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 and 6,575,827

PERFORMANCE TEST REPORT

Independent Test Performed by:
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STRUCTURAL PERFORMANCE TEST

The Occupational Safety and Health Administration (OSHA) requires holes larger than 2 inches wide to be covered to prevent people from tripping over or falling onto them (20 CFR 1926.501). The code further specifies that the cover withstands twice the weight of employees, equipment and materials that may be imposed on the cover at any one time (29 CFR 1926.502)

TEST CONFIGURATION

Two test scenarios: Application of force by a ladder and by a larger object such as foot. All testing was performed over a 4" x 12" opening. The Pro-Vent was installed with 6 screws, one at each of the mounting bosses. Screw type: #8 x 1" Pan Head wood screws.

LADDER TEST

Typical extension ladder foot: approx. 2" x 4" contact surface. Typical maximum load requirement for an extension ladder: approx. 150 lbs. / foot. 2x MAX load requirement: 300 lb.s

- MAX REAL LOAD 150 lbs. load applied over 2" x 4" area at the center of the Pro-Vent. This resulted in no breakage. Part deflected 0.5" (less than 3/16" below the floor surface).
- 2X MAX LOAD SAFETY FACTOR 300 lbs. load applied over 2" x 4" area of the center of the Pro-Vent. This resulted in no breakage. Part deflected 0.75" (just over 3/8" below the surface).

FOOT TEST

Male size 9 shoe. Surface area approximately 33" square. This is emulated by a rectangular load of 3.5" x 10.4". Estimated maximum single foot load of a person and equipment: 300 lbs. 2x Max load: 600 lbs.

- MAX REAL LOAD 300 lbs. load applied over 3.5" x 10.4" area at the center of the Pro-Vent. This resulted in no breakage. Part deflected 0.5" (less than 3/16" below the floor surface).
- 2X MAX LOAD SAFETY FACTOR 600 lbs. load applied over 3.5" x 10.4" area of the center of the Pro-Vent. This resulted in no breakage. Part deflected 0.75" (just over 3/8" below the surface).

RESULTS

The Pro-Vent cover withstands the OSHA load requirements for floor hole covers without failure.

H.V.A.C PERFORMANCE TEST

| Room | Reference CFM (Hart & Cooley #421) | Test CFM (Pro-Vent) |
|---------------|---------------------------------------|------------------------|
| Living Room | 82 | 73 |
| Kitchen | 89 | 45 |
| Dinette | 82 | 66 |
| Bath | 50 | 34 |
| Bed #1 Reg #1 | 104 | 69 |
| Bed #1 Reg #2 | 136 | 82 |
| Bed #2 | 87 | 60 |
| Foyer | 142 | 98 |
| TOTAL: | 772 | 527 |

Other Tests

| | Reference | Test |
|--|-------------|-------------|
| Inches of Water: | 0.5 | 0.6 |
| <i>(At furnace plenum, before coil & return air drop, before filter)</i> | | |
| W.A. Plenum Temp: | 109 degrees | 114 degrees |

Equipment Used for Testing:

DWYER MAGNEHELIC
 Catalog #2002C w/ High-Low Ports
 VEI #300A Therm
 TIF #VA500

Comments

Found Pro-Vent to cause no harm to equipment cycle or high limit controls.