



LOSS CONTROL BULLETIN

Another loss prevention service from Bollinger, Inc.

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GOLF & COUNTRY CLUB - PESTICIDE STORAGE

#120

Background

Pesticides require proper storage to maintain product and container integrity and to protect other non-pesticide products from damage or contamination. Improper pesticide storage can result in exposures to humans and the environment to dangerous levels of pesticides and can also result in costly environmental cleanups.

Storage areas should be clean, dry, ventilated, and adequately lighted. Warning signs should be posted, and the area secured to prevent unauthorized access. Pesticides should be stored separately from fertilizers to prevent contamination of the fertilizer and potential hazardous chemical reactions. Food, feed, or personal protective equipment should be stored in a separate area in order to prevent contamination.

The label instructions on the pesticide container will provide valuable information on proper storage. Most states rely on label requirements as a basis for enforcement. Pesticide storage also can be affected by zoning ordinances, building and fire codes, right-to-know laws, and environmental regulations.

Whether you are constructing a new pesticide storage facility or renovating an existing facility, the following elements should be taken into consideration during the planning process.

Design & Construction Considerations:

Appropriate site selection is very important when constructing a new pesticide storage facility or when modifying an existing building. The storage building should be located down-wind and down hill from other club facilities and adjoining properties.

Pesticide storage buildings should be freestanding structures used for no other purpose. If pesticides must be stored in a maintenance building, the room must have a substantial partition wall and may not be in an area where people work or congregate. Fire resistive or noncombustible construction is desirable but not required. As long as the building is soundly constructed and well maintained it may be masonry or even frame construction.

Storage areas should be of sufficient size to adequately store all stocks in designated and segregated areas. There should be adequate aisle space for access in an emergency.

Storage buildings should have an impermeable floor that incorporates spill containment. The floor must be poured concrete with no cracks or seams and have a four-inch sill around the entire inside perimeter for spill containment. A built-in drain, sump pump, and secondary containment system is also desirable.

An alternate solution to the turf chemical storage question is the factory built locker style building, specifically engineered to trap spills and fires inside and to protect the environment from pollutants. The cost of these units is comparable to new construction in many instances.

Freight container boxes or trailers are generally not acceptable for pesticide storage because the floors are not liquid tight and will not contain spills.

Storage Considerations:

Small quantities of pesticides (< 250 gallons) can be stored in an approved metal cabinet. The type of Cabinet selected should correlate with the hazards of the pesticides to be stored. For example, pesticides with a flammable or combustible hazard should be stored in an approved flammable liquid storage cabinet. If incompatible pesticides are to be stored, multiple cabinets may be required.

Pesticides should be stored in accordance with label instructions and all applicable federal, state and local standards and regulations. Pesticides should also be stored separately from all other storage and occupancy uses.

Storage areas should be kept clean and orderly and pesticide containers positioned so that they are not exposed to unreasonable risk of damage to the containers or labels. Avoid storing pesticide containers near windows as sunlight may cause chemical breakdown or overheating.

Smoking should not be allowed where pesticides are stored. Pesticides should be stored in original containers. Containers should be in good condition, with labels intact, and stored in a way that allows inspection for integrity. Containers should be inspected upon delivery. Damaged or leaking containers should not be accepted.

Storage areas and containers should be inspected regularly. Leaking, rusted, unsafe, or defective containers should be placed in suitable over pack containers, segregated from undamaged containers, and any leak or spill cleaned up in accordance with manufacturer's directions. Pesticides should never be stored in any food, feed, beverage, or medicine container.

Hazard class and function should segregate pesticides. A dike, wall, or other barrier should physically separate potentially reactive materials. If shelves are used to store pesticides, the shelves should be constructed of impermeable materials to prevent saturation of the shelf material with pesticide and possible reactions with other pesticides.

Storage areas should have sufficient lighting so that labels and product information can be read easily. Pesticides stored on shelves should be arranged such that the label is visible.

Personal protective equipment, eyewash and shower facilities, routine washing facilities, a first aid kit for pesticide poisoning, spill kits, and fire extinguishers should be readily available.

Workers should be trained in the proper use of this equipment.

A current inventory of pesticides by brand name and formulation should be maintained. An up to date copy of the inventory should be kept in a separate location that is easily accessible in an emergency. An emergency fire and spill response plan should be developed and given to local authorities and state emergency response committees.

Ventilation:

Storage areas should be cool, dry, and airy or, if possible, should have exhaust ventilation installed to reduce concentrations of toxic fumes and to hold down temperatures. In many situations, natural ventilation such as outside wall louvers or roof vents is adequate. If there are any flammable or combustible chemicals, mechanical ventilation must be provided and all electrical equipment must be explosion proof. Ventilation must not connect with offices or other areas frequented by people. Provide mechanical ventilation that provides at least 4 air changes per hour for flammable pesticide storage areas.

Security:

Access to the pesticide storage building should be restricted to licensed pesticide applicators only. The building must be securely locked at all other times. If the building has other uses, the pesticide storage room should be isolated in a remote area of the building.

Outdoor pesticide storage areas should be fenced or walled, and covered or otherwise protected to prevent damage to labels and hazards to persons or wild animals.

Posting Requirements

Post warning signs on all storage areas and storage cabinets containing pesticides (or empty containers) with the signal words "DANGER" or "WARNING" on the label. Post signs on all directions of possible approach to the storage area. You must be able to read the sign from 25 feet away. Check with local officials for posting requirements and required verbiage.

Some sample wording that might be required is as follows:

**WARNING PESTICIDES
FIRE MAY CAUSE TOXIC FUMES**

Or

**DANGER
PESTICIDE STORAGE AREA
ALL UNAUTHORIZED PERSONS KEEP OUT
KEEP DOOR LOCKED WHEN NOT IN USE**

Sources of Additional Help

The National Fire Protection Association (NFPA) has several codes and standards that provide general recommendations for the safe storage of pesticides. These include:

- NFPA 434 "Code for Storage of Pesticides in Portable Containers";
- NFPA 30 "Flammable and Combustible Liquids Code"; and
- NFPA 395 "Standard for the Storage of Flammable and Combustible Liquids on Farms and Isolated Construction Projects.

The U.S. Environmental Protection Agency (EPA), trade associations and agricultural colleges can be additional sources of help. If you have any questions or would like additional information, contact your local Insurance Broker

IMPORTANT NOTICE - The information and suggestions presented by Bollinger Inc. in this Loss Control Technical Guide are for your consideration in your loss prevention efforts. They are not intended to be complete or definitive in identifying all hazards associated with your club, preventing workplace accidents, or complying with any safety related, or other, laws or regulations. You are encouraged to alter them to fit the specific hazards of your club and to have your legal counsel review all of your plans and club policies.