



CONSTRUCTION

Insurance Profile

Preventing Spontaneous Combustion

Fires are a significant risk to businesses in the construction industry. In addition to significant property damage, they can cause serious injuries and fatalities. One source of fire is spontaneous combustion, in which a fire starts without an external heat source.

This article outlines the causes of spontaneous combustion and offers strategies to prevent this hazard.

Causes of Spontaneous Combustion

Spontaneous combustion happens when objects increase in temperature without an external heat source, eventually leading to autoignition. Combustible materials can self-heat to a temperature high enough for ignition through chemical (eg oxidation) or biological processes (eg bacterial fermentation). Factors that can contribute to the likelihood of spontaneous combustion include:

- Improper storage or disposal of combustible materials in areas with poor ventilation
- High ambient temperatures combined with dry conditions
- The presence of moisture and air
- High oxygen availability

Several materials that may be prone to spontaneous combustion include:

- Oily or stain-soaked rags, fabric, towels and linens
- Oil-based paints
- Seed oil (eg linseed oil) and products containing seed oil
- Coal, charcoal and peat
- Sawdust and woodchips

Mitigating Spontaneous Combustion Hazards

The following strategies can help address spontaneous combustion risks at a worksite:

- Educate employees about spontaneous combustion and train them on how to avoid conditions that may facilitate it.
- Develop and implement proper disposal procedures, including providing employees with receptacles rated for flammable materials.
- Thoroughly dry oily rags by hanging them outside or spreading them out on a non-flammable surface before disposing of them. They may also be immersed in water before being dried through those techniques. Disposal should comply with waste management and environmental regulations.
- Use non-combustible solvents or water-based materials when possible.
- Avoid stacking or piling combustible materials in a manner that can trap heat. Materials susceptible to spontaneous combustion should be stored in a well-ventilated area.
- Store rags in a metal container with a tight-fitting lid to prevent oxidation.
- Remove and dispose of combustible waste daily and in an appropriate manner, and do not leave materials stored for extended periods.
- Prohibit the disposal of rags in cardboard boxes, waste bins and debris piles. Ensure procedures are in place to monitor compliance with this policy.
- Ensure employees have access to safety data sheets when using flammable materials.
- Keep materials at risk of spontaneous combustion away from buildings and structures.
- Provide and maintain fire extinguishers and other fire suppression systems at jobsites.

Despite prevention measures, spontaneous combustion may still occur. Employers should develop and implement fire and emergency response plans to mitigate the impact.

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