

Fibreglass Pond Construction Guide

Constructing a fibreglass pond requires careful planning and execution to ensure durability and safety. Follow these step-by-step instructions for a successful project.

Step 1: Prepare the Pond Structure

1. **Base and Walls:** Construct a reinforced concrete base and reinforced concrete block walls.
2. **Render the Surface:** Apply a render to create a flat surface for the fibreglass. Ensure all corners have a slight radius for better fibreglass adhesion.
3. **Check the Surface:** Inspect for sharp points or lumps that could complicate fibreglass application. Smooth these out as needed.

Step 2: Ensure Proper Conditions

- Allow the render to dry completely.
- Protect the render from water absorption by covering the pond during bad weather.
- Work during dry weather and avoid cold or damp conditions, as they inhibit resin curing.

Step 3: Safety Precautions

- **Read Labels:** Review all health and safety advice for the materials.
- **Wear Protective Gear:** Use overalls, rubber gloves, goggles, and dust masks (especially during sanding).

Step 4: Plan the Lay-Up Process

- Leave a dry section to climb in and out of if the pond is deep. Complete this section last.
- Start with the outer walls, extending 3–4 inches onto the floor. After curing the walls, proceed with the floor, overlapping the edges to prevent damage.

Step 5: Apply G4 Sealer

1. **Purpose:** Seal the render and provide a bonding primer for polyester resin.
2. **Alternative:** Catalyzed resin thinned with styrene can be used if budget is a concern.
3. **Timing:** Apply fibreglass within 4 hours of the G4 curing to ensure proper bonding.

Step 6: Laminate the Pond

1. **Prepare Materials:**
 - Cut fibreglass matting into 1-meter square pieces for easy handling.
 - Mix 2–4 kg of resin at a time.
 - Add 1–2% catalyst to the resin, adjusting for temperature (do not go below 1%).
2. **Lay Fibreglass:**
 - Apply resin to the working area.

- Place fibreglass matting and coat it with resin.
 - Use a paddle roller to flatten the matting and eliminate air pockets.
 - Overlap layers by 3 inches and stagger joints between layers.
3. Wet-on-Wet Application: Apply subsequent layers while the previous ones are still tacky. If layers cure for more than 24 hours, abrade the surface and wipe with acetone.

Step 7: Apply Surface Tissue

1. Inspect and Repair:
 - Sand down rough spots and check for dry patches.
 - Repair defects and wipe with acetone.
2. Apply Tissue Layer: Smooth the fibrous surface and prepare for the flowcoat.

Step 8: Apply Topcoat (also known as flowcoat)

1. Mix Properly:
 - Stir the main tin of topcoat for at least 10 minutes before decanting.
 - Mix 2% catalyst into batches of 2–4 kg.
2. Application:
 - Brush on the topcoat (do not use a roller).
 - Apply at a thickness of 0.4–0.6 mm (1 kg covers ~1.5 m²).
 - Do not apply multiple layers, as secondary coats will not bond.

Step 9: Curing and Testing

1. Cure Time: Allow the resin and flowcoat to cure for at least 2 weeks before filling the pond.
2. Toxin Removal:
 - Fill and empty the pond several times to remove residual styrene monomer.
 - Introduce plant life first and observe before adding fish.

Additional Tips

- Choose flowcoat colors like British racing green for a natural look or black for shallow ponds to create depth.
- Avoid spreading the flowcoat too thin, as this can lead to tacky areas.

By following these steps, you'll ensure your fibreglass pond is safe, durable, and ready for aquatic life.