0.836 mm (0.0329") minimum thickness for header.
- .6 Runner fasteners:
 - .1 To metal concrete inserts: Use 10 mm (3/8") Type S-12 Pan Head screws.
 - .2 To suspended ceilings: Use prefinished clips to match ceiling grid, as manufactured by CGC or approved equivalent.
- .7 Furring runners and channels: ASTM C645, minimum 0.46 mm base metal thickness, hot-dipped galvanized to ASTM A653/A653M G60 (Z180) zinc coating, roll formed.
- .8 Resilient steel furring channels: ASTM C645, 12.7 mm x 65 mm, 0.46 mm base metal thickness, hot-dipped galvanized to ASTM A653/A653M G60 (Z180) zinc coating, roll formed; Hat shaped resilient furring channel for direct wall furring where resilient channels are indicated.
- .9 Fasteners for furring members: Type and size recommended by furring manufacturer for substrate and application indicated.
- .10 Channel bridging: 1.37 mm bare steel thickness, 38 mm deep with minimum 12.7 mm wide flange.
- .11 Backing plate: Galvanized steel sheet for blocking and bracing in length and width indicated, minimum base metal 0.7 mm thick.
 - .1 Elimination of backer plates or direct attachment of accessories or equipment to studs will not be permitted.
- .12 Attachment clips: Sized to suit acoustical ceiling grid members, complete with screws and other fastening system, Revoe Clips by Revoe Manufacturing Ltd.
- .13 Hangers, tie wires, inserts, anchors: Manufacturer's standard.
- .14 Insulating strip: Rubberized, moisture resistant 3 mm thick foam strip, 12 mm wide, with self-sticking adhesive on one face, lengths as required.
- .15 Casing beads, corner beads: 0.48 mm hot dipped galvanized steel, perforated flanges, designed to be concealed with joint compound; one piece length per location.
- .16 Reveal trims: Extruded 6063-T5 aluminum, designed to be concealed with joint compound, maximum lengths, reveal width and depth as indicated, Final Forms I 500 Series by Gordon Inc. or other approved equivalents.
- .17 Sealants: as specified in Section 07 92 00.
- .18 Joint and laminating compounds: to ASTM C475, as recommended by gypsum board and tile backer board manufacturer, high bond, low shrinkage and asbestos-free.
- .19 Joint tape: 50 mm wide reinforced tape.
- .20 Acoustical insulation (Sound Attenuation Batts): CAN/ULC-S702, mineral (glass and rock wool) fibre, flame spread and smoke developed in conformance with OBC requirements and other authorities having jurisdiction in accordance with CAN/ULC-S102. Non-combustible in accordance with requirements of CAN/ULC-S114. Sufficient thickness to meet required STC rating for sound-rated partitions and of width to suit metal framing spacing and other miscellaneous spacings.

- .21 Acoustic putty pads: asbestos free gypsum based synthetic rubber moldable putty pad, 177.8 mm x 177.8 mm x 3 mm, non-conductive, of 1.6 kg/l density, tested to UL 263, in red colour, to match Hilti CP 617L Firestop Putty Pad by Hilti (Canada) Corp., for covering electrical boxes in acoustic partitions.
- .22 Access Doors and Panels:
 - .1 Product: supplied under Mechanical and Electrical Divisions' specification.
 - .2 Installation: under this section 09 21 16.
- .23 Adjustable partition closure: spring loaded aluminum closure of extruded alloy 6063 T5, in clear anodized finish; Mullion/Mate Partition Closure by Gordon Interior Specialties Division, in required sizes for openings indicated.

PART - 3 EXECUTION

3.1 EXAMINATION

- .1 Examine areas and substrates including welded hollow-metal frames and framing for compliance with requirements and other conditions affecting performance.
- .2 Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged. Remove rejected panels from site and replace with undamaged panels at no additional cost to the Owner.
- .3 Do not proceed with installation until the building is completely enclosed and protected from exposure to the elements.
- .4 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION - GENERAL

- .1 Comply with ASTM C754 and ASTM C840, Standard Specification for Application and Finishing of Gypsum Board.

3.3 INSTALLATION - PARTITION AND WALL FRAMING

- .1 Align partition top and bottom tracks and secure by screws at 600 mm o.c. maximum.
- .2 Place studs vertically at 400 mm oc, unless otherwise noted, and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in top and bottom tracks.
- .3 Screw attach end studs to top and bottom tracks. Screw attach intermediate studs to bottom tracks. Secure intermediate studs to top tracks by crimping or by other means of fastening acceptable to Consultant.
- .4 Continuously cross brace steel studs at 1500 mm on center to provide rigid installation to manufacturer's instructions.
- .5 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs.
- .6 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using clips or other approved means of fastening placed alongside frame anchor clips.
- .7 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.

- .8 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .9 Provide stud, furring channel, and backing plates secured between studs for attachment of fixtures, electrical boxes, grab bars, washroom accessories, and other items. Comply with details indicated and with stud and gypsum board manufacturers' written recommendations.
- .10 Terminate partitions at ceiling height except where indicated otherwise.
- .11 Install continuous insulating strips to isolate studs from exterior window framing.
- .12 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .13 Apply two continuous beads of acoustical sealant at junctions of metal framing and structure, including bottom and top tracks, where partitions abut fixed building components. Fill junction completely and continuously from floor to ceiling, or to structure for full height partitions.
- .14 Acoustic putty pads: Apply acoustic putty pads to the exterior of electrical boxes in acoustic partitions, completely sealing pads against the stud within the stud cavity and fitting around conduit and cables, in accordance with manufacturer's recommendations.
- .15 Frame for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .16 Secure light lens support trims to substrate at 300 mm centers. Loose lay light lens on support trims.
- .17 Mechanically fasten resilient channels perpendicular to wall framing starting at 50 mm up from floor and end with 150 mm to the underside of structure at no more than 610 mm o.c. Install where indicated.

3.4 **INSTALLATION – ATTACHMENT CLIPS**

- .1 Place attachment clips over acoustic ceiling main/cross tee from top. Line up pre-drilled hole on clip with hole on main/cross tee and screw clip to main/cross tee with 12.7 mm wafer screw.
- .2 Screw through pre-drilled holes in attachment clip into top track of stud partition. Do not screw through ceiling grid.
- .3 Do not damage ceiling grid system during installation of these clips.

3.5 **INSTALLATION - WALL FURRING**

- .1 Space wall furring runners vertically at 600 mm o.c., and secure through alternate flanges of runners. Shim runners as required to present a true, plumb line for application of gypsum board.
- .2 Locate furrings not more than 50 mm away from all openings, interior corners, intersections, frames, jambs, control joints and the like.
- .3 At windows, doors or similar openings having returns, and around corners, install lengths of mitred and bent pieces of furring horizontally spaced approximately 600 mm o.c. Form mitres by cutting the flanges and bending the web. Do not cut web to form corners.
- .4 Mechanically fasten resilient channel perpendicular to wall framing starting at 50 mm up from floor and end within 150 mm to the underside of structure, at no more than 600 mm o.c. Install where indicated.

3.6 **INSTALLATION - SUSPENDED CEILING FRAMING**

- .1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C840 and in accordance with the engineered shop drawings.

- .2 Provide additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of light fixtures and diffusers.
- .3 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

3.7 **INSTALLATION - GYPSUM PANELS**

- .1 Do not apply gypsum panels until bucks, anchors, blocking, electrical and mechanical work are approved.
- .2 Apply gypsum panels to furring or framing using screw fasteners, at 300 mm oc., and at closer spacings as required for fire resistance rated assemblies. Space fasteners in tile baker boards a maximum of 200 mm o.c.
- .3 Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- .4 Install gypsum panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1.6 mm of open space between panels. Do not force into place.
- .5 Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- .6 Attach gypsum panels to framing provided at openings and cutouts.
- .7 Control Joints
 - .1 Prior to installation review exact locations of control joints with the Consultant. Install purpose made control joint metal trim at following locations:
 - .1 Where partition, wall, or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.
 - .2 Furring or partition abuts a structural element or dissimilar wall or ceiling.
 - .3 Ceiling abuts a structural element, column or dissimilar wall, partition, or other vertical penetration.
 - .4 Construction changes within a partition or ceiling.
 - .5 Partition or furring runs exceeding 9100 mm and total area between control joints exceeding 84 m²
 - .6 Partition and ceiling runs on column lines or at joints in ceiling runs.
 - .7 In interior ceilings without perimeter relief exceeding 9100 mm in either direction and total area between control joints exceeding 84 m²
 - .8 In interior ceilings with perimeter relief exceeding 15000 mm and total area between control joints exceeding 230 m²
 - .9 In exterior ceilings or soffits exceeding 9100 mm in either direction and total area between control joints exceeding 84 m²
 - .2 Install control joints full height floor to ceiling or door header to ceiling in partitions and furring runs.
 - .3 Install control joints from wall to wall in ceiling areas.

- .8 Cover both faces of steel stud partition framing with gypsum panels in concealed spaces.
 - .1 Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 0.7 sq.m. in area.
 - .2 Fit gypsum panels around ducts, pipes, and conduits.
 - .3 Where partitions intersect open joists and other structural members projecting below underside of slabs and decks, cut gypsum panels to fit profile formed by joists and other structural members; allow 6 mm to 10 mm wide joints to install sealant.
- .9 Gypsum board single layer application:
 - .1 On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 - .2 On partitions and walls, apply gypsum panels parallel to framing, unless otherwise indicated or required by fire resistance rated assembly, and minimize end joints.
 - .3 Stagger abutting end joints not less than one framing member in alternate courses of board.
- .10 Gypsum board multilayer application - ceilings: Apply gypsum board indicated for base layers before applying base layers on partitions and walls; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face layer joints one framing member, 400 mm minimum, from parallel base layer joints, unless otherwise indicated or required by fire resistance rated assembly.
- .11 Gypsum board multilayer application – partitions and walls: Apply gypsum board indicated for base layers and face layers parallel to framing with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
 - .1 Furring members: Apply base layer parallel to framing and face layer either vertically parallel or perpendicular to framing with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
- .12 Single layer fastening method: Fasten gypsum panels to supports with steel drill screws.
- .13 Multilayer fastening method: Fasten base layers with screws; fasten face layers with adhesive and supplementary fasteners, unless otherwise indicated or required by fire resistance rated assembly.
- .14 Laminating to substrate: Where gypsum panels are indicated as directly adhered to a substrate, comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.8 **INSTALLATION - ACOUSTICAL INSULATION**

- .1 Install acoustical insulation to partitions indicated. Provide continuous coverage between studs and run continuously from floor to ceiling, or to structure for full height partitions, over door frames and openings and around corners.
- .2 Install acoustical insulation within induction units where partitions meet window mullions.
- .3 Pack acoustical insulation around cut openings in gypsum board, behind outlet boxes around plumbing, heating or structural items passing through the system and at abutting walls.

- .4 Secure acoustical insulation to one interior face of gypsum board with adhesive or mechanical fasteners or by other approved means.
- .5 For partitions receiving acoustical insulation, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919, Standard Practice for Use of Sealants in Acoustical Applications, and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings

3.9 **INSTALLATION - FIRE RATED ASSEMBLIES**

- .1 Construct fire rated assemblies where indicated, to requirements of authorities having jurisdiction.

3.10 **INSTALLATION - ACCESSORIES**

- .1 Erect casing beads, corner beads straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured by screw fasteners. Fit corners accurately, free from rough edges.
- .2 Provide corner beads at external corners of gypsum board partitions and where indicated.
- .3 Provide casing beads at gypsum board terminations, at gypsum board wall/ceiling junctions, where gypsum board butts against surfaces having no trim concealing junction and where indicated.
- .4 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint. Provide continuous polyethylene dust barrier behind and across control joints.

3.11 **INSTALLATION - ACCESS PANELS**

- .1 Install access doors to electrical and mechanical fixtures specified in respective Sections.
- .2 Rigidly secure frames to furring or framing systems.

3.12 **INSTALLATION - TAPING AND FILLING**

- .1 Fill joints, casing beads, corner beads, screwholes and depressions on gypsum board surfaces exposed to view to provide smooth seamless surfaces and square neat corners.
- .2 Apply joint compounds and reinforcing tapes in accordance with manufacturer's specifications.
- .3 Fill joints and apply joint compounds by three-coat method. Apply cover coat 175 mm wide, level coat 250 mm wide, and skim coat 300 mm wide.
- .4 Embed reinforcing tape in a cover coat of joint compound. Apply level coat of joint compound when cover coat has dried. Apply skim coat of compound when level coat has dried.
- .5 Feather edges of compounds into surfaces of gypsum boards. After skim coat has dried for at least 24 hours sand to leave smooth for decoration. Do not sand paper face of gypsum board.
- .6 At internal corners: First fill gaps between boards with joint compound. Embed creased reinforcing tape into a thin coat of joint compound applied 50 mm wide at each side of corner. Apply cover coat. Apply skim coat to one side of joint, and when dry apply skim coat to other side.
- .7 At external corners: Fill to nose of corner bead with joint compound and sand smooth.

- .8 At screwheads and nailheads: Fill holes and depressions with a two coat application of joint compound and sand smooth.
- .9 Finish gypsum board joints above finished ceiling with tape and first coat of joint compound.

3.13 **EXISTING BASE BUILDING GYPSUM WALL PARTITIONS**

- .1 All existing Base Building gypsum wall partitions must be repaired, patched, taped, filled and sanded prior to receive new finishes.
- .2 Patching and Repair:
 - .1 Gypsum panel product patch must be mechanically secured; attachment with joint compound material only is not acceptable. The patching material should be cut from gypsum panel product of a type and thickness equal to the original materials so that the patching material is in the same geometric shape as, but slightly larger than, the damaged area. The damaged area is then further enlarged to match exactly the size of the patching material. Restore thermal insulation, if present.
 - .2 Metal runner track is secured to the inside edges of the damaged area. The patching material is screw attached to the exposed face of the runner track with fasteners a maximum of 8 in. (200 mm) apart. The patch should be treated with tape and joint compound to restore appearance to Level 5 gypsum board finish, fire resistance qualities, and acoustical performance.
 - .1 Apply skim coat of topping or all-purpose drying-type compound over the entire wall where patching and repair was performed.

3.14 **FINISHING**

- .1 Provide levels of gypsum board finish for locations as follows, in accordance with GA-214.
 - .1 Level 1: Ceiling plenum areas and concealed areas, except provide higher level of finish as required to comply with fire resistance ratings and acoustical ratings.
 - .2 Level 2: Gypsum board substrate at applied hard surfaces, except remove tool marks and ridges.
 - .3 Level 4: Exposed gypsum board surfaces where flat paints, light textures, or wallcoverings are to be applied.
 - .4 Level 5: Exposed gypsum board surfaces where paint Gloss Level 3 or higher is specified, indicated, scheduled, or required, for all glass scrim (fiberglass mat) interior gypsum boards, and for areas where critical lighting exists, including wall and ceiling areas abutting glazed assemblies, long hallways, and areas with large surface areas flooded with artificial or natural lighting.
- .2 Refer to Section 09 91 00 for paint Gloss Levels.

3.15 **INSTALLATION TOLERANCES**

- .1 Provide and install studs, framing, shimming, and furring to provide proper support for gypsum board to achieve the following installation tolerances:
 - .1 Do not exceed 3 mm (1/8") in 3 m (10') variation from plumb, level, and plane.
 - .2 Do not exceed 10 mm (3/8") from drawings locations.
 - .3 Do not exceed 1.5 mm (1/16") variation between planes of abutting edges or ends.
 - .4 Install each framing member so fastening surfaces vary not more than 3.2 mm (1/8") from the plane formed by faces of adjacent framing.

- .2 Suspended and furred ceilings:
 - .1 Level cross furring channels to maximum tolerance of 3 mm in 3 m (1/8" in 10 ft).
- .3 Installation tolerances gypsum board panels:
 - .1 Do not exceed 3 mm (1/8") in 3 m (10') variation from plumb, level, and plane in exposed surfaces, except at end joint between gypsum board panels.
 - .2 Do not exceed 10 mm (3/8") from indicated location.
 - .3 Do not exceed 1.5 mm (1/16") variation between planes of abutting edges or ends.
 - .4 Surface flatness shall not exceed 1.5 mm (1/16") within 305 mm (12") straight edge. For non-tapered-edge end joints between boards, measure flatness tolerance with end of straight end at centreline of joint.
- .4 Installation tolerances accessories:
 - .1 Alignment with board panels shall not exceed tolerances specified above.
 - .2 End joints shall be flush aligned to maximum offset of 0.5 mm (0.020").

3.16 **PROTECTION**

- .1 Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- .2 Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- .3 Remove and replace panels that are wet, moisture damaged, and mold damaged at no additional cost to the Owner.
 - .1 Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - .2 Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION