



PROVEST
GROUP

PRODUCTS & SERVICES

www.provestgroup.co.za

CARE . PROFESSIONAL . RELIABLE . INNOVATIVE





CARE
PROFESSIONAL
RELIABLE
INNOVATIVE



OUR DIVISIONS

The services and product offerings of the ProVest Group include:

CEMENT & AGGREGATE PRODUCTS

- Premix bags
- Specialised products
- Crusher Services

SPECIALISED SUPPORT SERVICES

- Drill and installation of Anchors & Roof Bolts
- Shotcrete Application
- Grout Plant Operations
- Grout Pack Installations
- Mesh and Lacing
- Oslo Straps Installation
- Installation of Sets
- T.S.L Application
- Silo/Ventilation Shaft Rehabilitation

GENERAL MINING SERVICES

- Development
- Stopping
- Sweeping and Vamping
- Construction
- Drop Raising

INNOVATIVE TECHNOLOGY SOLUTIONS

- Blast Prone Ventilation Walls
- Grout Efficiency Tester (Patented)
- Blasting Control Device (Patented)



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SHOTCRETE: A DRY MIXTURE

ProVest's Shotcrete is a pre-bagged blend of sand, aggregate, cement, fibres (optional) and other specially selected additives. The cement and additives are placed in a separate bag and sealed with the aggregate, sand and fibres (optional) in 25kg or 30kg bags.

SHOTCRETE USES

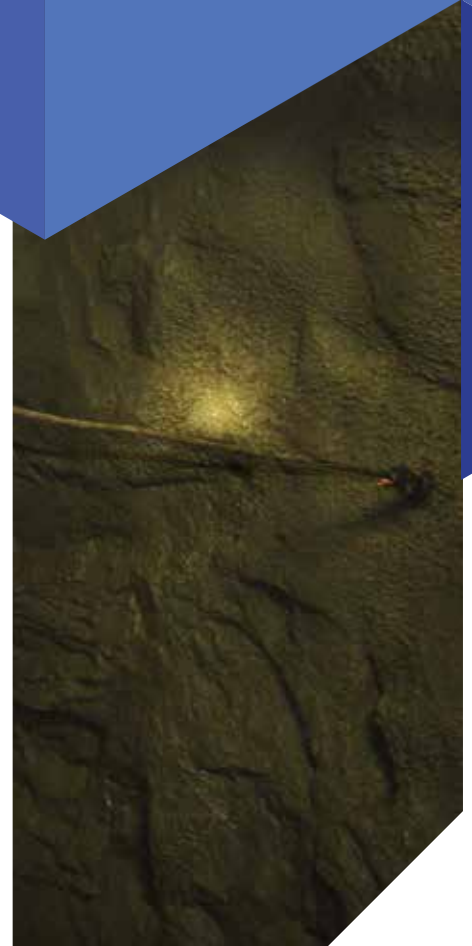
ProVest's Shotcrete is mixed dry and pumped with air through the hose which mixes with water at the nozzle of the hose. The velocity with which the material impacts the surface, results in a high quality, well compacted concrete. Shotcrete is available in different strengths, ranging from 30Mpa up to 50Mpa.

Other uses are:

- Tunnelling support
- Mining
- Support of walls
- Concrete rehabilitation
- Excavation Support

ADVANTAGES

- Easy and fast application with trained personnel
- No additives required
- Seals the sprayed area and prevents unravelling
- Low rebound, resulting in less material use.



WETCRETE

ProVest's Wetcrete is a pre-bagged blend of sand, aggregate, cement, fibres (optional) and other specially selected additives. The cement and additives are placed in a separate bag and sealed with the aggregate, sand and fibres (optional) in 25kg or 30kg bags.

WETCRETE USES

ProVest's Wetcrete is mixed with approximately 3 Litres of water per bag prior to pumping. The mixture is pumped with any type of Wetcrete pump to the nozzle. The velocity with which the material impacts the surface results in a high quality, well compacted concrete. Wetcrete is available in 50 Mpa cube strength.

Other uses are:

- Tunnelling support
- Mining
- Support of walls
- Concrete rehabilitation
- Excavation Support

ADVANTAGES

- Easy and fast application with trained personnel
- Seals the sprayed area and prevents unravelling
- Low dust levels during application
- Can be used as accelerated or non-accelerated product

PACKAGING

ProVest's Wetcrete is bagged in bulk bags containing 50 x 30kg or 25kg bags of product.

Wetcrete can be custom blended with or without fibres depending on the requirements. Steel fibre, Oxi-fibre and Monofilament fibres are available and are weighed and placed with the sand in the bags.



THIN SKIN LINER (TSL)

Provest's Thin Skin Liner is a Polymer base pre-bagged blend of sand, aggregate, cement, and other specially selected additives. The cement and additives are placed in a separate bag and sealed with the aggregate and sand in a 20kg bag.

THIN SKIN LINER USES

Provest's Thin Skin Liner is mixed with approximately 4 Litres of Polymer per bag prior to pumping. The mixture is pumped with a TSL pump to the nozzle.

The velocity with which the material impacts the surface results in a high quality, well compacted concrete.

Other uses are:

- Tunnelling support
- Mining
- Support of walls
- Concrete rehabilitation
- Water channel rehabilitation.

ADVANTAGES

- Easy and fast application with our trained personnel
- Seals the sprayed area and prevents unravelling
- Low dust levels during application.
- No accelerator required

PACKAGING

Provest's Thin Skin Liner is bagged in a bulk bag containing 20 x 20kg bags of TSL. Provest's Thin Skin Liner can be custom blended with a liquid or powder base polymer depending on the requirements.

PREMIX

ProVest's Premix is a pre-bagged blend of sand, aggregate, cement and other specially selected additives.

The cement is placed in a separate bag and sealed with the aggregate and sand in 30kg or 25 kg bags.

PREMIX USES

ProVest's Premix is a very versatile concrete and can be used in multiple situations where a high quality concrete is required. ProVest's Premix is mixed and then placed as one would do with concrete.

ProVest's Premix is available in different strengths ranging from 25Mpa up to 70Mpa. Once the product has cured it results in a high quality concrete.

Other uses are:

- Traveling ways
- Mining
- Concrete rehabilitation
- Construction
- Box Fronts

ADVANTAGES

- Easy and fast mixing and application with trained personnel
- No additives required
- Can be ordered to desired strength specification

PACKAGING

ProVest's Premix is bagged in a bulk bag containing 50 of either 30kg or 25kg bags of product.

PUMPCRETE

ProVest's Pumpcrete is a pre-bagged blend of sand, cement and other specially selected additives.

The cement and additives are placed in a separate bag and is sealed with the aggregate and sand in a 30kg bag.

PUMPCRETE USES

ProVest's Pumpcrete is mixed with approximately 3 Litres of water per bag prior to pumping. The mixture is pumped with any type of concrete pump. Pumpcrete is then pumped to where the concrete needs to be placed, like conventional concrete.

The product has self-levelling and easy air-void removal properties which results in a high quality, well compacted concrete. It's available in 50Mpa cube strength.

Other uses are:

- Traveling ways
- Box fronts
- Mining
- Concrete rehabilitation
- Construction
- Ventilation Walls

ADVANTAGES

- Easy and fast application with trained personnel
- Self-levelling properties
- No additives required
- Easy air-void removal

PACKAGING

ProVest's Pumpcrete is bagged in a bulk bag containing 50 x 30kg bags of product.

HSWR | ANDESITE OR CRUSHER SAND

ProVest's HSWR (High Strength Wear Resistant) is a pre-bagged blend of sand, aggregate, fibres (optional) cement and other specially selected additives. The cement and additives are placed in a separate bag and sealed with the aggregate and sand in a 25kg bag.

HSWR USES

ProVest's HSWR is used as an Ore Pass and Silo-lining where a durable and wear resistant surface is required.

HSWR is mixed wet or dry and is pumped with air through a hose and mixed with water at the nozzle.

The velocity with which the material impacts the surface results in a high quality, well compacted concrete. HSWR is available in different strengths ranging from 70Mpa to 90Mpa.

ADVANTAGES

- Easy and fast application with trained personnel
- Seals the sprayed area and prevents unravelling
- High durability and wear resistant

PACKAGING

ProVest HSWR is bagged in a bulk bag containing 50 x 25kg bags.

VARIOUS PRODUCTS

The ProVest Group undertakes various projects across the continent with great success. We specialise in various dry and wetcrete products as well as T.S.L products.

SAFE WORKFORCE

Our biggest assets is our people and we therefore believe that every employee must return home safely each day.

The Group is committed to managing and operating in the **safest** way possible.

The ProVest Group has an independent safety department who audits their own separate safety system which runs parallel to the clients' safety system.

UNDERGROUND & SURFACE APPLICATION

We pride ourselves on our outstanding quality of work and passionate workforce.

- We specialise in both dry and wetcrete, as well as T.S.L applications, which are used on surface and underground environments.
- Securing and protecting electrical cables and palisades by applying FOMPA HSWR (High Strength Wear Resistant).

PRODUCTION PLANTS

The Group has offices and four production plants situated in four provinces; North West, Limpopo, Mpumalanga and the Northern Cape.

The Group currently supplies the mining industry with premix and shotcrete in excess of 750 000 bags per month.

Apart from the production plants, the Group has a workshop in Rustenburg where it carries out repairs and maintenance to all its equipment.



CABLE ANCHORS

CABLE ANCHOR INSTALLATIONS

The ProVest Group performs a variety of long anchor installations, which vary between 3.5m and 6.5m. Various types of roof bolt, resin bolt and coupling bolt installations are also undertaken.

Approximate number of installations per month:

- 11 100 Cable Anchors (4.5m)
- 200 Cable Anchors (6.5m)
- 5 000 Bolts (1.5 to 2.5m)

CLIENT BENEFITS

- Safety: Operator drills remotely out of harm's way.
- Ability to test grout inside a hole after installation.
- Highly efficient competent crews and supervisory structures.
- Excellent supporting structures, as ProVest installs anchors in two provinces.

SAFETY BENEFITS

The Group has developed a grout efficiency tester (GET System) which enables the amount of grout in a hole to be tested after installation. This assures the reliability of all anchor installations.

PRODUCTION BENEFITS

The Group has a highly skilled labour force and the work crews are renowned in the industry for their proficiency and safety standards.

- Experienced and qualified business unit managers and regional managers with mine overseers and mine managers certification supervise all crews.
- The use of specialized machinery with a higher penetration rate than the normal drilling machine improves efficiency and allows the crew time to complete tasks timeously and safety on each shift.



GROUT EFFICIENCY TESTER

The adequate grouting of Cable Anchors has been a major concern over the last few decades. Our GET is a simple, user-friendly system that determines whether Anchor holes are fully column grouted.

SAFETY BENEFITS

- Reliability of support: a proactive system that detects a possible disaster prior to its occurrence.
- Improves quality and safety of support installations.
- Removes human error.
- Provides management with peace of mind.

PRODUCTION BENEFITS

- Removes the necessity of reinstallations that can cause unplanned delays in production.
- Less resources required to do quality control on support installations.

CLIENT BENEFITS

- Safety: Integrity of support and peace of mind.
- Excellent quality control system.
- Less chance that the Department of Mineral Resources and Energy (DMRE) could potentially instruct the mine to reinstall all tendon supports after a fall of ground (FOG) where it is found there was no grout installed.
- There is no other solution which is as cheap and effective as ProVest's GET System.



BLASTING CONTROL DEVICE

- The BCD is designed to eliminate reverse priming.
- Ability to replace “boosters” with improved face advances, 70% saving on booster costs.



TESTING

Independent tests and trials were done at various mining operations, both for traditional conventional and trackless mining methods to assess the effectiveness of the device.

DETONATING

- The Blasting Control Device (BCD) ensures detonation away from the hole of entrance at a consistent distance from the end of the hole of 5cm to 10cm
- This maximises the impact, prevents blow-outs and at the same time directs explosion energy forward.

SAFETY & COST BENEFITS

- It improves hanging wall conditions.
- Less support is blasted out or damaged.
- Improves face shape which eliminates excessive rigging.
- SABS Certification for toxicity and flammability.



BLAST PRONE VENTILATION WALLS

DESCRIPTION

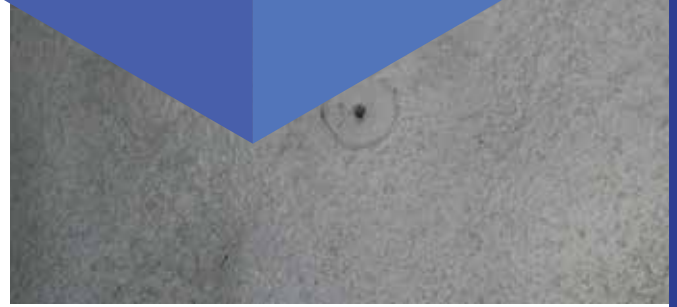
- The total opening that requires to be closed up by the ventilation wall is first covered by the construction of the robust steel structure which covers the opening.
- This steel structure is secured to the hanging wall and both side walls by drilling holes into the rock perimeter and inserting 8mm rebar rods into these holes.
- After the steel structure has been constructed and secured, 40 MPA shotcrete is applied to the robust steel structure.
- ProVest also installs “curtain type” ventilation seals for areas further away from blasting sites.

SAFETY BENEFITS

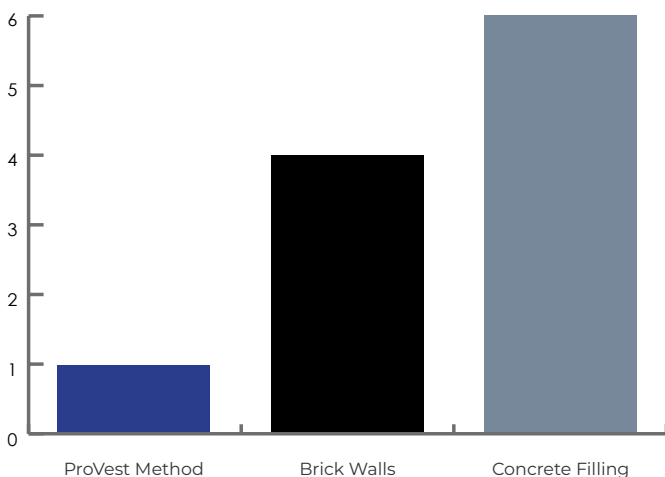
Due to ProVest’s quick installation process, people spend less time on scaffolds. Blast damage on brick walls could potentially injure people due to cracks and instability of the structure, which is not present with the ProVest’s walls.

CLIENT BENEFITS

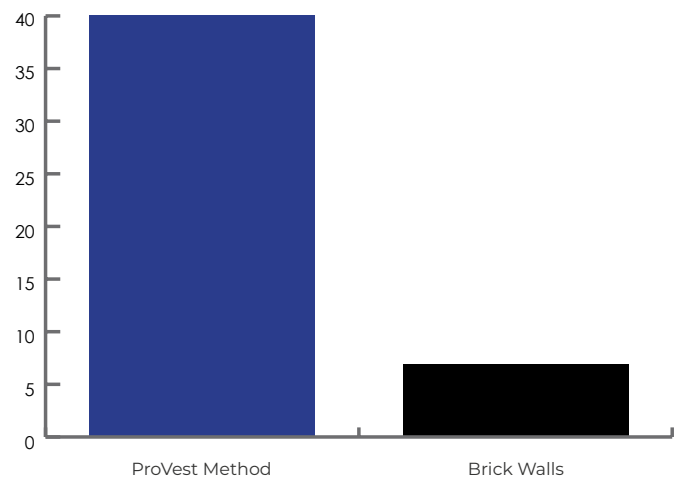
- Less time is required to construct a wall compared with the other methods in the market.
- Normal brick walls have a strength of 7 MPA compared with the ProVest walls which have a superior strength of 40 MPA.
- ProVest’s walls are blast prone, tests have proved that our walls are standing 60m from blasting face.
- Less logistics required due to lightweight material.



DAYS TO CONSTRUCT



MPA STRENGTH



GROUT PLANTS

PLANT DESCRIPTION

- These sophisticated plants have programmable batch controllers that produce an overall accuracy of 1.5%.
- The plants are equipped with electro hydraulic driven pumps that are cost advantageous to the employer compared with compressed air pumps.
- Each pneumatically driven pump consumes compressed air in the order of 1,242 cu m per second at 600kPa compresses air pressure.

CLIENT BENEFITS

- **Less plant maintenance:** this system uses the positive pressure generated by the combination of shaft depth and relative density of the grout. These assists pumping operations when pumping over long distances and reduces the pressure the pump has to generate.
- **Limits human error:** pumping and mixes are prepared with sophisticated programmable batch controllers direct from surface to the working place.
- **Higher productivity:** with a three-pump plant, our plants produce approximately 2400m³ a month per plant.
- **Easier logistics:** this system eliminates transportation of grout product to the underground workings through the shaft.



CRUSHING PLANTS

PLANT DESCRIPTION

- ProVest has its own state of the art crushing plant, which consists of two vertical shaft impact crushers that deliver two predominant products: 6,3mm sand and 19mm shaped stone.
- This plant produces these two products at a rate of 160 tons/hour and at a ratio of 70/30 (70% sand and 30% stone).

CLIENT BENEFITS

- **Less plant maintenance:** there are fewer moving parts in this plant compared to a jaw or gyratory crusher system.
- **Limits human error:** this is a fully automated plant and is operated from the control room.
- **Improved quality products:** this plant produces at a constant feed which results in perfectly mechanically made sand (Sized: 6,3mm) and shaped stone (Sized: 19mm).
- **Cost saving:** due to the high quality of sand produced there is less rebound when applying shotcrete.

GENERAL MINING | PLATCHRO

Platchro Mining Services are continuously looking for new ways to provide safer, more economical production methods. Currently, we incorporate both conventional and mechanised production mining techniques, as determined by the individual requirements and overall complexity of each client and site.

Each project stage is fully scoped by our competent and highly skilled professionals, ensuring the safest, most efficient and cost-effective methods are applied.

Our supervisors are Site Managers, Area Managers and General Managers - all of whom have the appropriate Certificates of Competency.

CLIENT BENEFITS

- Safety, a sound safety system implemented over the total mining area.
- Highly efficient and competent crews and supervisory structures.

DROP RAISING

Platchro makes use of highly skilled labour, supervision and site management. Drop Raising is a method applied to create an ore pass or ventilation holing between two adjacent levels.

TECHNICAL DETAIL

The difference between the two adjacent levels can be as little as 7 meters up to 45 meters. This is achieved by making use of a S36 drifter with T32 jumpers where the operator is drilling remotely. Hole sizes for drilling differ between 54mm up to 102mm in diameter. The size of a drop raise or ventilation holing can vary between 1,8m x 1,8m and 4,5m x 4,5m.

The raise is drilled either vertically, or at a steep incline dip. Drilling is done from the top to the bottom level. Blasting will commence from the bottom in stages moving upwards. Cleaning is done either with a chute for conventional mining, or with an LHD in a trackless mining environment.

REPUTABLE CLIENTS

- Impala Platinum Mine
- Two Rivers Platinum Mine

OUR SERVICES

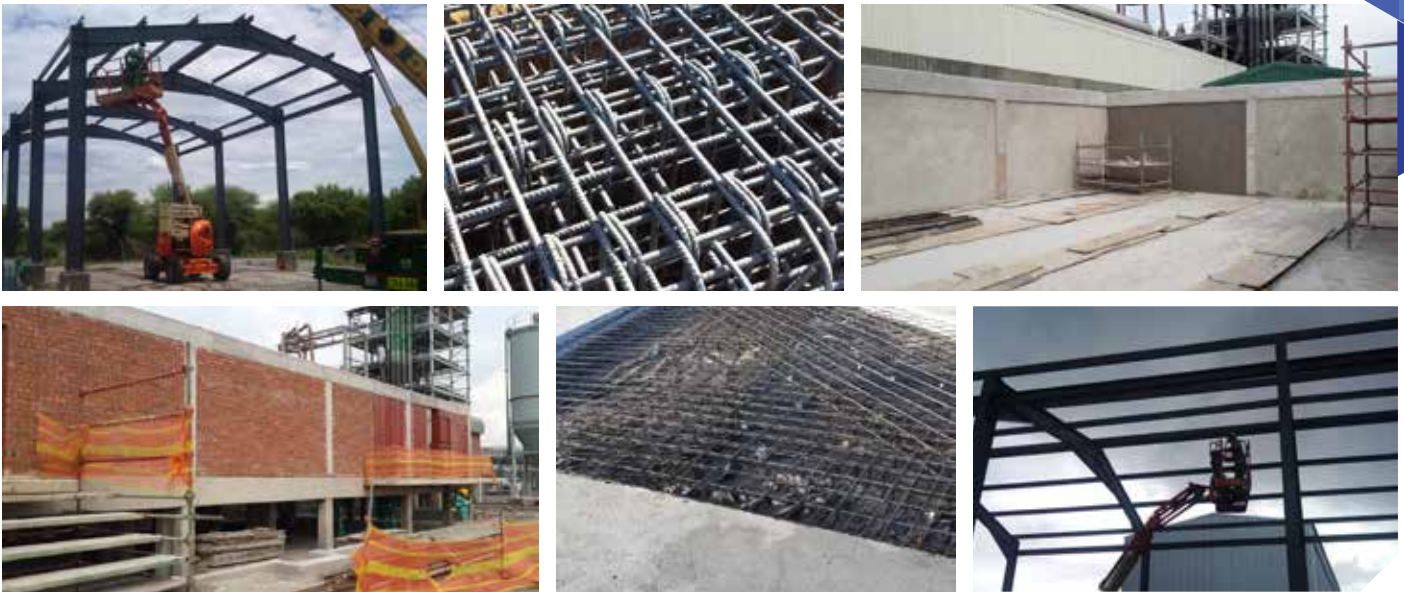
- **Stoping and Development expertise**
We pride ourselves in our highly specialised development crews with an excellent track record.
- **Sweeping and Vamping**
We recover higher grade materials left in stopes and thereby increasing value yield to our clients.
- **All related Construction Work**
We cast concrete slabs, floors, plinths and carry out general construction work as per client's request.
- **Secondary Support**
 - Long anchors and roof bolts
 - Shotcrete
 - T.S.L

REPUTABLE CLIENTS

- Impala Bafokeng
- Impala Platinum



SPECIALISED CIVIL WORKS



ProVest Specialised Services offer diverse construction services, including, but not limited to: heavy civil construction & infrastructure, general contracting, commercial and industrial facilities construction, site improvement & utilities projects, dam construction and rehabilitation as well as reclamation of shaft and sites after shut-down.

ProVest Specialised Services has the capability to mobilise nationally. The Company possesses capabilities in numerous diverse disciplines, and has developed a reputation for completing projects on time and within budget constraints.

SERVICES

- Structural floor slabs
- Concrete parking lots
- Equipment foundations
- Concrete Remediation
- Sidewalks and stairs
- Concrete tunnels
- Precast concrete walls
- CNC Machining
- Conventional Turning & Milling
- Hydraulic & Pneumatic Cylinder Manufacture, Repair & Rebuild
- 24 Hour on site line boring
- Steel fabrication
- Pump Shaft Repair & Manufacturing
- Bucket Refurbish & Rebuild
- Manufacturing of Pins & Bushes

AUTO ELECTRICAL SERVICES

- Diagnostic repairs (Electronic technician)
- Field service repairs
- Rewiring of earthmoving machines
- Fitment of all electrical parts and products
- Repairs to wiring harnesses
- Automotive diagnostic repairs (Specialist diagnostic machines for all vehicles) etc



TRAINING CENTRE MOCK-UPS



STEEL & CONCRETE SILO REHABILITATION



WHAT ARE SILOS?

Silos are large, thin-walled reinforced concrete shell structures with large diameter and height for storage of grain, cement, coal, and mostly for the Mining materials.

FREQUENT PROBLEMS

- Large vertical and horizontal cracks
- Low concrete strength
- Spalling of concrete
- Construction joints
- Corrosion of re-bars
- Reduction of concrete cover for reinforcement

REASONS

- Concrete deterioration and abrasion
- Overstressing in re-bars
- Construction faults
- Design assumptions
- User errors
- Environmental influences

SERVICES

- Structure repairs
- Reinforcing
- Rail replacements
- Silo cleaning
- Shotcreting of Walls
- Replacing of Liners inside Silo feeders.

PRODUCT

- ProVest has developed an exceptionally strong, durable product that lasts for an exceedingly long period. In addition, the product has the ability to withstand abrasion, the impact of hard materials and extreme weather conditions.
- The product is called HSWR (High Strength Wear Resistant) and has a compressive strength of 70 MPA.
- Silo coating to seal hairline cracks.

REPUTABLE CLIENTS

ProVest has undertaken various silo rehabilitation work for almost all the major mining houses, both surface and underground operations. They include:

- Aquarius Platinum (Surface Silos)
- Impala Platinum (Surface Silos)
- Lonmin Platinum (Surface & Underground Silos)
- Anglo Platinum (Surface Silos)

VENTILATION SHAFT REHABILITATION



OUR SAFETY SYSTEM

The ProVest Group prides itself on having its own internal safety and quality assurance function, staffed with a dedicated team of experts.

We believe that all our employees need to be truly empowered and therefore must know and understand the top five workplace risks and more importantly, how to mitigate Section 22 and Section 23 of the Mine Health and Safety Act.

In addition, we promote bottom-up reporting at all times through formal incident reporting. This

is not used as a punishment tool, but rather to compile a Pareto Analysis, which identifies areas in which behavior and systems need to improve on a weekly basis whereby these indicators are addressed through planned task observations and "VFLs".

ProVest is extremely proud to be ISO 9001:2015 SACAS accredited for its Quality Management System.



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