

Suggested Specification For **TITUS FlowBar** Diffusers

1.0 Linear Airbar Slot Distribution System

1.1 General

Provide all materials and equipment required for a complete installation of all linear airbar air distribution systems as shown on the architectural and mechanical drawings and/or indicated in the architectural or mechanical specifications. The systems shall be complete in every respect and shall include all required appurtenances including plenums, hoods, blank-offs and associated sheet metal components including all duct connections thereto.

Provide all continuous airbar as shown on the drawings. The airbar shall integrate into the ceiling system. Where curved airbar is indicated, it shall be stretched curved to the exact radii. Rolled or segmented curving will not be accepted.

The linear airbar shall have a single slot unless shown otherwise and shall be capable of being used for supply air, return air, exhaust air or any combination thereof.

1.2 Installation

The linear airbar shall be capable of supporting the ceiling system. Linear airbar supported by screws in the flanges or from air plenums are unacceptable. For lay-in ceilings, provide hanger wire support clips that are integral with the linear airbar, allowing the airbar to be supported from the building structure with ceiling wire. For hard ceilings, provide clips that are integral with the airbar allowing the attachment directly to the ceiling framing without the requirement for hanger supports. Provide spline clips to secure joints and ceiling tees to the airbar.

Provide ends and corners as required. Ends shall be butt type, field installed, or mitered picture frame type factory installed, as indicated herein or shown on the drawings. All corners shall be mitered one-piece units.

1.3 Construction

Linear airbar shall be minimum .062 extruded aluminum. Linear airbar shall be furnished in 12' lengths to minimize the number of field joints. Pattern controllers shall be one piece, extruded aluminum, 24" long, positioned between spring loaded spacers. Spring steel retainers shall be used under the spacers to hold the slot diffusers assemble tightly together and allow the slot diffusers to be disassembled easily for field trimming. Rubber or neoprene space material will not be allowed. HighThrow pattern controllers shall cause the airstream to be directed flat against the ceiling in either direction or downward. Where specified for sidewall or high ceiling applications, the JetThrow pattern controllers shall provide a straight jet which can be directed up or down in a sidewall application, left or right in a ceiling application. The pattern controllers shall allow the adjustments to the air stream at 24" maximum intervals to change the direction of the air stream as may be required to satisfy job conditions and provide draft free air distribution.

Flanges exposed to view shall be painted factory standard white. All other surfaces shall be painted flat black. Provide paint samples if requested.

Airbar manufacturer shall also offer a frame style which installs like the standard frames but the flanges may be completely covered with spackle so that only the active air slot is visible. The concealed flange style shall not affect airbar performance.

1.4 Air Plenums & Hoods for Linear Slot Diffusers

The same manufacturer of the airbar shall manufacture all plenums and hoods. No exceptions will be allowed. Plenum lengths and entry collar sizes shall be as indicated on the plan schedules.

Plenums shall be minimum 24 gauge galvanized steel and lined inside with black matte fiberglass insulation. Spread vanes, adjustable through the slot of the linear slot diffuser, shall be provided on all plenums 48" and longer to equalize pressure. Four spring steel clips shall secure plenums to the linear airbar along with wire hangers from the plenum to the building structure per code requirements. Where shown on the drawings or otherwise indicated, provide a friction type volume damper located in the entry collar of the supply air plenum, accessible through the slot diffuser.

Where the linear airbar is used for return air plenum ceilings, hoods manufactured from 24 gauge perforated sheet metal (51% free area), painted flat black, shall be provided by the same manufacturer as the linear airbar. Hoods shall be field trimmed as required to fit between air plenums by the installing contractor. Solid blank-off pieces shall also be available from the linear airbar manufacturer.

1.5 Performance

All slot diffusers shall be performance tested with air plenums as a composite assembly in full accordance with ASHRAE, ARI, and/or ADC standards. If requested, this contractor shall provide for a visit by the mechanical consulting engineer to the product testing laboratory to verify performance data and testing procedures. All costs associated thereto shall be provided at the expense of this contractor.

All airbar shall be selected to achieve a throw to room length ratio which meets the requirements of the ASHRAE 1993 Fundamentals Handbook, Chapter 31, Table 2, at both maximum design flow rate, and for VAV systems, at the minimum flow rate expected during partial occupancy. All airbar shall be selected to achieve a minimum of 70% ADPI over the range of expected loads in the space with 80% the preferred ADPI. The airbar's reported performance shall be based on tests conducted in accordance with ASHRAE Standard 70-91. ADPI performance on at least one unit size of the selected airbar shall have been tested in accordance with ASHRAE Standard 113-90, to validate conformance and applicability to the ASHRAE table.

TITUS FlowBar system is the bases of the specification. Comparable products may be submitted as a substitution provided they are in full compliance with all sections of this specification and meet the performance specifications. This contractor should note that if the substitution adds costs to any other sections of this specification, or causes the architect and/or engineer to incur redesign costs, this contractor shall be fully responsible for the reimbursement of all these costs.