

Risk Insights

Provided by MST Insurance Solutions, Inc.

Preventing Spontaneous Combustion Hazards

Fires are a significant risk to businesses in the construction industry. In addition to significant property damage, they can cause serious injuries and death. One source of fires is spontaneous combustion, or spontaneous ignition, in which fires start without the presence of an external heat source. Several conditions, including the improper storage or disposal of combustible materials, can create conditions for this process to occur. Knowing about and addressing factors contributing to this hazard can help prevent it, and by taking steps to mitigate this risk, employers can help protect people at their worksite and their property.

This article provides information on the causes of spontaneous combustion and how to address those hazards. It also discusses tips on how to be ready if spontaneous combustion occurs.

The 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 (e.g., oxidation) or biological processes (e.g., bacterial fermentation). Factors that can contribute to the likelihood of spontaneous combustion occurring 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

There are several materials used in the construction industry that may be prone to spontaneous, including:

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

How to Mitigate 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 on a nonflammable surface or immerse them in water before drying them. Follow local laws that may regulate the disposal of rags and oily water.
- Store rags in a metal container with a tight-fitting lid to prevent oxidation.
- Prohibit the disposal of rags in cardboard boxes, trash bins and debris piles. Ensure procedures are in place to monitor that this policy is being followed.
- Ensure employees have access to Safety Data Sheets when using flammable materials.
- Utilize noncombustible solvents or water-based materials when possible.
- Keep materials at risk of spontaneous combustion away from buildings and structures.
- Avoid stacking or piling combustible materials in a manner that can trap heat. Materials susceptible to spontaneous combustion should be kept properly in a well-ventilated area.
- Remove and dispose of combustible waste daily and in an appropriate manner, and do not leave materials stored for extended periods.
- Provide and maintain fire extinguishers and other fire suppression systems available at jobsites.

Being Prepared if Spontaneous Combustion Occurs

Spontaneous combustion can still take place despite efforts to prevent it. To prepare for these events, employers should proactively implement an emergency response plan to mitigate its impact. Actions to consider include:

- Developing a fire response plan and an emergency response plan and train employees on them, including whom to notify in the event of an emergency and where the evacuation routes are located
- Practicing fire drills to make sure employees know how to evacuate safely
- Posting proper signage regarding the location of evacuation routes
- Providing education on how and when to use fire suppression methods, fire extinguishers and other emergency response protocols

Conclusion

In the construction industry, spontaneous combustion is a serious hazard that could cause severe injuries or property damage. Taking action to address this risk can help improve safety and prevent losses.

Contact us today for more information and risk management guidance.