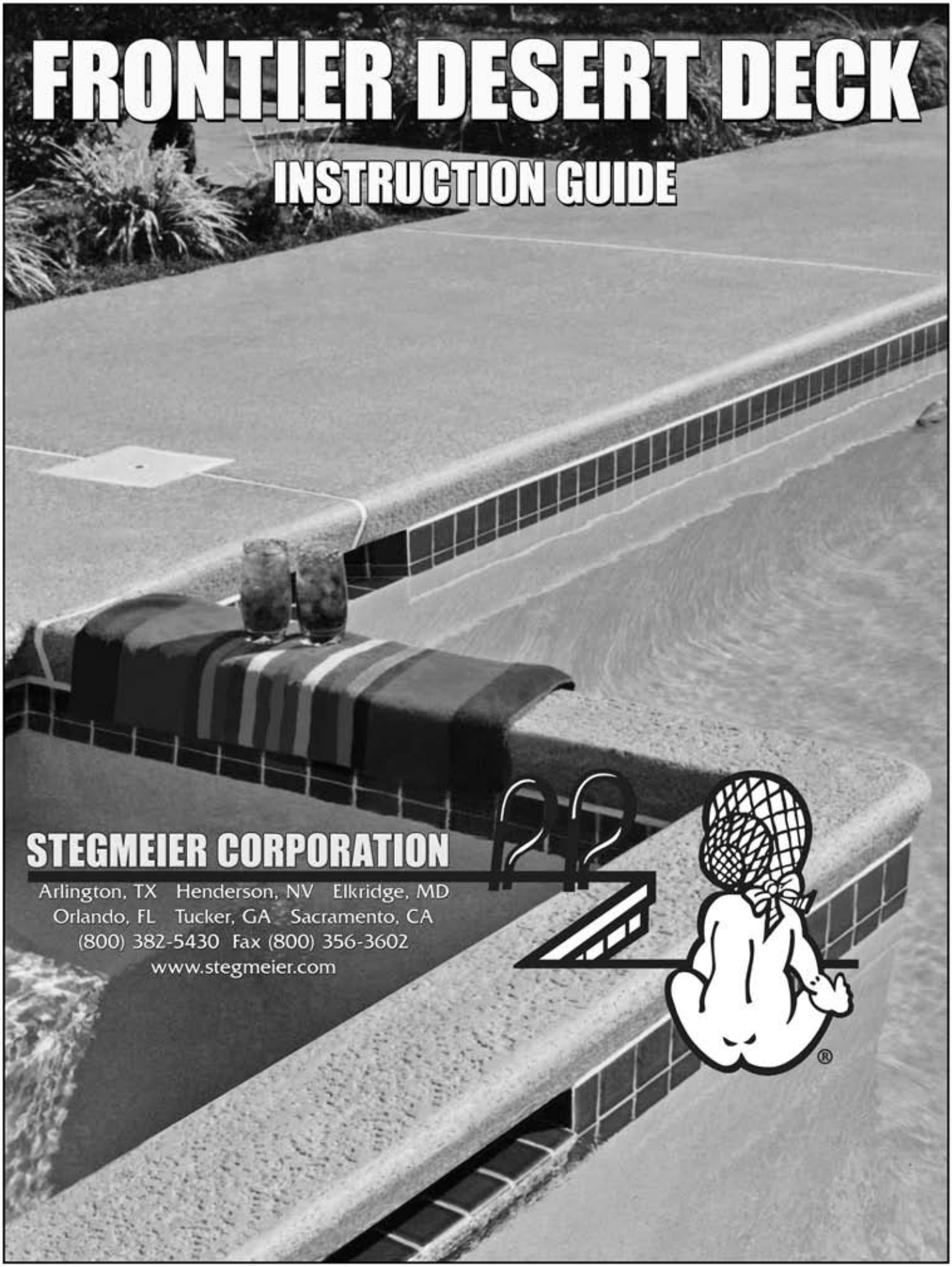
FRONTIER DESERT DECK

INSTRUCTION GUIDE



STEGMEIER CORPORATION

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Instructions for Application of

FRONTIER DESERT DECK

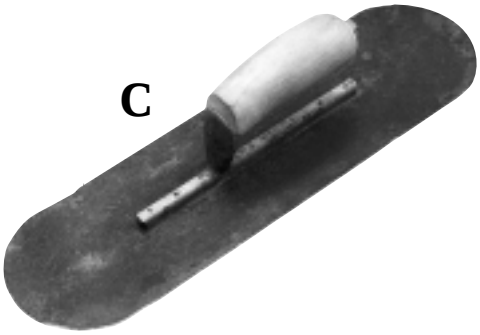
Materials

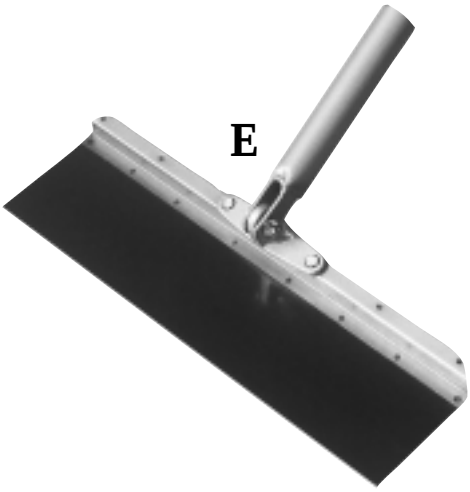
A. Frontier Desert Deck
B. White Cement
C. Marble Sand (clean, white, 20 mesh -or- pool plaster sand)

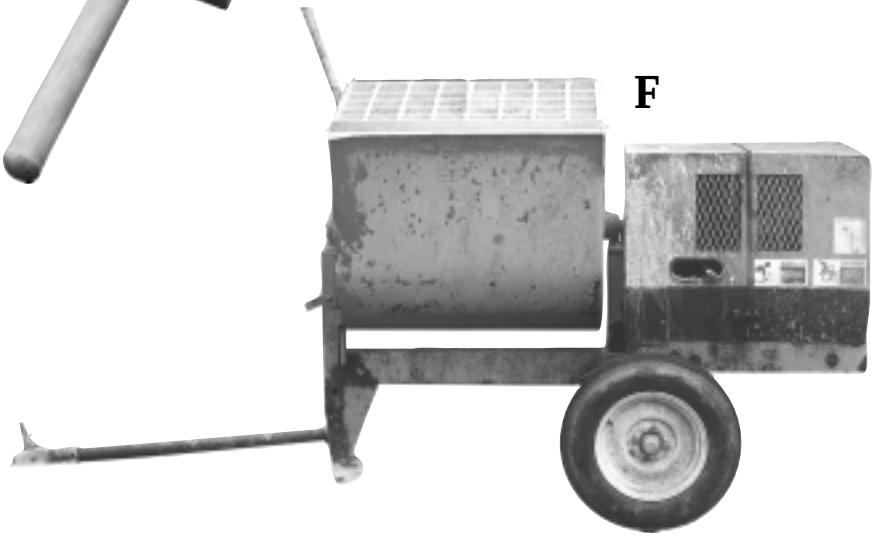
Special Tools & Equipment

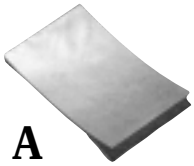
A. Cantilever Flexible Edger
B. Foam Profile Edging Tool*
C. Pool Plaster Trowel
D. Dash Brush*
E. Walking Trowel*
F. Paddle Type Plaster Mixer

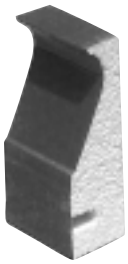
*These tools are available from your nearest Stegmeier Dealer.











Preparations

Forming and grading should be prepared as for an ordinary broom finish, allowing for proper drainage, etc. Since the finished Frontier Desert Deck (FDD) is very thin, pre-set expansion joints should be set flush with the top of the forms. Mask areas directly adjacent to work, as FDD is applied by dashing it on with a brush. Pay special attention to aluminum because the cement in the FDD will corrode and blacken it. It is a good practice, as with other concrete finishes, to have formwork completely prepared and all materials and special tools at the job site in advance. Immediately before placing the base concrete, the subsoil should be thoroughly dampened. This moisture allows concrete to set more uniformly by preventing excessive water loss to the subsoil.

Ordering the Readymix

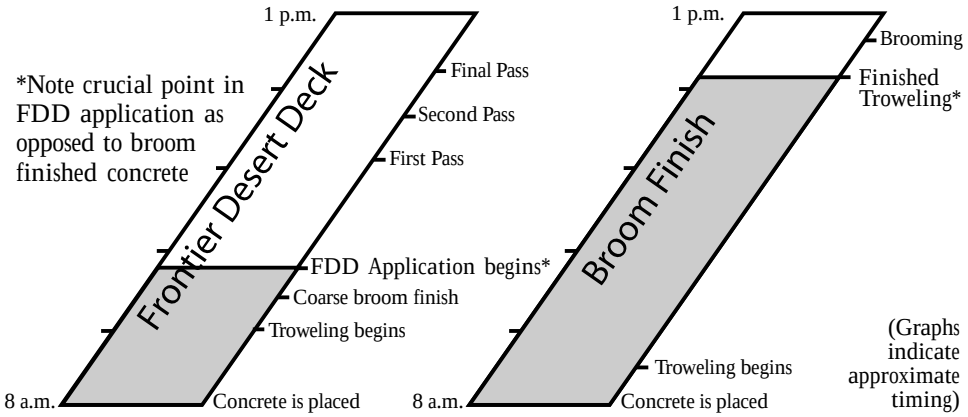
The right concrete design:

1. 3,000 psi concrete, no fly ash (5 bag mix)
2. 6% air entrainment
3. 4 to 4-1/2 inch slump

Although this mix works well for other finishes (broomed concrete, etc.), this design provides especially desirable properties for FDD. Fly ash is eliminated because this tends to rise to the surface, producing a parting agent, unsuitable for FDD application. The addition of 6% air entrainment provides a uniform and predictable pour by trapping moisture. This retained moisture stops water rise, eliminating hot spots and uneven suction. It also helps prevent shrinkage cracks on hot, dry or windy days.

Placing the Concrete

There are a number of tools and combinations of tools used in placing concrete. We recommend using the methods the contractor has been most successful with in the past, providing the concrete is placed in a minimal amount of time.



Preparing the Base Concrete for Frontier Desert Deck

After the base concrete is placed and has set sufficiently to permit finishing, it should be floated or troweled to produce a true, even surface. As the finished FDD is very thin, care should be taken to avoid water holes and drainage problems. Flaws in concrete place ment and finish cannot be covered with FDD.

Brooming the Base Concrete

A broom finish should be applied using a wide nylon or cement finisher's broom. The broom should be damp only and not wet, producing a uniform, rough texture. Care should be taken to broom all edges, leaving them with an open, coarse texture, yet free of debris.

Brooming is required for the following reasons:

1. To ensure a mechanical bond.
2. To break up any impurities in the concrete that may have risen to the surface.

Since FDD is applied while the concrete is still damp, it attains a chemical as well as a mechanical bond.

Coverage and Good Mixing Practice

One unit of FDD covers from 300 to 400 sq. ft., depending on the dash man's skills, concrete condition, and type of deck (cantilever or other). The proportions for mixing FDD are (1) unit FDD to (1) sack of white cement to (1) 100 lb. bag of white marble sand. Mixing is performed in a paddle type mixer only. Depending upon the size of the mixer used, it is often advisable to mix enough FDD to complete the entire slab at once. This practice ensures uniform color throughout by eliminating the chance of error caused by a hastily prepared mixture. Avoid mixing partial batches unless measured very carefully.

Mixing Instructions

Belt driven rental mixer

Using a paddle type mixer (wiper blades preferred), blend the marble sand, white cement and FDD with a tarp over the mixer to avoid loss of material for about 3 minutes.

The FDD unit should be added last. Add 4-1/2 gallons of water at one time to the paddle* side of the mixer. This will produce a thick paste consistency, mix until no smears of the FDD color are seen. Additional water is then added to produce a creamy, liquid state. This last stage of mixing should be done by the dash man, as the final water content determines the coverage and texture.-

Caution: It is very important to keep the amount of water the same for each mix to avoid color variances (uneven color).

* the downward paddle stroke is opposite the pour spout.

Because FDD is in a dry, powdered state, excessive dry mixing would lose valuable additives to the air, while mixing wet would cause FDD to float. Total water content (per unit) should not exceed 8 gallons. If additional water is necessary, the sand is too fine. **Caution: the use of sand other than marble sand will cause the finished FDD to be hot.**

Time of Application

FDD is applied when the concrete is set up enough to support the dash man's weight, yet damp enough to cause moisture to come to the surface when walked upon.

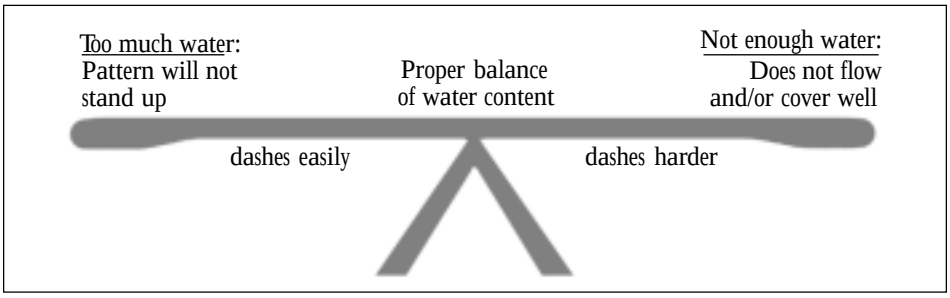
Application of Frontier Desert Deck

The dash stroke is achieved by raising the brush shoulder height, bringing it forward (extending the arm completely) and snapping the wrist. This causes the material to rain onto the concrete in a uniform pattern. The best texture is attained when standing at least seven (7) feet from the area to be covered (when practical). The dash man should always work with a full brush, laying even, parallel rows (approx. 6 inches wide). The first dash stroke applies the bulk of the material, overlapping slightly for complete coverage. The remaining material in the brush is used to even-out the texture of the work already dashed.

Note the use of a tall bucket to relieve back strain.

Note sideways position of brush in dash man's hand.

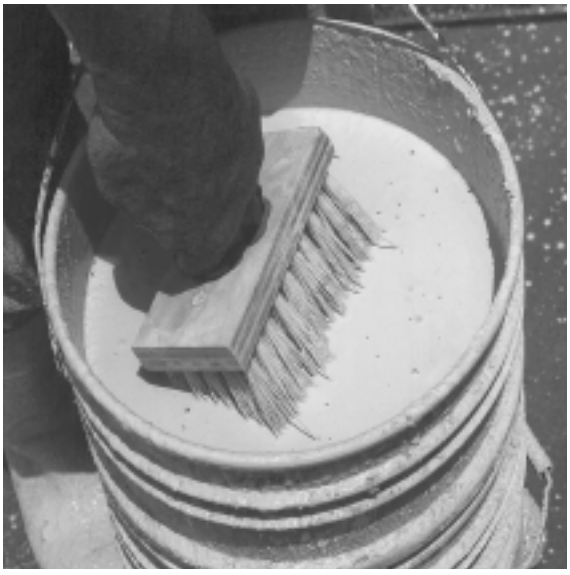
The knolls produced with this pattern should be approximately 3/16" in height. After the first few dash strokes, the dash man may want to add a little more water to the mixer to achieve the desired coverage and texture (see diagram). In hot weather, additional height may be desired. This is done by re-dashing a slight amount of FDD onto the work before it has lost its shiny appearance (water glaze). The object of this second dash is not to increase the amount of material, but to make the material stand up higher. Use the same dash stroke described above, but apply very little material.

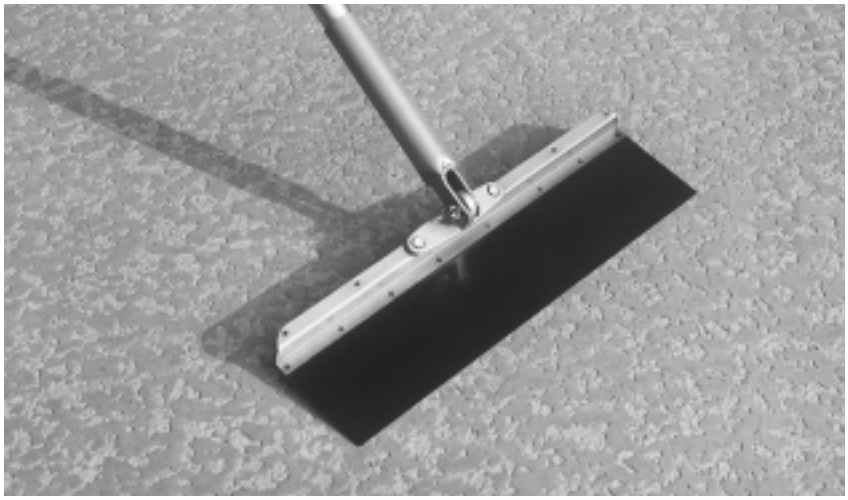


Troweling Frontier Desert Deck

The finished FDD should expose a 50% flat-50% void surface. This flat-void pattern is achieved beginning with a very light troweling (which sets the initial pattern), and progressing to a finished troweling (which produces a hard, dense surface).

The First Pass begins as the dashed surface starts to lose its water glaze. Troweling may be done with a pool plaster trowel or walking trowel.





Hand Troweling:To set the pattern by hand, use a well-broken-in pool plaster trowel. The trowel should be held flat, using a very light hand.

The Walking Trowel: This tool consists of a wide, limber blade which attaches to extension handles. To set the pattern, suspend the trowel over the work and lower it until a slight amount of pressure is exerted. Always use a pulling motion. The limber blade follows the contour of the slab, producing a very light flat-void pattern. Although the walking trowel may be used on a very narrow slab, it is especially useful for its speed and long reach.

The Second Pass follows closely behind the first, finishing out the texture set with the walking trowel. Holding the trowel flat, correct any uneven pattern, while attaining the desired 50-50 flat-void pattern.

The Final Pass is a sharp troweling necessary to clean away any “fuss marks” left from flat troweling. This process may involve a separate troweling, but is often combined with the Second Pass in warm weather conditions.

Soft plastic bags allow the finisher to apply the final pass without leaving foot prints.

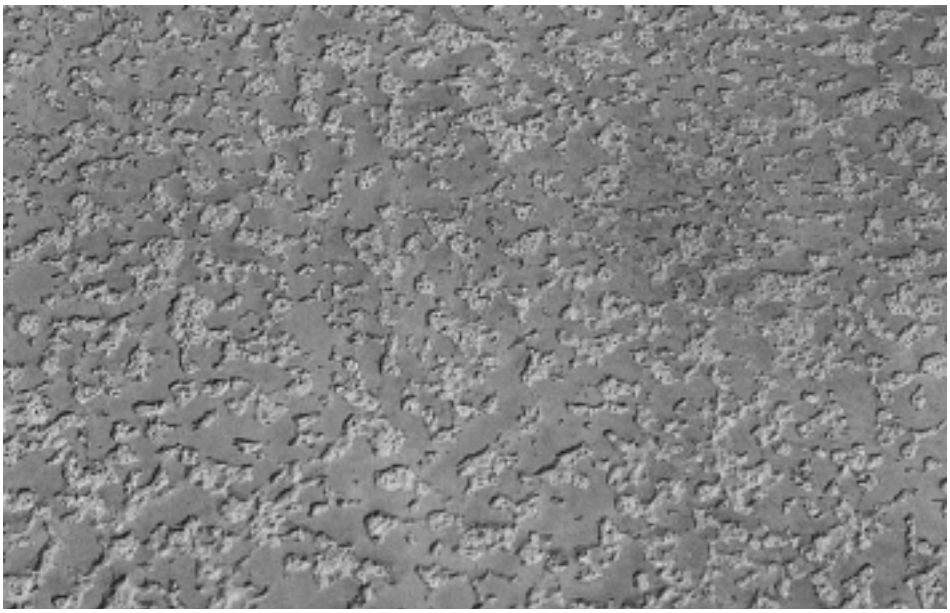
Edging Frontier Desert Deck

Should edging be desired, use a 1/2" tool for the base concrete and 3/8" tool for the FDD finish.

The Flat-Void Pattern

Attractive and Functional

Since the FDD mixture is very rich (approx. 1 part sand to 1 part cement), the 50-50 pattern is necessary to control craze-cracking. With the proper finish, the flat sections can expand and contract from the void sections, while attaining a hard, durable cement finish.



Application to a Cantilevered Deck

1. Whether the cantilever forms are set the day before or the morning of the pour, care should be taken to be completely ready when the concrete truck arrives.

2. While pouring the base slab, care should be taken to pat or vibrate the cantilever form well, ensuring against rock pockets (honey comb). Place and finish concrete as previously described.

3. The cantilever form should be stripped at approx. the same time the brooming process is taking place.

4. In the event that patching is required, use a small amount of the FDD material. This material should be taken from the mixer before the final wetting-up process. The Foam Profile Edging Tools are available to match each Stegmeier deck form profile.

5. The cantilever edge should be dashed one section at a time, just prior to dashing the top slab.

6. The flat-void pattern can be produced with a hand trowel as previously described, but should be finished with a Cantilever Flexible Edger. This tool can be made by cutting a 4” x 6” piece of plastic from a discarded bleach bottle (polyethelene) or laminated plastic sheeting available from copy stores.

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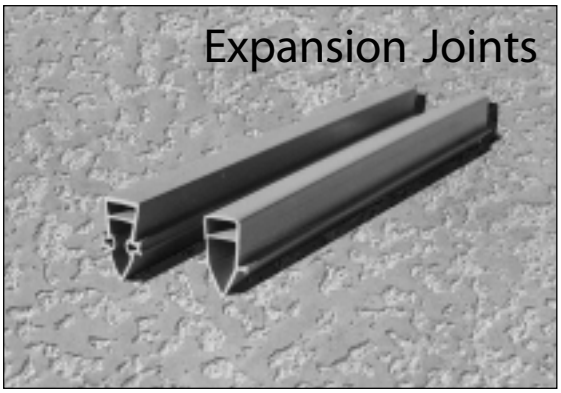

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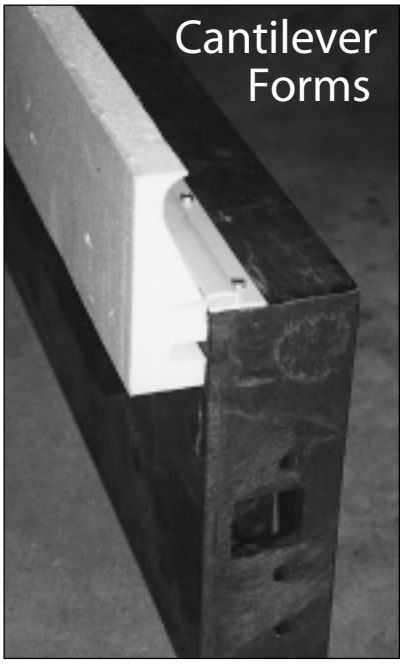

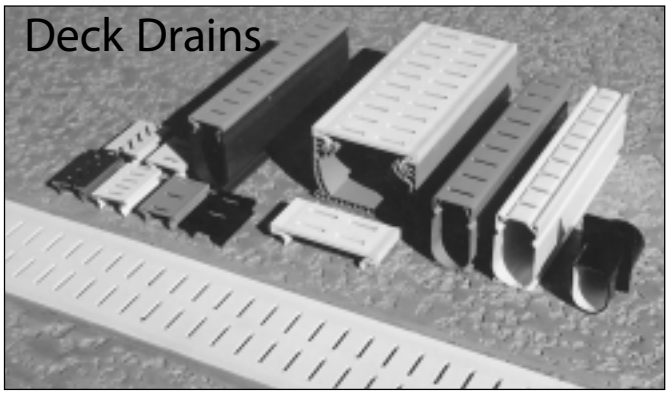

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