



# CMC TECHNOLOGIES

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## EXPLOSION PANEL / VENT / DOOR APPLICATION DATA SHEET 2017

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### COMPANY DETAILS:

Company Name:	Location:
Contact Name:	Position:
Email address:	Phone:

### SECTION A:

PLEASE COMPLETE THIS SECTION IF THE REQUIRED EFFECTIVE VENT AREA IS ALREADY KNOWN

- 1 Certified Explosion Vent Activation pressure and coincident burst temperature: Pstat= Barg @ Deg C
- 2 Required Effective Vent Area: Area= m<sup>2</sup>
- 3 Dust or Gas or Hybrid Maximum Kst (dust) or Kg (gas) or K Hybrid: bar.m/sec
- 4 Pred (Your required reduced explosion pressure) = Bar g
- 5 Configuration /shape of Explosion Vent. Rectangular, Circular or other shape please advise.
- 6 Size of Explosion Vent Shape Required mm
- 7 Minimum to Maximum Process operating Pressure OP min = Barg OP max = Barg
- 8 Vacuum or Back pressure condition (please specify the maximum vacuum and back pressure resistance (combined total) required and specify the units.
- 9 Will the explosion vent be subject to any wind force? How much in terms of back pressure
- 10 Minimum to Maximum Process operating Temperature OT min = Deg C , OT max = Deg C
- 11 Unusual operating conditions. Please advise if there is pulsing or vibrating or harmonic process conditions. Please advise in detail
- 12 Materials of metal section preferred or accepted for panel membranes (304 or 316SS, Other) Materials of Seals EPDM , Silicone, Food Grade Silicone, Klingersil, Ceramic - other -please specify
- 13 Sanitary/Aseptic or non-sanitary application?
- 14 Do you wish to manufacture the panel frame yourself or would like a quotation for the frame?
- 15 If quotation required for panel frame what are the materials preferred for panel frames.
- 16 Location: indoors or outdoors?
- 17 Vent Pipe length (if venting to safe area via duct) : L= m
- 18 Inlet Duct configuration? Details: Size:
- 19 Clean Air Duct configuration? Details: Size:
- 20 Are Burst indicators required?
- 21 Will the explosion panel vent to atmosphere and safe area?
- 22 Do you need an earthing strap or lead?

## SECTION B: DATA SHEET

– Calculation of Effective Vent areas according to EN 14491:2012 or NFPA 68, 2013

This data sheet is available if the vent area is unknown and guidance is required.

PLEASE COMPLETE THIS SECTION IF THE EFFECTIVE VENT AREA IS UNKNOWN AND YOU WOULD LIKE ASSISTANCE.

### Special Note:

CMC Technologies are suppliers of industrial instrumentation. We represent Brilex and Thorwesten Vent of Germany who manufacture explosion vents and explosion doors respectively. From time to time we are asked to provide sizing for explosion vents. We would like to state that CMC Technologies is not a consulting engineering company nor has professional indemnity insurance to act as a consultant. The best we can do is input your data into the nominated equations of the standard or guideline that you or your customer or their insurer selects. Therefore we must state that CMC Technologies takes no responsibility with regard to sizing, application or recommendation of burst pressure specification. Our principles will manufacture these explosion panels and supply these under their standard warranty, which we are obliged to pass on to you. We will supply explosion vents with a certified burst pressure and burst tolerance only.

If you would like us to complete any vent area calculations the form below must be completed and signed giving us your approval to use the data given. It is understood therefore that you have certified data that is representative of the worst-case condition. We draw your attention in particular to values of  $K_{st}$  and  $P_{max}$ , which should be established and certified by actual testing as well as  $P_{red}$  which is a function of the structural strength of your enclosure which needs to be certified by a structural engineer appointed by you or the customer.

We would also like to make you aware of the following standards, which we suggest that you get a full copy of before completing this data sheet.

**A: EN 14491:2012 Edition**   or   **B: NFPA 68, 2013 Edition**

Please advise us to which standard you would like the calculations made to. **A or B**

Please provide the following basic Information (this must be completed in full otherwise a calculation cannot be made)

1. Type of plant equipment to be protected (Dust Collector, Cyclone, Silo, Bucket Elevator, Mill, Ducting etc)
2. A dimensional drawing of the equipment to be protected and a plant layout drawing showing location with respect to the whole plant. **Please select from attached drawings if there's a match and complete the dimensions.**
3. Total Volume of enclosure: V=                  m<sup>3</sup>
4. Type of Product: (please describe) \_\_\_\_\_
5. Product Explosion Overpressure: Pmax=                  Bar
6. Product specific maximum constant (explosibility) Kmax=                  m.bar/sec
7. Pred (Your required reduced explosion pressure) =                  Bar g
8. What is the pressure shock resistant strength or design pressure of the equipment?                  Bar g
9. Resistance (Overpressure) How much overpressure is allowed in the enclosure after the explosion vent opens?                  Bar g
10. Location: indoors or outdoors?
11. Will the explosion panel vent to atmosphere and safe area?
12. Vent Pipe length (if venting to safe area via duct) : L=                  m
13. Median Particle Size of Product: M=                  micro metres
14. Configuration of Explosion Vent. Rectangular, Circular or other shape please advise
15. Minimum to Maximum Process operating Pressure OP min =                  Barg          OP max =                  Barg
16. Vacuum or Back pressure condition (please specify the maximum vacuum and back pressure resistance (combined total) required and specify the units.
17. Will the explosion vent be subject to any wind force? How much in terms of back pressure
18. Minimum to Maximum Process operating Temperature OT min =                  Deg C ,          OT max =                  Deg C
19. Unusual operating conditions. Please advise if there is pulsing or vibrating conditions. Please advise in detail
20. Materials preferred or accepted for panel membranes (304 or 316SS, Other)
21. Sanitary/Aseptic or non-sanitary application?
22. Do you wish to manufacture the panel frame yourself or would like a quotation for the frame?
23. If quotation required for panel frame what are the materials preferred for panel frames.
24. Are Burst indicators required?
25. Inlet Duct configuration? Details:                  Size:
26. Clean Air Duct configuration? Details:                  Size:

Signed:

Name:

Date:

body depth:

body width:

body height:

hopper:

bottom: depth  X  width  [m]

body depth:

body width:

vent to top:

body height:

hopper:

bottom: depth  X  width  [m]

top: depth  X  width

body to top:

body depth:

body width:

body height:

hopper:

bottom: depth  X  width  [m]

body diameter:

body height:

hopper:

bottom diameter:  [m]

body diameter:

vent to top:

body height:

hopper:

bottom diameter:  [m]

top diameter:

body to top:

body diameter:

body height:

hopper:

bottom diameter:  [m]

body depth:

body width:

clean air:

bag length:

bag diameter:

no. of bags:

vent to top:

body height:

hopper:

bottom: depth  X  width  [m]

body depth:

body width:

clean air:

bag length:

bag diameter:

no. of bags:

vent to top:

body height:

hopper:

bottom: depth  X  width  [m]

body depth:

body width:

clean air:

LA:

bag length:

bag diameter:

no. of bags:

body height:

hopper:

bottom: depth  X  width  [m]

body diameter:

clean air:

bag length:

bag diameter:

no. of bags:

vent to top:

body height:

hopper:

bottom diameter:  [m]

body diameter:

clean air:

bag length:

bag diameter:

no. of bags:

vent to top:

body height:

hopper:

bottom diameter:  [m]

body diameter:

clean air:

LA:

bag length:

bag diameter:

no. of bags:

body height:

hopper:

bottom diameter:  [m]

**diameters:**

X:

body:

cone bottom:

settling top:

settling bottom:

**heights:**

outlet (LA):

body:

cone:

settling:

[m]

d depth:

w1 width:

h1 height:

w2 width:

h2 height:

[m]