Office of Environmental Health & Safety
333 S. Beaudry Avenue, 28th Floor
Los Angeles, CA 90017
Phone: (213) 241-3199
Fax: (213) 241-6816

SAFETY ALERT

No. 13-01 WATER INTRUSION ISSUES IN SCHOOL BUILDINGS JUNE 2013

Moisture problems and water intrusion in school buildings can be caused by a variety of conditions, including roof and plumbing leaks, condensation and excess humidity. When excessive moisture accumulates in buildings or on building materials, mold growth will often occur; particularly if the moisture problem remains undiscovered or unaddressed.

Molds are part of the natural environment. Molds do generate tiny spores to reproduce which travel through the indoor and outdoor air continually. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet and foods. If excessive moisture or water accumulates indoors, extensive mold growth may occur, particularly if the moisture problem remains undiscovered or unaddressed. There is no practical way to eliminate all molds and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.

Water can enter buildings both as a liquid and as a gas (water vapor). Liquid water moves freely in the path of least resistance and will always travel to the lowest point. Water vapor moves through the air of buildings in the ventilation system, through openings in the building shell or directly through the building materials themselves. When taking action to control moisture, both forms of moisture need to be considered.

When a large water leak or spill occurs indoors, the key is to act quickly. If wet or damp materials are dried within 24-48 hours, in most cases mold growth will not occur. Drying the wet materials is only half the battle. Be sure that the source of the water problem is fixed to prevent future leaks. Make sure to contact Maintenance and Operations for assistance in adequately drying out all building materials.

Regular inspections of buildings are vital in detecting signs of water intrusion or mold growth early. Look for stains or discoloration on ceilings, walls, floors and window sills. Be sure to check areas not frequently visited such as mechanical rooms. Look around and under sinks and plumbing fixtures for standing water or stains. Ensure water is not accumulating in air conditioning or refrigerator drip pans. Clean and repair roof gutters regularly. Make sure the ground slopes away from the building foundation, so that water does not enter or collect at the foundation.

Moisture from water vapor should be detected and controlled as well. The amount of water vapor within the air is represented as the relative humidity (% RH). The ability of air to hold water vapor decreases as the air temperature falls. Indoor humidity levels and dampness can be controlled by increasing the ventilation or air movement within a building by opening windows /doors or by using heating, ventilation and air conditioning (HVAC) systems. HVAC systems should be run continuously when indoors areas are occupied. This will provide adequate ventilation to maintain indoor humidity levels between 30-60%.

You can also reduce indoor humidity levels at the source. Showers and bathrooms should be vented to the outside. Use exhaust fans when cooking, dishwashing or cleaning. The potential for condensation on cold surfaces (windows, exterior walls, piping) can be reduced by adding or repairing insulation. The installation of carpet in areas where there is perpetual moisture (i.e. near drinking fountains or classroom sinks) is not recommended.

For additional tips and assistance in maintaining a healthy indoor learning and working environment, including preventing water intrusion, please contact the Office of Environmental Health & Safety at 213-241-3199 or www.lausd-oehs.org.

We also highly recommend the Environmental Protection Agency's (EPA) Indoor Air Quality Tools for Schools Program which provides a common-sense guide to prevent and solve the majority of indoor air quality problems with minimal cost which is designed to be implemented at the site level. For more information on this program contact District Nursing Services at 213-202-7580. You may also refer to *Reference Guide 5354.0 Implementation of the EPA's Tools for Schools Program to Improve Indoor Air Quality* or the EPA's website at http://www.epa.gov/iaq/schools/.

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