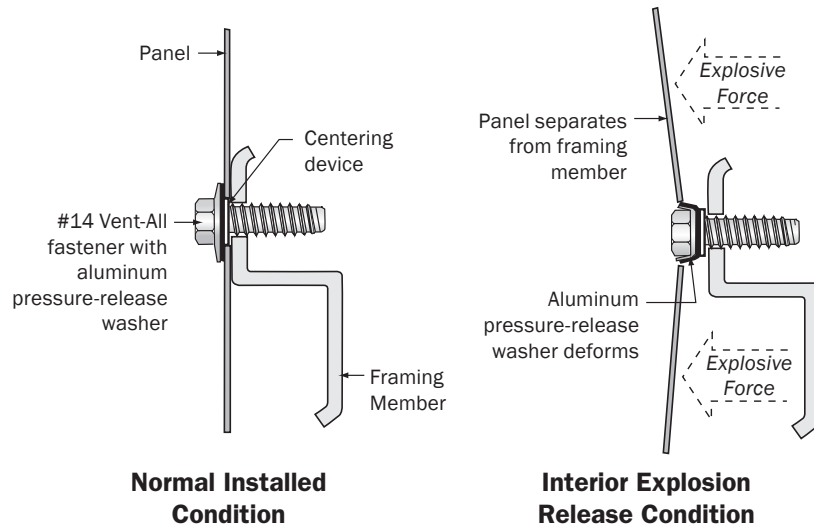


Vent-All explosion-venting fasteners, a series of FM-approved collapsible washers on stainless steel fasteners, are designed to minimize injury and destruction of property from explosions caused by agricultural or industrial operations.



It is suggested that all sheets/panels be installed with restraint cables, about three feet long and anchored to the structure, to prevent sheets/panels from becoming flying projectiles.



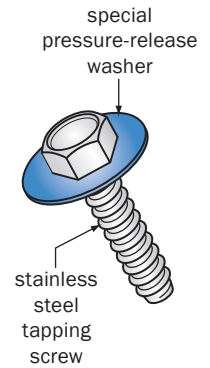
Selection Guide*

Washer Designation	Color Code	Release Value Per Fastener**
EXA-74	Green	70 lbs (0.31 kN)
EXA-76	Blue	110 lbs (0.49 kN)
EXA-79	Tan	175 lbs (0.78 kN)
EXA-84	Light Green	435 lbs (1.93 kN)

*See other side for application examples and calculations.
**These are the average release pressures for each washer.

Features

- .729" O.D. washer with special aluminum alloy bonded with EPDM or neoprene sealant
- Stainless steel screws
- Washers designed to collapse under force of explosion, allowing panel to separate and vent shock waves



Benefits

- Maintains standard building integrity
- Minimizes destruction from explosion by quickly dissipating explosive forces
- May be used with any sheet or panel, with or without insulation, field-assembled or shop-assembled walls

Specifications

- Diameters:
 - Screw: 1/4"
 - Washer: .729" O.D.
- Length: 3/4" to 6"
- Head/Drive Style: Hex
- Thread/Point: Type B standard
- Material:
 - Screw: stainless steel
 - Washer: special aluminum alloy bonded with EPDM or neoprene sealant
- Finish: Zinc plating
- Can be installed with standard drive tools

NOTE: Care must be taken during installation to prevent damage to washers.

Sample Applications:

- Grain handling facilities
- Agricultural buildings
- Industrial buildings housing operations that produce combustible dust or gases
- Power plants

Applications

The illustrations on this page are provided only to give an overview of the design process. **Fastener layout should be reviewed by an engineer or other qualified application specialist to ensure proper venting function.**

Basic Design Guidelines

It is most desirable to vent shock waves through sidewalls of a structure. Venting through metal roofs can be troublesome because of movement due to expansion and contraction from temperature changes. Built-up roofs also present problems; use of rigid insulation, felts, and ballast would tend to delay venting.

Generally, for each Vent-All fastener, a hole is drilled into the panels and framing; then the hole in the panel is enlarged to 1/2" diameter. It is necessary to install one centering device per fastener to prevent sagging of the panel. All fasteners must be driven with care to prevent distortion of the washers.

Sample Calculation

Desired Pressure Release: 25 #/F2
Area to be vented: 3'0" X 16'3" = 48.75 F2
Sidelap Fastening: Approx. 18" on center

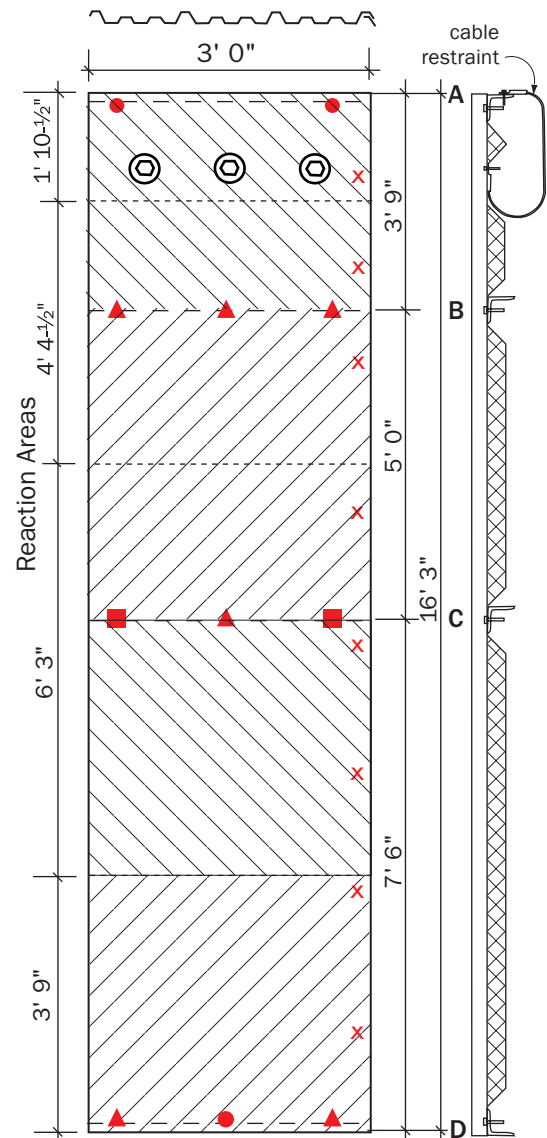
EXAMPLE ONLY; NOT TO BE USED FOR DESIGN

- Girt A:** 0.5 X 3'9" X 3'0" = 5.6F2
Required release: (25#/F2) x 5.6F2 = 140.62#
2 EXA-74 fasteners will provide 140#
- Girt B:** 0.5 X (3'9" + 5'0") X 3'0" = 13.12F2
Required release: (25#/F2) x 13.12F2 = 328.12#
3 EXA-76 fasteners will provide 330#
- Girt C:** 0.5 X (5'0" + 7'6") X 3'0" = 18.75F2
Required release: (25#/F2) x 18.75F2 = 468.75#
1 EXA-76 fastener and 2 EXA-79 fasteners will provide 460#
- Girt D:** 0.5 X 7'6" X 3'0" = 11.25F2
Required release: (25#/F2) x 11.25F2 = 281.25#
1 EXA-74 fastener and 2 EXA-76 fasteners will provide 290#

Total Provided Panel Release: 1220#
1220# ÷ 48.75SF = 25 #/F2

Sample Layout

Metal Skin - Single Sheet
With 3" Batt Insulation



- Fastener: EXA-74 (70# R.V.)
- ▲ Fastener: EXA-76 (110# R.V.)
- Fastener: EXA-79 (175# R.V.)
- × Fastener: EXA-74 (70# R.V.)
- for sidelap fastening
- ◎ Restraint cable attachment point

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