



# Encapsulation Jacket Installation (Marine/Corrosive) Guide

Encapsulation jacket installation (marine/corrosive) with an interactive checklist—commentable and exportable as PDF/Excel to capture evidence and approvals.

Project:

Date:

Filled by:

## Pre-Installation Checks

1	Review approved drawings and specifications; confirm scope excludes cathodic design. Record permits, method statement approval, and risk assessment sign-off with responsible names and dates.
2	Verify environmental limits: air/water temperature 5–40 °C, wind <10 m/s, wave/tide window sufficient for safe access. Log readings with time-stamped photos and weather source.
3	Inspect member for holes, severe section loss, or sharp protrusions; measure with callipers and depth gauge. Record locations on sketch and obtain approval for local patching per approved project specifications and authority requirements.
4	Verify materials: shells, seals, bands, gaskets, ports, and injection material. Record product names, batch/lot numbers, expiry dates, and safety data sheets with photos.
5	Calibrate tools: torque wrench, pressure gauge, and injection pump. Attach current calibration certificates and perform a zero/functional test; record results.

## Surface Preparation

6	Remove marine growth and loose corrosion using scrapers, pneumatic chipping, and high-pressure water jetting $\geq 20$ MPa. Contain debris; photograph before/after and note disposal method.
7	Abrade to a clean, sound surface with uniform 50–100 $\mu\text{m}$ profile where specified; feather sharp edges. Evidence: close-up photos with surface comparator reference.
8	Wash and neutralize chlorides with approved solution; verify surface chloride $< 30$ mg/m <sup>2</sup> using a field test kit. Record kit reference, readings, and locations.
9	Install non-absorbent spacers/centralizers to maintain 25–50 mm annulus. Space at $\leq 500$ mm vertically; photo each elevation showing gauge measurement of stand-off.

Jacket Assembly and Sealing	
10	Dry-fit jacket halves; confirm overlap and vertical alignment within $\pm 5$ mm over 2 m. Check clearance around protrusions. Record measurements and photos.
11	Install bottom seal/skirt to form a watertight base. Conduct a brief fill check at the toe; acceptance: no visible leaks for 5 minutes. Record video evidence.
12	Apply sealant to longitudinal joints to manufacturer bead size; close shells and fasten. Tighten bands to recorded torque (per manufacturer), noting tool ID and readings.
13	Install circumferential bands at 300–500 mm spacing; ensure even compression without shell distortion. Log band locations, torque values, and installer initials.
14	Fit injection and vent ports with gaskets; provide at least one vent per compartment. Tag ports and record their elevations on the as-built sketch.
15	Perform preliminary leak test with 0.3–0.5 m water head for 10 minutes. Mark any seepage, reseal, and retest until dry; capture before/after photos.

Annulus Injection (If Required)	
16	Confirm specified material (grout, epoxy, or wax). Mix per manufacturer ratio; record ambient and mix temperatures, start time, and pot life.
17	Prime with a small volume, then inject from the lowest port upward at 50–150 kPa, maintaining continuous vent flow. Log pressure and volume at each port.
18	Verify annulus thickness 25–50 mm and full elevation coverage using a dip rod or gauge through vents. Record measured levels and locations.
19	Close ports and vents in sequence once material runs air-free. Clean excess, install caps, and photograph each closed port with date/time stamp.
20	Protect from wave/vibration until initial set/cure per manufacturer. Record batch numbers, start/finish injection times, and any hardness or temperature readings at acceptance.

Inspection and Handover	
21	Conduct final 360° visual check: continuous seal beads, tight bands, no leaks or deformation. Acceptance: no damp patches or movement under hand pressure. Take 360° imagery.
22	Tap-test shell for voids or hollows; mark dull areas and address via re-injection or sealing as instructed. Record corrective actions and outcomes.
23	Apply durable label with jacket ID, date, installer, and material type. Photograph label and location for records.
24	Compile as-built: dimensions, band spacing, port elevations, pressure/volume logs, materials certificates. Obtain supervisor and client digital signatures.
25	Enter asset into maintenance schedule (6–12 month inspections). Publish report with QR link to photos and logs; verify QR resolves correctly on site.

**Comments:**

Filled by:

Signature:

Introduction	How to use this checklist
Encapsulation jacket installation (marine/corrosive) focuses on fitting shells around corroded piles or structural members, sealing all joints, injecting the annulus when specified, and documenting results. This guidance supports teams performing pile jacket installation, marine pile repair jackets, and corrosion mitigation wraps in tidal, splash, and atmospheric zones. The scope covers field installation only: joint sealing, annulus injection (grout, epoxy, or wax where required), and inspection. It excludes cathodic design or electrical detailing. By controlling surface preparation, jacket alignment, sealant application, and low-pressure injection, you avoid entrapment of seawater, voids, shell buckling, and early failure from wave action. The outcome is a watertight, evenly supported encapsulation with traceable materials and measurable acceptance criteria. Use this checklist to plan tides and access, record chloride levels, verify torque and pressure, log volumes, and secure sign-off. Start interactive mode to tick items, add jobsite comments, and export your evidence-rich report to PDF/Excel with a QR-secured link.	1. Preparation: gather jacket shells, seals, bands, ports, injection materials, torque wrench, pressure gauge, pump, surface prep tools, PPE, and as-built templates. Confirm access window, tides, and safety controls before starting. 2. Start Interactive Mode: open the checklist, assign roles, and enable tick boxes. Add locations and jacket IDs; attach baseline photos. Use comments for issues that need resolution and tag responsible parties. 3. Capture Evidence: upload photos, readings, batch numbers, and calibration certificates directly to each step. Use timestamps, geotags, and port elevation notes for traceability. 4. Review and Resolve: filter by incomplete or commented steps, address punch items, and re-test where required. Validate acceptance criteria and mark steps complete with notes. 5. Sign-Off and Archive: obtain digital signatures, generate a report, and export to PDF/Excel. Share QR-authenticated links with stakeholders and archive within the asset management system.