

PART 1 — FERROCEMENT MESH LAYERING GUIDE

Ferrocement strength comes from mortar fully encasing many thin layers of mesh. Never skip a layer. Total wall thickness: 25–40 mm for residential panels.

LAYER	MATERIAL	Aperture	Wire Ø	Coverage Check
Frame	6 mm deformed bar @ 150 mm grid	N/A	6 mm	☐ No bare frame ends
Mesh 1 (outer)	Chicken wire or welded mesh	25 × 25 mm	0.9–1.2 mm	☐ Full coverage
Mortar coat 1	1 cement : 1.5 sand + plasticiser	N/A	N/A	☐ Into mesh, 10 mm
Mesh 2 (mid)	Welded mesh or hardware cloth	12 × 12 mm	1.0 mm	☐ Pressed into mortar
Mortar coat 2	1 cement : 1.5 sand	N/A	N/A	☐ Full coverage 8 mm
Mesh 3 (inner)	Welded mesh	12 × 12 mm	1.0 mm	☐ Pressed in
Final coat	1 cement : 1.5 sand (plastered)	N/A	N/A	☐ Smooth finish 7 mm
TOTAL THICKNESS Target 25–40 mm (check with pin)		—	—	☐

✓	Item	Notes
☐	Water/cement ratio held to 0.35–0.45 (mix is stiff, not flowing)	
☐	All mesh laps minimum 50 mm, tied with 0.8 mm wire every 200 mm	
☐	No air pockets — tap panel; hollow sound = remortar that section	
☐	Panel cured wet (covered with damp burlap) for minimum 28 days	
☐	No cracks visible at 28 days — if cracks present, investigate mix ratio	

PART 2 — CISTERN DESIGN MATH SHEET

Ferrocement cisterns are one of the highest-value applications. Use these formulas to size your tank.

PARAMETER	FORMULA	YOUR ANSWER
Daily household water use (litres)	Persons × 50 L/person/day	
Storage target (days of supply)	Suggest: 30–90 days for rain-fed	
Tank volume required (litres)	Daily use × storage days	
Tank volume (cu.m)	Litres ÷ 1,000	
Cylindrical tank diameter (m)	Choose: 1.5 m, 2.0 m, or 2.5 m	
Required tank height (m)	Volume ÷ ($\pi \times (D/2)^2$)	
Wall surface area (m ²)	$(\pi \times D \times H) + (\pi \times (D/2)^2)$ floor	
Mesh required (m ²)	Surface area × 3 layers × 1.15 waste	
Mortar volume (cu.m)	Surface area × 0.030 m thickness	

★ Ferrocement cisterns must have a tight-fitting lid to prevent contamination. Apply two coats of food-safe lime wash to the interior before filling.