

4.5-k MATERIAL HANDLING STORAGE AND SAFETY

Alternate Names: Materials Management

DESCRIPTION

Material handling, storage, and safety are construction practices designed to effectively prevent environmental contamination and human health hazards through the use of good housekeeping and training.

SITE SUITABILITY

These practices are applicable to all construction sites and developed properties where material use and storage of fertilizers; detergents; plaster; asphalt and concrete compounds occurs. Refer to Section 4.2-n Hazardous Material Management for more information on proper practices for hazardous chemicals such as acids, limes, glues, adhesives, herbicides; petroleum products, such as fuel, oil, and grease; paints, solvents, curing compounds; and other materials that may be considered detrimental if released into water bodies.

Advantages

- Reduces the potential of stormwater discharges by minimizing the volume of hazardous materials stored on-site.
- Establishes controls for material delivery and storage on construction sites.
- Reduces the potential for discharges of potentially-polluting construction materials (e.g., by specifying wash stations, spill containment, and hydrocarbon management techniques).

Disadvantages

- Requires dedication of space in the project area, which is often limited.
- Weatherproof storage areas with secondary containment require significant investment.
- Requires dedicated time and material resources to train and ensure that employees obey delivery and storage policies for hazardous materials.

DESIGN CONSIDERATIONS

- Storage of reactive, corrosive, or flammable materials must conform to all applicable regulatory codes and requirements. Storage sheds and other areas must meet building and fire code requirements. Contact the local jurisdictions to review site materials, quantities, and proposed storage areas to determine specific requirements.
- Designate one on-site location for material delivery and material storage. This location shall be near the construction entrance but away from main traffic, away from waterways and drainages, and in an area that is or will be paved.
- Secure material storage facilities to prevent unauthorized access.
- Keep appropriate spill clean-up materials near all storage areas.
- Minimize the volume of hazardous materials stored on-site. Refer to Section 4.2-n for more details regarding Hazardous Material Management.

BMP DESIGN APPROACH

Pollutant Source Control

Hydrologic Source Control

Stormwater Treatment

SCALE OF APPLICATION

All SFR and MFR < 1 acre

MFR 1-5 Acre and CICU < 5 acres

MFR and CICU > 5 acres and all WQIPs

TYPE OF APPLICATION

Temporary

Permanent

- Meet OSHA requirements for the handling of hazardous materials.
- Always follow manufacturers' instructions regarding material use, including protective equipment deployment, ventilation, mixing of chemicals, and protection from ignition.
- Place emergency devices that seal storm and sewer drains as a contingency for spills. Train employees on an on-going basis to use these devices.
- Lake Tahoe Region's dry Mediterranean summer allows vegetation and debris to dry out and become highly flammable. Use caution with all flammable material to ensure a fire-free construction site. Follow all fire defensible space recommendations issued by the local fire protection district.

INSTALLATION

- Construct all material storage facilities prior to delivery of materials.
- Ensure that employees trained in emergency spill cleanup procedures are present when hazardous materials are being unloaded or used.
- Design spill containment systems to retain the largest volume of spill that could occur.
- Keep hazardous materials containment devices and spill kits ready to use near locations where materials are being unloaded or used. Refer to Section 4.2-n for more detail regarding Hazardous Material Management.
- When possible, store all materials indoors within appropriately designed structures. If materials must be stored outside, cover, contain, and secure them properly using secondary containment.
- Do not allow rainwater or snow to collect on containers. Inexpensive domed plastic covers can be employed to prevent water from collecting on the tops of storage drums.
- Allow sufficient space between stored containers to allow access for spill cleanup and emergency response.
- Do not store reactive combinations of materials, such as chlorine and ammonia, in the same containment facility.
- If spill materials remain on the ground after construction is complete, promptly and properly recover materials and any contaminated soil.

INSPECTION AND MAINTENANCE

- Inspect material storage areas daily.
- Maintain a current inventory of materials received and stored on-site at all times.
- Ensure that current Material Safety Data Sheets (MSDS) are readily available for all materials stored on-site.
- Store hazardous materials in their original containers with original product labels maintained in legible condition. Replace damaged or otherwise illegible labels immediately.
- Post proper storage instructions at all times in a conspicuous location.
- Repair or replace perimeter containment devices or structures, and maintain covers and liners as needed to maintain proper function.

- Never bury or attempt to dilute dry material spills with water. Use a rag for small spills, damp mop for general cleanup, and absorbent material for larger spills. Dispose of materials properly.
- Contain and clean up any spill and leaks immediately. Report spills and leaks to supervisors, and call emergency response personnel if appropriate.
- A hazmat spill plan must be prepared that includes appropriate direction for responding to spread of a spill, cleaning contaminated areas, and properly disposing of contaminated materials. Refer to Section 4.2-n for more detail regarding Hazardous Material Management.

