What you should know about storage of bagged cement

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This memorandum is addressed to the trucker, materials dealer, contractor and hod carrier so that each may act in a manner that will best protect a valuable commodity.

Portland cement should be protected against moisture at all times, whether the cement is being transported on a truck or being held in storage or on the jobsite. Broadly, protection includes (1) keeping out water which may fall as rain or as a spray from the hod carrier's hose as he is washing down the mixer; (2) preventing water on the bed of a truck from splashing upward against the sacks; (3) protection from water on the ground, such as puddles of rain or water from the mixing operations. All too often bags of cement may be observed sitting in water or on moist concrete, or receiving a spray of water over the sacks.

There is a very good reason for protecting cement from exposure to water before it is batched into the mixer—portland cement starts to hydrate as soon as water touches it.

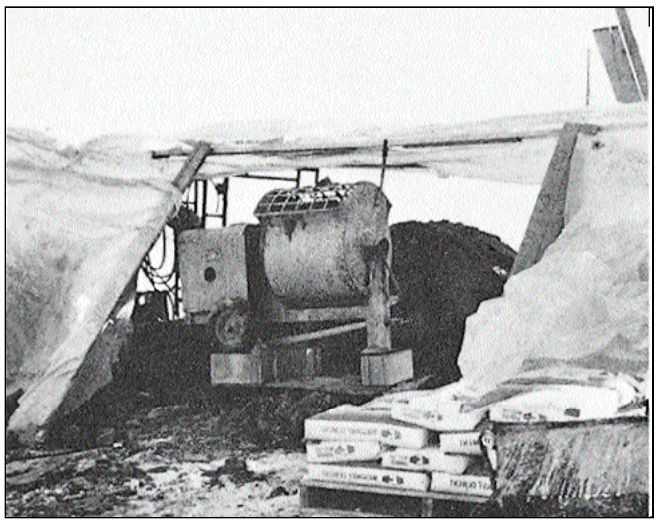
What do we mean by hydration of cement? Stated simply, it means that the cement combines chemically with the water. We do not want water to combine with the cement until the actual start of mixing the plaster, mortar or concrete because if the cement becomes moist prior to mixing and placement there will be some loss of strength and value in the ultimate product. Portland cement is a valuable commodity and should be treated with reasonable care.

If rain or fog is expected during a truck shipment, the cement bags should be stacked on pallets on the bed of the truck. Bags of cement should not rest directly on even a moist truck deck. They should be covered with canvas and the tarp placed so that water splashing upward from the deck of the truck will not wet the bottoms of the bags.

If a contractor purchases cement in quantities that will require storage, the cement should be held in a dry, protected area that has a dry floor. There should be a canopy over the loading door unless the warehouse permits entry of the truck for inside loading. When rain or mist is falling or imminent, the cement should be covered with a tarp before the load is exposed to the weather.

Do not assume that winterized (water-repellent) bags do not need protection against extended exposure to moisture. Water-repellent bags are just what the name implies. They may be made repellent by having a plastic coating on the shell of the bag or they may have a plastic liner to aid in keeping out moisture. One reason that water-repellent bags are not waterproof is that the bags must and do have tiny perforations in the walls to allow release of air from the sack during the bag-filling operation. Without those holes to release air from the bag, filling would be virtually impossible using the typical packaging machines. Covering water-repellent bags on the truck or jobsite makes good sense during inclement weather. Elevating the bags on one or two pallets or raised dry wood planks reduces the possibility of premature hardening of corners and edges—or worse, the entire sack of cement—on the bottom layer of a stack of bags. Even in a warehouse that appears to be dry, elevation of stored bags of cement on pallets or planks is good practice.

If the mortar, plaster or concrete mixing operation is proceeding in an unprotected area while rain is falling, the mixer operator should keep plastic film, heavy canvas or saturated felt over the pallet between his trips to remove bags from the pile for batching into the mixer. In areas or times of high relative humidity, cement on the job should be covered when the operator leaves the job at the end of the day. Damage to the cement may occur from rain or condensation of dew if the bags are left exposed.



A makeshift shelter of lumber and polyethylene film will protect not only the bagged cement but also the equipment and mixing operation.

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