

Loss Prevention Standards – Asset Class

Milling and Grinding Operations - Checklist

Version: 1.0

Date: 14th June 2024

Managing Fire and Explosion Risks Associated with Milling and Grinding Operations - Checklist



Milling and Grinding Operations - Checklist



Location	
Date	
Completed by (name and signature)	

	Understanding the Risks From the Materials Being Milled	Y/N	Comments
1.	<p>Have the materials that are planned to be milled been assessed to determine whether there are risks of:</p> <ul style="list-style-type: none"> Dust explosion? Self-heating and auto-ignition? Accelerated rates of corrosion or wear of the milling equipment? Coagulation and risks of blockage once milled? 		

	Process and Plant Design and Assessment	Y/N	Comments
2.	Has the milling equipment and ancillary equipment been subject to risk assessment using a recognised method such as HAZOP/HAZAN/LOPA or FTA?		
3.	Has an explosion/ DSEAR Assessment been completed, identifying hazardous areas and any precautions required to reduce risks of explosive events?		
4.	If so, have the recommended remedial actions been completed or scheduled?		
5.	Has the milling equipment been selected to minimise the amount of mechanical work on the materials?		
6.	Has the milling equipment been selected to minimise the head space/dead space within in the mill buildings?		
7.	Have suitable measures been taken to prevent the formation of explosive atmospheres within the milling equipment?		

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8.	Have residence times within the milling equipment been reduced as far as achievable?		
9.	<ul style="list-style-type: none"> • Are fire detection and protection systems such as sprinklers in normal working order? • Are they covering battery storage and charging areas? • Are interlocks in place and fully functioning? 		
10.	Has the process plant been designed to reduce the accumulation of dusts on horizontal surfaces or within ducts/pipework?		
11.	Have measures been put in place to reduce risks of fugitive dust emissions from the milling equipment and ancillary process plant?		
12.	Is electrical equipment in any “Hazardous Areas” identified in the explosion assessment, suitably specified for the type of zone identified and subject to regular inspection to ensure continued standards of explosion prevention?		
13.	Are measures in place to prevent the introduction of foreign objects into the mill?		
14.	Have materials of construction been specified to reduce risks of corrosion and abrasive wear?		
15.	Are mill drive motors, electrical equipment, and control equipment in separate rooms or areas that are cut off from the mill, and any supplies of lubricants, as far as is practicable?		
16.	Is equipment, such as motor surfaces, light fittings, that have hot surfaces which may come into contact with dust clouds or have dust layers formed on them, appropriately specified with the correct T class rating identified and specified?		
17.	Are measures in place to ensure process plant remains connected to earth throughout use and any static charge that accumulates on milled materials is safely discharged to earth?		
18.	Does the mill building, milling plant, silos and any fixed access ladders and elevated walkways benefit from a suitably designed and maintained lightning protection system?		

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19.	Has the milling and associated plant been designed to feature arrangements or systems to either contain an explosion, relieve excess pressure and any fireball to a safe place or suppress any explosive event, preventing destruction of the milling plant and ensuring the safety of persons in or around the building?		
20.	Is there a suitable means of detecting a fire within the milling equipment and in the surround areas?		
21.	Is the building protected by a suitable automatic sprinkler system?		
22.	Is the milling equipment interlocked to both automatic fire detection and any fire protection systems to safely isolate equipment upon activation?		
23.	Has the need for automatic spark detection and extinguishment systems with milling plant and ducting been assessed?		
24.	Where identified as necessary, has the work been scheduled by a reputable and accredited installer?		
25.	Have design specifications been shared with your Insurer and Broker?		
26.	Has resilience been built into the plant design that permits the required process availability, whilst allowing sufficient time to complete planned preventative maintenance and any necessary repairs or plant modifications?		
27.	Are spares for critical components held on site?		
28.	If not, are spares for all critical equipment readily available in the case of an incident or breakdown?		

	Management and Maintenance	Y/N	Comments
29.	Have critical components and plant items that are vulnerable to wear or corrosion been identified?		
30.	Are systems/arrangements in place to monitor the condition of these critical components?		

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31.	Is the milling plant and ancillary equipment maintained in accordance with a defined maintenance schedule?		
32.	Are such maintenance schedules up to date?		
33.	Do maintenance schedules incorporate periodic non-destructive testing of the mill shell wall and other components that could be subject to very high pressures in an explosive event?		
34.	Do maintenance arrangements include a regular assessment of the condition of mill stands?		
35.	Is there an appropriate procedure for the management of any hot works on, or in the vicinity of the milling plant? Ref: Aviva's Loss Prevention Standard for Hot Work Operations.		
36.	Are plant areas subject to a programme of regular cleaning that prevents build up and accumulation of dusts in both high- and low-level areas?		
37.	Are these scheduled cleaning programmes up to date?		
38.	Is there a suitable procedure for safely dealing with any blockages?		

Please Note

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