

COMPOSITE STRENGTH FOR SAFER, SMARTER MINING

INNOVATIVE MINING WITH ADVANCED POLYMER TECHNOLOGIES



LIGHTER • STRONGER • SMARTER

ADVANCED POLYMER CAPABILITIES FOR MINING APPLICATIONS

Matrix Composites & Engineering delivers advanced polymer solutions designed to perform in the toughest mining environments. Our in-house capabilities in rotomoulding, rotolining, and injection moulding allow us to manufacture components that are lightweight, corrosion-resistant, and built to last. These technologies support safer, more efficient operations across the mining sector.

ROTOMOULDING

Matrix uses a biaxial rotational process to manufacture hollow, seamless plastic components with uniform wall thickness and excellent mechanical strength. This technique is ideal for producing large, durable parts with complex shapes tailored to mining applications.

Key benefits

- Seamless construction reduces stress points and leakage risks
- High impact and abrasion resistance
- UV and chemical durability
- Customisable shapes and sizes
- Ideal for tanks, housings, and protective enclosures.

Mining applications

Slurry tanks, chemical storage units, equipment covers and guards.

ROTOLINING

Matrix applies seamless polymer liners to the internal surfaces of pipes, tanks, and process equipment using a dual-axis rotational oven. This process evenly distributes molten polymer across complex geometries, creating stress-free, corrosion-resistant linings suitable for aggressive chemical and slurry environments.

Key benefits

- Seamless, stress-free liners
- Exceptional corrosion and abrasion resistance
- Adhesive-free mechanical or chemical bonding
- Extended service life with fluoropolymer options
- Operates across a wide temperature range:
 - LLDPE: 70°C
 - HDPE: 85°C
 - PVDF: 135°C
 - ETFE: 150°C
- Compatible with ANSI, Victaulic, and sanitary flange fittings
- Suitable for pipe spools up to 4.5 m and vessels up to 4 m diameter.

Mining applications

Slurry and chemical transport systems, process tanks and vessels, pump and valve housings.

INJECTION MOULDING

Matrix uses injection moulding to produce precision polymer components in high volumes. This process is ideal for manufacturing small to medium-sized parts with tight tolerances and repeatable quality, supporting mining systems that demand reliability and performance.

Key benefits

- High dimensional accuracy and repeatability
- Suitable for chemically inert and wear-resistant parts
- Scalable for large production runs
- Capable of producing intricate geometries.

Mining applications

Seals and gaskets, connectors and fittings, structural and support components.



Rotolining

ABOUT MATRIX COMPOSITES & ENGINEERING

Matrix's 80,000 m2 Henderson headquarters is Australia's largest composites manufacturing facility. Designed based on LEAN principles and one-piece flow, the facility integrates automated chemical processing, mobile work-cells, robotics, and SCADA-controlled production lines. This advanced setup enables Matrix to deliver high-quality components at scale faster and more reliably.

END-TO-END CAPABILITY

Matrix provides a complete manufacturing solution from concept through to commercialisation:

- Collaborative workshops with our Technology Group to define fit-for-purpose material solutions
- Rapid prototyping and validation using our in-house laboratory and procedures for syntactic foams and thermoplastics
- Seamless scale-up via flexible manufacturing cells that accommodate varying batch sizes, complex geometries, and new products.

INNOVATIVE MATERIALS TESTING

Our Henderson facility is home to a dedicated R&D department staffed by scientists and materials engineers, and holds several international patents. Using a full suite of equipment for advanced materials characterisation, the team rigorously assesses mechanical integrity, thermal performance, decomposition thresholds, density, and environmental resilience. Every composite is validated against internal benchmarks, client specifications, and global standards.

INTEGRATED ISO-CERTIFIED MANAGEMENT

Matrix operates an integrated management system which encompasses ISO 9001:2015 (Quality), ISO 45001:2018 (Health & Safety) and ISO 14001:2015 (Environment). Our supplier qualification procedures ensure consistent material standards, while our 365 Perfect Days culture drives best practice in health, safety, and environmental performance. We are committed to zero emissions, resource conservation, and optimising manufacturing processes to minimise waste and maximise reuse and recycling.



MATRIX **DELIVERING** **TO THE WORLD**

