



## **SPECIFICATIONS FOR SWIMMING POOL FIBERGLASS APPLICATION**

*Used and adapted by permission of Kent Williams Consulting*

These specifications are for planning purposes only. Users should review them thoroughly and adapt them as required to meet the needs of their specific pools.

### **PART 1 - GENERAL**

Work under this section is governed by the General Conditions of the Contract.

#### 1.01 Description

A. Scope: Provide all material, labor, equipment and services necessary to furnish and install pool interior fibreglassing (or lining), underwater tile as opted, accessories and other related items necessary to complete the work as indicated by the contract documents or otherwise required for a complete installation.

B. (Use this section to describe in detail the subject pool or pools.)

C. The intention of this specification is to require work that will result in a fully renewed interior surface of the pool, in essentially like-new condition. This interior lining, and all related work under this contract, should be expected to perform without failure for many years. Warrantees assuring this quality of product and workmanship are, therefore, contained herein.

#### D. Configuration Detail

1. Glassing will terminate either below the coping (cantilever deck) or below the tile.

2. If lanes are required, the owner should choose one of the following three lane options. In addition, the owner should consider the other options as an add alternate.

2a. If restoration of the tile lanes and target pairs are required in the work, tilework shall be restored, perimeter sawcut (nicked), then fiberglass installed and tucked into the sawcut in a termination identical to that which is to be installed below the perimeter waterline tile.

2b. If new tile lanes and target pairs are required in the work, the contractor shall use a technique consisting of removal of all lane and target tiles, cleaning and trimming of the resultant trough, glassing the entire bottom of the pool in one continuous membrane, then re-tiling the lines and targets to regulation dimensions upon the glass within the formed, depressed trough. Only minor elevation of the tile surface from the surrounding finished fiberglass is expected, without edges to cause a trip or stub hazard.

2c. If tile lanes and targets are not saved then black resin painted lines shall be used for this work.

2d. The use of printed polyester "motif" or mat coated with a clear seal coat for lanes, targets and other pool markings is not acceptable.

3. Incidental and minor tile repair/replacement bid as necessary shall be included for all existing above-deck tile work in order to make the finished project complete and intact. Contractors shall detail numbers and locations of tile areas to be restored, and define exceptions if any.

4. Any expansion joints encountered shall be restored and re-sealed using an approved technique, or over-glassed in such a manner as to preserve its function using the wax-paper band or other proven method. In all cases, bid documents shall detail the proposed method for expansion-joint treatment.

## 1.02 Special Provisions/Quality Assurance

### A. Contractor Experience and Qualifications

1. The contractor shall submit proof of ability to perform the work specified herein, and shall have experience in the application of fiberglass surfacing to pre-existing swimming pools in particular.

2. He or she shall use only qualified, thoroughly trained and experienced craftsmen, completely familiar with the materials and methods specified.

3. Each bidding contractor shall have a minimum of five years experience in work of the type specified herein and shall have satisfactorily fiberglassed the interiors of at least ten competition-class institutional pools, at least half of which have been completed for over two years. Names and phone numbers of personnel familiar with the project at each of these ten pools must be available upon request.

4. The contractor shall hold the appropriate license classifications required by the appropriate State License Board for the work described herein.

5. The contractor shall be experienced in the use of, and shall utilize exclusively on this work, airless spraying equipment that mixes materials internally prior to exiting the equipment nozzles. External fiberglass "chop" is introduced into the resin/catalyst stream as it exits the gun and well before coming into contact with pool surfaces. See also Section 3.03 B1.

#### B. Delivery and Storage

1. Materials shall be delivered to the project site in original, factory-supplied containers or packages with the manufacturer and brand name, date of manufacture and/or expiration date, nomenclature and instructions clearly presented thereon.

2. Materials shall be stored under cover in a dry and protected, well-ventilated area. They shall remain in original containers under the manufacturer's recommended conditions until the day of use.

#### C. Weather Limitations

Work shall not proceed when weather conditions detrimentally affect the quality of the applied fiberglass, e.g.: temperatures 60 degrees F or below, or extremely high humidity. Determination of unsatisfactory conditions shall be made either by the contractor's foreman, the owner's inspector or the pool consultant.

#### D. Warranty

1. As warranty work is undesirable at best and not without cost to all parties, it must be concluded that avoiding repair by virtue of the appropriate initial quality of the fiberglass product is of utmost importance. If warranty work to be performed disrupts aquatic programs,

it should be done as rapidly as possible to result in the least amount of "down time" and expense as necessary.

2. The successful contractor shall warrant the work against all defects in materials and/or workmanship for a period of time specified following completion of the project. This warranty includes but is not limited to: delamination; separation of the fiberglass from the pool surface; objectionable discoloration other than minor variations due to batch differences; degrading of the finish coat or the glass/resin material itself; or for any other reason shown as directly related to poor or incomplete preparation.

The contractor warrants that he will repair such defects to like-new condition, notwithstanding minor variations in the "color" as above. Warranty liability does not include degradation or failure from normal wear and tear, mistreatment or neglect, staining due to improper use of chemicals, vandalism, extended periods with the pool drained, or accidental or natural causes beyond the contractor's control.

3. The pool owner is expected to notify the contractor immediately upon discovery of a defect. Determination of the applicability of the warranty shall lie with a third-party pool consultant in case of a dispute, with any fee borne by the contractor only if the defect is deemed a warranty item, otherwise by the owner.

4. The contractor is not liable for any incidental or consequential damages related to the defects or repair of said defects, including all district-incurred costs related to pool draining, the cost of refilling, man-hours and other maintenance-related costs involved, and the chemicals necessary to re-establish balance. The contractor and owner may mutually agree to perform such warranty work at an off-season time when lower costs prevail and aquatic programs would not be precluded, thereby avoiding costly down time.

5. Warranty rework does not extend the original guarantee period.

## **PART 2 - PRODUCTS**

### 2.01 Material Specifications

Item No

1. Polyester resin McWhorter 4635, or equiv.

2. Finish coat (Wax- & color-impregnated, glass-free, final resin coat.)
3. Methyl ethyl ketone peroxide Norax Co. or equivalent.
4. Washed sand Local source, mixed with resin for subsurface filler.
5. Fiberglass rope Contractor's preference, appropriate for this work.
6. White and black pigments Neste or equivalent.  
(for resins)
7. Surfacing agent ( wax) Lilly or equivalent.
8. Acetone (for cleaning) Any local brand and flushing equipment)

## 2.02 Submittals

The contractor shall provide submittals in accordance with standard practice.

## **PART 3 - EXECUTION**

### 3.01 Surface Preparation

The purpose of preparing existing concrete and plaster surfaces in this work is to provide a positive bond for the new fiberglass coating onto the original, replaced or repaired substrate of the pool-shell interior surfaces. Work will include physical removal of any loose plaster or fiberglass lining, preparing the remaining surface for bonding, sandblasting or grinding of any ceramic tile racing lanes and targets on the floor and walls of the pool revealed by the stripping process (not including original or renewed waterline tile).

### 3.02 Pre-Work Conditions

#### A. Quality Assurance

The contractor will personally supervise the work or provide a competent person acceptable to the owner, who will be present at all times during execution of this portion of the work and who will be thoroughly trained and experienced in the types and use of equipment required. He or she will direct all work performed under this section.

## B. Inspection

1. Prior to work of this section, the contractor shall carefully inspect the installed work of other trades or subcontractors. He shall verify with the owner's inspector or pool consultant that all such work is complete to the point where this installation may properly commence in strict conformity to contract documents. This inspection shall also verify that all other conditions are correct for said commencement of work. The contractor does not accept liability for work performed by other trades or subcontractors.

2. Before fiberglass is applied, the contractor shall confirm that all pool mechanical equipment (pumps, filter, circulation lines, etc.) is operational and flushed clean in order that an expeditious fill and start-up may follow immediately after completion of the work of this section. Any items needing attention shall be reported to the owner's representative for immediate attention.

## 3.03 Application of Coating

### A. General Description of Coating

1. The coating/surface/liner specified shall consist of a three-coat, multi-component system of compatible materials including primers, surface sealers, polyester resins, pre-disbursed fibers, and top sealer/finish (chemically resistant, traction glaze) as described herein.

### B. Application to Pool Surface

1. All resin and catalyst shall be applied with airless spraying equipment that mixes materials internally prior to exiting the equipment nozzles. External fiberglass "chop" is introduced into the resin/catalyst stream as it exits the gun and well before coming into contact with pool surfaces. The internal material mixing assures that the resin/catalyst mixture conforms to manufacturers' specifications. Use of equipment which mixes resin and catalyst externally (either gun applied or hand lay-up method) is expressly prohibited.

2. Application of material shall be performed in four coats, referred to as coats A, B, C, and D.

2a. Coat A: A uniformly sprayed, brushed or rolled application of a surface seal coat, designed to seal and penetrate all surface "pores" prior

to application of the fiberglass.

2b. After coat A has cured, the surface shall be inspected to insure proper coverage and that sealing has been obtained.

2c. Coat B: The contractor shall apply a uniform coat of fiberglass at thickness of 80 to 120 mils consisting of a ratio of approximately 30% fiberglass gun roving to 70% resin.

2d. Coat C: After roll-out of coat B is performed, the contractor shall apply a resin overspray to insure proper "wet out" of fibers and to provide for proper coverage of resin over fibers.

2e. All glass below the tile or coping or around other retained tile detail, and around lights and fittings, shall be trimmed neatly as required. The niche (slot) around these fittings shall then be filled with a compatible resin paste.

2f. The entire pool surface shall be inspected for smoothness and integrity. All fiberglass "hairs," sharp edges, steps and corners shall be sanded or otherwise prepared for final coat.

2g. The contractor shall then sweep the pool thoroughly and insure any preparation for lane-line target tile work is complete.

2h. Coat D: The contractor shall apply 15 mils (+/-5) of finish coat with minimum of 2% wax, using a spray technique, resulting in a texture providing adequate and safe traction properties.

2i. In accordance with the option chosen by the owner for lane lines, targets, and other underwater tile features (see section 1.01, D), the contractor shall perform the application using the approved technique.

#### D. Inspection During Application

Confirmation of application thickness and uniformity shall be assured continuously during the work, performed or monitored by the owner's representative, using a wet-thickness "mil" gauge. Test points, if desired, shall be chosen at a sufficient number of locations throughout the work to provide the owner with confidence in this test. In any case, no less than three points per thousand square feet shall be examined, in addition to any tests requested by the inspector in coves, odd contours or other hard-to-reach or hard-to-judge areas.

#### 3.04 Detailing and Clean-up

A. The contractor shall reset any hardware, lights, ladders, etc., removed from walls or floor of pool.

B. He shall remove all waste materials, spent containers and tools, rags and cleaning materials, overspray, sand, masking tape, etc., from the jobsite upon completion of the work.

C. Final detailing shall leave the work complete and without noticeable flaws, tears or sharp edges, with an orange-peel smooth, uniform finish overall. The pool interior must be fully cured and clean, ready for filling and use.

#### 3.05 Final Inspection

##### A. Visual Inspection

1. The finished pool shall be uniform and smooth in physical appearance as well as color, complete in all respects as described in section 3.03 above. (Minor variations in color may have occurred due to changes in temperature throughout the execution of work; however, extreme conditions that may create noticeable contrasts must have been avoided. Unpleasant and obvious variations in color or texture may cause terms and conditions of the warranty to be immediately enforced.)

2. Membrane integrity and continuity must be without doubt, with no seams or joints apparent. The final inspection shall include the confirmation of compliance with all requirements of paragraph 3.04, sub-

paragraph C in particular, and any other paragraph, detail or item that, in the judgment of the inspector, should be included to insure the completed work and quality product required by the intention of this specification.