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In March 2017, the UK’s Health and Safety Executive (HSE) published its Business Plan for 2017/18. Whilst not capturing all that the HSE will deliver during this period, the plan does outline specific priorities within an overall framework.

Included within these priorities is “reducing the likelihood of low-frequency, high impact catastrophic incidents and the potential for extreme harm to workers and the public”. Combustible dusts can, in certain circumstances, provide the recipe for such a disaster.

In February 2008, a sugar dust explosion killed 14 employees at the Imperial Sugar Plant in Port Wentworth, Georgia. A metal powder explosion killed 146 people in 2014 at a Chinese production company, and, closer to home, four people were killed at the Bosley wood mill near Macclesfield on 17 July 2015.

**So what are combustible dusts?**

Many materials we use everyday produce dusts that are flammable and, in the form of a cloud, can explode if ignited. Examples are sugar, coal, wood, grain, certain metals and many synthetic organic chemicals just to name a few.

Manufacturing and processing plants that produce these dusts must conform to the Danger Substance and Explosive Atmospheres Regulations (DSEAR). These can include food manufacturers, breweries, wood mills and furniture makers and pharmaceutical companies.

The Regulations require employers to make an assessment of the risks arising from dangerous substances and to establish precautions to control any risks associated with dust fires and explosions. This includes the classification of hazardous areas and the selection of equipment that is intended to be used within those areas.

**Proper cleaning is crucial**

Special precautions need to be taken in hazardous areas to prevent equipment, including cleaning equipment, from being a source of ignition.

Vacuum cleaners and associated accessories, as an example, can be such a source of ignition through static electricity and sparking. Therefore, it is essential that equipment to be utilised within these areas conforms to the set of European Directives commonly known by the acronym ATEX (Atmospheres Explosibles).

The deflagration or domino chain effect of a dust explosion can, and has seen, the loss of life and the complete destruction of plant and premises. This chain reaction is fuelled by combustible dust settled at high levels within the premises becoming airborne in a cloud format as a result of the initial shockwaves of the initial explosion, and then making contact with the source of ignition.

Good housekeeping is a fundamental health and safety element in any environment. In respect of combustible dusts, this includes the cleaning of areas where the dust can accumulate: particularly at elevated areas such as ducting, pipe-work, sills and shelving which should be part of any cleaning regime.

Traditional cleaning methods have often involved the use of high level access equipment which in turn import the additional risks of working at height for the operatives. Accessibility of this equipment can also be impeded by the configuration of the production line thereby preventing access to certain areas.

One solution is Spinaclean’s ATEX certified SkyVac system that extracts dust up to 12m (40ft) with only one operative working from the safety of the ground.

The health and safety record in the UK is one that we can all be proud of: it’s regarded as one of the safest places in the world to work in. However, we constantly rely upon the many human factors involved in ensuring a safe environment for ourselves, our workers, neighbours and members of the public. Thankfully, low-frequency, high impact catastrophic incidents are exactly that – low – frequency. However, we cannot allow complacency to play any role in ensuring we remain “one of the safest places in the world”.

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