Over 70% of the process industries handle powders or granules at some stage in the manufacture of their products.

These powders and granules are flammable and can form explosive mixtures with air if dispersed in a dust cloud. These explosions can be devastating - leading to loss of life, destruction of plant and subsequent loss of business.

**What we offer?**

ABB offer expert consultancy in the assessment and control of dust explosion risks and in the development of a safety basis for plant. ABB is able to undertake a total or part study on new plant, existing plant, or plant modifications to identify hazards, assess risk and develop practical and cost effective solutions. The range of service available varies from basic consultancy and advice to a complete engineering solution.

ABB use a proven approach for investigating and solving dust explosion issues. The approach can be split into four stages.

- Hazard identification
- Risk evaluation
- Risk reduction
- Develop basis of safety

Our approach covers:

- Evaluation of ignition sources including electrostatic hazards
- Measurement and interpretation of explosive dust parameters, including advice on representative sampling
- Assessment of whether a flammable atmosphere exists or could exist under normal / abnormal conditions or start-up / shut down
- Explosion prevention and protection techniques including inerting, explosion venting, containment, isolation and suppression systems
- Safe vent discharge area determination
- Hazardous area classification
- Explosion consequence modelling
- Basis of safety development
- Auditing
- Incident investigation
ABB’s approach has been successfully applied to a range of equipment including:

- Pneumatic conveyors
- Dryers
- Centrifuges
- Grinders and mills
- Dust collectors
- Mixers
- Hoppers and silos
- FIBC handling
- Dust / vapour hybrid systems

Benefits
- Improved safety, health and environmental compliance
- Reduced risk of personnel injury and plant loss
- Reduced risk of plant downtime
- Fast delivery of a total solution
- A valid plant basis of safety

Why ABB?
ABB consultants has extensive experience of risk assessments on high hazard operating plants. We identify credible risks and offer pragmatic solutions to problems.

To complement the expertise of our consultants, ABB has the latest software tool ‘dust expert’ and expertise in a wide range of relevant hazard and risk assessment techniques, including:

- Hazard analysis
- Process Hazard Review (PHR)
- Hazard studies
- Quantified Risk Assessment (QRA)

ABB also has expertise in:

- Selecting electrical equipment for use in atmospheres containing flammable dusts
- Piping and pressure vessel design and verification for explosion containment
- Dust control techniques for avoidance of secondary explosion potential