UNDERGROUND SHOTCRETE SPECIALIST
LARGEST SHOTCRETE CONTRACTOR IN AUSTRALIA
LEADING INNOVATOR OF SHAFT LINING SOLUTIONS
REMOTE AREA CONCRETE SUPPLIER
UNDERGROUND-SURFACE MINING CONSTRUCTION

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With a background of over 30 years in the industry, Jetcrete Oz Pty Ltd has extensive experience in all aspects of concrete spraying.

The company is capable of providing a complete service for all stages of underground shotcreting including excavation, on site concrete/shotcrete/CAF manufacture, supply, delivery and application.

Jetcrete is also capable of delivering surface and underground civil infrastructure works including earthworks, machine foundations, drainage and culverts, concrete slabs, heavy workshops and site offices.

Jetcrete has developed several major advances in shotcrete technology, some highlights include:

- Remote shotcrete application of vertical shafts from 1 m – 9 m diameter, up to a maximum depth of 400 m
- Introduction of hydro-scaling as part of the shotcrete process
- Specialised wet mixes capable of holding shotcrete in a workable state for up to 3 days

Jetcrete has extensive experience in:

- Underground delivery of shotcrete/concrete with Normet Agitators
- Underground development support using Normet Spraymecs
- Overhead spraying
- Remote concrete manufacture
- Remote CAF manufacture
- Remote vertical shaft linings, both surface and underground
- 3D mapping and camera survey of shafts
- Vent wall/wet fill bulkheads

Jetcrete has achieved the vital blend for success through a commitment to:

- Our People
- New equipment technologies
- Mix technologies and research
- QA/QC

Jetcrete’s advanced technology and specially formulated concrete have, time and time again, completed difficult tasks in minimum time and cost to our clients.

We are confident the solution to your ground support problems is Jetcrete.

MARCUS PROPERZI
General Manager
Jetcrete has safety and quality as core values and these values are at the forefront of everything we do. In order to provide our services in the safest manner possible our operations are underpinned by a mature Safety, Environment, Quality and Training System (SEQ&T) developed over our more than thirty years of experience in the civil construction and mining industries.

This system is accredited under AS/NZS4801, ISO9001, ISO14001 and OHSAS18001 and continues to be developed and integrated into our management system.

**Our Team**

Jetcrete’s team of SEQ&T professionals operate across Australia, assisting and advising our site supervisors in the delivery of our SEQ&T system in order to minimise risk to our people and our clients’ operations. This includes the following ongoing functions:

- Risk assessment and job hazard analysis
- Operator training
- Competency based assessments
- Task and behavioural observations
- Accident & incident investigation
- Inspections and audits

Nationally accredited operator training is delivered through our function as a Registered Training Organisation using our Training Resource Manuals (TRMs). These Training Resource Manuals are aligned to the National Metalliferous Mining Competency Standards.

**Training Resource Manuals (TRM)**

Jetcrete’s TRMs are developed to meet industry best practice and are:

- Aligned to the National Metalliferous Mining Competency Standards
- Developed in accordance with Australian Quality Framework guidelines
- Developed in consultation with employees, supervisors, corporate management and industry experts

**INX InControl and InTuition**

Jetcrete uses the INX InControl and InTuition management systems to electronically track and measure our compliance to our policies, processes and procedures. The InTuition system provides online data entry for uploading and tracking of personnel compliances and completed competencies.

**Auditing**

Every Jetcrete site undergoes two audits each year to ensure our compliance to our systems. These audits are made available to our client and an improvement plan implemented to ensure each site continues to operate in line with our very high standards of safety and quality.
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<td>Metals X</td>
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<td>Degrussa</td>
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<tr>
<td>Paddy's Flat</td>
<td>ACM - Australian Contract Mining</td>
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<td>Prominent Hill</td>
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<td>650km north west of Adelaide SA</td>
<td>Supply and Application of Ground Support</td>
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<td>Telfer Mine</td>
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SHOTCRETE PROCESS

Drawing on over 30 years experience in concrete spraying for both the civil and mining sectors and utilising an experienced workforce and modern fleet of equipment, Jetcrete has the proven capabilities to successfully perform all elements of the shotcrete process. This includes capabilities for batching, delivery and application in all conditions and locations.

BATCHING & DELIVERY CAPABILITIES

Jetcrete currently operates 12 of its own batch plants in addition to operating 4 client and hire batch plants producing in excess of 170,000 m$^3$ of shotcrete/GP concrete per annum. In 2015 Jetcrete manufactured:

♦ 130,000 m$^3$ of shotcrete
♦ 10,000 m$^3$ of general purpose concrete
♦ 247,000 m$^3$ of CAF

Concrete products are delivered underground using purpose built underground agitators. These units provide the safest method of operation on declines and ramps in underground mines.

Some of the benefits of on site batching include:

♦ Cheaper costs to client
♦ Better overall management of the manufacture and delivery process

Faster development
♦ Increased production
♦ Ability to design the specific mixes which perform to the ground support requirements of the mine.
SHOTCRETE APPLICATION

Since 1994 Jetcrete has been providing shotcrete and fibrecrete ground support for both development and rehabilitation in underground mines Australia wide.

Jetcrete uses only the best equipment available for the processes and services in both hard and soft rock mines.

All shotcrete operators have a minimum of 12 months intensive training, including concrete batching and delivery driving prior to their appointment as a “Nozzleman”.

QUALITY ASSURANCE TESTING

All Jetcrete sites are structured with an Inspection Test Plan (ITP) to govern the testing requirements. This is done in accordance to the requirements of our client, Jetcrete and Australian Standards.

Site testing is inclusive of, but not limited to:

- Casting batch plant cylinders
- Spraying of in situ and round determinate panels
- Casting of beams
- Periodic testing of aggregate and cement compliance
- Testing site water for impurities
- Calibration of batch plant scales and dosing units

All testing is completed by NATA accredited independent test laboratories throughout Australia.

In addition to the ITP, Jetcrete also conducts periodic auditing of all equipment and processes to ensure maximum quality and compliance.
NEW TECHNOLOGIES

Having been at the forefront of the industry for many years, Jetcrete is leading the way in the use of modern technologies for shotcreting in Australian Mining today. This includes the development and introduction of overhead wet shotcrete, robotic shotcrete units, hydro-scaling and more recently laser technology to measure thickness of applied fibrecrete.

These advancements have resulted in increased development rates for clients through faster excavation cycles, improved early strength support and increased bonding between the fibrecrete and the substrate surface.

Jetcrete, in conjunction with major suppliers, have been actively involved in the development of many specialised mixes and the trialing of new, more advanced technologies to meet the ever growing industry demands. In addition, Jetcrete still continues to drive new technology research and the development of industry guidelines.

Jetcrete currently operates two simulators with the key purpose of providing measurable and structured hands on training for novice sprayers. This is complemented by our competency based training and assessments. The facility is used to establish base knowledge and skill sets for novice sprayers prior to operating front line plant. The simulators can also be used as an effective tool for ongoing training and assessment.

Thickness is a key factor in the application of sprayed concrete and Jetcrete is implementing a new method to measure and record applied concrete thickness in real time. This innovation will provide operators with valuable information that will improve the cost effectiveness of fibrecrete as a ground support option.
**SHAFT LINING**

For over 14 years, Jetcrete has been operating a shaft lining system, developed in house, with the key focus on remote operation. This significantly improves the safety of the operation by eliminating the need for personnel to enter the shaft at any time throughout the process.

Accurate depth measurement is achieved by a rope measurement device which allows precise coverage and thickness of the spray application.

The rig includes three cameras to send real time data back to the control room, a hydraulic motor to drive the rotation of the nozzle, and an integral water dosing housing. It is also fitted with Mines Department approved enclosures and lighting so it can be utilised in coal mine applications.

Jetcrete continues to develop and improve the capability and operability of the shaft lining system. Currently there are three of these innovative systems in operation throughout Australia.
CIVIL INFRASTRUCTURE

Jetcrete has a team of engineers, project managers and qualified tradesmen who are capable of delivering civil infrastructure works in remote locations around Australia. With a fleet of equipment including mobile batch plants, concrete boom pumps, road and underground agitators, backhoes and loaders Jetcrete provides a complete package to the mining industry.

Benefits we provide to our clients include:

♦ Capability to deliver challenging projects in remote locations
♦ Integration with concrete supply provides total package solution
♦ Highly experienced and trade certified workforce
♦ Commitment to first class standard in quality and safety
♦ Expertise and financial backing to undertake large projects
♦ Client benefits in terms of cost savings and timely completion

Jetcrete is your construction partner for:

♦ Heavy Duty Workshops
♦ Mine Site Offices
♦ Machine Foundations and Slabs
♦ Drainage and Culverts
♦ Underground Civils
♦ Earthworks