

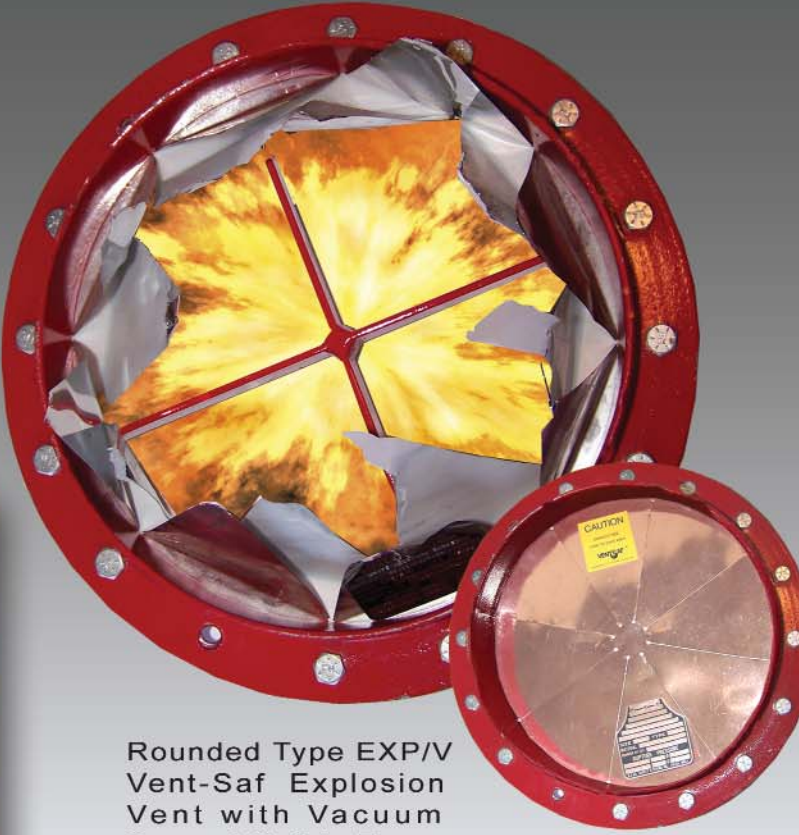


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VENT-SAF™ EXPLOSION PANELS

INDUSTRIAL EXPLOSION PROTECTION

Type EXP/V Vent-Saf
Rectangular Explosion
Vent with Vacuum
Support Safety Frame



Rounded Type EXP/V
Vent-Saf Explosion
Vent with Vacuum
Support Safety Frame

What Does it take to have an Industrial Explosion?

An explosion results from ignition of a combustible material (dust, gas or vapor) when mixed with oxygen present in the air. When this takes place inside a process or storage enclosure, the rapid rise in pressure developed will exert destructive forces within a few milliseconds that will place both personnel and equipment at risk. Most materials handling, processing and storage equipment is not designed to resist the pressure of a deflagration*. Only equipment designed to resist the maximum pressure (Pmax) developed by the combustion process will survive - such design pressures typically exceed 75 psig (5.2 bar), making design for containment of a deflagration prohibitively expensive in most cases.

* Deflagration: An expanding flameball that proceeds below the speed of sound in air, as compared to a detonation which exceeds the speed of sound in air. Typically, a deflagration can be protected from deflagration hazards.

Examples of Explosive Materials

- Coal
- Fertilizer
- Cosmetics
- Pesticides
- Plastics
- Plastic Resins
- Wood
- Charcoal
- Detergents
- Food
- Ore Dusts
- Metal Dusts
- Graphite
- Dry Chemicals
- Pigments
- Cellulose

Typical Examples of Industrial Equipment Protected by Vent-Saf Explosion Panels

- Crushers
- Grinders
- Pulverizers
- Silos
- Sieves
- Conveyor Ducts
- Screws
- Blenders
- Shredders
- Dust Arrestors
- Mixers
- Dust Collectors
- Conveyors
- Elevators
- Ovens
- Dryers
- Furnaces
- Filters
- Hoppers
- Bins

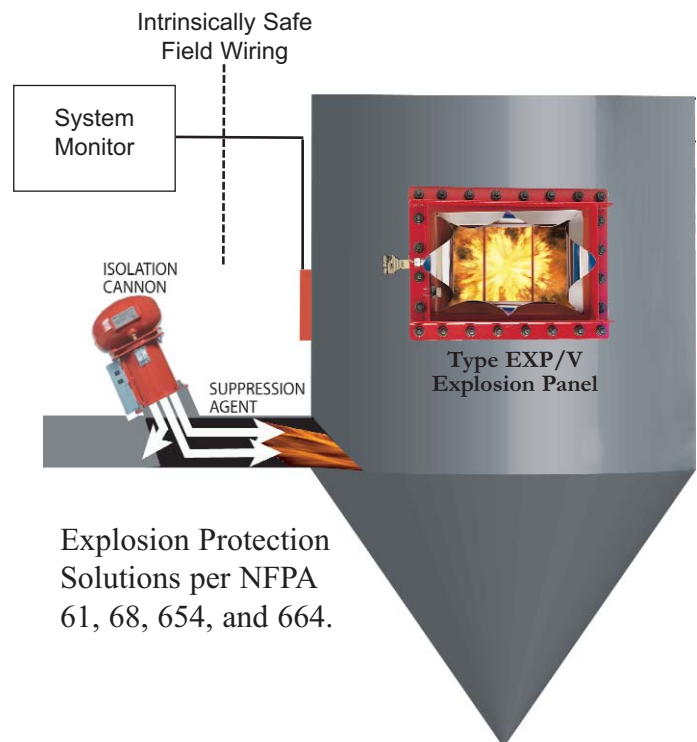
VENT-SAF™ EXPLOSION PANELS

Vent-Saf Explosion Panels are low burst pressure membranes designed to be fastened over structure openings to provide rapid pressure release. When properly applied, Vent-Saf Explosion Panels can minimize damage to containers, ducts and other structures in the event of deflagration of combustible dusts, gases or mists.

Explosion panels are not designed to protect vessels containing liquids, liquified gases or compressed gases under fire exposure conditions.

For deflagration only. The effectiveness of explosion panels under detonation conditions is problematic and applications designed to protect against the result of such an event exceeds any industrial standard or safety practice that is generally recognized.

Explosion Venting & Isolation



The above Type EXP/V Explosion Panel is combined with a BS&B Type IPD Chemical Isolation System to provide protection to interconnected equipment in the event of an explosion. The Explosion Panel releases the fireball from the structure. The Type IPD Chemical Isolation System injects a food-grade suppression agent into the ducting and piping to interrupt the transport of burning material & quench the flame front.

Features and Benefits

Vent-Saf Explosion Panels feature both round and rectangular vents designed to be held in place by safety frames. Safety Frames are available in two designs. The first bolts directly onto the structure. The second is designed to be welded onto the structure.

Type EXP, a flat vent with a slotted 316ss* top section and FEP/PTFE seal.

Type EXP/V, a flat vent with a slotted 316ss* top section, FEP/PTFE seal and a slotted support to resist light vacuum. The vents will burst at the same pressure in both directions.

* Vents are available in other materials.

Safety Frames

Materials: 304ss, 316ss or carbon steel

Operating Temperatures

Temperatures to 400°F/204°C. Thermally insulated vents may be used up to 1600°F/870°C.

Burst Pressure

Burst pressures are available from 0.75psig (0.052barg) to 5psig (0.34 barg) depending on vent size.

Burst Tolerance

The burst tolerance is ± 0.25 psig (± 0.017 barg.)

Markings

A tag is affixed to the discharge side of the vent and marked with a minimum-maximum burst range.

Example: A vent with a nominal burst pressure of 1psig (0.069 barg) will be tagged 0.75 psig (0.052barg) to 1.25psig (0.086 barg).

Service Capabilities

These vents are designed for static or light pressure cycling duty.

Operating Pressure

The vents are suitable for operating pressures up to 60% of the minimum of the burst range.

Vacuum Service

The vents must be installed in a safety frame with support bars in order to withstand vacuum or back pressure.

Gaskets

White neoprene for operating temperatures up to 275°F (135°C) and between 275°F (135°C) to 400°F (204°C), red silicone gaskets are supplied.

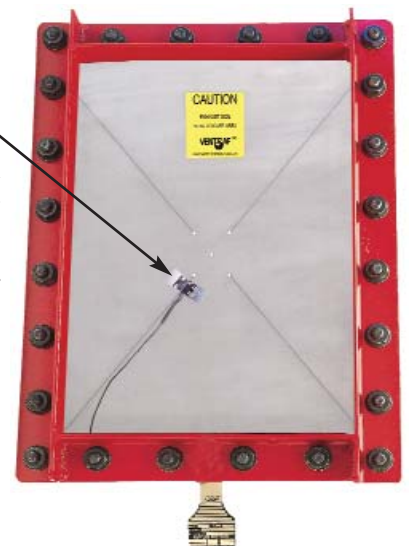
Ordering Checklist

Contact a BS&B consultant for an application data sheet. Relevant information required includes:

- Product name, Example EXP
- Size
- Burst pressure Pstat at coincident temperature
- Normal/maximum operating pressure and temperature
- Maximum vacuum pressure
- Pressure cycling conditions
- Optional insulation design
- Optional burst sensor
- Safety frames (bolted or welded design)
- BS&B standard or special, please specify.

MBS Magnetic Burst Sensor

Type EXP/V Explosion vent, installed in Safety Frame, with MBS Magnetic Burst Sensor to provide immediate indication upon bursting of the explosion vent.



Codes & Standards

BS&B will guide you in following the practices required by the latest Codes and Standards. Visit www.bsbipd.com for the most up-to-date information.

OSHA
COMBUSTIBLE DUST
NATIONAL EMPHASIS PROGRAM

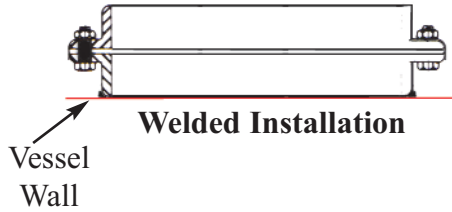
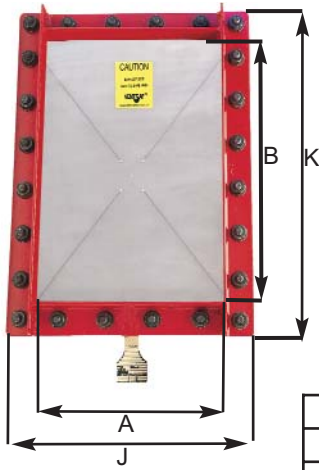
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RECTANGULAR EXP, EXP/V EXPLOSION VENT



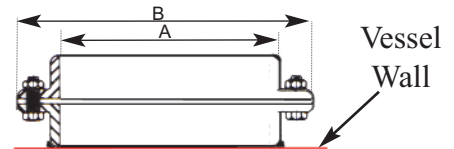
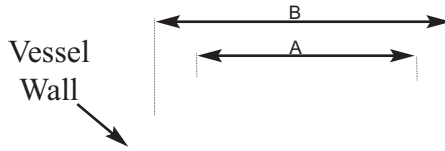
DIMENSIONS

Nominal Size		A		B		J		K		Net Relief Area	
in.	cm.	in.	cm.	in.	cm.	in.	cm.	in.	cm.	sq. in.	sq. cm.
12x18	30x46	12	30.48	18	45.72	16	40.64	22	55.88	210	1355
18x24	46x61	18	45.72	24	60.96	22	55.88	28	71.12	423	2729
18x36	46x91	18	45.72	36	91.44	22	55.88	40	101.6	639	4123
24x30	61x76	24	60.96	30	76.2	28	71.12	34	86.36	708	4568
24x36	61x91	24	60.96	36	91.44	28	71.12	40	101.6	852	5497
24x48	61x122	24	60.96	48	121.92	28	71.12	52	132.08	1140	7355
30x36	76x91	30	76.2	36	91.44	34	86.36	40	101.6	1065	6871
30x48	76x122	30	76.2	48	121.92	34	86.36	52	132.08	1425	9194
32.5x65	83x165	32.5	82.55	65	165.1	36.5	92.71	69	175.26	2096	13523
44.5x68	113x173	44.5	113.03	68	172.72	48.5	123.19	72	182.88	3004	19381

ROUND EXP, EXP/V EXPLOSION VENT



Nominal Size		A		B*		Net Relief Area	
in.	cm.	in.	cm.	in.	cm.	sq. in.	sq. cm.
16	41	16.25	41.28	19.75	50.17	179	1115
18	46	18.25	46.36	21.75	55.25	227	1465
20	51	20.25	51.44	23.75	60.33	281	1813
24	61	24.25	61.6	27.75	70.49	405	2613
30	76	30.25	76.84	34.25	87	633	4084
32	81	32.25	81.92	36.25	92.08	720	4645
36	92	36.25	92.08	38.25	97.16	912	5884
40	102	40.25	102.23	44.25	112.4	1127	7271
44	112	44.25	112.4	48.25	122.56	1364	8800
60	152	60	152.4	64	162.56	2518	16245



Bolted Installation

Welded Installation

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