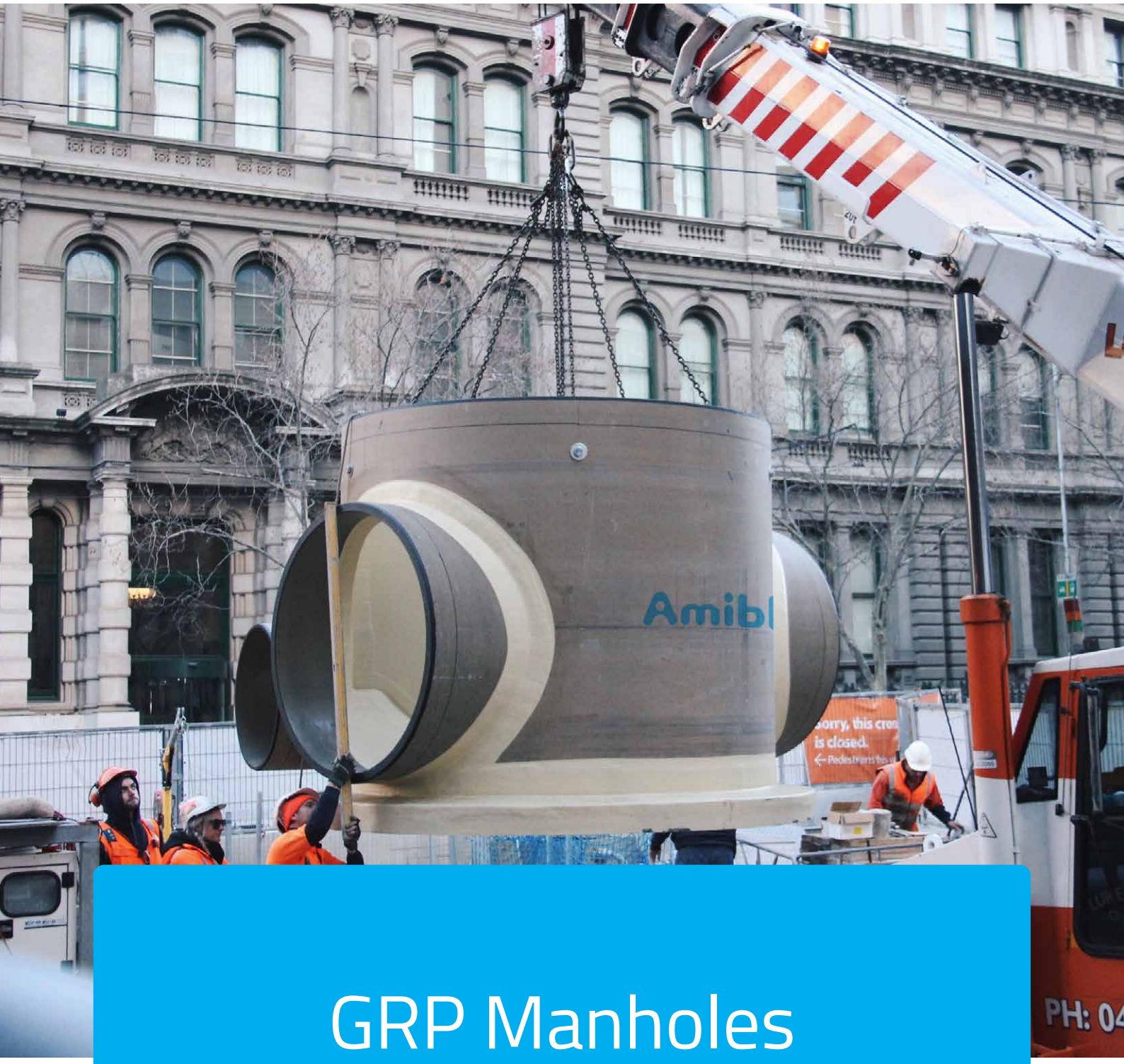

GRP Manholes

Custom design. Easy integration. Made to last.

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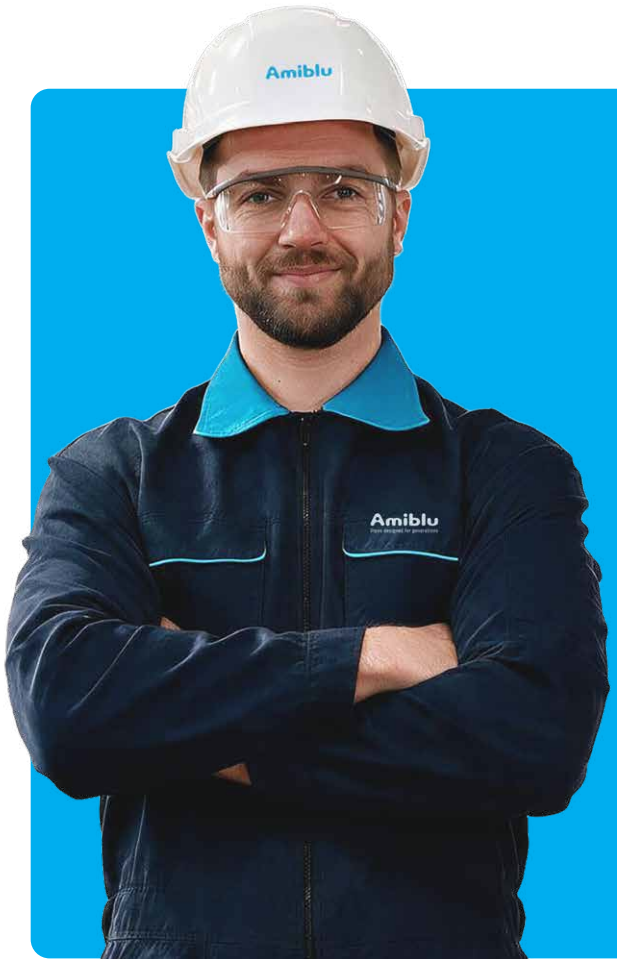


Seven decades of **composite engineering excellence**

As the global leader in GRP pipeline technology, Amiblu combines more than seven decades of composite expertise with an unrivalled record of GRP infrastructure innovation. Our specialist engineering teams provide **end-to-end technical support**, from initial concept and hydraulic design to final site construction.

With countless successful GRP manhole installations worldwide, our structures operate seamlessly within a unified, **single-material composite ecosystem**. We partner with civil engineers and utility authorities to optimise structural design, verify geotechnical conditions, and ensure rapid, low-risk installation.

Flexibility for planners. **Reliability** for operators.

High design flexibility and tailor-made project solutions make Amiblu GRP manholes the preferred choice of planners and engineers. Built to individual project needs, our composite structures adapt to complex site requirements, simplify project execution and offer a very long service life with minimal maintenance requirements.

Invest in performance, not in repairs.

Structural reliability, reduced maintenance requirements and a very long service life result in lower life-cycle costs.

Project-specific geometries

Custom angles, tangential inlets, and multi-pipe junctions precisely engineered to meet exact project requirements.

Specialised applications

Structures for flow control, energy dissipation, drop connections, discharge, pumping, and double-wall protection.

Reliable design and engineering

Every Amiblu GRP manhole undergoes a comprehensive structural design process in accordance with regional standards and norms.

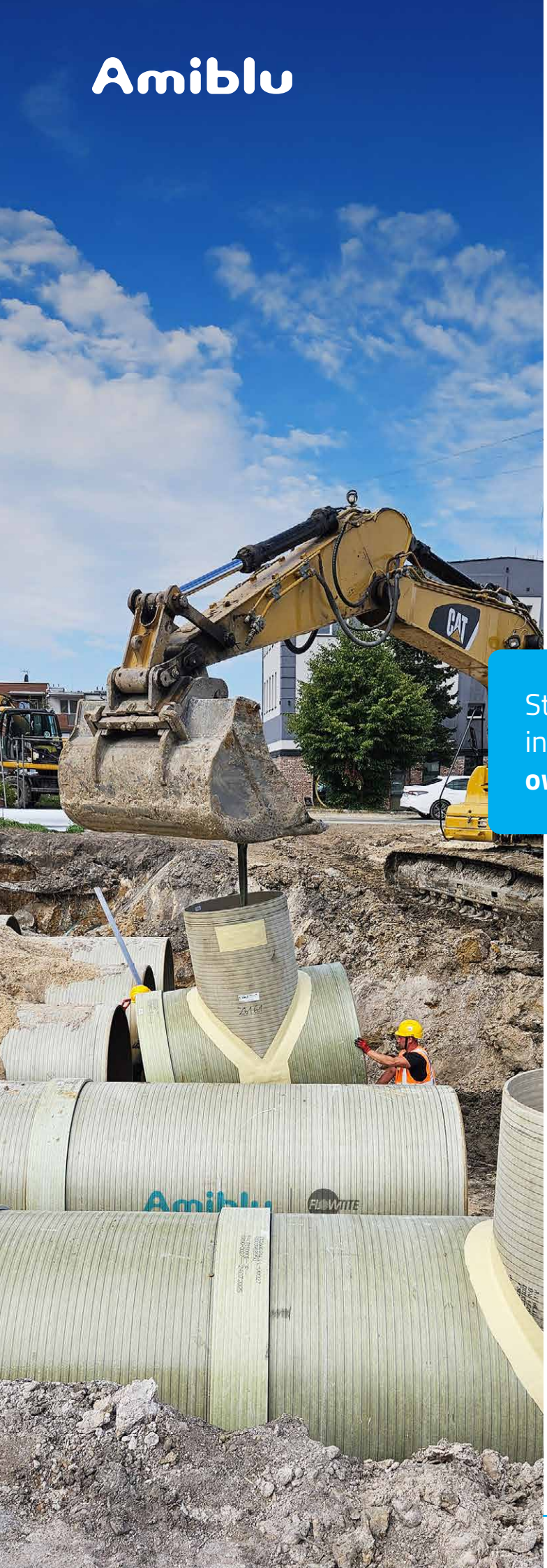
Multi-material compatibility

Factory-integrated stub pipes provide seamless integration with all common municipal and industrial pipe materials.

Modular shaft assemblies

Available as monolithic or modular shaft systems with custom GRP or concrete tops and bases.

Engineered to meet **your exact project requirements**



From pipe to manhole: **one integrated GRP system**

Amiblu offers a fully integrated GRP infrastructure solution—pipes, fittings, and manholes—engineered to operate as one unified system. Utilising a single composite material across the entire network ensures seamless compatibility, consistent performance and simplified installation.

Structural reliability. Fast installation. **Lower total cost of ownership.**

GRP system **reliability**

- Watertight manhole structure and connections
- Seamless compatibility
- Simplified installation
- High hydraulic performance
- Low maintenance requirements
- Long service life and lower life-cycle costs
- Factory-made construction with high dimensional accuracy and quality consistency

Very **long service life**

High structural performance and strength-to-weight ratio

Suitable for aggressive materials, soils and high groundwater conditions

100% GRP BENEFITS

Low maintenance costs due to smooth surfaces and resistance to degradation

100% corrosion resistant against wastewater gases (H_2S), acids, alkalis, salts and many industrial effluents

Easily adaptable: additional pipe inlets can be cut with standard power tools

Lightweight material, reducing transport and installation costs

Long-term leak-tightness: protection against infiltration and exfiltration

Amiblu GRP manholes are made of **Flowtite** and **Hobas** GRP pipes joined together with the use of polyester - glass fibre laminates. This proven manufacturing technology creates a fully watertight structure with high mechanical strength and exceptional long-term durability.

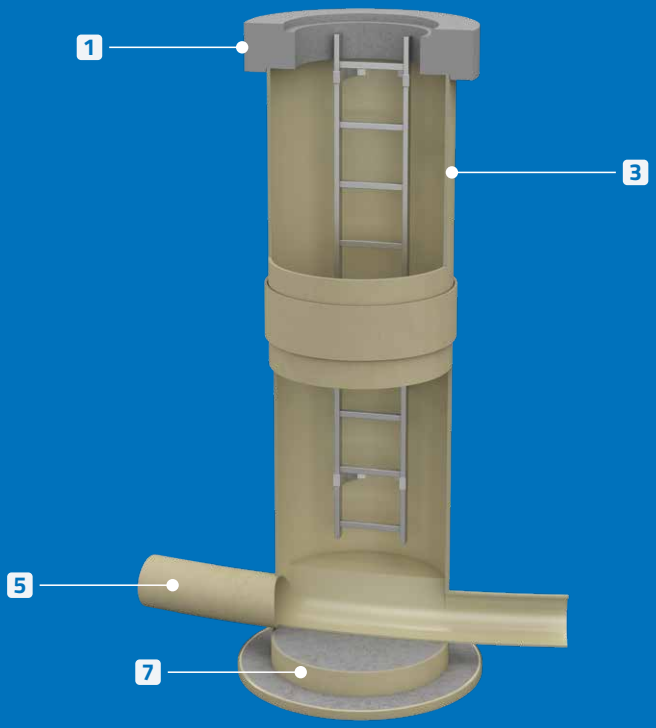
Resistant to corrosion, aggressive wastewater environments and groundwater exposure, Amiblu GRP manholes ensure safe access, easy maintenance and reliable operation throughout the entire asset lifecycle.

Essential asset protections

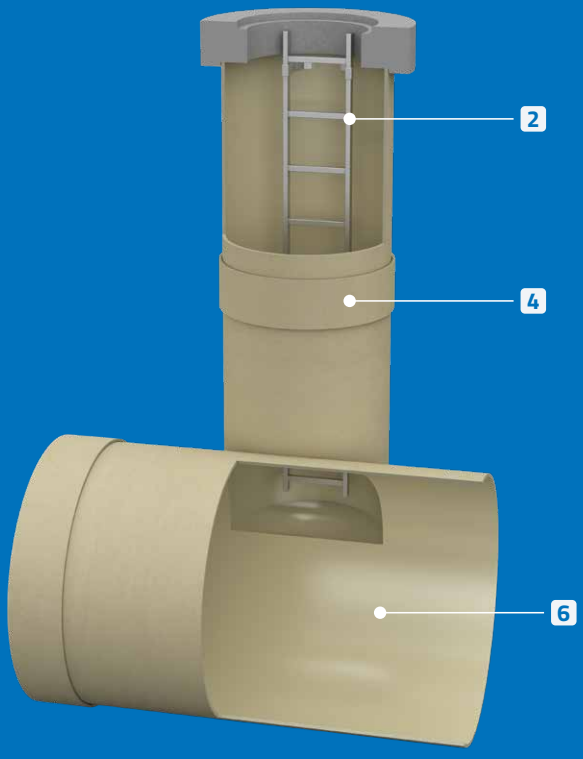
- **100% H_2S gas resistance**: inherently resistant to biogenic sulphuric acid corrosion—the #1 killer of municipal concrete manholes.
- **Leak-tight & root-proof:** stops groundwater infiltration to protect treatment plant capacity and prevents exfiltration into surrounding soils.
- **Structural fatigue resistance:** maintains structural integrity under repeated traffic loads, soil movement and cyclic loading conditions throughout its service life.

Engineered for reliable operation and **minimal lifetime maintenance**

Easy to install.
Endless variety of options.



Standard manhole



Tangential manhole

1 - Load-transmitting support ring

Compatible with GRP or concrete capping slabs. (Shown in fig.: concrete cover plate)

2 - Pre-fitted safety ladder

Corrosion-proof GRP, aluminum or stainless steel with anti-slip rungs; factory-installed to eliminate confined-space fitting risk.

3 - Shaft pipe

High stiffness-to-weight ratio; engineered for heavy soil pressures and high groundwater tables.

4 - Watertight modular coupling

Precision elastomeric joint accommodates ground settlement while ensuring permanent tightness for multi-segment shafts.

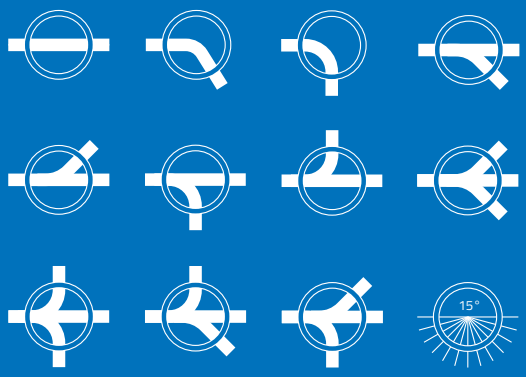
5 - Connecting branch

6 - Main pipe

7 - Anti-buoyancy measure (GRP base plate or laminated concrete base plate)

Hydraulic channel options

Custom channel geometry, tangential branch entries, and drop backdrops engineered to prevent flow turbulence and head loss.



Standard product range
& shaft dimensions

We offer a high degree of flexibility and provide tailor-made designs to meet customer requirements. Standard configurations include **cylindrical** and **tangential** manholes (centric or eccentric). Please ask your local Amiblu contact for availability and details.

Main pipe DN (mm)	DN of GRP shaft pipe*																	
	Without access for personnel						With access for personnel											
	400	500	600	700	800	900	1000	1200	1400	1500	1600	1800	2000	2200	2400	2600	2800	3000
200	■	■	●■	●■	●■	●■	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
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300	■	■	●■	●■	●■	●■	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
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500	■	■	●■	●■	●■	●■	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
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1200	■	■	■	■	■	■	■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
1300	■	■	■	■	■	■	■□	■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
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1600	■	■	■	■	■	■	■□	■□	■□	■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
1700	■	■	■	■	■	■	■□	■□	■□	■□	■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
1800	■	■	■	■	■	■	■□	■□	■□	■□	■□	●■□	●■□	●■□	●■□	●■□	●■□	●■□
1900	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	●■□	●■□	●■□	●■□	●■□	●■□
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2500	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□	●■□	●■□
2600	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□	●■□	●■□
2700	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□	●■□
2800	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□	●■□
2900	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□
3000	■	■	■	■	■	■	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	■□	●■□

● Standard cylindrical manholes

■ Centric tangential manholes
□ Eccentric tangential manholes

*Amiblu manholes are generally supplied with a berm, a ladder and a manhole cover. Additional fittings are available on request. Amiblu standard manholes comply with the requirements of EN 15383. Intermediate GRP diameters are available on request, depending on the DN of the main pipe (e.g. DN 650, DN 750, DN 960 and more)

- Amiblu manholes are available in various models and sizes or can be built on individual needs. They are available with different tops and bottoms in GRP and concrete.
- On request they can be delivered in one piece, or the GRP shaft can be supplied separately and connected to the concrete base plate on site with a coupling or by lamination. The base plate can be delivered with or without a drainage channel, uncoated or GRP coated for a tight, seamless shaft system.
- In addition to the main duct, additional inlets are possible, for example stub pipes to connect the manhole with channels made from GRP, PE, PVC, PP, concrete, stoneware, steel and other materials.

Engineering **confidence** built in

The structural design of Amiblu manholes is based on the mechanical interaction between the GRP chamber and the surrounding soil. Thanks to an exceptionally high strength-to-weight ratio and engineered laminate structures, our chambers withstand high earth and traffic loads* while remaining lightweight and easy to handle.

For installations with exceptional loading conditions, high groundwater levels or large diameters, Amiblu provides project-specific structural assessments and customised solutions to ensure maximum safety and long-term performance.

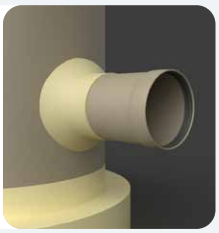
*Traffic loads are assessed in accordance with AS 5100 (W80 wheel load of 80 kN for normal heavy road traffic). Depending on installation conditions, cover depth, and project requirements, Amiblu chambers and pipe systems can be engineered to safely withstand AS 5100 traffic loading. Project-specific structural verification is available for exceptional loading scenarios.

Universal **pipeline connectivity**

Amiblu GRP manholes connect seamlessly to virtually any pipe material across new installations and existing networks without compromising joint integrity. Common connections include:

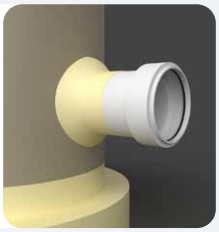
Amiblu GRP pipe
Connection: spigot + GRP coupling

Uniform material properties ensuring maximum corrosion immunity and joint flexibility.



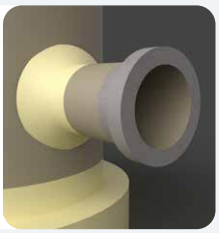
PVC gravity, AS/NZS 1260
Connection: spigot + PVC sleeve

Flush internal joint connection eliminating hydraulic friction loss. Suitable for standard sewer applications.



Custom project adaptors

Tailored spigot dimensions to match the internal and external diameter of the existing pipeline.

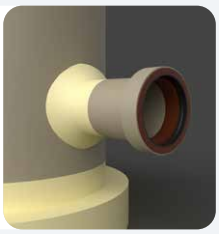


Various materials

Other materials can be accommodated with special design considerations. Contact your local Amiblu expert.

Vitrified clay
Connection: sleeve / socket

Fully compatible with standard and high-load vitrified clay networks. Flush internal connection.



Flange adaptors

Full-face GRP or stub flanges meeting Australian standards. Connects seamlessly to flanged PE and metallic pipelines.

Flexible steel couplings

Arpol flexible steel couplings enable rapid trenchless installation, accommodating axial misalignment and angular joint deflection.

Solutions designed for **complex network demands**

When standard solutions are not enough, Amiblu delivers custom-designed GRP manholes and chambers tailored to specific hydraulic, structural and operational requirements. Factory pre-fabrication allows specialised mechanical hardware, flow control structures, and protective monitoring equipment to be integrated directly into monolithic composite shafts before delivery.

Specialised hydraulic & flow chambers

- **Flow & velocity management**
  Energy dissipation chambers, drop manholes, high-velocity discharge structures, and adjustable weir channels.
- **Pumping & pressure networks**
  Integrated lift station sumps, valve and meter vaults, air-release/ventilation chambers, and pressure-sustaining enclosures.
- **Environmental & dual-wall protection**
  Double-wall containment manholes engineered for hazardous industrial effluents, fuel storage areas, and sensitive groundwater protection zones.

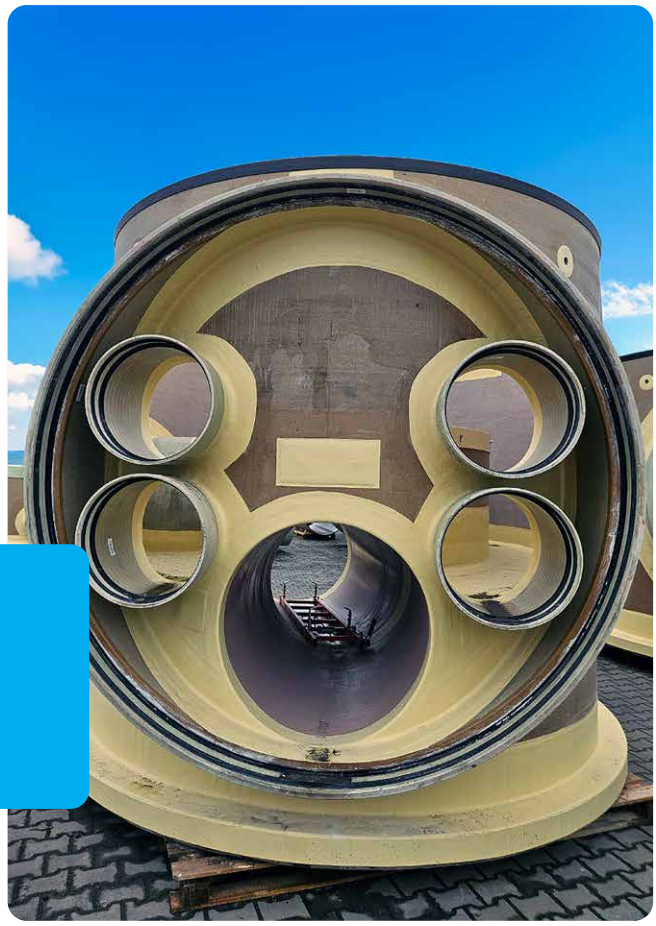
Pre-installed equipment & superstructure outfitting

- **Mechanical & instrument integration**
  Factory mounting for isolation valves, magnetic flow meters, telemetry sensors, and automated control gates.
- **Safety & operations hardware**
  Heavy-duty GRP safety platforms, intermediate rest landings, anti-fall safety grids, and corrosion-free access ladders.

Bespoke engineering

The design of custom manholes is developed in close cooperation with the customer and tailored to the specific project requirements.

From high-velocity drop structures to fully out-fitted valve vaults, Amiblu collaborates directly with utility planners to supply complete, factory-tested application chambers ready for immediate connection.



There is always a solution with fibreglass materials.

1 EXCAVATE

2 INSTALL

3 BACKFILL

Fast, low-risk installation

Delivered as complete, factory-finished components, on-site work is reduced to handling, setting and connection. Full multi-segment structures can be installed in a single day under the right conditions, with open-excavation time far shorter than an equivalent in-situ structure.

The lightweight GRP construction enables faster and safer installation with smaller lifting equipment, reduced trench occupation time and fewer confined-space entries.

Construction & safety advantages

- **Complete factory delivery:** accessories such as benching, drop pipes, and anti-slip access ladders are fully integrated during manufacturing, eliminating high-risk confined-space fitting on site.
- **Zero field coating required:** factory-cured composite surfaces require no internal epoxy linings, chemical sealants, or post-placement testing delays.
- **Safe handling & smaller equipment:** factory-installed lifting points ensure controlled positioning, while lightweight construction reduces required crane capacity and site footprint.
- **Manhole tie-in service:** Amiblu GRP manholes can be modified on site to integrate additional pipeline connections quickly and efficiently.

TAKE THE FAST LANE

Installation has never been easier. Amiblu GRP manholes are designed to simplify construction through lightweight components, factory-manufactured precision, and modular configurations that minimise on-site assembly.

Rapid on-site modification for future network expansion

Existing Amiblu GRP manholes can be modified quickly and cost-effectively on site, providing a reliable, leak-tight solution for future network growth without major civil works or structural replacement.

Technical modification & connection capabilities

Structural on-site lamination*

Proven polyester-glass lamination technology allows new branch connections to be integrated at any stage of the asset lifecycle. The result is a permanent, watertight, and structurally bonded connection.

Multi-material connections & easy retrofit

Additional connections can be integrated directly into the shaft wall using proven GRP cutting and lamination techniques. Standard transition assemblies ensure reliable, watertight connections to multiple systems.

*On-site modifications must only be carried out by Amiblu-approved personnel or authorised subcontractors. For further information on approved modification methods, please contact your local Amiblu expert.

Buoyancy **protection**

- An additional cylindrical manhole uplift protection configuration is available and can be provided upon request.
- The design incorporates a GRP benching with an opening below the channel, allowing the contractor to fill the base with concrete after installation.
- This solution eliminates the need for an underside base plate, simplifying installation.
- A sand-coated GRP puddle flange is integrated into the base structure, creating a strong bond with the concrete and providing effective resistance against buoyancy forces and groundwater uplift.
- The system offers a cost-effective and robust solution for installations in areas with high groundwater levels while maintaining the benefits of a lightweight GRP structure.

Quality & service: Australia

Amiblu manufacturing facilities operate under **ISO 9001** quality management systems, ensuring full compliance with Australian infrastructure standards.

Australian standards & services

NORMS / STANDARDS

- AS/NZS 2566.1 — Buried flexible pipelines
- ASTM F1759 — Manhole structural design
- AS 1170.0/.1/.4 — Structural design actions
- NZS 3106 — Earthquake soil pressure
- AS 5100.2 — Bridge design loads
- BS EN 15383 — GRP manholes & chambers
- ISO 23856 / ISO 25780 — GRP piping systems
- YVWCD-2-8119 — YVW large sewer standard
- Sydney water specification for fibre polymer composite D0002490

PRODUCT RANGE

- Standard and custom-designed manholes and chambers
- Diameters from DN 800 to DN 4500
- Water, wastewater, stormwater and industrial applications
- Pump stations, valve chambers, flow control structures and other special-purpose installations

OUR SERVICES INCLUDE:

- Structural design report with calculations
- Buoyancy calculation verification based on site conditions
- Chamber-by-chamber calculation sheets
- Anti-flotation plate sizing for each chamber
- GRP pipe data sheets
- Fabrication drawings — base & top sections
- General arrangement drawings per chamber
- Unloading & handling instructions
- Review client backfill material data requirements and integrate with buoyancy calculation (e.g., Holcim Rapidfill, EcoFill)

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