

Application Guide: Shrink-wrapping with ZERUST® ICT®510-OPS Outdoor Preservation VCI Shrink Film

Protection of equipment against environmental elements

EQUIPMENT, PRODUCT AND ACCESSORIES THAT MAY BE NEEDED

1. Heat Tool Kit (Shrink-wrap gun, torch and/or shrink fast heat tool)
2. Shrink tape for repairs, installation of doors and vents
3. Film cutting knife
4. Strapping, 1/2" and 3/4" polyester strapping
5. Vents, doors and access panels
6. Tape measure
7. Stapler
8. Ladder
9. ZERUST® ICT®510-OPS VCI Shrink Film
10. ZERUST® Open Cell or Closed Cell foam for padding of sharp corners
11. ZERUST® VCI Diffusers such as Vapor Capsules or ActivPak® for void space protection

Safety Equipment (PPE)

1. Fire extinguisher
2. Heat retardant and Welding safety gloves-long cuff
3. Safety glasses

OPTIMAL WORKING CONDITIONS

Temp: 45°F (7°C) to 99°F (37°C)

Wind: Less than 10 mph

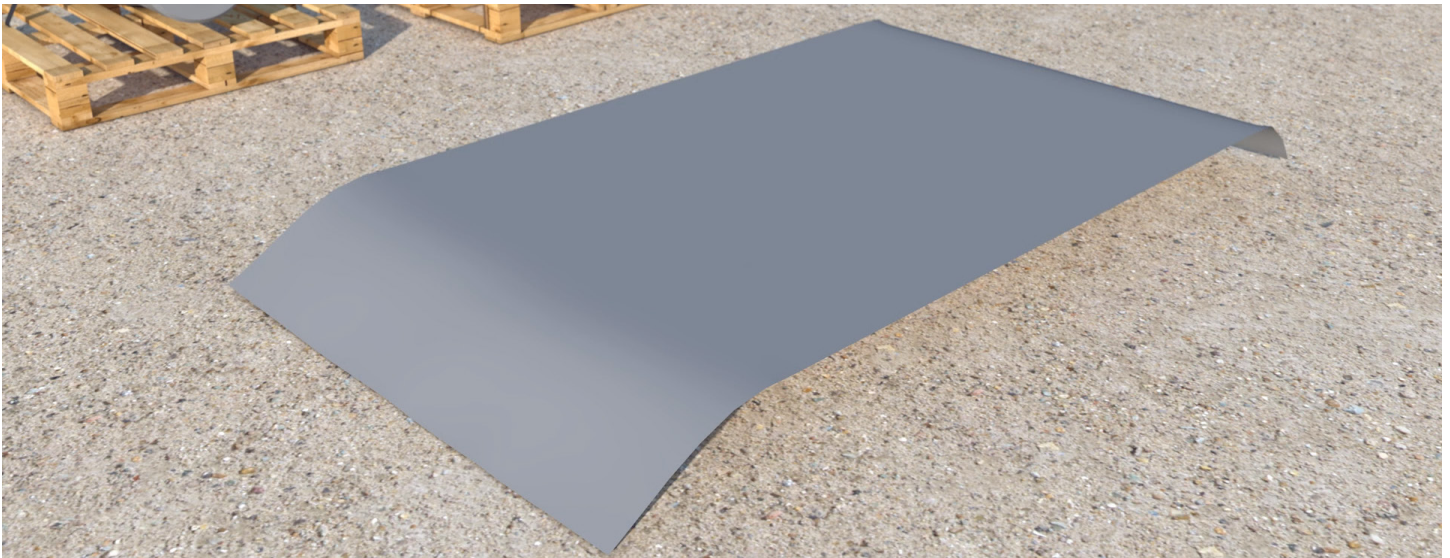
PRIOR TO SHRINK-WRAP INSTALLATION

1. Ensure that the equipment to be protected is dry, clean and at ambient temperature. ZERUST® ICT®510-OPS Film protects clean metal from corrosion when enclosed correctly.
2. Be sure to have the proper equipment, tools and heating devices for the job.
3. Check the integrity of the ZERUST® ICT®510-OPS shrink film. The film should appear uniform in color and not be damaged, punctured or dirty. The ZERUST® ICT®510-OPS film or excess leftover film should be stored in its original packaging when not in use. This will preserve the corrosion inhibition chemistries in the product from depleting sooner.

4. If necessary, to shorten installation time, pre-made shrouds or bags using the ZERUST® ICT®510-OPS for protruding structures on the equipment (such as chimneys, channels) can be constructed off-site prior to the installation day.
5. Be cautious to not drag the film on the ground. This causes static electricity that attracts dirt and dust and prevents the shrink film or shrink tape to weld properly.
6. Check for sharp corners and edges. Pad edges with ZERUST® VCI foam. After shrinking, patch thin spots or tears caused by edges with shrink tape.
7. If equipment contains gasoline tanks, empty fuel prior to wrapping. A ZERUST® VCI capsule, ActivPak® or ActivPowder™ should be placed inside these tanks to provide corrosion protection before capping the tank. Properly install tape over gas vents for fire safety precautions. Reminder tags to remove these ZERUST® products from the gasoline tank should be placed and secured on a prominent spot to remind the user to remove diffuser before filling the tank when the equipment is ready for use.

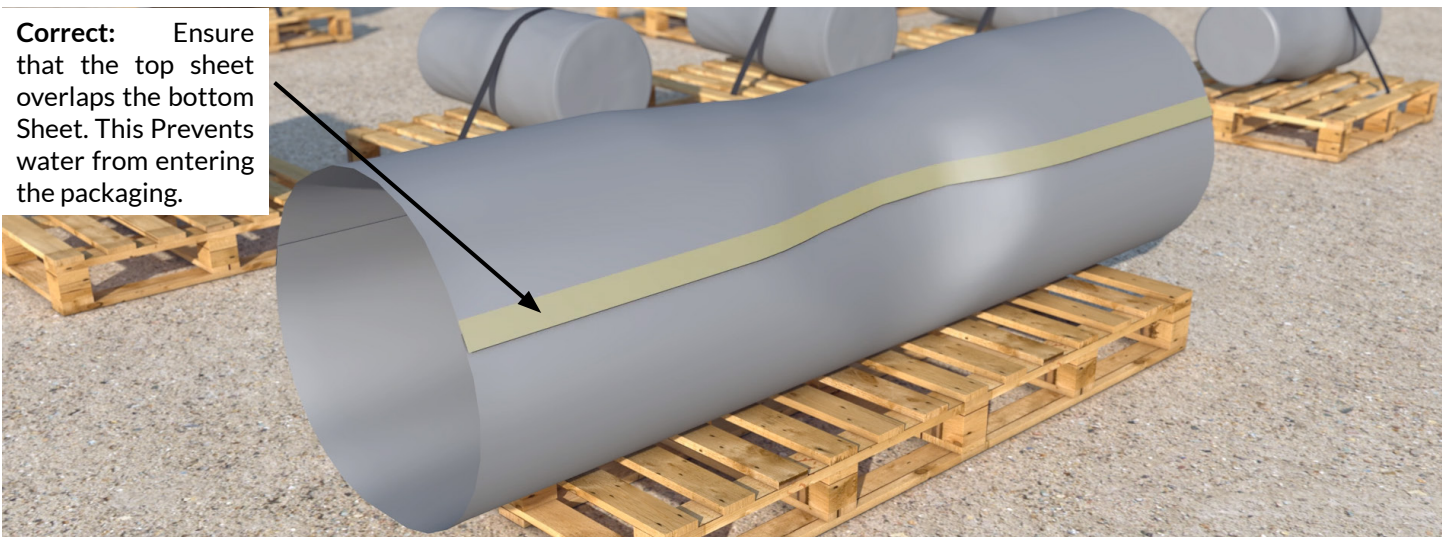
SHRINKING

1. If the equipment to protect will be sitting on wooden pallet, cover the pallet with a sheet of ZERUST® ICT®510-OPS film to separate the equipment from direct contact with the wood. Allow ample excess on the base piece of ICT®510-OPS film for connecting with the upper portion of the ICT®510-OPS cover. If necessary, use the shrink tape to secure both sections together before heat shrinking the sections together.



2. After you have placed the ICT®510-OPS cover/wrap onto the equipment or item, properly secure all sides, corners and folds by folding, taping and pressing material down. **IMPORTANT NOTE:** When joining sections of film, i.e. upper portion to a bottom portion, ensure that the top portion lays over the bottom portion (See correct & incorrect photos below).

Correct: Ensure that the top sheet overlaps the bottom sheet. This prevents water from entering the packaging.



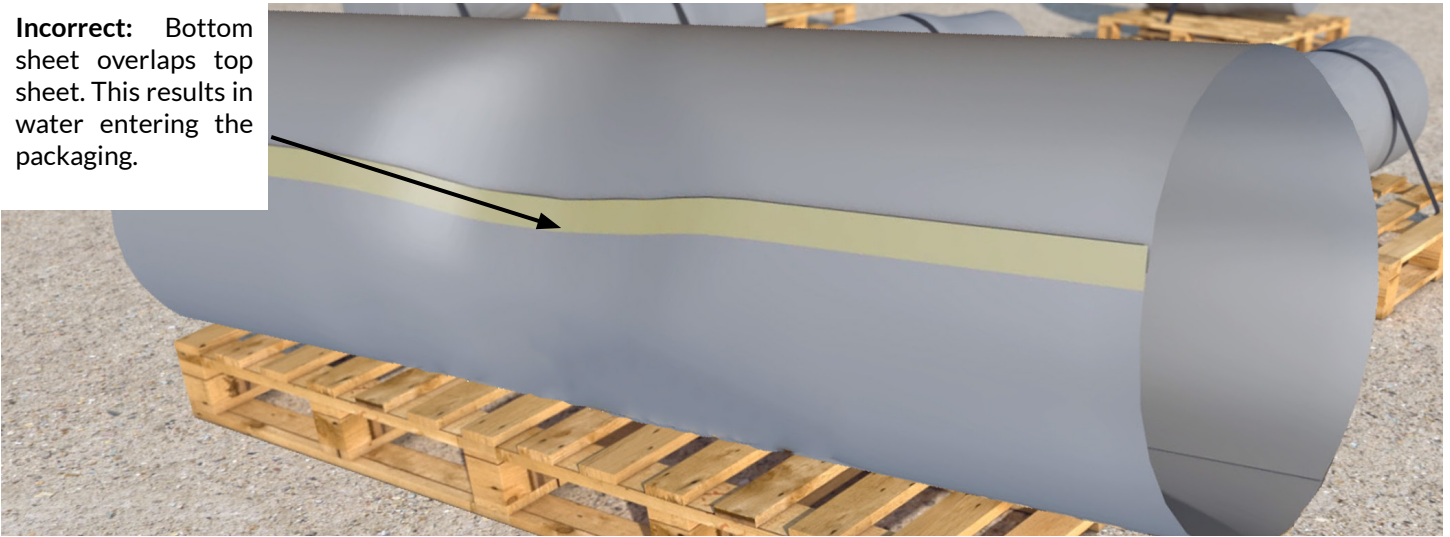
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Incorrect: Bottom sheet overlaps top sheet. This results in water entering the packaging.



3. Optional Step: install a polyester belly strap around the lower portion of the wrapped product to help hold the shrink-wrap in place and allow you to secure the wrap to the equipment. Installing belly bands and or perimeter tensioners will help pull the slack out of shrink film allowing it to become tighter during the heating process.
4. Heat and shrink film in this order:
 - a. Starting at one end, begin applying heat on the bottom of the wrap. Starting at the bottom will allow the heat to rise and cause the top sections to shrink faster.



- b. Use a shrink-wrap torch and/or gun to apply heat in steady strokes in a spray paint fashion. Be consistent and careful to keep the heat moving evenly on the surface.



- c. After shrinking one area move to the next until you have completed all areas.
- 5. Use the least amount of heat possible on sharp and pointed areas. The thicker the product is in these areas the more allowance for better performance over a longer time period.

If you have any questions, please contact your ZERUST® representative. www.zerust.com

REPAIRING

After the product is completely wrapped, you will need to check for small holes, tears and or weak thin areas. The most effective method of repairing a hole or weak spot is to use shrink tape. When shrink tape is applied to a hole, or to reinforce over a sharp object, it will need to have a small amount of heat applied to help activate the adhesives in the tape. Applying Shrink tape to these areas is important for keeping contaminants out while keeping the ZERUST® VCI technology in. Inspect and insure area is clean and free of debris prior to applying tape for optimal adhesion.

OPTIONAL ACCESS DOOR AND VENT INSTALLATION

Installing a vent and or door is easy with the proper tools. Standard prefabricated zippered access doors and vents are available commercially. Choosing the proper location for a door is something you should map out prior to wrapping. This will allow proper use of the door for your application. Venting should be considered in certain applications. For example, stationary equipment wrapped for long periods of time will benefit from vents along with ZERUST® diffusers to help control condensation build-up.

‡ DECLARATION

Corrosion protection claims are based on Northern Technologies International Corporation (NTIC) internal laboratory testing performed under controlled parameters on contaminate-free substrates. Real-world application corrosion protection duration on different substrates will vary and depends on factors such as, but not limited to, the application or use, environmental / storage conditions, surface cleanliness, type of substrates, and coating thickness (where applicable). The use of the term "Up to" in reference to time is defined as any time duration from zero up to a specified time frame, but in no event beyond the specified time frame. The use of the term "for years" is based on NTIC's experience with its products but is in no way guaranteed. The use of the term "Up to" in reference to volume is defined as any volume from zero up to a specified volume but in no event beyond the specified volume of protection. It is the customer's / user's obligation to evaluate product performance, corrosion protection duration, safety, and suitability for intended use within the scope advised in the data sheet and to comply with all applicable laws and regulations. **LIMITED WARRANTY/DISCLAIMER** Warranty is limited to the replacement of a product that fails to meet specifications. For full warranty and disclaimer information, visit www.zerust.com/warranty.

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