REDUCING THE RISK OF FIRE IN SHEDS AND ACCESSORY STRUCTURES

WHY ARE SHEDS AND ACCESSORY STRUCTURES AT RISK OF FIRE?

FUEL STORAGE
Sheds are used to store mowing and yard equipment, cars, ATVs, boats and other machines that use fuel. Storage of fuel puts your shed at an increased risk of fire damage.

ELECTRICAL FIRE
Close proximity of combustible and flammable materials with electrical appliances creates a fire risk.

SUNLIGHT
Direct sunlight over time can degrade fuel containers and interact with chemicals and combustible materials.

FUEL SAFETY

FUEL SAFETY COMES DOWN TO SMART STORAGE, COMPLIANCE AND REFUELING PRACTICES.

FUEL STORAGE

There's a diverse range of equipment found in just about any shed that needs fuel to run including lawnmowers, tractors, cars, and boats. However, storing fuel can be a tricky business. You want to avoid the unnecessary risk of fire by taking appropriate measures to store your fuel.

CONTAINERS
American Petroleum Institute and the Office of the State of Illinois Fire Marshall guidelines:

- Use metal containers of good quality with a working seal.
- Plastic containers can be used, provided they comply with ANSI/ASTM F852-08
- Do not store fuel in non-compliant containers like plastic, cardboard or glass.

PLACEMENT
Fuel should never be stored near ignition sources like open flames or sparks from grinders and welders. They should also be stored away from combustible materials or fertilizers.

Do not place grills or power equipment into the structure without allowing them to cool and dissipate the heat from use.

VENTILATE
Fuel storage containers should be stored in well ventilated areas of the shed.

LABEL
Proper fuel safety storage includes the accurate labeling of all flammable liquid holding containers.

VOLUME
Guidelines recommend storing no more than a total 25 gallons of fuel in 5-gallon approved containers.

REFUELING

There are several measures you can take when refueling to minimize risk to your person and property:

- Always refuel outdoors, not in the shed
- Use a funnel to minimize spill
- Never smoke when handling fuel or refueling
- Ensure engine is switched off before removing cap and refueling
- Replace all fuel and container caps and ensure they are on tightly.
- In the event of a spill, never start the engine. Move the machine away from the area without creating any ignition and wait for the vapor to disperse.

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FLAMMABLE SOLVENTS

It's not just fuel that's a fire and safety threat to your shed. The following common solvents are all flammable and are found in many workshops and backyard sheds around the United States:

- **Alcohols** including methanol, propanol, ethanol, amyl alcohol and hexanol.
- **Aldehydes & Ketones** including acetaldehyde, acetone, methyl ethyl ketone, MIBK
- **Alkanes** including butane, hexane, heptane, octane, nonane, ligroin, naphtha, petroleum naphtha, petroleum ether, petroleum distillates, pentane and petrol.
- **Aromatics** including benzene, bromobenzene, cumene, pyridine, toluene, xylene
- **Ethers** including ether, ethyl ether, methyl ether, isopropyl ether, ethylene glycol monomethyl ether and cellosolve.
- **Toxic Solvents** like acrolein, carbon disulfide, ethyleneimine, ethylene oxide, silane.
- **Halogenated Hydrocarbons** like bromobenzene, chlorobenzene, 1-dichloroethylene, vinyl chloride, bromomethane, chloroethane and ethyl bromide
- **Other Solvents** like acetic acid, acetyl chloride, acetonitrile, cyclohexane, dichloroethane, dioxane, ethyl acetate, ethylenediamine, furan, methyl methacrylate.

AGENTS, SUBSTANCES & CHEMICALS

Store chemicals in approved, clearly labeled containers and store them on shelves with drip trays to prevent any corrosive contact with other materials. Never store flammable materials with these agents, substances, and chemicals:

- **Oxidizing Agents** like chlorates, perchlorates, nitrates, permanganates, and peroxides. Oxidizing agents don't combust, but they can provide oxygen to accelerate combustion rates in other chemicals.
- **Corrosive Chemicals** including sulfuric acid, acetic acid, and nitric acid. These acids destroy organic and inorganic materials.
- **Common Alkalis** including ammonium hydroxide, calcium oxide and sodium hydroxide (lye). Alkalis are also known as bases.
- **Hydrogen Peroxide** contacting any combustible material can result in spontaneous combustion.
- **Picric Acid** is sensitive to shock and friction when dry and can be explosive
- Any material that reacts with air or moisture to create heat. Concentrated sulfuric acid is corrosive and can react with water, giving off heat and toxic fumes.

DIRECT SUNLIGHT

Heat from the sun is another cause of combustion. Skylights and windows in your shed can channel the sun's heat and create high temperatures. Direct sunlight can also corrode storage containers, which is especially dangerous if they contain flammable and combustible materials. Affix blinds and shades to windows to negate the sun's effects when you're not in the shed. You might also consider sheds with annex or retractable skylights to better protect your materials.

ELECTRICAL FIRES

Electrical equipment and flammable materials don't mix. In a shed, where space is at a premium, it might take a bit of planning to make sure flammable and combustible materials are kept away from electrical equipment. Try keeping items that could burn stored on shelves rather than on the floor. Use only one power plug/appliance at a time. Don't use extension cords when charging devices. Don't use power boards or multiple extension cords.

You can also install a heat alarm (not a smoke alarm) in the shed to sound if the temperature rises too high. Heat alarms will alert you to a situation that could potentially cause a fire. Some heat alarms can alert the owner via text message when the temperature of the shed had reached a level that could cause ignition in stored fuel and other combustible substances.

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