AEROBARRIER
Breakthrough Envelope Sealing Technology

AeroBarrier Cold Weather Operation

How to use seal and use optional equipment during cold weather

Purpose:
This document describes the AeroBarrier seal process during cold weather. This information will cover how to handle the sealant and other equipment during seals in cold weather.

Sealant:

- ALWAYS store sealant above 40˚F (4˚C) as the sealant is water- based and will freeze if stored in cold conditions.
- Best Practice is to store sealant in a temperature-controlled warehouse and take only the required # of buckets to the job site. Any partial containers to be put back into the warehouse at the end of the day. If sealant does freeze, do not use and contact Aeroseal for further instructions.
- Mix sealant every hour during a seal operation to avoid any change in viscosity.

Pre-Heating the Space to be Sealed:

For sealing in very cold situations, ensure that the space being sealed is at least 40F with the temperature increasing.

- Existing heat source (furnace, other installed heat source that do not add moisture or combustion exhaust to the envelope). Sites that have installed heating systems should leave their system on the night before the seal operation.
- Space heaters inside the envelope (electric or indirect propane with exhaust going outside the envelope)
  * Heaters must be removed before the seal operation begins.
- Pre-heat with indirect propane heaters outside using duct to force air into the envelope
- Pre heat with the AeroBarrier system
  - Set-up the blower door and fan/heater equipment before prep. Power will be needed for the fan, and separate power will be needed for the heaters as there will be no power control from the MCU (Main Control Unit) before the seal operation is in progress. All of these will be running at 100% when plugged directly into 110V 20A power. Four outlets will be needed (3 heaters, 1 fan).
  - First, turn the fan on (plug-in). The fan must be in operation before power is applied to the heaters. The fan must remain on the entire time the heaters are energized and for

five minutes after the heaters have been de-energized. Plug the heaters into the local power or generator. Once the fan/heater assembly is supplying heated air to the envelope, let it run while prep is completed.

Prep the Space:

In cold conditions, tape adhesion may be reduced. You may need to clean some surfaces and remove dust/dirt to make sure tape stays in place during the seal operation.

Pre-Heating Air During the Sealing Operation:

An indirect heater can be used to warm the air going into the blower door fan with the following directions:

- The exhaust from the heater must be routed outside the seal/work area. Direct fire propane heaters should not be used due to the moisture that will be added to the air.
- Air flow from the heater should not point directly into the blower door fan. This may cause incorrect CFM readings.

Post Seal:

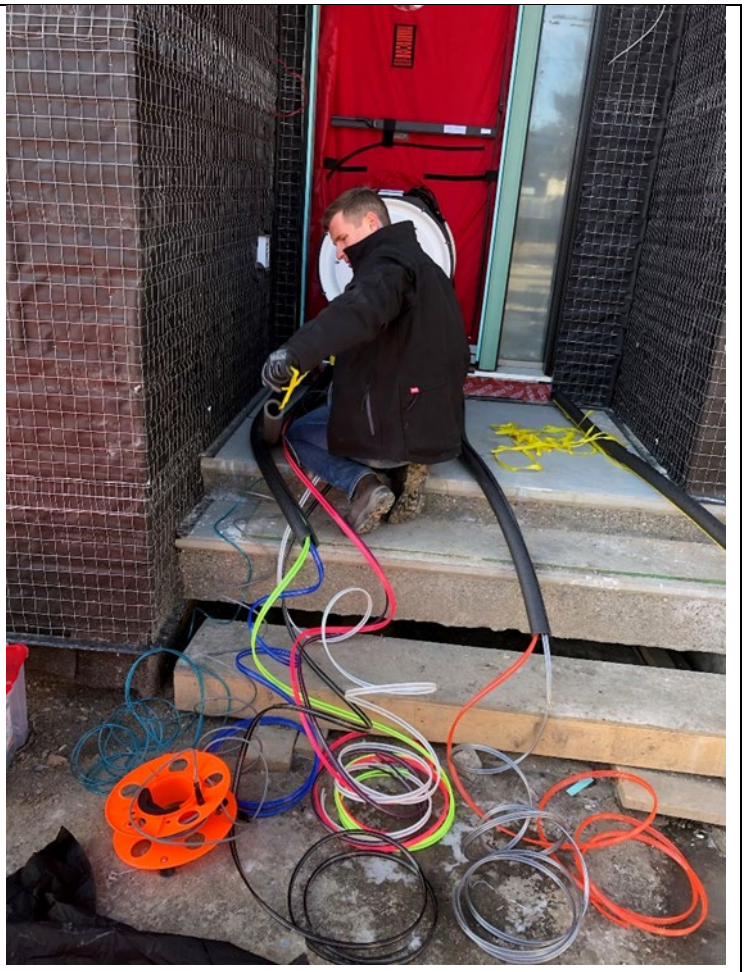
Remove condensation from the compressed air system

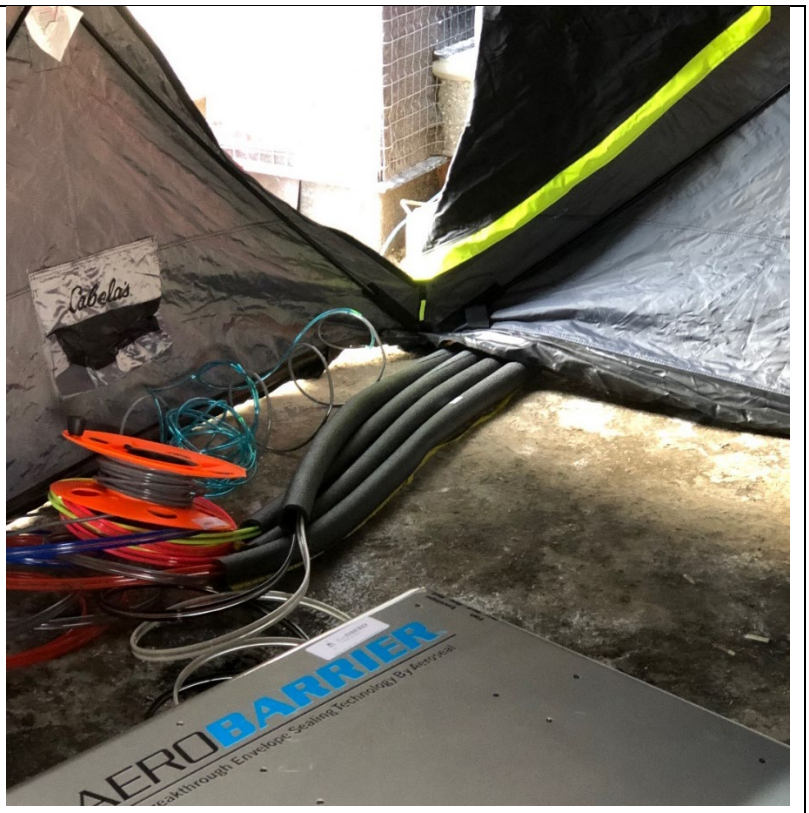
- drain the compressor
- close the valve
- restart the compressor
- blow out the air line to purge any condensation (Keep air hose from freezing by purging the air lines after use)
- drain the compressor
- If you do find hoses/tubing that have some frozen water, thaw that equipment inside a heated building. Use a hot air gun on low or a hair dryer and slowly thaw the frozen section of the hose or tubing.
- **ALWAYS** ensure that the hose reels and machine are free of water before storing away after the job.
- After the Flush step of your Aerobarrier process (when you pump water through the liquid lines and nozzle), remember to blow the hose reels out using the compressed air. Removing moisture from the lines will eliminate any wait time for the equipment to thaw out before your next job.

The best option: store the equipment and hose reels in conditioned environment above 40 degrees F

Tips:

- Be aware of uninsulated walls - as cold walls will cause condensation on the inside and will not retain heat.
- Plan on seal rates (pump injection rates) being slower than in summer months.
- If a long section of hose reels is outside & exposed to elements, then consider routing them through insulated sleeves.

Consider using insulation to protect tubing in cold conditions	

Using a tent for shelter. A larger tent can be used for to pre-heat air going into the blower door where the building design allows. Otherwise, use the garage area to pre-heat air and create a wrm area to work. Always remember to keep exhaust outside and leave an opening for air flow for the blower door.	

	Indirect heater example

	Indirect heater supplying heat to the second floor