Miami Tech Inc.

MODEL 253
CEILING DAMPER
INSTALLATION INSTRUCTIONS

The City of New York 909-89-SM
California State Fire Marshall 3225-1382:100

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Foreword

This publication details the installation requirements for ceiling dampers as manufactured by Miami Tech. Use of this manual for systems or products not manufactured or supplied by Miami Tech shall not be applicable.

All products covered by this manual have been tested in accordance with UL555C and are authorized to bear the UL classification mark for ceiling dampers. Specific Ceiling Damper model numbers and their corresponding UL file numbers may be found in UL's Fire Resistance Directory.

For specific ceiling damper location requirements, duct construction and connection or installation practices, refer to the following codes or standards:

NFPA Publications:

NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilation Systems

UL Publications:

UL555C - Standard for Safety, Ceiling Dampers

SMACNA Publications:

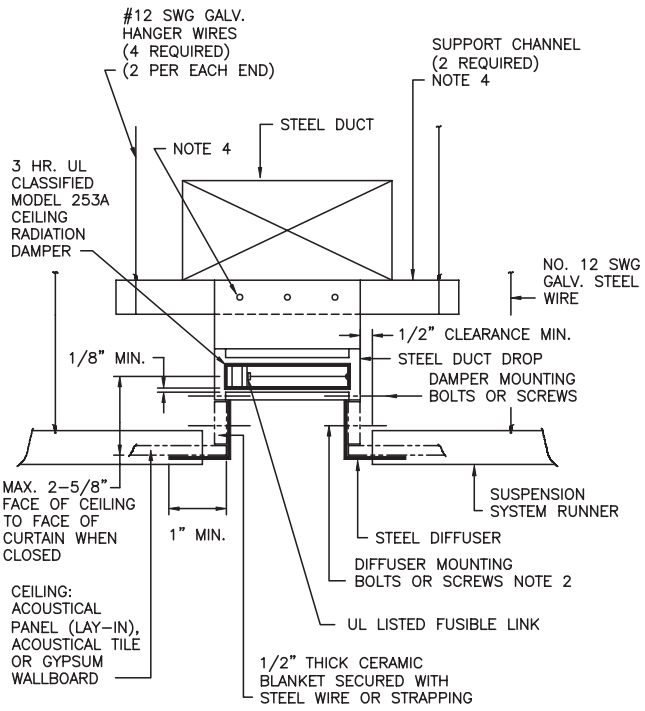
Fire, Smoke and Radiation Damper Installation Guide for HVAC Systems Guide

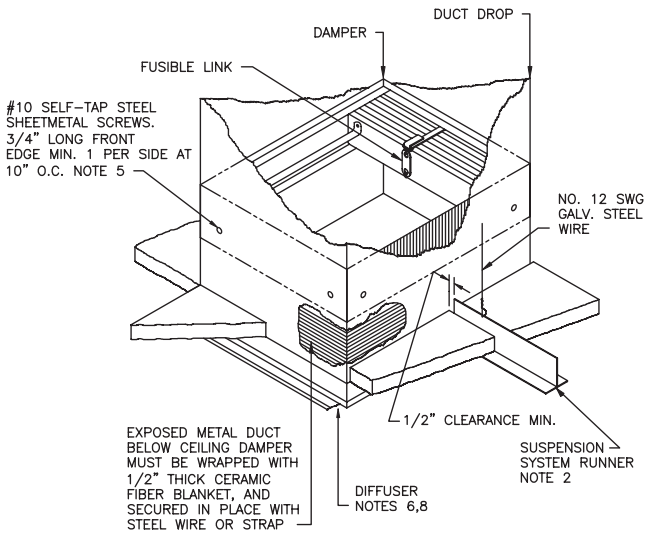
HVAC Duct Construction Standards – Metal and Flexible

The Installation Instructions found within this manual have been specifically drawn and detailed to meet the requirements of UL555C. Some jurisdictions may require additional or different installation methods; therefore, consult with the authority having jurisdiction for specific differences. For these cases, the requirements defined by the authority having jurisdiction will take precedence over the documents contained herein.

Model 253 (Square or Rectangular) • Ceiling Damper

For Installation in Square or Rectangular Steel Duct





Fusible Link — 165°F, 212°F Alternate

NOTES:

These ceiling dampers are Classified by Underwriters Laboratories, Inc. as to heat barriers in the Fire Resistance Directory under the category of Ceiling Dampers (CABS). Refer to the Classification information in the back of the Fire Resistance Directory regarding the use of these dampers in the various Floor-Ceiling or Roof-Ceiling assemblies. Ceiling dampers and the associated components (surface mounted diffusers or grilles, ducts, etc.) which are to be constructed of steel are installed in the ceiling to maintain the hourly ratings of the floor-ceiling or roof-ceiling assemblies which are rated 3 hours or less.

1. For fusible link attachment, open damper blades and hook fusible link over tab on top of damper frame, press down tab to hold fusible link on place.
2. Ceiling penetrations should be located within ceiling tiles or panels or occupying the entire opening without necessitating cuts in the ceiling suspension main runners or cross tees. If required, a maximum of one runner or cross tee may be cut to enable proper damper location during installation. Each cut end shall be supported by No. 12 SWG hanger wire (not splayed). A 1/2" clearance must be maintained between the duct drop and the cut end of the main runner or cross tee.

   NOTE: Lay-in ceiling panels cut to fill the remainder of the 24 x 24" or 24 x 48" module shall provide a minimum of 3/8" bearing on the ceiling suspension grid members.

   NOTE: All No. 12 SWG minimum hanger wires shall be supported directly from the structural members of the roof or floor by vertical (not splayed) hanger wires. When the duct extends over the intersections of the grid members, cold-rolled steel channels shall be used as a supplementary structural member to ensure that the ceiling grid suspension system is supported from the structural members by vertical No. 12 SWG minimum hanger wires.
3. Location of the damper shall be close to the back of the ceiling membrane. The distance from the ceiling face to the fabric curtain shall not exceed 2 5/8" (2.625").

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4. Damper support method for the ceiling damper/lay-in or surface mounted diffuser assembly is to use two No. 16 gauge cold-rolled steel support channels. The two 1 1/2" 16 gauge cold-rolled steel channels with 1/2" flanges shall be attached to the top of the damper frame with 3/16" bolts of 3/8" minimum length or screwed with No. 8 x 1/2" sheetmetal screws. A minimum of two bolts per damper side or minimum of three No. 8 x 1/2" screws equally spaced, 6" maximum spacing are required. Each channel is to be supported by two 12 SWG wires attached to the structural members.
   NOTE: The installation method described above shall support the entire weight of the damper/lay-in diffuser off the ceiling grid suspension system members.
5. The damper shall be fastened to the duct drop using No. 10 by 3/4" long sheetmetal screws or 3/16" diameter by 3/4" steel bolts and nuts. The screws (or bolts) shall be driven through the lower extension of damper frame into the duct drop. The number of screws (or bolts) attaching the damper to the duct drop shall be a minimum of one per side for 4 to 8" long sides and a minimum of two per side for 10" and longer sides, uniformly spaced at 10" O.C.
6. Transition collar for round connections shall be attached to damper frame with No. 10 x 3/4" steel sheetmetal screws, minimum of three screws equally spaced per side.
7. Exposed metal duct drop below ceiling damper must be wrapped with 1/2" thick ceramic fiber blanket and secured in place with steel wire or strap.
8. Steel diffuser fabricated from 24 MSG (.027" minimum), nominal 24 x 24", 14 x 14" maximum neck size, attached to damper frame (square neck openings) minimum of one No. 10 x 3/4" screw per side when neck opening dimension does not exceed 10". When a transition collar is used (round neck openings), the steel diffuser is attached to collar with No. 10 x 3/4" steel sheetmetal screws, minimum of three equally spaced on 6" maximum centers. Steel diffuser must provide a minimum of 1" support of the ceiling membrane on all sides.
   NOTE: The ceiling damper shall maintain a maximum clearance of 1/8" between the diffuser and damper.
9. For connection of a flexible duct, a steel clamp or No. 16 SWG minimum steel wire shall fasten the flex air duct to the damper or transition collar when flex air ducts are used to connect the main duct to the damper/diffuser assembly. The flex air duct shall be Class 0 or 1 and bear the UL Classification Mark — refer to the UL "Gas and Oil Equipment Directory." Maximum length of flexible air duct shall not exceed 14' 0" length. The flexible air duct shall not rest on the back surface of the ceiling grid or panels and provide a minimum of 4" clearance. The flexible air duct shall not interfere with the closing of the damper.