NFPA EXPLOSION MITIGATION

Apex Industrial Solutions, Inc.
113 Chelsea Rd, Monticello, MN 55362
763-777-9525
Sales@ApexSolutionsMN.com
www.ApexSolutionsMN.com

CUSTOMER		DATE	
PHONE #		EMAIL	
COMPANY		PLANT LOCATION	
PROJECT			

NFPA EXPLOSION MITIGATION STRATEGY (See Page 3)

NFPA Explosion Mitigation Strategy (Choose ONE)	☐ NFPA 68 - Venting (Employed by Others)	☐ NFPA 69 - Suppression (Employed by Others)
	☐ NFPA 85 - 50 PSIG Containment - Pulverized Fuel	☐ NFPA 69 - Containment
	☐ NFPA 69 - Isolation (12.2.4.2)	☐ NFPA Other (Specify)

P (Red)	PSIG/BARG	**Pmax**	PSIG/BARG	**Kst of Material**	

FUNCTION OF VALVE

Function of Valve	☐ Airlock	☐ Feeder	☐ Airlock/Feeder

ABOVE VALVE

Valve is Installed Beneath	☐ Hopper	☐ Silo	☐ Baghouse
	☐ Cyclone	☐ Filter Receiver	☐ Screw
	☐ Shredder	☐ Dryer	☐ Mixer
	☐ Other		

Pressure Above Valve	☐ Positive	☐ Negative	☐ Atmospheric
	PSI	"Hg	"H_2O
Humidity is	☐ High	☐ Average	☐ Low

Temperature Above	°F	**Is Valve Choke-Fed?**	☐ Yes	☐ No

BENEATH VALVE

Valve is Installed Above	☐ Hopper	☐ Screw	☐ Airslide
	☐ Belt	☐ Chute	☐ Mixer
	☐ Tank	☐ Vacuum Line	☐ Pres. Line
	☐ Other		

Pressure Beneath Valve	☐ Positive	☐ Negative	☐ Atmospheric
	PSI	"Hg	"H_2O
Humidity is	☐ High	☐ Average	☐ Low

Temperature Beneath	°F	**Ambient Temperature**	°F	**Diameter of Line**	"

OPERATING CONDITIONS

Constant Rate of Flow	Tons/Hr	Lbs/Hr	Cu.Ft./Hr
Variable Feed Rate	Max	Avg	Min

Duty Cycle	☐ Continuous	☐ Intermittent

MATERIAL CHARACTERISTICS

Common Name	
Chemical Formula	

Bulk Density, Aerated	Lbs/Cu.Ft.	**Bulk Density, Settled**	Lbs/Cu.Ft.
Max Particle Size		**Moisture Content**	%
Allowable Degradation	%		

Particle Type/Shape	☐ Pellet	☐ Powder	☐ Lump	☐ Chip
	☐ Granular	☐ Flake	☐ Curl	☐ Fibrous

Flowability	☐ Extreme	☐ Moderate	☐ Sluggish

Abrasiveness	☐ Extreme	☐ Moderate	☐ Mild

Material Temperature	°F	**Mesh Size-Angle of Repose**	°

Mesh-Size Angle of Repose	% Thru 1/2"	% Thru 1/4"	% Thru 1/8"	% Thru 1/16"
	% Thru 25	% Thru 50	% Thru 100	% Thru 200

Special Characteristics	☐ Hygroscopic	☐ Corrosive/Reactive	☐ Explosive	☐ Toxic/Emits Fumes
	☐ Heat Sensitive	☐ Aerates/Dusty	☐ Tends to Pack	☐ Sticky/Smears
	☐ Other			

- **Notes:**

CUSTOMER PRINTED NAME

CUSTOMER SIGNATURE

GENERAL (All NFPA Mitigation Strategies)

All NFPA airlock orders require complete application details (Pred Pmax, Kst, material, pressure differential, temperatures, etc.). Meyer WILL NOT process an order without this information. OSHA requires a Dust Hazard Analysis be performed on explosive dusts prior to fabrication of NFPA rated equipment and the results provided to equipment vendors. The Pmax and Kst must be provided along with the Pred (when required) in order to satisfy the OSHA requirements.

When applying a rotary airlock, the end user is responsible for compliance of other aspects of NFPA not directly related to the rotary airlock scope that Meyer supplies.

In the event of a deflagration event or fire, Meyer will neither warrant parts nor guarantee the airlock will be operational thereafter. In particular, after such an event, Meyer recommends inspection and testing to assure the airlock functions normally. This may include repair and/or replacement of some parts or the entire airlock.

CHOOSE ONE OF THE FOLLOWING:

NFPA 68 (Deflagration Venting)

The maximum pressure developed in a vented enclosure during a vented deflagration (Pred) must be provided as defined by NFPA 68.

NFPA 69 (Deflagration Suppression)

Explosion prevention (suppression) within the process system in which Meyer's equipment will operate will be provided by others in accordance with NFPA 69 "Suppression". Pred must also be provided as defined by NFPA 69.

NFPA 69 (Oxidant Concentration Reduction)

Explosion prevention (suppression) within the process system in which Meyer's equipment will operate will be provided by others in accordance with NFPA 69 "Oxidant Concentration Reduction".

NFPA 69 (Combustible Concentration Reduction)

Explosion prevention (suppression) within the process system in which Meyer's equipment will operate will be provided by others in accordance with NFPA 69 "Combustible Concentration Reduction".

NFPA 69(Containment)

The Equipment will contain a deflagration pressure of Pmax as defined by NFPA 69 "Containment".

NFPA 85 (Containment – Pulverized Fuel)

The Equipment will contain a deflagration event of 50 PSIG as defined by NFPA 85.

Choose If Required:

NFPA 69 (Isolation) Deflagration Isolation - Section 12.2.4 (NFPA 69 – 2014)

COMPLIANCE WITH NFPA 69 "DEFLAGRATION ISOLATION" IS BASED ON THE FOLLOWING:

- Two vanes within the airlock will be maintaining a seal at all times on each side (WWM eight vane rotary airlocks comply with this requirement).
- External (outboard) bearings.
- Internal Clearances under 0.0079" when operating at quoted Design Temperature. This gap MUST be maintained by the END USER to assure Deflagration Isolation capability is preserved.
- An independent explosion detection device or interlock (not provided by Meyer) from an explosion prevention or control system on the same protected enclosure shall be interlocked to automatically stop the rotary airlock upon a deflagration event.