

## **7 BOND COAT AND WATERPROOFING**

These specifications are built on the following criteria:

- 1) The tie beam and walls will have the system as outlined below.
- 2) The entrance areas and all horizontal surfaces shall have an additional coat of the Basecrete system to accommodate wear from surface abrasion.

### **BASECRETE APPLICATION TO NEW SURFACES**

1. Basecrete provides on sight training for certification at any time
2. Apply Intercept to the new concrete surface when the concrete is finished. (This will reduce if not eliminate micro-cracking.
3. After 14 days on new concrete the Basecrete Waterproofing membrane can be applied to the surface.
4. Assure that all surfaces are clean, dry and free from release compounds, laitance, dirt and salts.
5. Assure that all bug holes and features and concrete profile is smooth and in the same plane as desired.
6. If filling deep bug holes ,mix Basecrete to a thicker consistency,like a mortar
7. Assure that all functions are met as described in Technical Bulletin AED-2 2014 Architectural and Engineering Details.
8. Mix material to the desired consistency and fill the voids as necessary. Always dampen the surface prior to this application and scrub the area first with the mix to assure a tight bond. Once set finish or float with a sponge.
9. The next day dampen the surface as needed to a SSD (saturated surface dry) condition.
10. Mix the Basecrete with approximately 1.5-1.75 gallon of polymer, adding the dry mix to the polymer in the mixing bucket while mixing. Mix to a homogeneous, pancake batter like consistency. Once achieved stop and allow the material to fatten or swell. Then re mix the material adding additional liquid if necessary to achieve the proper consistency and viscosity. (See notes below for additional information)

11. Brush, spray or roll the first coat on in one direction over a SSD wet wall. Work into the surface filling all pinholes etc. If sprayed on, apply spray and then brush with a masons brush in one direction.
12. Allow to cure overnight.
13. Apply the second coat the next day. Use the same mixing procedures and formulary as specified under item 7, applying the material perpendicular to the first. This would be considered the final finish on the walls and tie beam or cap. This would probably be a smooth towel finish or a knockdown texture being the clients' choice.
14. Allow the material to cure overnight.

Notes:

- ü Extending Pot Life and Workability Of Basecrete Compound In High Heat Conditions:
- o Try to keep Basecrete liquid out of direct sunlight, keep in a shaded area

Keep all material out of direct sunlight as bags of compound and polymer become thermal heat sinks causing an accelerated set time and decreasing the workability immensely.

## **8 EXPOSED AGGREGATE POOL FINISH**

### **8.1 Pool Finish Mix**

The use of calcium chloride is to be avoided. If an accelerator is needed for fast hydration it shall be pre-packaged material approved in advance by the owner. No lime will be incorporated in the mix, nor will a pre-mix containing lime be used. If additional plasticizing is required, commercial products such as air entraining admixes or plasticizer additives will be used.

### **8.2 Mixing and Application**

- a. Mixing of pool finish shall be in paddle type drum mixer. The pool finish mix will not be tempered in the mixer. No water beyond original mixing water will be added. Tempering water may be used only very sparingly during the final surface trawling. Platter should remain in the mixer for at least three minutes and it may not remain in the mixer longer than 15 minutes, otherwise it will be dumped
- b. The trawling process should be continuous once hydration of the material commences. Continuous trawling is preferred, but no less than three trawling are required to deliver a smooth, flat surface. Late tempering during the trawling process brings a thin layer of hydrated latence (fat) to the surface which tends to discolor and often flakes away after the pool is placed in service.
- c. Pool finish, truing coats or scratch coats should not be applied when the ambient temperature is neither above 100 degrees nor below 70 degrees Fahrenheit. Pool finish shall not be applied during the

rain or any material which has been newly placed shall be protected in the event of rain by canvas, plastic or other cover to avoid erosion of the surface. Damaged work will be removed and re-plastered.

d. Application of interior finish should commence in the deep area of the pool and be carried on to the shallow end as a continuous operation. If the contractor wishes to complete application of material to the walls before plastering the floor then one of two procedures must be followed:

(1) A thin strip of white tile shall be installed string straight in the spring line of the pool where the floor and wall meet. Wall plaster shall terminate at this stripe and floor plaster may be applied beginning at this point later.

(2) The floor to wall joint must be continuously extended during the plastering process to maintain fresh, hydrated material so that it will accept the next application of plaster and become a monolith. This joint must be kept fresh. No cold joint at this point will be acceptable.

e. Maximum plaster thickness shall be  $\frac{3}{4}$ " minimum thickness to  $\frac{1}{4}$ ". Where more than  $\frac{1}{2}$ " of material is required to bring the finish to a true surface, a brown or purge coat will be applied to the finish coat of the plaster.

f. All surfaces will be trowled to a smooth, dense hard finish including radii. Flat surfaces will be "flat". Material will be brought to level with shingles or 24" cement finishing towels during initial application. Initial placement of plaster will not be with "flex" trowels.

g. No "sponging" of compound radii or steps will be done. Excessive tempering of the finish for late trowling will be avoided. The finished surface shall be free of stains, discoloration from trowel burns, streaking, trowel marls and cat faces before the pool is filled with water.

### 8.3 Patching and Pointing

a. Upon completion of the work, loose, cracked, damaged or defective plaster will be cut and replaced. Patch must match existing work in texture, color and finish. Joint must be flush with plaster previously applied. Remove plaster droppings or splattering from surrounding surfaces before filling the pool with water.

b. Fresh plaster should not be exposed to open sun else "craze cracking" is likely to develop in the finish. This must be avoided by continuously keeping the material moist with a fine spray of water as soon as the material has cured sufficiently enough that the water will not erode the surface. The surfaces shall be kept wet until the hydration is complete. If the fresh plaster is not to be kept watered during the initial cure, then it shall be tightly covered with a black sheet plastic until filled with water.

### 8.4 Sample Wall

Unless waived by the owner, the contractor shall apply the interior plaster of choice to a sample wall no smaller than 4'x6' in size, somewhere in the complex. The sample shall be trowled tight and smooth, then etched to expose the proper amount of aggregate pieces. This wall shall be used as the "sample wall" and shall establish the bench marks for the final measure of workmanship in the finish of the work inside the pools.

### 8.5 Exposed Finishes

a. Special exposed aggregate material may require that surface matrix is washed away with water and brush just after the hydration process is complete, or the pool surfaces may be washed with a light acid solution later, after hydration is complete. Particular care must be used to avoid "river lets" down the walls and across the floor during this process. No acid wash may be allowed to stand in the deep bowl of the pool. Acid wash must be constantly diluted with fresh water and it must be pumped out of the pool while the process is underway.

b. Poorly washed or uneven etching of the surface will be patently unacceptable.

#### 8.6 Filling the Pool

- a. After the exposed aggregate finish has achieved its initial set, the pool will be gradually filled with water. Care will be used so that fill water does not wash directly against any new exposed aggregate finish surface. This is best done by introducing the original fill water through hoses with the nozzle tied into a cloth sock along with a small block of Styrofoam. This will prevent the discharge water from fill hoses damaging the fresh plaster.
  
- b. After fill water has reached a depth of several feet then fill water may be introduced directly into that portion of the pool. The pool will be filled without interruption to help avoid dirt rings. It shall be the owner's responsibility to provide suitable water for initial filling of the pool. Care must be taken that the water does not contain excessive amounts of iron, manganese or other suspended metals which may stain the newly applied exposed aggregate finish. This problem can be handled by treating the fill water with a sequestering or chelating agent.

#### 8.7 Chelating Agents

The pool contractor will provide a chelating chemical which will be added to the water during the initial process in the proportions recommended by the manufacturer to help avoid precipitation of solids which may be present in the water.

#### 8.8 Clean- Up

- a. This contractor will remove all trash and debris generated by removal and replacement of the exposed aggregate finish and other work.

#### 8.9 Final Turnover

No chlorine is to be added to the water for 48 hours after the plaster has hydrated. At that point the water may be balanced and chlorinated. The contractor shall turn the pool over the operator only after the water is in a clear condition, properly balanced, and the interior surface is free from stains or discolorations.

#### 8.10 Brushing the Pool

- a. If the contractor or the provider of the packaged material used in the plastering work recommends that the pool be "brushed" regularly during the first few days after being filled with water, this will be the initial responsibility of the contractor.
- b. If arrangements are made with the city forces to perform this routine brushing of the pool surface, the contractor may turn that responsibility over to the regular maintenance crew.
- c. This brushing procedure is intended to prevent staining of the pool from loose calcium particulate which tends to "dust off" unless this fine, unhydrated material is swept off the walls and floor as the hydration of the plaster continues. If not swept loose, this "dust" tends to discolor.

#### 8.11 Warranty (Applicator)

Pool finish material and workmanship must be guaranteed by the applicator against failure for a period of at least one year after completion against delamination, cracking (excluding shell movement) or spalling and surface discoloration except as excluded below. Exposed aggregate shall be warranted for at least 7 years.

#### 8.12 Warranty (Material Packager)

The supplier of the bagged goods used on the work shall guarantee the product for a period of one year against failure from chalking, spot etching, discoloring, or breaking down.

### 8.13 Warranty Limitations

- a. The plaster is to be warranted against discoloration or staining with these exclusions:
- (1) Plating of the pool interior with precipitation of suspended materials from fill and make up water or from water excessively loaded with solids (particularly calcium)
  - (2) The addition of chemicals other than chlorine or other commonly used halogens and acceptable sanitizers ; or
  - (3) By improper ph control of the pool water.

### 8.14 Shell Cracks In Swimming Pool

If shell cracks are discovered in the pool while work is underway, these cracks are to be repaired by the contractor and such repairs will be considered extra work. Compensation shall be according to the unit price in the bidding documents. Detailed specifications for any such repair are listed in an addendum to these specifications, identified as "crack repair".

### 8.15 Additional Work in the Pool Builders Contract

- a. Installation of new chemical feeding equipment-The existing chemical equipment will be reused. No new chemical equipment is anticipated, for the remodel of the pool. If the equipment is not functioning properly or is not working prior to shut down of the pool, the pool contractor needs to notify the owner, to discuss any additional work or change order. Other than reconnecting the existing chemical equipment to the new system, payment of additional work needs to be authorized by the owner.
- b. Checking the depth markers-The pool depth should be checked by the engineer of record at each depth marker three feet from the wall and the depth measured from the lip of the gutter using a hand level. The stated depth must be within three inches of the actual depth at this point.
- c. Check gutter lip for level- The gutter lip must be level to within 1/8" plus or minus. This can be checked with a contractor's level, a laser or by flooding the gutters. This will be done by the engineer of record .
- d. Replacing Deck Equipment-Reinstalling swim lane floats and pool covers will be performed by the pool contractor. Rail goods shall be checked by Contractor to be certain that all ladders and handrails are secure and tight in the sockets. If tubular rails are crushed by excessive pressure from the deck anchor wedges, Contractor shall install stabilizing plugs in the ends of the rail goods.
- e. Crack Repair- If shell cracking is discovered after the pool has been drained the following procedure is to be followed:
- (1) First, the Engineer of record shall determine that the structural integrity of the pool shell has not been materially threatened. If the Engineer feels that any cracking has come about from settlement of the pool resulting from voids beneath the pool shells or a structural problem, then a further investigation should be made into the possibility of voids beneath the pool to be certain no such voids exist or structural failer, otherwise continued movement of the pool may occur with the result that the cracks will re-open. Such an investigation will not be under the scope of work of the pool contractor.
  - (2) This investigation may involve coring the pool floor in the vicinity of the cracking as well as other locations deemed appropriate by the Engineer. If voids structural failer are identified, then a procedure of pressure grouting beneath the pool will be employed.
  - (3) After the considerations are dealt with, repair of the crack(s) by the pool contractor may begin. Following is the procedure for effecting a proper repair:
    - The pool must be dry
    - Chip away the exposed aggregate finish in an area of 2" or 3" square at each terminus of each crack which is visible. Carefully inspect the concrete pool shell

at each end to see if the crack in the shell extends further than that visible in the exposed aggregate finish. If so, continue to remove exposed aggregate finish until the terminus of the crack is reached. Expose the crack in its entirety.

-Chip away exposed aggregate finish on either side of the crack for a distance of at least one inch.

-Make sawcuts in the cracks, carefully following the route of the crack and cutting into the shell for a depth of not less than  $\frac{1}{2}$ ". The sawcut should be  $\frac{1}{4}$ " in width (prox. 2 clipper blades width). Diamond tipped masonry blades are also available in  $\frac{1}{4}$ " width.

-The sawcut should extend past the points wherever the crack turns so that the full  $\frac{1}{4}$ " x  $\frac{1}{2}$ " rag let follows the crack for its full length. This will result in a zig zag pattern, but that presents no problem, just be certain that the sawcut extends past the point where the crack changes direction, so that all of every crack is occurring within the  $\frac{1}{4}$ " sawcuts.

-The rag let must then be cleaned, made completely free from dust and allowed to dry so that absolutely no moisture is present in the concrete substrate. The rag let can be filled with Vulkem Sealant #116 or equivalent. The sealant should be forced into the rag let so that it takes a secure bond to both sides.

-After the Vulkem sealant or equivalent has taken its initial set (a minimum of 48

to 72 hours),

work may continue and the application of plaster may commence.

-Any subsequent movement of the shell, which might be as little as that caused by temperature change, may cause the crack to reappear in the plaster. The flexible nature of the Vulkem Polyurethane or equivalent caulking will however,

maintain a

seal which will preclude the danger of water loss through the shell crack.

-As can be seen by the procedure outlined above, crack repair is sensitive work and requires a good craftsman in order for the result to be attractive and effective