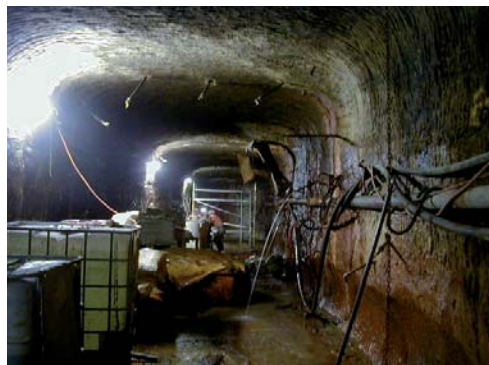




# Tunnelling and Mining



Multigrout®, high-performance injection grouting, groundwater control, ground strengthening, drainage and waterproofing in underground construction. Based in Australia, servicing a wide geographic area across the Asian continent, Australasia, Pacific and the Americas.

From our regional base in Melbourne, with our technology and supplier links to Scandinavia, Europe and Canada, Multigrout® Australia can offer a high level of experience and technical knowledge over a wide range of applications in civil tunneling, underground mining in both metaliferous and coal mining sectors as well as surface based works:

- Controlling groundwater movement and flow
- Ground strengthening with tangible improvement in rock mass characteristics
- Soft ground and granular soil consolidation
- Fault consolidation
- Collapse recovery and rectification
- Contact and backfill grouting

# MultiGrout

The problem solver

# Our five core service areas are as follows:

## 1. Materials

- Environmentally inert cements and complimentary materials to cater for the wide range of applications
- Ultrafine and Microfine Portland cements
- Special “blocker” set-controlled cements
- Essential performance enhancing additives

Note: Multigrout® is derived from the notion of a multiple number of materials, i.e. a materials suite, that can cater for a wide range or multiple applications

## 2. Engineering Support

- Working with designers, specifiers and constructors on problem definition, solution development, design, specification and performance criteria

## 3. Application methodology

- Working with constructors and specialist sub-contractors on a project by project basis
- Materials and methods selected on basis of required outcome
- Work method statements and systematic procedures
- Hands-on, at the tunnel face, practical grouting support

## 4. Training

- Information seminars on grouting and its application potential
- Training programs for tunnel/grouting crews and site engineering personnel
- Training tailored to the specific application and work environment

## 5. Equipment

- Grouting packers – inflatable hydraulic packers or simple mechanical packers of varying lengths to suit a range of applications
- Grouting pressure gauges (various ranges) with diaphragm seals or simple “gauge protectors”
- Testing apparatus – Mud Balance, Marsh flow cone, bleed apparatus etc, complete kits can be made to order
- Grouting Platforms – complete grout plant consisting of colloidal mixer, agitating tank and grout pump – high pressure piston pump or low pressure progressive cavity pump
- Project hire or new purchases

For all technical and commercial inquiries, please contact us at:

### Multigrout® Australia

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*Multigrout® is a registered trademark belonging to Elkem ASA Materials.*

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The problem solver



## Platon “Tunnel Membrane” as waterproofing and drainage

Continuous developments in air gap technology by Isola have resulted in a very versatile studded membrane designed for a range of tunnel applications from simple drained tunnels to fully tanked systems. The system can be designed to suit specific requirements.

### Application

- Groundwater seepage through the rock or concrete surface is diverted to the drainage system.
- Ensure a dry inner liner
- Injection layer and mechanical protection for waterproofing

### Advantages

- The natural flow of ground water in cracks and fissures is not stopped, but controlled
- Second level of insurance for complete waterproofing
- Drinking water safe and environmentally neutral
- Special product specifications to suit individual projects

### Installation

- Installation by well trained contractors in accordance with specific requirements and individual specifications

