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BIG RIVER GROUP / FOR THE TRADE

CONCRETE FORMWORK SYSTEM GUIDE

A practical, on-site checklist of tips and tricks for the perfect formwork installation — from residential slabs to steps, benches and architectural off-form finishes. Built for the professional formworker who takes pride in the pour.

RESIDENTIAL SLABS & FOOTINGS | STEPS & BENCHES | ARCHITECTURAL OFF-FORM

00 WHY GREAT FORMWORK MATTERS

THE TRADE THAT SHAPES EVERY POUR

Concrete only ever looks as good as the form it was poured into. The formworker sets the line, level, dimension and finish of the finished structure before a single load of concrete arrives — which makes it one of the most skilled and consequential trades on any site. Get the formwork right and everything downstream runs smoothly; get it wrong and the errors are cast in concrete, literally.

Safety first, always

The National Construction Code requires structures to perform under load both in service *and during construction*. Formwork carries the full wet-concrete load until it cures — so it must be engineer-designed, correctly braced and built from compliant materials. Formwork failure risks time, money, injury and lives.

Quality is set here

Line, level, plumb, dimensional accuracy and surface finish are all locked in by the formwork. The reo fixer, concreter and every following trade inherit whatever the formworker set out. Accurate forms mean less grinding, patching and rework later.

Programme & cost

Formwork is typically the single largest cost component of a concrete structure. Fast, reusable, well-planned forms keep the pour cycle moving and the budget intact — which is exactly where good material selection and set-out pay for themselves.

The mark of a professional

Straight edges, crisp arrises, tight joints and a clean off-form face are the visible signature of a skilled formworker. This guide is about consistently hitting that standard — and being able to prove the materials and methods behind it.

01 PLAN & DESIGN BEFORE YOU BUILD

GET THE PAPERWORK AND THE LAYOUT RIGHT FIRST

1 DESIGN, COMPLIANCE & SET-OUT

BEFORE MATERIALS ARRIVE

- [ ] **Confirm the formwork is engineer-designed.**
  All formwork must be designed by a qualified structural engineer to meet the NCC and Australian design standards for expected construction loads — this is a legal responsibility, not an optional step.
- [ ] **Check the drawings for line, level, slab thickness and cover.**
  Set your datum and reference lines from the site benchmark. Confirm finished floor levels, falls to drains, and step-downs to wet areas before you set out.
- [ ] **Verify material suitability for the application.**
  The designer/installer is responsible for ensuring materials are suitable for the job. Keep evidence of suitability — ask the supplier for AS 6669 certification and structural data (see Section 4).
- [ ] **Plan the pour sequence and reuse cycles.**
  Decide up front how many times each panel needs to be reused — this drives your formply grade selection and your budget.
- [ ] **Order everything from one supplier where possible.**
  Formply, LVL bearers, edgeboard, steel decking, bracing, form ties, fixings and release agent ordered together means compatible components, one delivery and fewer gaps on site.

PRO TIP

Book crane-truck delivery to land panels close to the pour. Double-handling heavy sheets across a site is wasted labour and a common source of edge and face damage.

02 RESIDENTIAL SLABS & FOOTINGS

THE BREAD-AND-BUTTER POUR — DONE PROPERLY

Slab-on-ground, waffle pods, strip footings and edge beams. The goal is a straight, level, correctly-dimensioned slab with clean edges that need minimal finishing.

2 EDGE FORMS, SET-OUT & BRACING

SLABS & FOOTINGS

- **Use a purpose-made LVL edgeboard, not random timber lengths.**
  Engineered edge forms like RedEdge are dead-straight, stiff and stay put under concrete pressure — giving a true screed rail for a flat slab and a crisp, square edge. Sawn timber bows and twists, putting waves in the slab edge.
- **Set edges to line and level, then double-check diagonals.**
  Measure diagonals to confirm the form is square. Re-check level along the top of the edgeboard — this is the surface the concreter screeds off.
- **Stake and brace at close, regular centres.**
  Wet concrete exerts significant outward pressure. Adequate pegs and external bracing stop blow-outs and bulging edges. Straighter edge material needs fewer stakes.
- **Seal joints and check for gaps at the base.**
  Grout loss under or between forms causes honeycombing and ragged edges. Close the gaps before the pour.
- **Confirm penetrations, set-downs and cast-in items are fixed.**
  Plumbing penetrations, box-outs, step-downs and cast-in fixings must be secured against float before concrete goes in.

WHY LVL EDGEBOARD WINS

Low moisture absorption means it won't swell or draw water from the slab edge; it strips clean and reuses across many pours, dropping your cost-per-pour well below one-use timber despite the higher sheet price.

03 STEPS, BENCHES & OFF-FORM FINISHES

COMMON COMMERCIAL FORMWORK WHERE THE FINISH IS ON SHOW

Stairs, seating, plinths, feature walls and any exposed concrete where the surface *is* the finish. Here, formply selection and on-site care decide whether you achieve a clean architectural result.

STEPS & STAIRS

Rigid risers, tight joints

- Use stiff formply risers braced against kick-out
- Keep riser heights and goings identical — measure every step
- Seal all joints; steps show every grout leak
- Chamfer nosings for a clean, durable arris

BENCHES & PLINTHS

Square, sealed, supported

- Brace box forms against bulging on taller pours
- Reseal all cut edges and screw holes before pouring
- Support the base so forms don't lift or float
- Plan the strip so arrises aren't chipped

ARCHITECTURAL OFF-FORM

The face is the finish

- Choose a high-density overlay formply (F22/F27)
- Plan panel joints and tie positions as a deliberate pattern
- Best face for the first pours; a Class 2 finish is generally only achievable on the first pour for each face
- Consistent release agent, evenly applied

3 ON-SITE PRACTICES FOR A QUALITY SURFACE (PER EWPAA)

OFF-FORM FINISHING

Most concrete surface defects come from water absorbing into the formply. Control water ingress and you control the finish:

- ☑ **Identify and remove damaged formply from use.**
  A damaged face imprints straight onto the concrete.

- [x] **Reseal all cut edges, holes and fixings before pouring.**
- [x] **Apply a release agent** to reduce face water absorption and make stripping easier.
- [x] **Allow a 2mm expansion gap** with edge or face sealing tapes.
- [x] **Take care with concrete vibrators** so the panel surface isn't gouged or over-worked.
- [x] **Lower form panels into place — never drop them** — to protect faces and edges.
- [x] **Use hot-dipped galvanised, alloy or stainless nails** to prevent rust staining.
- [x] **Store panels under cover, never wrapped in plastic.**
  Trapped moisture ruins faces. Stack flat, off the ground, out of the weather.

> **SET EXPECTATIONS**
> Even with perfect practice, a Class 2 finish is generally only achieved on the *first* pour for each face. Plan your best panels for the visible work.

04 FORMPLY — CHOOSING THE RIGHT MATERIAL

GENUINE COMPLIANT FORMPLY VS COPY-CAT PRODUCTS

Formply is structural plywood with a phenolic resin overlay (a high-density film face) specifically engineered for concrete. It is **not** the same as standard structural plywood: formply carries its own certification under **AS 6669** and uses an A-Bond (phenolic) glueline for full waterproof performance under repeated wet-concrete exposure. Standard ply certified to AS/NZS 2269 lacks the overlay needed for clean release and finish.

FORMPLY VS STANDARD PLYWOOD — THE KEY DIFFERENCES

CHARACTERISTIC	FORMPLY	STANDARD STRUCTURAL PLYWOOD
Product standard	Certified to **AS 6669** — the formply-specific standard	Certified to **AS/NZS 2269** for general structural use
Intended purpose	Engineered specifically for concrete formwork	General structural applications (bracing, hoarding, flooring, etc.)
Face / overlay	High-density phenolic film overlay for a smooth concrete face	Bare veneer face — no formwork overlay
Glue bond	A-Bond (phenolic) waterproof glueline for repeated wet-concrete exposure	Bond type varies; face is not sealed for repeated concrete contact
Water absorption	Overlay slows water absorption to protect the concrete surface	Absorbs water — swells, moves and grain-imprints the concrete
Concrete release	Overlay is designed **not** to adhere to concrete — clean strip	Untreated face tends to bond to and mark the concrete
Surface finish	Achieves a controlled off-form finish (e.g. Class 2 on first pour)	Not suited to quality off-form or architectural finishes
Reuse in formwork	Built for multiple pours with good on-site care	Degrades quickly if used as formwork
Verification	EWPAA / JAS-ANZ third-party certified for formply performance & overlay quality	Certified for structural properties, not for formwork overlay or durability

Source: EWPAA "Know Your Formply" and AS 6669 / AS NZS 2269. The two products look similar on the pallet but are certified against different standards for different jobs — using standard ply as formwork is a common and costly mistake.

ARMOURFORM RANGE — STRESS GRADES AT A GLANCE

GRADE	CONSTRUCTION	BEST FOR	REUSE (GOOD SITE CARE)
F17	Hardwood faces & pine core (A-Bond)	General formwork — residential decks, precast, tilt-up panels	Good — everyday slab & panel work
F22	Mix of hardwood & pine veneers, high-density overlay (B-Bond)	Versatile — tableforms, columns, shutters, off-form finishes	Higher — steps up finish quality & value
F27	Total hardwood, high-density phenolic overlay (B-Bond)	Premium fixed formwork — tableforms, jumpforms, shutters, architectural off-form	Highest — 40+ castings achievable

ArmourForm is available in 2400/1800 × 1200 sheets, 12·17·19·25mm, manufactured to AS 6669-2007 and EWPAA certified. Bending ply (5.5 & 9mm) is available for curved formwork. Not all thicknesses are stocked at every branch — check with your local branch.

COMPLIANT FORMPLY VS COPY-CAT IMPORTS

Cheaper look-alike formply can appear identical on the pallet but fail where it counts — a false economy that risks the pour, the finish and the compliance chain. Under Australian law the manufacturer or importer must ensure any claim of compliance is accurate, but a claim alone may not prove suitability. Always request the evidence.

GENUINE AS 6669 FORMPLY

- ✓ Certified to AS 6669 with an A-Bond phenolic film overlay engineered for concrete release
- ✓ EWPAA / JAS-ANZ third-party certified — six-monthly factory inspections and ongoing independent testing
- ✓ Consistent, verified structural properties an engineer can rely on
- ✓ Overlay is water-resistant, durable and won't adhere to concrete
- ✓ Traceable manufacturer, batch consistency and technical support
- ✓ Documented evidence of suitability you can retain for the project

COPY-CAT / UNCERTIFIED PRODUCT

- ✗ Compliance "claimed" but hard to verify — no independent certification
- ✗ Inferior or unsuitable overlays that absorb water, swell and grain-imprint
- ✗ Inconsistent veneer quality and unverified structural properties
- ✗ Poor or non-waterproof bond that delaminates under repeated pours
- ✗ Fewer reuses — higher true cost-per-pour despite a lower sticker price
- ✗ No evidence trail — leaves the installer carrying the risk

KNOW YOUR FORMPLY — THE COMPLIANCE TEST

ASK THREE QUESTIONS BEFORE YOU BUY

1. Is it certified to AS 6669? Not AS/NZS 2269 (that's standard structural ply, not formply).
2. Is the manufacturer EWPAA / JAS-ANZ certified? That means independent, ongoing verification — not a self-made claim.
3. Can they provide the evidence? Structural data, overlay/durability results and certification, kept on file for your project.

If the answer to any of these is unclear, the product isn't proven for your pour — regardless of the price.

05 STRIP, REUSE & STORE

PROTECT THE INVESTMENT — EVERY PANEL IS MONEY

5 STRIPPING & PANEL CARE

AFTER THE POUR

- [x] **Only strip once the concrete has gained adequate strength.**
  Follow the engineer's stripping times — early stripping risks the structure and the finish.
- [x] **Ease forms off, don't lever against the face.**
  Prying against the panel damages the overlay and chips concrete arrises.
- [x] **Clean panels promptly after stripping.**
  Remove concrete residue before it sets hard; reseal any fresh cut edges and holes.
- [x] **Re-apply release agent before the next pour.**
- [x] **Store flat, off the ground, under cover — never in plastic.**
  Correct storage is the single biggest factor in how many pours you get from a panel.

> **THE ECONOMICS OF REUSE**
> A premium hardwood F27 panel cared for well can deliver 40+ castings. Spread over that many pours, the best formply is almost always the cheapest per pour — and it delivers the best finish along the way.

06 INDUSTRY BEST PRACTICE IN AUSTRALIA

THE STANDARDS AND HABITS THAT DEFINE THE PROFESSIONAL

Design to the NCC & AS standards

Formwork engineered by a qualified structural engineer; materials selected to Australian product standards — AS 6669 for formply, AS 1397 for steel decking substrate. Compliance is the baseline, not the aspiration.

Specify certified, traceable materials

Choose EWPAA / JAS-ANZ certified products with verifiable structural and durability data. Retain evidence of suitability for every project — it protects you, the builder and the client.

Control water & protect faces

Reseal cuts, use release agents, allow expansion gaps, lower (never drop) panels, and store correctly. Most finish defects trace back to water ingress and handling damage.

Brace for construction loads

Design and brace for the full wet-concrete load plus placement and vibration forces. Local failure must never compromise the whole structure — build stability in from the start.

Plan reuse & sequence

Match formply grade to reuse target, sequence pours to keep the cycle moving, and order a full compatible system from one supplier to avoid on-site gaps.

Buy local know-how

An experienced Australian manufacturer brings consistent product, technical support, accurate estimation and reliable delivery — the practical backup that keeps a professional crew productive.

THE PROFESSIONAL'S BOTTOM LINE

GOOD FORMWORK IS INVISIBLE — BECAUSE EVERYTHING IT TOUCHES IS RIGHT

Straight slabs, crisp edges, clean off-form faces, safe scaffolds and an on-time pour cycle are the quiet proof of a skilled formworker. It starts with compliant, correctly-selected materials and ends with disciplined on-site practice. That combination is what separates a professional formwork tradesperson from the rest — and it's exactly what this guide is built to support.

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This guide is general trade information prepared by Big River Group and draws on the EWPAA "Know Your Formply" fact sheet and the ArmourForm product range. It does not replace project-specific engineering design. All formwork must be designed by a qualified structural engineer; always confirm product suitability, certification (AS 6669) and installation method for your specific project, and retain evidence of compliance. Product specifications, sizes and stocked thicknesses vary by branch — contact your local Big River branch to confirm. Civil and high-rise formwork is intentionally outside the scope of this edition.