

FIELD BULLETIN¹ 080211

TO: Sales, Customer Service, Field Ops, Distributors
FM: Charles Osborn Ext. 350
Field Services
DT: February 11, 2008
RE: Drying Conditions for Triarch Exterior Products

Triarch specifications require the following ENVIRONMENTAL CONDITIONS for installations of Triarch Exterior Applications:

1. Application of materials shall not take place during inclement weather unless appropriate protection is provided (see Field Bulletin 080211 Proper Tenting). Protect materials from inclement weather until they are dry.
2. Application of wet materials shall be at a minimum ambient temperature of 15 degrees Celsius (60 degrees Fahrenheit) and rising. These temperatures shall be maintained for a minimum of 24 hours (48 hours for Granyte, Sandstorm, and Duroplex EXT) thereafter, or until completely dry.

These are the minimum conditions to assure resistance to wash-off from direct rainfall exposure and also to assure long-term performance. All Triarch products are water-based and require the evaporation of water for drying to proceed. Any conditions that retard the evaporation of water, such as low temperature and high relative humidity, will prolong the time required for drying. In cases we have seen where the product will not achieve ultimate film hardness due to the low relative temperature. When application is directly under un-guttered roof areas, allow more drying time to resist wash-off. Concentrated run-off of rain from un-guttered roofs or scuppers can deliver extremely high water pressure to specific areas of a wall.

At high relative humidity, the time required for drying will be prolonged, no matter what the temperature. When temperatures fall rapidly in the late afternoon or evening, the formation of dew on wall surfaces can occur under moderate to high relative humidity conditions. A light deposit of dew will completely inhibit the drying of the Triarch finish until the dew evaporates, and may affect color. Please be aware that dew will completely saturate a substrate on shaded elevations and that the substrate will often remain saturated until exposed to bright, direct sunlight for over two hours.

Most wash-offs and blister problems involve application of the finish over a substrate that is still saturated. The wash-off and blister will occur in areas where the finish is applied over a saturated substrate. It is especially important to apply finish over a dry substrate under marginal drying conditions.

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Finish must never be applied over efflorescence. When Triarch products are applied directly over CMU or concrete, very close attention must be paid to surface temperature and moisture content. Wet areas on concrete are not readily visible. When concrete or CMU are cold or frozen they do not warm up as rapidly as other substrates when exposed to direct sunlight. Hand-held infrared surface temperature thermometers are strongly recommended to check surface temperatures when application is done in the shade at lower temperatures. The cost is comparable to a quality electric drill. Shaded elevations may have surface temperatures 9.5 degrees Celsius (15 degrees Fahrenheit) below the air temperature, which greatly increases the probability of dew formation on that elevation.

Triarch Field Service personnel can provide suggestions on installation of protective enclosures. Always allow for more drying time in a protective enclosure because all positive drying effects from natural breezes are eliminated, and also because a high relative humidity may be trapped. Relative humidity increases inside the enclosure as water from the applied finish evaporates. Recent evaluations have demonstrated that using a moisture meter is a reliable method for determining whether a finish is dry. The most accurate moisture meter uses a plaster/concrete reference scale with moisture readings from 0 – 100. This is the #2 scale setting on the Delmhorst Model BD2100 (www.delmhorst.com/products/floor.html). Readings below 20% indicate that the finish is sufficiently dry to remove the protective enclosure and expose the finish to moisture. This is equivalent to 13% moisture reading on moisture meters using a wood scale.

Fuel burning space heaters inside an enclosure produce combustion byproducts that can asphyxiate (carbon monoxide) workers and contaminate the finish. Propane heaters may produce high relative humidity levels in an enclosed area. Manufacturers of oil-fired heaters specify that fresh air must be supplied when used in an enclosed area. Electric heaters provide heat with less air quality problems inside an enclosure. OSHA regulations related to the use of heating equipment during construction can be found in 29CFR, part 1926 Section 150 Fire Protection; Section 151 Fire Prevention; Section 152 Flammable and Combustible Liquids; Section 153LP Gas; Section 154 Temporary Heating Devices; and Section 55 Gases, Vapors, Fumes, Dusts, and Mists. The temperature and relative humidity inside the enclosure must be maintained around the clock. The temperature gauge should be located at the lowest level of the enclosure.

Dehumidification systems may provide positive benefits for ensuring positive drying of Triarch products.

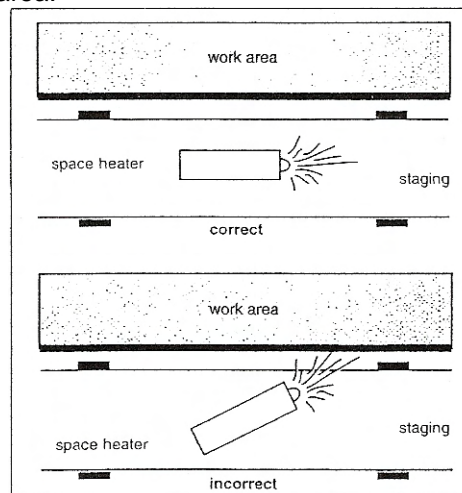
TIP: Whenever possible, store finishes at 21 degrees Celsius (70 degrees Fahrenheit) or above prior to application when the outdoor temperature is 10 degrees Celsius (50 degrees Fahrenheit) or below. The speed of drying will be significantly increased, reducing the risk for wash-off.

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RE: Proper Tenting Methods

As the cooler months quickly approach, the need for tenting and heating becomes a necessity. The following is a list of helpful tips collected from various contracting firms across the country.

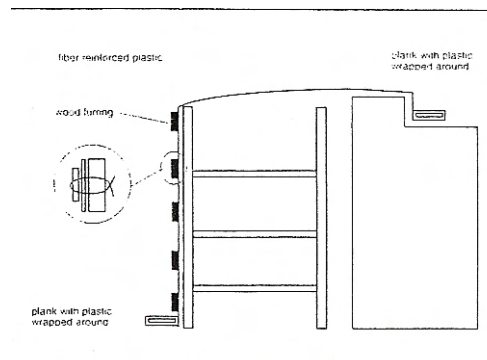
- It is important to maintain a warm temperature inside the enclosure until the wet materials fully cure. Therefore, someone should monitor the heating equipment around the clock.
- The tent and heat are usually provided by the applicator or the general contractor.
- Since heat rises, the temperature gauge should be kept on the lowest level of the tented construction area to ensure that the temperature does not fall below 50 degrees Fahrenheit anywhere within the work area.



- The heat source can be propane or kerosene. Propane lasts longer, and it is a clean heat source. However, it will add a tremendous amount of moisture to the enclosure. Kerosene could produce soot when the tank runs dry if the equipment is in need of service.
- If space heaters are chosen, you should position them parallel to the wall rather than pointing them directly at the substrate that Triarch will be applied to.
- The humidity level inside the tent is as important as the temperature. If the humidity level is too high, the material will take longer to dry.

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- Venting the top of the tent will reduce the humidity level. This can be accomplished in two ways:
 1. Cut holes in the plastic at the top of the tent and close to the edge of the scaffolding. Make the cuts away from the wall.
 2. Drape the plastic over the parapet and hold it off the roof, approximately 6 inches. This will vent the tent the entire length of the enclosure, similar to a ridge vent.
- The enclosure used should be a transparent, fiberglass-reinforced plastic sheathing.
- Two common tenting methods are described as follows:
 1. Plastic sheathing is placed from above the wall surface, over the top of the scaffolding and down the outside to the base of the scaffolding. Adjacent pieces of plastic are overlapped a minimum of 12 inches, rolled up and wired together with the wire placed every two to four inches. The tie wire is pushed through the plastic on one side of the roll and pushed back through the other side. These areas are tied to the scaffolding uprights, cross members, screw jacks, etc. This method will not achieve an air tight enclosure. However the air spaces will provide further venting. The base of the plastic is usually cut longer and wrapped around planks for stability. Of course, with this method, the plastic sheathing becomes torn and can only be reused to a certain extent. During long term use, the plastic requires patching and tightening of the tie wire connections. If the plastic sheathing has holes on the ends which are reinforced with metal O rings – similar to grommets – you need only to tie these areas together.



2. Plastic is draped on the outside of the scaffolding similar to the above mentioned method. Then, wood furring strips are installed horizontally to the outside of the scaffolding, sandwiching the plastic between the scaffolding and the furring strips. This method costs more with the added expense of the wood furring. However, with this procedure, you greatly reduce the chance of the plastic tearing and blowing off due to high wind conditions. In addition, it is also considered a better long term enclosure. As with any tenting procedure, it is extremely important to ensure that the scaffolding frames are tied together at the interlocking pin locations. This can be accomplished by either inserting a metal pin, which will pass through the coinciding holes in the scaffold legs and interlocking pins, or by wire-tying the scaffold frames together.

CAUTION: During high wind conditions the wind can enter the tent enclosure, forcing the air upward. Since the plastic is tied to the scaffolding, it resists the wind pressure; and the plastic will act as a sail, forcibly lifting the scaffolding off of the interlocking pins. **Never underestimate this possibility.**

If you have any questions regarding tenting and heating, you can contact on of Triarch's Field Service Managers.