

## FIRE FIGHTERS GUIDANCE NOTE # 6-27

### **ISSUE:    FIRES IN INDUSTRIAL DUST COLLECTORS, HOPPERS and BINS**

Fire departments should identify locations of industrial dust collectors, hoppers and bins in their response area in order to adequately pre-plan for emergency situations.

Industrial dust collectors, hoppers and bins that are used in woodworking, furniture manufacturing, flour mills and dry food processing mills may contain combustible dusts such as:

- sawdust,
- metal shavings,
- paper and plastic dust,
- grains and flour, or
- other types of milling or agricultural products.

Explosive conditions may arise when there is:

- an ignition source and/or movement of air into the interior of the dust collector, hopper or bin;
- a sudden movement of materials causing dust to be suspended in air,
- a smouldering fire in the contents,
- a build up of static electricity in equipment used to transfer, transport or move product from one container to another, or
- as a result of first responders or firefighters attempting to clear materials to get to a source of ignition.

Firefighters should exercise extreme caution when responding to these incidents and, where possible, avoid entry into the collector, hopper, or bin to extinguish fires.

Incident Command should identify the product, hazards and the extent and degree to which fire and heat are transferred within the container and the surrounding duct work or buildings. If available, thermal imaging cameras should be used for this purpose.

An adequate water supply is to be established before commencing any suppression operations and, depending on products involved, firefighting foam may be a consideration. When applying hose streams, caution should be exercised to minimize unwanted or sudden movement of potentially explosive materials in the container.

To prevent structural stress or a collapse of the structure, apply only as much water or foam that is necessary to ensure the containment of the fire. A fire in an industrial dust collector, hopper or bin is not extinguished until the structure is empty.

Pre-set relief valves for explosion venting may be present. Firefighters should stand clear of all openings.

Opening any access points must be done with extreme caution and as remotely as possible using aerial devices and ladders along with:

- pike poles,
- ropes or other equipment

in order to allow access while creating a minimum exposure to the individual undertaking the operation and a maximum distance from the hazard.

Crews should refrain from using any power tools to open access points, hatches or hinge pins as residual sparking and vibration may create an even greater explosive hazard. Opening of lower doors of hoppers should only be done after proper ventilation practices have been completed.

If the dust collector, hopper or bin needs to be unloaded, this operation must be done very slowly and systematically to ensure adequate soaking of any contents and safe removal.

Note: Incidents involving agricultural silos are unique and may require different tactics and approaches from those described in this Guidance Note

Reference:    GN # 6-16 Machinery/Electrical Lockout during Emergency Response