

SECTION 13074 – EXPLOSION VENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes furnish all pressure relief panels, frames, and attachment hardware necessary to complete the work as indicated on the drawings, and as described in the specifications.

1.2 RELATED SECTIONS

- A. Steel Framing
- B. Flashing and Sheet metal Section
- C. Sealants Section

1.3 REFERENCES

- A. Aluminum Association, Section 1, Specifications for Aluminum Structures.
- B. AAMA-603 Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions.
- C. ASTM-D35 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-supporting Plastics in Horizontal Position.
- D. ASTM-E-84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- E. NFPA 68 Guide for Venting of Deflagrations, 1999 Edition.
- F. Factory Mutual Engineering Corporation, 1-44, Damage-Limiting Construction, July 1991.

1.4 SYSTEM DESCRIPTION

- A. Pressure relief panel system shall be designed and shop calibrated to release at a static pressure differential between interior and exterior of 20 lb/ft² ± 10%.
- B. The panels and structure supports shall be designed to withstand a maximum wind load of 30 lb/ft² (1436 pascals).

- C. Each panel shall be equipped with a restraint/hold open mechanism designed to cushion the panel's deceleration as the full open position is reached; and to minimize the development of a vacuum in the enclosure when the heated gases cool.
- D. Panels shall have been tested by Factory Mutual. Dynamic test data shall demonstrate that the panel release, restraint, and hold open mechanisms performed properly, the panels were not structurally damaged, and the panels could be reset. In addition, the test data shall include all pertinent operating conditions under which the test was conducted including static release pressure and the additional pressure rise within the chamber.
- E. System design shall allow for non-destructive testing in the field to verify that the panels release at the specified static design pressure.
- F. The panel pressure relief system shall allow for manual (or semi-automatic) retrieval after release.
- G. The weight of the fabricated panel shall not exceed 2.5 lb/ft² (12.2 kg/m²).

1.5 SUBMITTALS

- A. The manufacturer shall submit complete shop drawings for approval prior in fabrication. Drawings shall show product location, fabrication details, specified static release loads, and static release forces.
- B. Installation instruction instructions shall be submitted with the shop drawings.

1.6 QUALITY TESTING

- A. The panel system shall be produced by a manufacturer regularly engaged in manufacture of similar products and with a verifiable history of successful product applications.
- B. Products equal to this specification in design, performance, and testing shall be considered provided they are submitted for approval at least 10 days prior to bid date. Submittal for approval shall include product literature, details, product samples, and verification of non-destructive field-testing capabilities. Failure to comply with these requirements shall be cause for rejection.

1.7 LIMITED WARRANTY

- A. All Explovent® products are sold with standard limited warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Explovent® pressure relief panel systems shall be manufactured by Conspec Systems, Inc., Cranford, NJ; or C/S Construction Specialties Company, Mississauga, Ontario or approved equal.
- B. Each panel shall be shop calibrated and tested for proper operation and for release at the design loads specified on the approved drawing.
- C. All panels shall be permanently marked with the design release pressure and the maximum static release force.
- D. Installation shall be performed in accordance with approved drawings and installation instruction.
- E. Manufacturer shall have complete in-house finishing capabilities.

2.2 MATERIALS

- A. Panels shall be semi-rigid insulated core with .032" thick 3003 or 5005 smooth finish aluminum alloy sheet laminated to both sides. Total depth of panel shall be 2".
- B. Panel framing components shall be .063" 6063-T52 alloy extruded aluminum. All fasteners shall be aluminum or stainless steel.
- C. Exterior panel gaskets shall be a pile fiber type with a continuous polypropylene center fin. Interior gaskets shall consist of open cell compression foam and clad with a polyethylene liner.

2.3 FABRICATION

- A. Fabricate the pressure relief panels model ERP-T-IC to the sizes shown on the approved shop drawings.
- B. Panels shall be top hinged as detailed.
- C. All panels, frames, and release mechanisms shall be factory assembled in units and shipped to the job site.
- D. Head, sill, jamb, and mullion frame members to be one piece extruded aluminum structural members as detailed, and to have integral caulking slots. Mullions to be two-piece interlocking assemblies, which allow for expansion and contraction, and for individual panel removeability.

- E. All panels shall have exterior pile gaskets and interior compression (or magnet) gaskets to minimize air leakage and water entrainment when closed.
- F. The release mechanism shall be mounted to the panel frame, and shall be shop calibrated and tested for the design loads specified on approved drawings.

2.4 FACTORY FINISHING

- A. Kynar 500®: Panels and frames shall be finished in full strength, 70% resin Kynar 500® Fluoropolymer Coating consisting of prime coat and color coat minimum 1 mil thick.
- B. Color to be selected from manufacturers standard color selection.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The vents must be installed in accordance with shop drawings, the installation instructions, and any special instructions on the shop drawing.

END OF SECTION 13074