

CITY OF NEW YORK  
DEPARTMENT OF BUILDINGS

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Pursuant to Administrative Code Section 27-131, the following equipment or material has been found acceptable for use in accordance with the report of the Material and Equipment Acceptance (MEA) Division.

Rudolph J. Rinaldi, R.A., Commissioner

MEA 260-91-M

Report of Material and Equipment Acceptance Division

Manufacturer - Greenheck Fan Corporation, P.O. Box 410, Schofield, Wisconsin 54476-0410.

Trade Name - None.

Product - Fire Dampers, Smoke Dampers, and Combination of Fire and Smoke Dampers and Ceiling Dampers.

Pertinent Code Sections - RS-13, Chapter III 3-3.7.1.1. and RS-13 Chapter IV 4-4.1.1.

Prescribed Tests - UL 555 and UL 555S and UL 263 for Ceiling Dampers.

Laboratory - Underwriters Laboratories, Inc.

Test Reports - U.L. Letter, dated May 10, 1991; File R13447(N), dated March 13, 1990 and File R1331N dated December 13, 1988 and U.L. Letter, dated August 27, 1991.

Description - (Previous BSA File No. 92-91-SA) The construction materials of the dampers are similar and their differences are summarized later.

For models FD100, FD300 the damper frame is U shaped channel 1 1/2" wide made of 20 gauge galvanized steel. The damper blades are 1 1/4" wide and made of 24 gauge galvanized steel. The damper must be mounted vertically to allow the weight of the blade to close the damper.

For models FD110V, FD310V, FD110H the damper frame is U shaped channel 2 3/16" wide and made of 20 gauge galvanized steel. The damper blades are 1 13/16" wide and made of 24 gauge galvanized steel. V = Vertically mounted damper; H = damper that may be mounted horizontally or vertically as the blades are pulled shut by two 0.010" thick by 5/8" wide stainless steel springs.

For models FD150V, FD155V, FD350V, FD150H, FD155H, FD350H the damper frame is a double T shape 3 3/4" wide made of 20 gauge galvanized steel or type 304 stainless steel. The damper blades are 1 13/16" wide and made of 24 gauge galvanized steel or type 304 stainless steel.

For smoke damper models SMD 21, SMD 23 and SMD 43, the damper frame is a hat channel shape and constructed for 20 gauge galvanized steel. The frame is fastened at the corners by 20 gauge galvanized steel corner braces toggle locked to the frame. Jamb seals are made of 0.010" stainless steel with 2 lengths of silicone rubber tubing, 1/4" inside diameter and 0.025" thick, glued to them with General Electric 1200 silicone construction sealant. The SMD 43 has extruded aluminum damper blades, fitted on each edge with fire resistant silicone rubber seals. The SMD 21 and SMD 23 have 3V type damper blades constructed of 16 gauge galvanized steel. The SMD 23 damper blades are fitted on one edge with silicone rubber blade edge seals. The steel blade axles are 3/8" square. The SMD 21 and SMD 23 have blade axle brackets that are constructed of 16 gauge galvanized steel and toggle locked to the blade. Blade axle levers are pressed onto blade axles and made from 10 gauge steel. Blade axle levers are linked together with a 1/2" by 1/8" steel tie bar. Blade axles rotate inside bronze oilite bushings placed in the frame sides. Blade stops are 20 gauge galvanized angles attached to the frame top and bottom with 3/16" rivets or by spot welding. The damper will open or close during a smoke/fire emergency when properly actuate

For Smoke Damper SMDR53 (Round Shape) the damper frame is round and constructed of 20 gauge galvanized steel for units up to 12" diameter and 18 gauge galvanized steel for units larger than 12" in diameter. Round damper blades are constructed of 22 gauge (minimum) galvanized steel and fitted with heat resistant silicone rubber seals around the edge. Blade axle brackets are made from 20 gauge galvanized steel and spot welded to the blade. The motor mounting bracket and blade stops are formed out of 16 gauge galvanized steel. The steel blade axles are 3/8" square. Blade axles rotate inside bronze oilite bushings placed in the frame. The damper will open or close during a smoke/fire emergency when properly actuated.

For Fire and Smoke Damper models FSD21, FSD23, and FSD28 the damper frame is a hat channel shaped and constructed of 20 gauge galvanized steel. The frame is fastened at the corners by 20 gauge galvanized steel corner braces toggle locked to the frame. Jamb seals are made of 0.010" stainless steel with 2 lengths of silicone rubber tubing, 1/4" inside diameter and 0.025" thick, glued to them with General Electric 1200 silicone construction sealant. Damper blades are the 3V type and constructed of 16 gauge galvanized steel. The FSD23 and FSD28 will have silicone rubber seal attached to the edge of each blade. The steel blade axles are 3/8" square. The blade axle brackets are constructed of 16 gauge galvanized steel and toggle locked to the blade. Blade axle levers are pressed onto blade axles and made from 10 gauge steel. Blade axle levers are linked together with a 1/2" by 1/8" steel tie bar. Blade axles rotate inside bronze oilite bushings placed in the frame sides. Blade stops are 20 gauge galvanized angles attached to the frame top and bottom with 3/16" rivets or by spot welding. The damper can be open and closed for emergency smoke control when properly actuated. The damper will close automatically during a fire emergency.

The CRD1 is a square or rectangular ceiling damper. Damper frames are constructed of 22 gauge galvanized steel. Damper blades are made from 20 gauge galvanized steel backed with a heat resistive quilted fabric. The damper blades hinge open and are held in place by a fusible link and 2 fusible link holders riveted to the blades. The hinge assembly is constructed from a 24 gauge galvanized support bar and a .052" by 3/8" diameter steel spring riveted to the blades and protected by a stainless steel spring protector. When the air temperature at the damper becomes high enough the fusible link melts and the damper blades swing shut.

The CRD2 is a round ceiling damper. Damper frames are constructed of 24 gauge galvanized steel. Damper blades are made from 18 to 22 gauge galvanized steel backed with a heat resistive quilted fabric. The damper blades hinge open and are held in place by a fusible link and 2 fusible link holders riveted to the blades. The hinge assembly is constructed from a 24 gauge galvanized support bar, and a .052" by 3/8" diameter steel spring riveted to the blades and protected by a stainless steel spring protector. When the air temperature at the damper becomes high enough the fusible link melts and the damper blade swing shut.

The CRD3 is a square or rectangular ceiling damper. The damper frames is constructed of 24 gauge (minimum) galvanized steel. The damper blade is formed out of 20 gauge galvanized steel and backed with a heat resistive mineral wool blanket. The damper blade is hinged on one side and held open by a fusible link and field installed wire. The hinge assembly is constructed from 24 gauge galvanized steel. When the air temperature at the damper becomes high enough the fusible link melts and the damper blade swings shut in a trap door fashion.

The CRD 60 is a square or rectangular ceiling damper. The damper frame is constructed of 24 gauge (minimum) galvanized steel. The damper blade is made from quilted fabric consisting of 2 sheets of glass fiber fabric with a sheet of ceramic fiber blanket sandwiched between the sheets of glass fiber fabric and all 3 stitched together and fastened at each end with 1-13/16", 24 gauge galvanized steel blades. The damper is held in the open position by a fusible link. When the temperature of the air passing through the damper rises to the point at which the fusible link melts, the damper blades will unfold and close the damper. The blades are pulled shut by two 0.010" thick by 1/2" wide stainless steel springs.

Model CRD 60X is identical to model CRD 60 with the addition of an insulation shirt made of the same quilted material as the blade which gets mounted to the outside of the frame.

A summary of model numbers with their parameters is as follows:

Fire Dampers					
Model	Hourly Rating	Mount Position	Type	Max. W x H	Multiple Assembly W x H
FD100	1.5	Vertical	Curtain	48 x 48	NA x NA
FD300	3	Vertical	Curtain	48 x 48	NA x NA
FD100V	1.5	Vertical	Curtain	48 x 48	96 x 48
FD150V++	1.5	Vertical	Curtain	40 x 40	120 x 40
FD155V++	1.5	Vertical	Curtain	48 x 48	96 x 48
FD310V	3	Vertical	Curtain	48 x 48	NA x NA
FD350V++	3	Vertical	Curtain	48 x 48	NA x NA
FD110H	1.5	Horiz/Vert	Curtain	48 x 48	96 x 48
FD150H++	1.5	Horiz/Vert	Curtain	40 x 40	120 x 40
FD155H++	1.5	Horiz/Vert	Curtain	48 x 48	96 x 48
FD350H++	3	Horiz/Vert	Curtain	40 x 40	80 x 40
FSD21	1.5	Horiz/Vert	M-Blade	36 x 48	72 x 48
FSD23	1.5	Horiz/Vert	M-Blade	36 x 48	72 x 48
FSD28	3	Horiz/Vert	M-Blade	36 x 48	72 x 48

Leakage Rated Dampers

Model	Mount Position	Type	Max. H W x H	Classification	
				1" WG	4" WG
SMDR53	Vertical	S-Blade	24 (Dia.)	I - A	I - A
SMD43	Vertical	M-Blade	60 x 36	I - 250	I - 250
SMD43	Vertical	M-Blade	60 x 72	II - A	II - A
SMD23	Vertical	M-Blade	36 x 50	I - A	I - A

FSD28	Vertical	M-Blade	36 x 50	I - A	I - A
FSD21	Vertical	M-Blade	36 x 50	III - A	III - A
FSD23	Vertical	M-Blade	36 x 50	I - A	I - A
SMD21	Vertical	M-Blade	36 x 50	III - A	III - A
FSD28	Vertical	M-Blade	72 x 30+	I - A	I - A
SMD23	Vertical	M-Blade	72 x 30+	I - A	I - A
FSD21	Vertical	M-Blade	72 x 30+	III - A	III - A
FSD23	Vertical	M-Blade	72 x 30+	I - A	I - A
SMD21	Vertical	M-Blade	72 x 30+	III - A	III - A

Notes: + - Multi. Assembly of two 36 by 30 in. max.sections.  
 ++ - Model number may have a "5" instead of a zero when sealed for high pressure systems.  
 FD - Fire Damper  
 SMD - Smoke Damper  
 FSD - Fire and Smoke Damper  
 R - Round Shape  
 Type: S - Single Blade  
 M - Multiblade

Type Ceiling Damper	Hourly Rating Period	Maximum Size, in.
CRD - 1	3HR	22 x 22
CRD - 2	3HR	15 dia.
CRD - 3	3HR	24 x 24
CRD - 60	3HR	24 x 24
CRD - 60x	3HR	24 x 24

TB24 Accessory Part of CRD - 1 and - 2 Dampers

QB24 Accessory Part of CRD - 1 and - 2 Dampers

Recommendation - That the above fire dampers, smoke dampers and combination fire and smoke dampers and ceiling dampers be accepted in accordance with their U.L. rating on condition that all uses, locations, and installations shall be comply with the New York City Building Code and the manufacturer's installation instructions.

All shipments and deliveries of such equipment shall be provided with a metal tag, suitably placed, certifying that the equipment shipped or delivered is equivalent to that tested and acceptable for use, as provided in Section 27-131 of the Building Code.

Final Acceptance 9/30/91  
 Examined By [Signature]