

SECTION 15851

CHILLED BEAM

PART 1 –GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Passive chilled beams.
 - 2. Active chilled beams.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated, include the following:
 - 1. Data Sheet: Indicate materials of construction, finish, and mounting details; and performance data.
 - 2. Chilled Beam Schedule: Indicate drawing designation, room location, quantity, model number, size, and accessories furnished.
- B. Samples for Initial Selection: Submit samples with factory-applied color finishes.
- C. Samples for Verification: Submit two samples in manufacturer's standard sizes to verify color selected.
- D. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from Installers of the items involved:
 - 1. Ceiling suspension assembly members.
 - 2. Method of attaching hangers to building structure.
 - 3. Size and location of initial access modules for acoustical tile.
 - 4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
 - 5. Duct access panels.

PART 2 –PRODUCTS

- A. Active Chilled Beams
 - 1. Unit shall be Trox Model DID or equal.

2. Unit selection shall meet the scheduled capacity at noise level between NC 30 - NC 35 including the effect of multiple units and a maximum 5 dB room attenuation.
3. The unit casing shall be galvanized steel. The induction grille below the heat exchanger shall be blade grille (bar grille). Coordinate the grille and special finish with the Architect.
4. The active chilled beam type DID suitable for dealing with high internal thermal loads using a combination of air and water comprises a casing with integral primary air duct fitted with two sets of induction nozzles size related to primary air flow rate.
5. Below the primary air duct two coils shall be fitted with condensate trays. The coils shall have copper tubes and aluminum fins, be piped to equalize temperature rise, and be factory pressure tested.
6. Provide flexible connections from the unit to the ductwork and piping, materials as specified in Division 23.
7. The induction grille below the coils shall be a bar grille. The coils shall be used either for a heating or cooling operation (2-pipe system) or for both heating and cooling operation (4-pipe system), as designed. In the mixing section of the unit the conditioned secondary air is mixed with the primary air and discharged horizontally (coanda effect) into the room via slots. The unit comprises external casing, edge profiles and suspension lugs.
8. The end of the casing can be fitted with optional support angles which are supplied loose. Control components can be supplied loose.
9. Materials: The casing and primary air duct are made of galvanized steel sheet, the induction bar grille, side frames and end frames are made of extruded aluminum profiles. The casing and coil shall be dip coated in black, visible surfaces of the induction grille completely powder-coated in pure white, coordinate with the Architect. The discharge nozzles are made of black plastic, the coil of copper pipes with formed aluminum fins. The flexible hose is made of special plastic with a stainless steel sheathing.
10. Where continuous grille appearance is required, provide linear bar grille by the chilled beam manufacturer, spliced between active chilled beams.

B. Passive Chilled Beams

1. Unit shall be Trox PKV or equal
2. Unit shall consist of casing, frame, a cooling coil with connection flanges, and a perforated metal facing
3. Casing and perforated metal facing shall be galvanized steel, frame of aluminum.
4. Cooling coil shall be copper tubes with formed aluminum fins and galvanized flanges.
5. Coordinate finish and color requirements with the Architect.
6. Provide flexible connections to the chilled water circuit as specified in Division 23.
7. Sufficient open area in the ceiling system shall be provided for return air to reach the passive beam.

2.2 QUALITY CONTROL

- A. Size all overhead discharge to result in maximum air velocity of 30-50 fpm at a level of 6-feet or less above the floor. Maximum NC shall be as scheduled including damper regenerated noise.

PART 3 –EXECUTION

3.1 EXAMINATION

- A. Examine areas where chilled beams are to be installed for compliance with requirements for installation tolerances and other conditions affecting performance of equipment.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install chilled beams level and plumb.
- B. Ceiling-Mounted: Drawings indicate general arrangement of ducts, fittings, and accessories. Beam locations have been indicated to achieve design requirements. Make final locations where indicated. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.
- C. Install active chilled beams with airtight connections to ducts and allow service and maintenance of all components.
- D. Mount passive chilled beams to meet Manufacturer's requirements with particular emphasis on the distance from the lower edge of the ceiling slab to the upper edge of the beam to allow the convective flow of air into the beam.
- E. Flush the chilled water circuits prior to the final connection to the chilled beams.
- F. Suspend and brace equipment per Manufacturer's requirements, Division 23, and CBC/CMC requirements.

3.3 ADJUSTING

- A. After installation, adjust chilled beams to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION