

PART 1 – GENERAL

- | | |
|--|---|
| 1.1
Range of works | None limitative list of works for this section : |
| | <ol style="list-style-type: none"> 1. The supply and installation and metal stud framing for walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010. 2. Coordination of engineering work to fix electromechanical elements in walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010. |
| 1.2
Related work | <ol style="list-style-type: none"> 1. Gypsum panels..... Section 09 21 16E 2. Acoustical tiles and panels Section 09 51 23E 3. Fire protection..... Division 21 4. Gaskets for recessed mechanical equipment Division 23 5. Gaskets for recessed lighting equipment Division 26 |
| 1.3
Reference standards | <ol style="list-style-type: none"> 1. ASTM C635-04, Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings. 2. ASTM C636-04, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels. 3. ASTM E 580-06, standard practice for application of ceiling suspension systems for acoustical tile and lay-in panels in areas requiring seismic restraint. |
| 1.4
Calculation criteria | <ol style="list-style-type: none"> 1. Maximum flexion: deflection of 1/360 over span, determined by flexion test prescribed in ASTM C635 standards. 2. Follow the manufacturer's recommendations with regard to the applicable seismic zone. (Category D of the IBC, for the purposes of submission). |
| 1.5
Technical data sheets and samples | <ol style="list-style-type: none"> 1. Data sheets and samples must be submitted according to section 01 33 00E – Submittal procedures. 2. Submit representative model of the suspension frame. 3. Each sample must show mounting and assembling details, wall anchoring, recessed equipment, interlocking method, finishing and soundproofing elements installation. 4. Each sample must carry product number referenced in current specifications. |
| 1.6
Scheduling | <ol style="list-style-type: none"> 1. Work carried out in two phases, see drawings limits. 2. Scheduling, see section 01 32 18E and directive Ministerial representative. 3. The place of work is within an occupied building. |
| 1.7
Guarantee | <ol style="list-style-type: none"> 1. Provide a certificate of guarantee, signed and issued on behalf of the Ministerial representative, stating that all the works in this section are warranted against defects for a period of five (5) years from the date of signature of the certificate of provisional |

acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

2.1

Seismic suspension system, IBC category D

1. Seismic suspension system: **RX type by ARMSTRONG**

Metal frame suspension superior strength, evaluated by ICC-ES (ESR-1308) according to ASTM C 636 and in accordance with ASTM E580-06 and Part 4 of the National Building Code of Canada 2010, suspended to the building structure and fixed to the walls with fasteners designed for this purpose.

Location and configuration of the ceiling: See drawings

Integrated electromechanical equipment: See engineering drawings

Dimensions and Levels: See drawings. Take and verify all dimensions and levels on site.

Materials: Non-limiting list

1. **7891:** Gauge hanger wire no.12, length of 3660 mm (1220 mm installation c/c, 2 ways);
2. **7891:** Perimeter wire installed at most 200mm from the wall, each spar;
3. **7803:** Hemmed angle molding ("L" 7/8) 22mm x 22mm x 3660mm;
4. **7869:** Inside/outside corner cover(for "L" 7/8);
5. **PRELUDE XL 15/16 TEE, white WH, 2 mils thick** (SUPERLOCK retaining clips);
 1. **RS7301:** main TEE 24mm x 43mm x L.R.;
 2. **XL7341:** secondary cross TEE 1220mm, 24mm x 43mm x L.R.;
 3. **XL7328:** secondary cross TEE 610mm, 24mm x 43mm x L.R.;
6. **BERC2:** Beam end retaining clip at each TEE, used at the four walls (spaced 20mm ends unfixed).
7. **LFB:** Lateral force spacer
8. **CT:** Seismic joints retaining clips (**for D, E et F category**)
9. **436:** Stabilizer retaining clips 38mm thick
10. **Other components** to complete the assembly according to the regulations.
2. Fabrication materials for framing elements: cold rolled steel commercial grade, galvanized.
3. Exposed suspension grid elements with T shaped tracks, painted in the workshop, matt satin finish; matrixed.
4. Main TEE with double web thickness surmounted by a rectangular pipe and provided, on the face side of a flange.
5. Secondary TEE surmounted by a tube rectangular core completed in tongues, type

CIMAISE
V/Réf. : A12-5.2.1
N/Réf : 09350-55

Suspension frame for acoustical ceilings

Section 09 22 27E
Page 3 de 6
March 31st 2013

"Quick-Release" for fixing the foolproof main tee, provided with a support base to tilting mismatch crossings.

6. Shroud: Annealed mild steel and galvanized wires.
7. Anchorages for shroud: As recommended by the manufacturer of the frames.
8. Accessories: sides, attachments, wire retaining clips, clips and molding ceiling wall joints, setback, in addition to the elements of the framework of suspension in accordance with manufacturer's recommendations framing.
9. Ajustable holding claw for fire resistant assemblies.
10. U shape supporting profiles: of 38 x 15 mm, galvanized steel 1.3 mm thick for circumventing bypass of the ventilation elements and others.

2.2 Other accessories exposed tee systems and molding possible

1. **Consult the manufacturer, validate regulatory requirements and provide all components required to complete the work in accordance with:**

Other possible materials: Non-limiting list

1. BERC: Beam end retaining clip joins main (IBC category C)
2. MB: Siesmic joint clip;
3. ESR4: Expansion sleeve;
4. ABSC: Air bar spacer clip;
5. DLCC: Direct load ceiling clip;
6. DW50LT et DW58LT: Transition clip with locking tabs;
7. EHDC50, EHDC58, EHDC75: Exterior hold down clip (drywall);
8. MBAC: Main beam adapter clip (drywall);
9. DW30C, DW45C, DW60C, DW90C: Angle clip (drywall);
10. RC1, RC2: Radius clip (drywall);
11. UPC: Universal partition clip 15/16;
12. 7327CA: Adapter mesh (for change of direction);
13. UTC: up tight clip (to attach to wood joist "C" of 38mm);
14. CBS4, CBS6, CBS8, CBS10, CBS12: Channel beam splice (100 to 305mm);
15. CBS2006, CBS2008: Channel main beam splice with square edge;
16. ES4, ES49: Expansion sleeve for rails 15/16 or 9/16;
17. GCWA: Grip clip wall attachment;
18. C1430: Variable placement hook clip;
19. WS12: Hanger wire splice, gage 12;
20. 7861, 7873: Shadow molding, inside corners;

CIMAISE
V/Réf. : A12-5.2.1
N/Réf : 09350-55

Suspension frame for acoustical ceilings

Section 09 22 27E
Page 4 de 6
March 31st 2013

21. 7862, 7873: Shadow molding, outside corners;
22. 7863, 7865: Outside corner cover;
23. 7864, 7866: Radius bullnose corner cover;
24. 7867: Field cut corner cover;
25. LFC: Light fixture clip;
26. 414 and/or UHDC: Universal hold down clip;
27. DWC: Drywall clip;
28. CHDC: Hold down clip;
29. XTAC: Cross Tee Adapter Clip;
30. MBSC2: Spacing clip for main beam (50mm);
31. 7425, 7445: Stabilizer bar of 610mm and 1220mm length;
32. GC3W: accessory grip clip 3-way;
33. SH12: Hanger bar, of knockouts 305mm c/c;
34. Aircraft cable stainless steel dia. appropriate (if visible);
35. Compression posts robust minimum strength of 430 lbs (195 kg) and of appropriate dimensions;
36. 7800 à 7813: Other hemmed angle moldings ("L");
37. 7880 à 7898: Flexible angle molding ("L" for minimum radius of 1830mm);
38. 7841 à 7843: Slip tile molding bonded ("J");
39. 7853, 7856: "F" molding for drywall 13mm or 16mm;
40. 7823, 7871, 7873, 7874, 7875, etc.: Other hemmed shadow moldings;
41. 7814, 7816, 7818: Edge molding 100mm, 150mm or 200mm height;
42. 7830, 7831, 7834, 7835: Profile molding "C";
43. 7857, 7858: Hemmed angle molding "inverse L";
44. 435: Stabilizer clip 19mm and 25mm thick;
45. 7870: Spring border clip;
46. 440: Border clip Vector;
47. 442: Vector clip against earthquakes;
48. And others.

PART 3 – EXECUTION

3.1 Mounting

1. Build the backbone of the suspended ceiling according to the requirements of ASTM C636 and ASTM E580 and the National Building Code of Canada 2010; according to the strict guidelines of Armstrong on the seismic suspension

system prescribed and indicated in this specification. The most restrictive conditions apply.

2. Do not start ceiling's frame installation before Ministerial representative's verification and approval of hidden installations in ceiling gap.
3. Hangers must be fasten to upper structure of the building by using appropriate robust fixation method approved by Ministerial representative.
4. Hangers must be attached to main beam center. All wire ties are to be at least three tight turns around itself within 75mm according to ASTM C636.
5. Hangers must be installed at 1200mm C/C maximum; hangers must be installed within 200mm of main tees ends.
6. If aluminum suspension system is installed, hangers must be installed at 900mm C/C maximum to withstand average charge according ASTM C635.
7. If fireproof suspension system is installed, hangers must be installed at 75mm maximum on both sides of expansion joint.
8. Install moldings perimeter that delineate the exact height of the ceiling.
9. Attach the "L" molding on the wall at 300mm c / c maximum and screw facing each beam (at each intersection of a T) as required by the standard.
10. Have the framework in the reflected ceiling plan.
11. On the ceiling, draw two perpendicular medial to ensure the symmetry of the system at the periphery of the room.
12. Dispose of the frame so that the width of the edge elements is not less than 50% of the standard width of the elements.
13. **Use fasteners BERC2 at each rail on all the walls. Use LFB lateral force spacers, CT and 436 clips required. Secure compliance with the requirements of the standards and instructions Armstrong.**
14. Effectively coordinate the provision of framing with the location of other elements mounted in the ceiling.
15. Once completed, the framework must be able to withstand any additional charges, such as those lighting fixtures, diffusers, grilles and speakers.
16. Once installed, ceiling grid must withstand all extra weight, e.g. lighting devices, diffusers, grilles and speakers. For each lighting device and diffuser, provide extra hangers to be installed at 152mm maximum from each corner and at 610mm maximum on perimeter.
17. Cross tee must be attached to main beams to get rigid assembly.
18. Install perimeter trim around lighting devices, diffusers and speakers openings, as well as at ceiling level changes.
19. Finished ceiling edges must be set squared along walls and must not admit a gap greater than 1:1000.
20. Dilation joints (when applicable).

CIMAISE
V/Réf. : A12-5.2.1
N/Réf : 09350-55

Suspension frame for acoustical ceilings

Section 09 22 27E
Page 6 de 6
March 31st 2013

1. All along building's dilation joints, install in parallel, at a distance of 25mm from each other, two main tee beams. Acoustical panels to be install between those trims; width should be 25% less than of space between tees;
2. Metal Z bars must be installed between main beams on both sides of dilation joint. Bars must be trimmed to allow a 25mm gap, more or less, and ensure joint occlusion. Z bars must be finished so they look the same as adjacent metal trims. Metal plate must be installed behind butt joints.

3.2 Minor jobs and general inspection

1. Review all system connections, all joints of materials, to ensure and provide earthquake resistant construction as required and without blemish.
2. Check that the electromechanical equipment located in the ceilings are fixed to the building structure in accordance with the requirements of the standards and codes.
3. Perform minor adjustments and / or corrections necessary.

3.3 Cleaning

1. Scratched or damages painted surface must be touched up and cleaned.

***** END *****