

The choice is yours...



Polystyrene Site



VS



CLEVA POD® Site



Choose a better future...

Leave Polystyrene Behind!
Save the planet one slab at a time with CLEVA POD®!

⋮⋮⋮ CLEVA P  D®

Rethinking Polystyrene in Construction

Widespread Use

- Polystyrene is a widely used plastic material found in packaging, insulation, and a range of construction and consumer applications.

Manufacturing Considerations

- Polystyrene is manufactured from petroleum-based resources.
- The production of expanded polystyrene (EPS) involves blowing agents such as pentane and may result in controlled emissions of volatile organic compounds (VOCs), including styrene, depending on manufacturing processes.

Environmental Profile

- Like many plastics, its overall environmental footprint is influenced by factors such as raw material extraction, manufacturing processes, transport, and end-of-life management.
- Like many polymer-based materials, when exposed to fire conditions, polystyrene can produce smoke and combustion by-products, which are considered in building design and fire safety engineering.

Waste and Pollution

- Due to its lightweight nature, polystyrene can be readily transported by wind or water if not properly contained.
- If not properly managed, it may break down into smaller particles over time rather than undergoing rapid biological degradation.
- Global estimates from organisations such as the United Nations Environment Programme indicate that millions of tonnes of plastic waste enter aquatic environments annually.

Marine and Wildlife Interaction

- Plastic debris, including polystyrene, has been observed in marine environments and may be ingested by wildlife.

Landfill and End-of-Life

- Polystyrene is not readily biodegradable and is understood to persist in landfill environments for long durations under typical conditions.

Urban Waste Management

- In urban environments, lightweight plastic materials can be transported via wind or stormwater systems if not properly contained.
- Effective waste management practices are important to minimise the movement of materials into natural ecosystems.

Look at what's happening around you!



Using Polystyrene is destroying the nature around us.



Polystyrene Site Contamination: A Hidden Legacy on Many Builds



Build better one slab at a time with CLEVA POD®



CLEVA POD® Circular Life



End of slab life, material is fully recovered and recyclable



Recycled to make new pods, the cycle continues



Low carbon transport
Stackable Products



Offcuts placed under the void for recovery & recycling at the end of life



Clean work sites
No polystyrene in sight!

"The foundation of better, sustainable buildings."



The Future of Concrete Slabs: CLEVA POD®

Benefits and advantages of using CLEVA POD®:

- Superior moisture barrier prevents water leaching and wicking through the slab
- CLEVA POD® foundations are stronger due to the unique trapezoid rib array.
- Protects structures, floor finishes, tiles, and carpets from moisture damage
- Keeps both top and underside of the slab dry
- Enables longer spans in pile and beam slab systems
- Supports Green and LEED certified building designs
- Improved concrete curing control, reducing curling and shrinkage cracks
- No polystyrene bead flotation — ideal for honed and polished floors
- Significant freight and transport savings (pallet delivery vs bulk loads)
- Efficient on-site storage for large developments
- Manufactured in Australia
- Made from 100% waste and recycled polypropylene plastic
- Zero waste to landfill and fully recyclable
- Air pockets improve thermal efficiency under the slab
- New Zealand Building Code compliant
- AS2870: Compliance AS 2870-2011 Residential slabs and footings standard compliant.
- Specified in the Firth RibRaft Technical Manual, incorporating the CLEVA POD® as the environmental choice. CodeMark Certified (CMNZ70056)



CLEVACO® Winner of the
2024 Zero Waste Innovation
Award



What's the cost on saving the planet:

Polystyrene has long been the default choice in raft foundations — not because it is better, but because it is cheaper to produce. Its low material cost and simple manufacturing process make it an economical option upfront.

But cost is only part of the story.

A Smarter Investment in Performance and Sustainability

The cost difference between a traditional polystyrene foundation and a CLEVA POD® system lies solely in the pods themselves. All other foundation components remain the same.

With the introduction of the CLEVA POD® UniSpacer75™, foundations can now be designed to achieve like-for-like concrete volumes, eliminating one of the traditional cost variables.

When supplied efficiently:

- Bulk orders (e.g. a 40-foot container servicing 10-14 homes) significantly reduce unit cost
- CLEVA POD®'s innovative stackability (8 pods to the height of 1 polystyrene pod) reduces freight costs to approximately one-eighth

Cost Comparison

For an average 160m² home, the CLEVA POD® system represents an increase of approximately: +9% on foundation cost. A modest premium — for a fundamentally superior outcome.

Eliminating Construction Waste

Unlike polystyrene, which generates significant site waste:

- CLEVA POD® creates a clean construction environment
- Offcuts can be reused within the foundation system
- Materials remain fully recyclable at end-of-life

Result:

- No unnecessary landfill waste
- Reduced site clean-up costs
- Alignment with sustainable building practices

End-of-Life: The Hidden Cost Advantage

What happens when the building reaches the end of its life?

A typical 160m² polystyrene raft foundation:

- Approximate weight: 64.4 tonnes
- Demolition, cartage, and contaminated landfill disposal: Approx \$37,867
- With landfill fees alone at approximately \$300 per tonne, that's: \$19,320 in dumping costs.



CLEVA POD® Advantage

- Fully recoverable and recyclable materials
- No contaminated landfill disposal required
- Significantly reduced demolition costs

The Real Question: Not “What does it cost?” — but “What does it save?”

- Less environmental harm
- Lower lifecycle costs
- Reduced waste
- Smarter logistics
- Future-ready construction

CLEVA POD®

**A small upfront premium. A lasting impact.
Leave polystyrene behind. Build for the future.**



Photo: Architectural Design Home - Overlooking the Poor Knights

The CLEVA POD® System

A traditional raft floor made of recycled plastic



CLEVA POD® 220/225/300

The core component of the system — a patented, recycled-plastic waffle pod used to form concrete slab foundations. It offers a sustainable alternative to polystyrene pods, stacking securely, cutting easily on site, and supporting efficient installation for residential, commercial, and industrial buildings. Made from recycled and waste polypropylene, it's lightweight, versatile, and eliminates polystyrene waste.



CLEVA POD® END CAP™

A specially designed end cap that integrates with the CLEVA POD® to seal voids and prevent concrete ingress where pods are cut to length. It ensures precision and a clean finish around cut areas, helping installers adapt to any foundation shape or angle.



CLEVA Baffle™ 220/225/300

This baffle locks into the CLEVA POD® grid and converts a standard pod into a highly adaptable solution. It allows cutting at any angle and around penetrations such as plumbing, while preventing concrete from entering the void space beneath the slab.





CLEVA POD® SPACER™

Designed to form internal concrete ribs, the Spacer™ sits on the POD® flange and supports reinforcing bars to prevent lifting during concrete pours — a common issue with polystyrene pods. Its design keeps the slab profile accurate and reduces installation issues.

CLEVA POD® UNI SPACER™

This spacer offers flexible pod spacing options, enabling tailored placement of CLEVA POD® units to meet specific foundation designs and reinforcement requirements. It enhances adaptability across different slab layouts.



CLEVA POD® UNI SPACER75™

The UniSpacer 75 is a world's first rib base width of 75mm which creates a trapezoidal rib profile and achieves "Like - for Like" concrete volume compared to traditional 100mm vertical ribs.

The CLEVA POD® SPACER EXTENDER™

An extension for the standard Spacer™, this component increases rib sizes in 100mm increments, providing greater flexibility for reinforcing placement and slab configurations, especially useful in larger or bespoke builds.



CLEVA PLUG™

A simple but essential connector used to secure CLEVA Baffle™ components to the CLEVA POD® and to link multiple baffles together. It ensures pod assemblies stay stable and aligned during installation.

Technical Supporting Information

Your Technical Support Resources

CLEVA POD® provides full technical support for designers, engineers, and builders to ensure seamless integration into any slab design.

Product Technical Statement

CLEVA POD®, when installed and specified according to the current CLEVA POD® Specification & Installation Guide, supports compliance with:

- AS 2870-2011 Residential slabs and footings – Construction
- Included in the Firth RibRaft Technical Manual as the environmental choice
- New Zealand Building Code (achieved through the complete system, not the pod alone)

The pod functions as a non-structural void former; structural performance comes from the concrete ribs and reinforcing steel.

There are no mandated requirements in NZ or AU standards regarding what material must be used as a void former. AS2870 only references the need for a “formed void”, and certification agencies do not require void-material details.

Evolution & Engineering Innovation

Developed in collaboration with Intrax Consulting Engineers (AU) and Markplan Consulting Engineers (NZ), the CLEVA POD® Uni Spacer75™ introduces key advancements:

- 75mm rib base width for a trapezoidal rib profile
- Concrete volumes remain “like-for-like” with traditional 100mm vertical ribs
- Maintains structural equivalence with improved installation efficiency

Thermal Modelling & H1 Compliance

The Building Code H1/AS (Sixth Edition, Nov 2025) removed the schedule method for slab-on-ground compliance. CLEVA POD® has been independently thermally modelled, and results are available online:

- Detailed thermal calculations
- Edge-thickening vs slab-thickening performance
- R-value results across climate zones
- (Website: clevaco.co.nz/compliance)

MBIE Confirmation - MBIE has confirmed the applicability of CLEVA POD® for thermal assessments under the revised H1 requirements.

CodeMark Certification

CLEVA POD® is incorporated into the Firth RibRaft System and holds:
CodeMark CMNZ70056

This provides assured acceptance by Building Consent Authorities throughout New Zealand.



System Compatibility

CLEVA POD® is fully compatible with:

GIBS™ Reflecta Under-Slab™ Insulation & Damp-Proof Membrane

The system has been modelled together with CLEVA POD® to ensure performance in energy efficiency and moisture management.

Resilience in Flood-Prone Locations

Polystyrene raft foundations pose well-documented risks in flood conditions due to their inherent buoyancy.

BRANZ's September 2025 technical update highlighted this risk, referencing real-world cases such as:

- A polystyrene raft home in Esk Valley (Cyclone Gabrielle, 2023) that floated and was displaced approximately 600 metres.
- Reports of uplift beneath homes in Auckland during the same year.

CLEVA POD® Advantage

CLEVA POD® introduces no added buoyancy, significantly reducing the risk of flotation or lateral movement during major flood events.

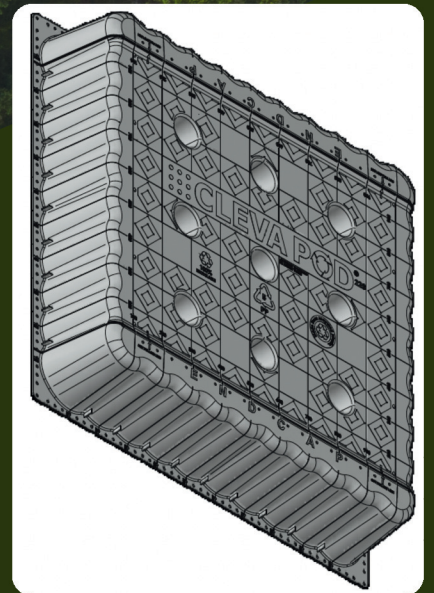
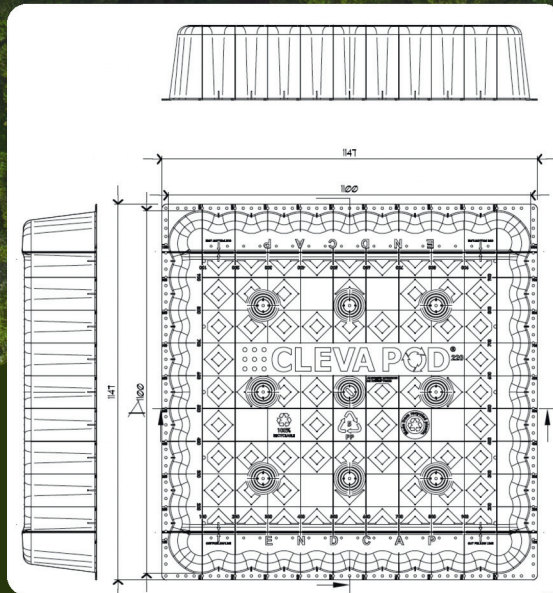
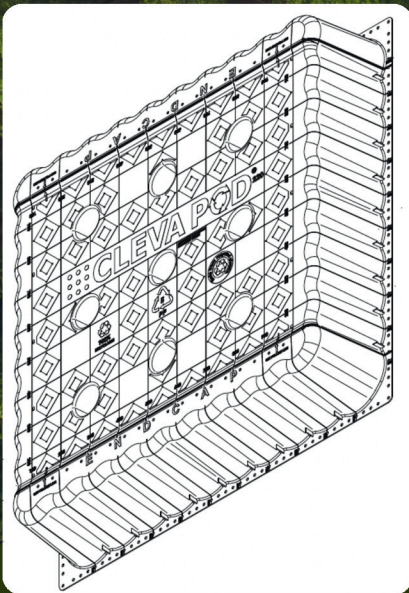
This makes CLEVA POD® a safer, more resilient foundation system for flood-prone or high-water-table environments.

CAD & BIM & How to Resources

Download detailed system files, DWGs, and BIM models directly from the CLEVA POD® website to support efficient design workflows.

- CAD & BIM Library
- System specifications
- Installation details

This is found on our website under technical information





CLEVA POD®

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Check us out on our socials:

