

Potential Winter Construction Challenges

Precautions are needed on the construction sites to avoid potential challenges associated with cold and sunny winter weather conditions. Neglecting caution during cold and sunny winter weather can contribute to avoidable problems in air and vapor barrier installations. Peel and stick and sealant bond failure, as well as delayed shrinkage in materials are more likely to happen in the winter installations. Winter installation concerns noted are likely not to be visible until after the spring thaw, which will likely be too late or costly and time consuming to correct.

Understanding the concerns and taking the following precautions in the winter, is usually far less costly and time consuming than coming back in six months to repair the results.

Stay on schedule and follow these guidelines.

- ❑ Substrate must be clean, dry, and frost free —always wipe surfaces to remove unseen frost.
- ❑ Be careful applying warm material on cold surfaces, because a thin layer of condensation will develop on the substrate, which will inhibit proper bond of the material to the substrate. Borderline winter installs will become an issue that could be prevented—talk to the Quality Department.
- ❑ Protect all materials (sealants, peel & stick membrane, liquid membrane, etc.) from freezing. Do not store materials outside or in an unheated truck (on-site or off-site). Most products need to be stored above 50°F.
- ❑ Generally, most fluid applied materials will need 25-40°F and rising until proper cure (contact the manufacturer for temperate and the length of time above freezing for proper cure).
- ❑ When Air & Vapor barriers go down to 25°F, just keep in mind that these materials become difficult to install above 50-60°F. Warm materials on cold substrates might cause bonding issues because of a condensation layer.
- ❑ Asphalt based peel and stick materials (air and vapor barriers, as well as detail membranes) will always require primer for installation, which will likely have a low temperature install of 40°F. This will limit their installation.
- ❑ Butyl and acrylic adhesive backed peel and stick material, which are generally primerless, and can be installed in extreme cold temperatures, AECOM Quality recommends installing with a primer installation when the temperature is down below 35°F, regardless of the manufacturer's instructions.
The Quality Department recommends Carlisle 702/702LV, which goes down to 25°F.
- ❑ Factory applied air barrier products, such as Tremco 430 board, can be installed in colder temperatures; however, butyl and acrylic adhesive backed peel and stick material, as well as sealant, will also need to be installed, which has temperature limitations as well.
- ❑ If temporary heat is being used on the interior of the building, make sure it is **INDIRECT** heat.
(SEE AECOM TEMPORARY HEAT BULLETIN FOR MORE INFORMATION)
- ❑ Review the elevation that the installation is to be installed. South and west elevations might cause problems due to sun load, which creates bubbles in the air and vapor barrier materials (liquid or peel and stick).
- ❑ There are some products that could freeze; however, if the product gets wet before the material unfreezes and dries out, the material will fail and be removed from the substrate.
- ❑ When spraying in cold temperatures, make sure that the equipment and the hose is properly insulated and kept warm. A co-spray might be utilized for low temperature installation, contact the manufacturer.

