

UNDERGROUND MINING



SURFACE MINING



TUNNELING & CIVIL

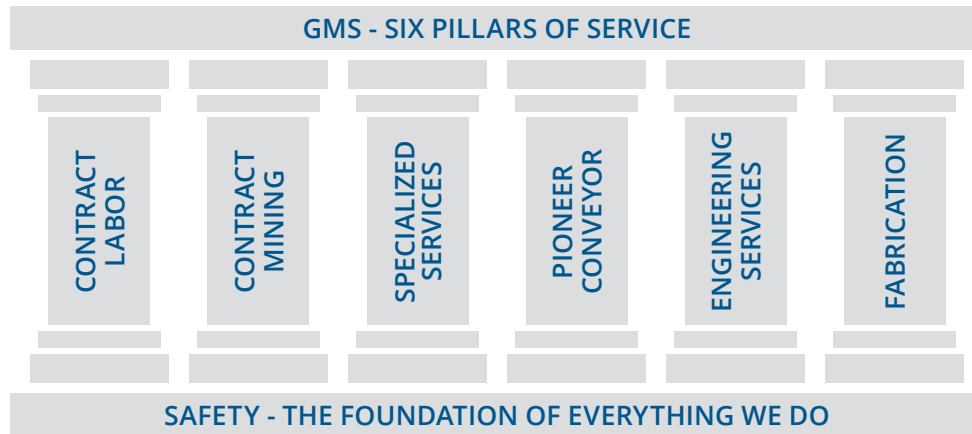


CUSTOM FABRICATION

SELECTED  
**Services & Products**



## OUR SIX PILLARS OF SERVICE



### Contract Labor

With nearly 40 years of experience in the field, GMS is the largest and most successful underground and surface mining labor provider in the US. Through the use of our proprietary Employee Development Programs and the outreach of our internal recruiters, GMS maintains an active pool of available skilled labor. We simultaneously source, vet and onboard hundreds of new recruits annually, for deployment into multiple industries throughout the world.

### Contract Mining

In addition to providing an experienced labor force, GMS can handle every aspect of production mining operations, whether surface or underground, including materials handling, equipment maintenance, mine design, drilling, blasting, cutting/excavating, scheduling and budgeting.

### Specialized Services

GMS offers leading-edge underground and surface technical services. We are experienced and proficient in many areas, including: Ground Control, Ventilation, Belt Terminal Services, Concrete, Slope/Drift Excavation, Shaft Work, Blasting, Longwall Services, and Surface Construction. Each of these technical service disciplines has its own dedicated managers and labor teams providing rapid response and effective resolution to our customers most critical and technically demanding applications.

### Pioneer Conveyor

Our affiliate company, Pioneer Conveyor is a leading, bulk material, conveyor manufacturer with complete engineering, machining, and fabrication capabilities to design and manufacture even the most complicated conveyor systems.

### Engineering Services

Our technical sales reps work closely with you, and with our engineers and fabrication experts, to create the most appropriate customized solutions for your specific situation. We utilize state-of-the-art software and manufacturing equipment to minimize lead time and maximize efficiency, while operating three strategically-located fabrication facilities to simplify production and transportation logistics.

### Fabrication

Utilizing modeling and design software that is compatible with our customers, we provide seamless communication and quick turn solutions to meet any demand. Our Engineering department, in collaboration with our Fabrication team can custom design, engineer and manufacture everything from obscure replacement parts to large scale capital projects.

### Safety

Safety is the foundation of everything we do! Our staff includes Safety Supervisors and Safety Foremen providing training, compliance and safety oversight at customer locations throughout the world. We have vigorous training, certification, continuous education, and drug enforcement protocols in place to ensure compliance of our entire workforce.



## MISSION STATEMENT

*To be the premier provider of contract mining services, products and technical support with an emphasis on safety and innovation.*



## We build long-term relationships that help make you successful!

For nearly 40 years, GMS has played a pivotal role in the support of customers in the **Mining and Tunneling/Civil** sectors. Using strategically located facilities throughout North America, we are able to deploy a vast array of services and products from a site nearest to the customer, quickly, economically and consistently throughout the term of the engagement.

GMS is built on a platform of **Six Pillars of Service: Contract Labor, Contract Mining, Specialized Services, Pioneer Conveyor, Engineering Services, Fabrication** – with **Safety** being the foundation of everything we do! GMS is a Partner who can deliver turnkey solutions to the most challenging issues and complex projects worldwide!

## CORE VALUES

### INTEGRITY

*All stakeholder relationships are built on a foundation of moral and ethical integrity.*

### FAMILY





*GMS gets its strength through the experience, professionalism and character of our employees.*

### COMMITMENT

*GMS is committed to be the safest, most productive and innovative contractor in the industries we serve.*

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### CONTACT US

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# CONTRACT LABOR

## Employee Development Program

With more than twenty experienced recruiters, GMS actively recruits safe and reliable professionals to work in the field, using a variety of means including television, radio, newspaper, social media, billboards, job fairs, and more.

GMS contract professionals are thoroughly screened, given complete, up-to-date training, and arrive ready-to-work with all necessary PPE gear. They continue to be vetted collaboratively throughout a three month probationary period, after which they are eligible to be hired.

**SAFETY FIRST.** *GMS employees log nearly 3 million man hours annually and boast the lowest incident rate in our sector!*

### RECRUITING

#### *We Find the Best!*

- Television, Radio, Newspaper, Social Media, Billboards, Job Fairs, and more.

### VETTING PROCESS

- 16-Panel Drug Test
  - Pre-Employment
  - Random
  - Accident/Suspicion
- Complete Background Check
- Monthly Employee Reviews during probationary period

### BENEFITS

- Safety and Attendance Bonus
- Paid Vacation
- Health Care
- Dental Care
- Vision Care
- 401K Match
- Health Savings Account Match

### READY TO WORK

- Up-To-Date Training
  - MSHA
  - OSHA
  - PEC Safe Land
  - First Aid/CPR
  - Common Core

### PPE PROVIDED

- Hard Hat
- Reflective Clothes
- Metacarpal Gloves
- Safety Glasses
- Metatarsal Boots
- Methane Detector (If needed)
- Self Rescuer (If needed)



# CONTRACT LABOR



## American Mining Academy

American Mining Academy is dedicated to teaching fundamental principles and technical training involved in mining operations, as well as *advancing a culture of safety* to inexperienced students and experienced miners alike.

### We Know Mining

For nearly 40 years, GMS Mine Repair & Maintenance has been North America's premier mining contractor. As such, GMS knows something about what it takes to become a professional miner and enjoy the rewarding career opportunities that await those who are properly trained and ready to work. That's why GMS began the American Mining Academy. A state-of-the-art facility in southwestern Pennsylvania that includes a *simulated underground mine* and brings together some of the best instructors and experienced field personnel to prepare students for an exciting career in mining, or to provide quality refresher training to seasoned veterans.

### Industrial Safety Training

AMA also provides both standard and customized industrial safety training and instruction for a broad range of workplace requirements.





# CONTRACT MINING

## Underground Mining

- Experienced Production Crews
- Hard Rock Mining Crews
- Continuous Mining
- Raise Mining
- Sub Level Stopping
- Professional Consulting



# CONTRACT MINING

## Surface Mining

- Production Mining
- Training
- Drill & Blasting
- Overburden Removal
- Screening and Crushing
- Professional Consulting





# Back & Rib Bolting



*Installing 50 ft Cable Bolts*

## **We can operate any equipment and install any support!**

Skilled ground control specialists can be mobilized quickly and can operate a variety bolters, drills, lifts and other heavy equipment to install any ground support mechanism.



*Installing 8 ft Point Anchor Bolts*



# Highwall Stabilization



- Highwall bolt-mesh
- Shotcrete
- Glue/grout injection

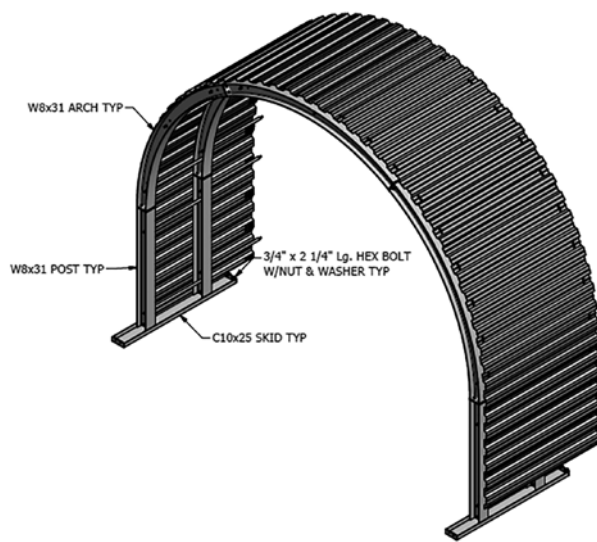




# Square Sets, Arches & Tunnel Rings



Custom designed and precisely fabricated to fit your specific needs, our talented and innovative engineers can work with you to create the perfect solution to your ground support challenges.





# Cans & Steel Props



## Quick Install Props

Heavy duty, up to 60T capacity, these props can be carried easily and installed quickly by one person. Height range adjustability and alternative plates to suit surface conditions.

## Can Supports

The can support is a yieldable secondary roof support made from a confined core of cementitious composite, encased in a cylindrical steel canister, which resembles a can.

# Steel Pumpable Cans



## Pumpable Can Supports

- Steel casing offers substantial initial strength
- Greater strength than pumpable tower cribs, more than 2,500 tons
- Used in high back applications up to 50 ft
- *Requires assisted material handling in transport and setup.*



# Pumpable Cribs



## Pumpable Cribs

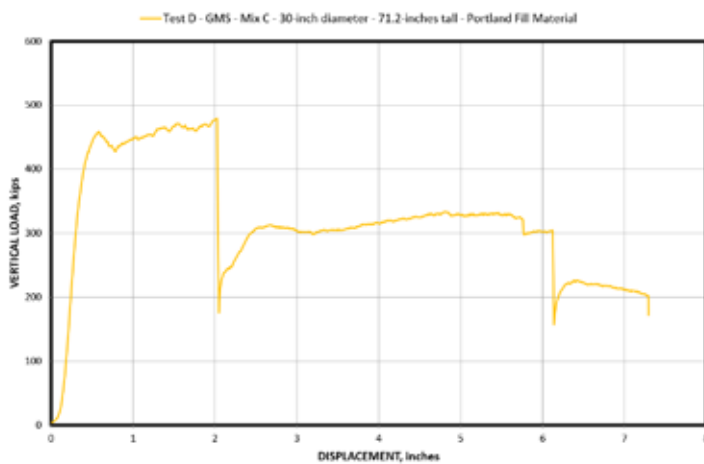
- Long pumping distance, up to 15,000 ft.
- Can be pumped from the surface
- Efficient material handling
- Rapid installation
- Rapid strength gain provides quick support
- Yieldable support

### Peak Loads

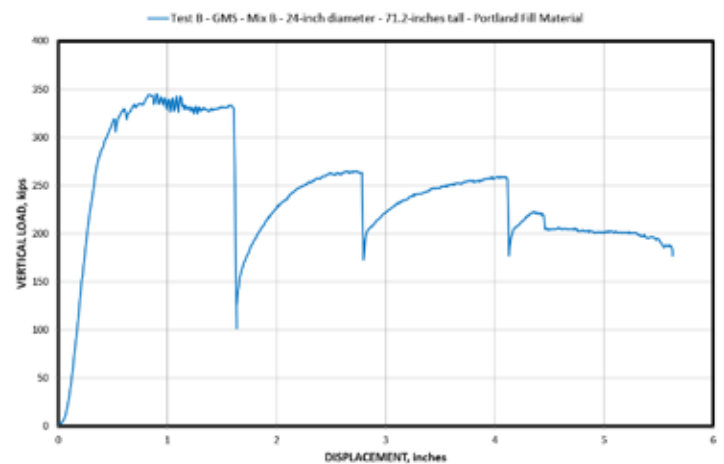
30 in.	240 tons
27 in.	218 tons
24 in.	172 tons



NIOSH RESEARCH LABORATORY  
GMS - Pumpable - 1/10/2019



NIOSH RESEARCH LABORATORY  
GMS - Pumpable - 1/10/2019





# Pumpable Tower Cribs



## Pumpable Tower Cribs

- Cribs are securely tethered together in a three-crib cluster to provide stability when pumping high areas
- Used in applications from 16 to 50 ft in height
- Long pumping distance, up to 15,000 ft
- Can be pumped from the surface
- Efficient material handling
- Rapid installation
- Rapid strength gain provides quick support
- Yieldable support

# Shotcrete



*ROSA (Remote Oscillating Shotcrete Arm) is a versatile attachment that mounts on most hydraulic equipment to allow GMS miners to remotely apply shotcrete from a safe location using any dry or wet shotcrete pump.*



## Wet Shotcrete

- Applied wet from underground or surface
- Ability to work inby when spraying (minimal dust)
- Quick application
- Minimal material rebound
- Can be pumped up to 4,500 ft
- Can be pumped from the surface
- Applied manually or with Remote Oscillating Shotcrete Arm (ROSA)



## Dry Shotcrete

- Applied with low profile Baby Reed pump
- Sprayed dry requires less water GPM
- Quick and easy mobilization
- Applied manually or with Remote Oscillating Shotcrete Arm (ROSA)





# Glue Injection

For Mining, Construction and Environmental applications.

- Roof Consolidation
- Water Stoppage
- Rock Stabilization
- Ring Grouting
- Void Filling





# Cementitious Grouting

For Mining, Construction and Environmental applications.

- Water Stoppage
- Ground Consolidation

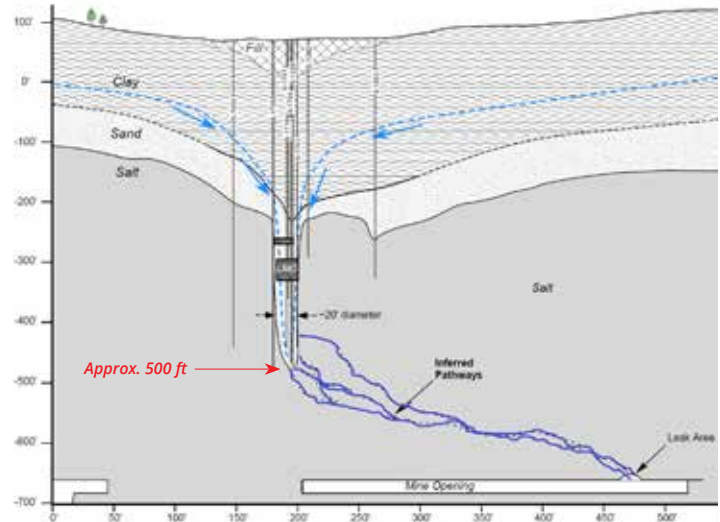


# Surface Grouting

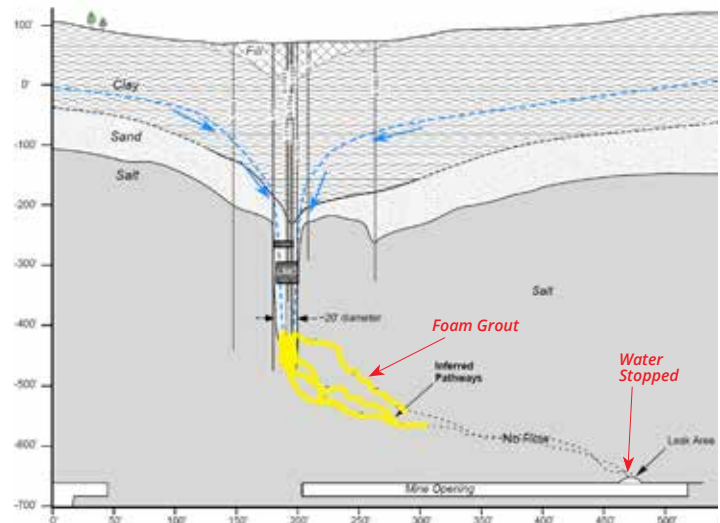


## Down-hole Grouting:

- Insert 2-part packer down into borehole followed by an Injection of 2-part grout
- Can stop even substantial water ingress
- High volume application



*Before Grout: Water was leaking into the mine at approximately 200gpm.*



*After Grout: The grout sealed up the pathways eliminating any further water ingress.*



# Void Filling & Back Filling



*Expansion Foam*

- Pumped from surface or underground
- Expands 30X original volume
- Strong adhesion properties to surrounding strata



*Shield Tips*



*QC= 30X Expansion Rate*



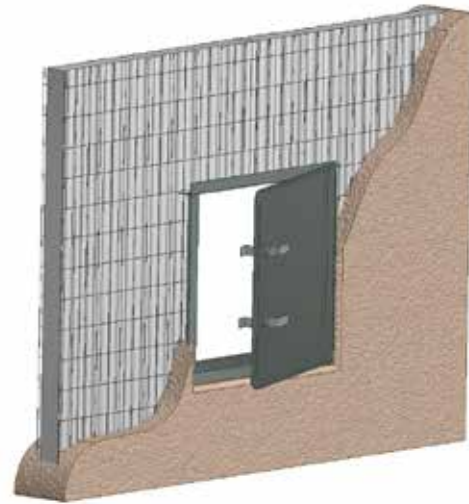
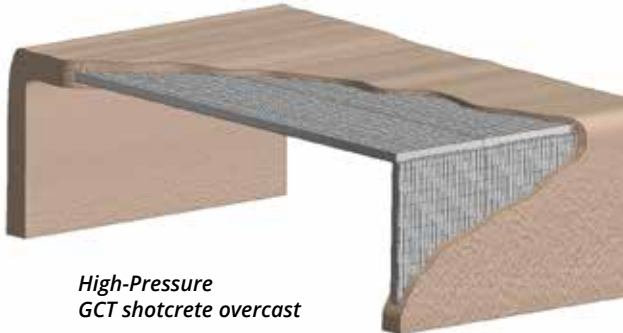
*Form Shield Tips to Face*



# Overcasts/Undercasts

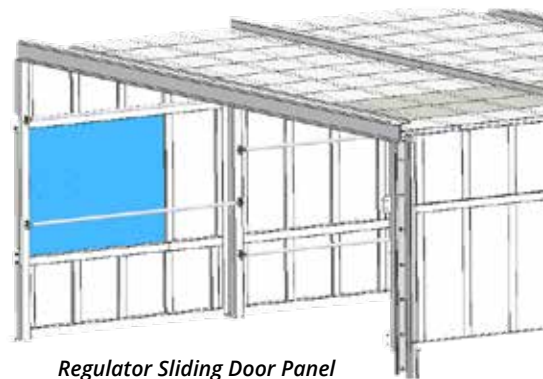
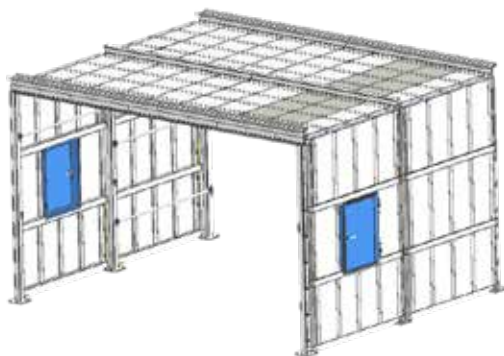
## High Pressure Overcasts

- Overcast panels are cut to fit any application
- Panels are dialed into the mine roof, rib, and floor
- Panels are sprayed with shotcrete on both sides
- Can withstand up to 20 in. wg



## Low Pressure Overcasts

- Overcast panels are engineered to customer specifications
- Modular, mobile and reusable
- Available with a variety of customized options, such as doors, ramps, steps, etc.



# Stoppings/Curtain Walls



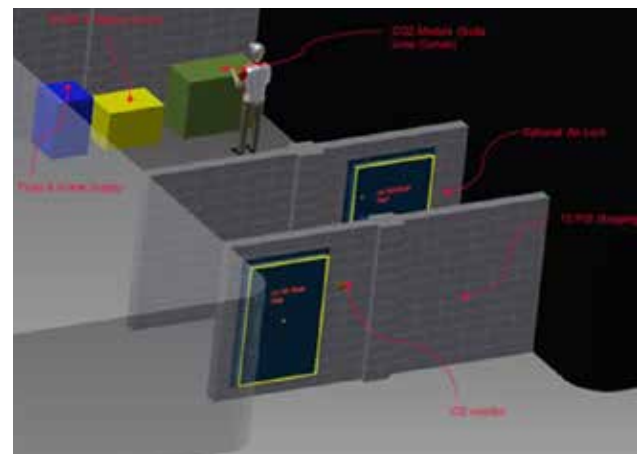
*Sprayed Shotcrete high-pressure stoppings can withstand 22 in. wg*



## Refuge Shelters

### MSHA Approved Refuge Chamber

- Breathable air can be provided from:
  - Borehole from the surface
  - Compressed air from the mine filtration system
  - Oxygen cylinders
- 15 PSI Stopping with thin spray-on liner sprayed on roof and rib
- Storage for communication devices
- Water and food
- Fire extinguisher
- Gas detectors





## Mine Seals 120psi MSHA Approved



*120 PSI MSHA approved mine seals.*



- GMS has thoroughly trained and highly experienced installers that have been constructing 120 PSI seals since the development of the latest regulations.
- We can pump underground or from the surface, utilizing a fleet of both crib and seal pump systems.



# Thin Spray-On Liners



*Customized application, underground training room.*

Elastic polymer-based thin spray-on liner (TSL) for surface reinforcement and weathering protection of soil, rock and coal strata

- Water- and air-tight
- For preventive measures on ventilation and seals
- Protects from atmosphere deterioration
- Product expands and flexes with roof or rib changes
- Unique waterproof membranes
- Prevents weathering in newly mined entries
- Sprayed on white for a brighter reflection
- Approved for ventilation controls
- Fireproof and can be used in charging stations
- One-component polymer powder, applied with baby reed pump
- Dry spray application, mixed with water in the spraying nozzle
- Sets within 5-10 minutes; generates tensile strength over the next hours, days, months
- Good bond and high elasticity
- Application thickness of 2-10 mm, average 4 mm
- No toxic components and virtually dust free, enhancing mine health and safety

## FAST

- Can be applied at one square foot per second
- Rapid set-up; allows stop and start at any time
- Only needs compressed air

## SAFE

- Improves visibility in mine due to white color
- Neither methane nor radon can pass through it
- Improves ventilation by creating smooth surface to the strata
- Impermeable

## LOW MAINTENANCE

- Easily washed and readily accepts rock dust
- Will stop the symptoms of weathering and prevent small rocks from falling
- Will not corrode. Forty-year life expectancy
- Not affected by Mine Acid Water

## COST EFFECTIVE

- No rebound or waste of material
- Takes less man power and cost to spray five times more than gunite or shotcrete
- One pallet of TSL can replace 14 pallets of shotcrete or gunite to do same area
- Requires a small, low cost machine that is permissible to use anywhere in the mine (Baby Reed SOVA, Allentown, Blastcrete Picolla or equivalent)



# Man Doors & Specialty Mine Doors



*Man doors and large-scale, specialty equipment doors, custom designed, professionally and efficiently installed.*

# Belt Terminal



**Drive Installations**  
**Take-Up Units**  
**Head Frames**  
**Chute Work/Replacement**  
**Conveyor Structure Installation**  
**Tunnel Reclaims**





# Mill Site/Plant Maintenance Solutions



GMS can help keep your operation running smoothly with qualified support crews to make repairs and complete dozens of mechanical services at your site. We have fully equipped service trucks, complete with tooling, welders, compressors, and cranes. We can also provide underground- and surface-qualified mill employees to supplement your workforce.

## ***Services include:***

- Chute and loading zone installation, repair, and replacement
- Rubber, lagging, and ceramic installation, repair and replacement
- Screen replacement and repair
- Pulley and bearing replacement
- On-site welding and fabrication
- Process analysis
- Outage work
- Complete conveyor maintenance
- Maintenance service contracts
- Structural steel; design, build, repair
- Complete concrete and construction services
- Contract labor MSHA



***Complete engineering, on-site fabrication, installation, and on-going maintenance!***



# Concrete



## GMS Concrete Services can design, form and pour foundations or structures, underground or above!

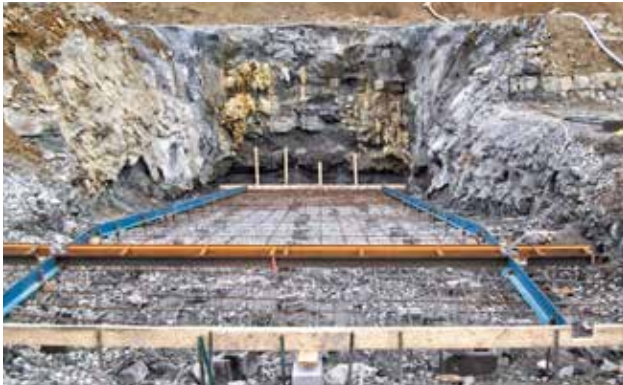
GMS can pump concrete from the surface to underground 5,500- 6,000 feet. While pumping from underground, we can pump from 800-1,000 feet away.

Underground projects typically include:

- Bunkers
- Sumps
- Training, Maintenance, Break Rooms
- Diesel Stations
- Slopes
- Cellular Concrete Void Fills
- Silo foundations
- Belt tunnel travel ways



# Slope/Drift Excavation



*Concrete and guniting entries*



*Track installed with heat tubes*



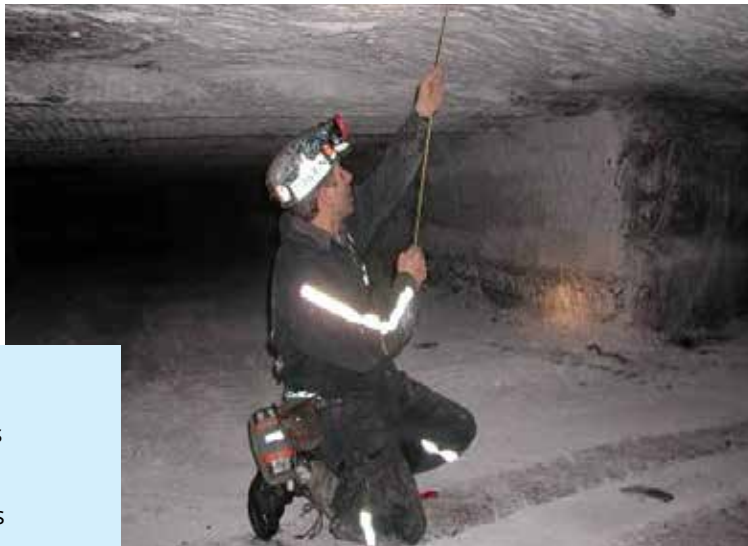
*Innovative slope drop car and platform*



*Drill and Blast Excavation*

# Blasting

ATF licensed and equipped to handle blasting needs at any operation



## Blasting Crews

- Certified Shot Firers
- ATF Permitted
- Blasting Capabilities
  - Overcasts
  - Undercasts
  - Sumps
  - Manholes
  - Belt Trenches
  - Bunkers
  - Slopes
  - Any problem rock
  - Production
  - Shaft Excavation
- Production
  - Pre-Split
  - Smooth
- Development
  - Ramp
  - Overburden





# Shaft Excavation & Rehab



**Raise Bore Shaft  
Excavation  
Shaft Liners  
Shaft Grouting  
Guide Rail Replacement  
Shaft Rehabilitation**

# Longwall Services



## Longwall Moves Longwall Maintenance

- Turnkey Longwall Moves
- Longwall Setup and Recovery Crews
- Outby Utility Crews
- Glue Injection Crews
- Pumpable Crib Crews
- Consultancy Services
- Shield Technicians
- Maintenance Services
- Pre-Driven Extraction Faces
- Mule Operators
- Certified Foremen
- Rental Equipment

GMS crews specialize in specific skill sets directly related to Longwall recovery and installation services. Current GMS Longwall core group has an average of 4.5 years of continuous longwall install and recovery experience with an average of 6 to 9 longwall moves per year, in various coal mines with varied geological conditions and recovery methods.

This experience allows GMS crews to minimize exposure to workplace hazards, and develop cost-saving efficiencies in longwall relocations.



# Surface Construction

GMS Construction offers complete construction services, from residential renovations to designing and building commercial or industrial facilities, we have the resources and experience to do the job efficiently and cost-effectively.

## General Contracting/ Project Management

## Concrete

## Industrial Construction

## Masonry

## Utilities

## Pipeline

## Excavation

## Industrial Maintenance

- Millwrights
- Electricians





# Badger



ELECTRIC OR DIESEL!

## GMS ADVANTAGE

*The GMS Advantage is a proprietary product like the Badger, developed by GMS and used exclusively by GMS crews, giving GMS an advantage over competitors!*

The GMS electric- or diesel-powered Badger is a robust, remote-operated, excavation and utility machine, that is nimble and compact enough to access areas too precarious or difficult to reach for a traditional skid steer or dozer. Underground examples include excavation in narrow or low areas, and under conveyors. Above ground, typical uses include highwall bench cleaning and remediation, or culvert and confined space cleaning.

With optional attachments that allow you to drill, hammer, spray, cut or carry, the Badger is also extremely versatile!

A single operator remains at a safe distance with enhanced sight lines, and an exhaust catalyst reduces emissions (diesel), making the Badger as safe as it is efficient!





# **ROSA** (Remote Oscillating Shotcrete Arm)

## **GMS ADVANTAGE**

*The GMS Advantage is a proprietary product like the ROSA, developed by GMS and used exclusively by GMS crews, giving GMS an advantage over competitors!*



ROSA (Remote Oscillating Shotcrete Arm) is a quick mobilization, highly versatile attachment that mounts on most hydraulic equipment to allow GMS miners to remotely apply shotcrete from a safe location using any dry or wet shotcrete pump.

# Equipment Rental

## GMS ADVANTAGE

*The GMS Advantage is an inventory of commonly-used rental equipment that can be rented with or without GMS operators, giving you extraordinary convenience!*

GMS offers reliable and well-serviced equipment rentals that can be rented with or without GMS operators.

Equipment includes:

- Underground Scoops
- Bolters
- Drills
- Pumps
- Face/Jumbo Drills
- Cobra Drills
- Jack Leg Drills
- Utility Vehicles





# ENGINEERING



GMS engineering services provides value to our customers by designing solutions for newly proposed projects and for existing areas and systems that may not be performing up to expectations. We perform analysis of structural issues, beltlines and equipment and recommend solutions while working closely with our clients to meet their financial goals.

We cover surface and underground projects and provide all phases of design services from layouts and proposals on through complete detailing. We prepare specs for our customers or will work directly in adherence to their supplied scope. Engineering performs various forms of necessary virtual and real-world analysis and integrates the solutions into our designs. All modelling and detailing is handled in-house and the engineers finish projects by working closely with the fab shops and field crews ensuring success.

Typical projects include:

- Square Sets
- Overcasts
- Roof Support
- Fall Remediation
- Seals
- Foundations
- Retaining and Containment
- Magnet Installations
- Transfer Points
- Chutes and a **wide array of machinery and custom equipment** for both beltlines and support functions.



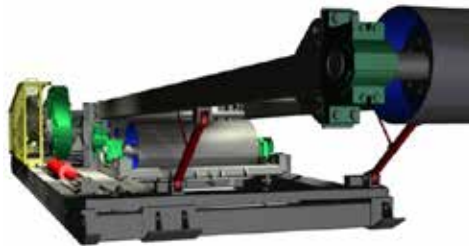
# PIONEER CONVEYOR



Pioneer Conveyor, an affiliate of GMS Mine Repair & Maintenance, is a leading bulk material conveyor manufacturing firm serving customers throughout North America. Pioneer has designed and manufactured thousands of standard and custom conveyor systems for a multitude of applications. Pioneer has complete engineering, machining, and fabrication capabilities on-site to design and manufacture even the most complicated conveyor systems. All Pioneer Conveyor components are rated well above CEMA specifications allowing Pioneer to offer customers the most attractive warranty in the industry.



PIONEER  CONVEYOR





# Large & Specialty Doors

## Equipment Doors

- Channel frame construction
- Changeable bottom sweep
- Easy installation
- Custom sizes and variations available



## Engineered Doors

- Measurement is Passable Opening
- Adjustable Frame Height at 6 in. increments
- Sliding Pressure Relief Door
- Designed for 11 in. Water Gauge
- Custom sizes and variations available



## Drive-Thru Doors

- Bolt-together channel or heavy beam construction
- Changable bottom sweep
- Various latching mechanisms available
- Custom sizes and variations available



## Combination Doors

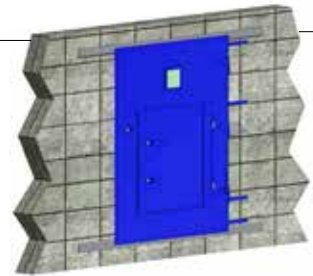
Designed with opposable, slide-away doors with 84 in. maximum pass-through and for 8 in. block wall construction.

- 8 in. sight glass windows
- 30 in. x30 in. spring loaded mandoor
- Draw latch, 4400 lbs work load
- Available in custom sizes per mine requirements

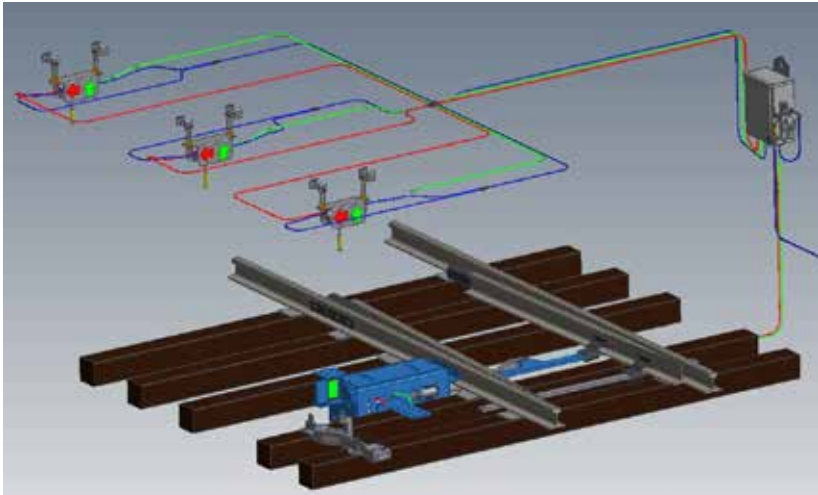
## Heavy Duty Man Doors

Designed for block wall installation with 60 in. maximum pass-through.

- Heavy, 12 gauge construction
- 8 in. sight glass windows
- 30 in. x30 in. spring loaded mandoor
- 60 in. removable door
- Draw latch, 1100 lbs work load
- Available in custom sizes per mine requirements



## Remote Track Switch



*Remote Track Switch, complete system.*

## Boxes, Liners, Carts

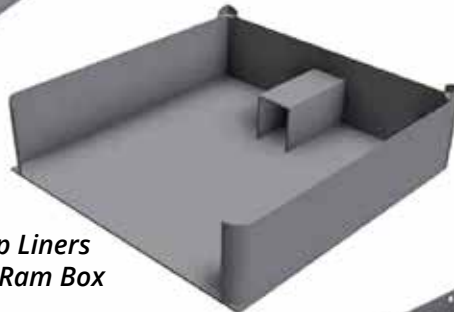
*Designed to fit! Manufactured to last!*



*Basic Scoop Liners*



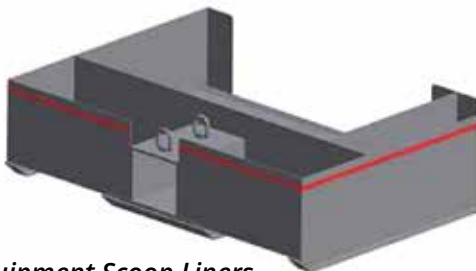
*SCSR  
Cache boxes*



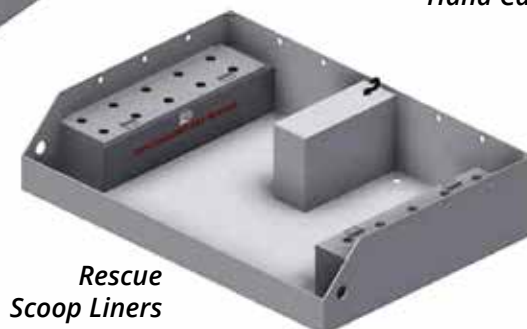
*Scoop Liners  
with Ram Box*



*Hand Carts*



*Equipment Scoop Liners*



*Rescue  
Scoop Liners*



# Sleds, Trailers, Hauling Equipment



Available for safety and rescue equipment, structure moves and belt hauling, and various other transport needs. Drag behind, tow behind, fork and scoop mobile.

Custom designed and manufactured sleds, trailers and hauling equipment includes:

- Belt and Structure Sled
- Glue and Mesh Sled
- Fire Suppression Sled
- Spray Trailer
- High Voltage Sled
- Belt Sled
- Mesh Sled
- Supply and Engineered Trailers
- Structure and Flat Haulers

## Rebuilds & Refurbishments

*Complete rebuilds and restorations or custom parts replacement.*



BEFORE



AFTER



BEFORE



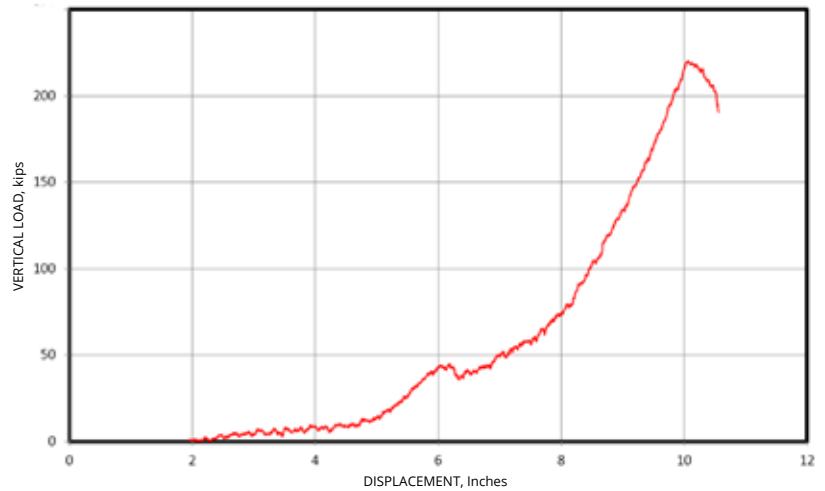
AFTER

# Quick Install Sand Props



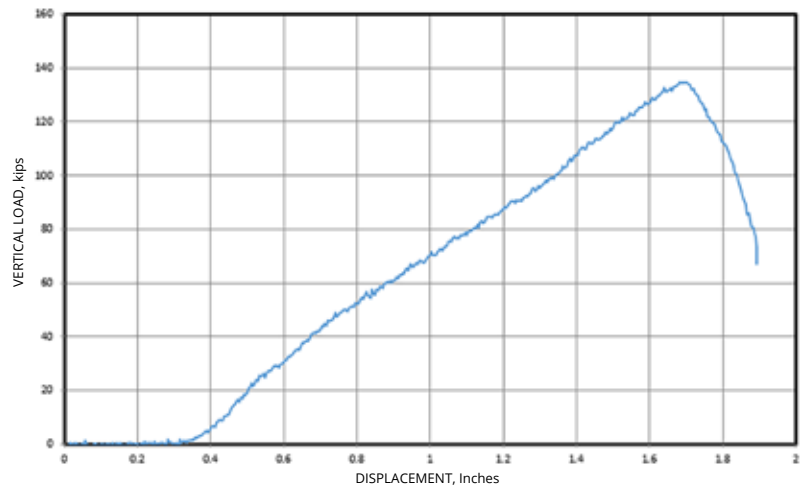
## 100T QIP Sand Prop

- Heavy duty, 60T capacity
- Quick installation
- One person can install
- Material handling efficiency
- 24 in. adjustability
- Carry handles
- Change top and bottom plates to adapt to surface control conditions



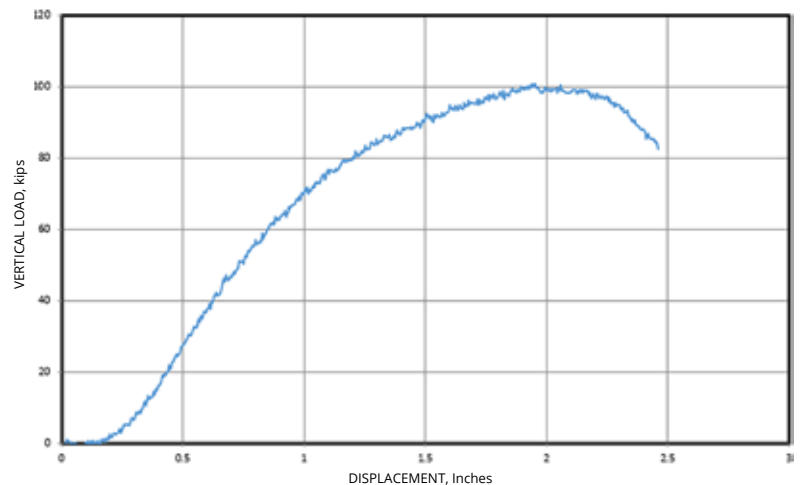
## 60T QIP Sand Prop

- Heavy duty, 60T capacity
- Quick installation
- One person can install
- Material handling efficiency
- 24 in. adjustability
- Carry handles
- Change top and bottom plates to adapt to surface control conditions



## 50T QIP Sand Prop

- Heavy duty, 50T capacity
- Quick installation
- One person can install
- Material handling efficiency
- 24 in. adjustability
- Carry handles
- Change top and bottom plates to adapt to surface control conditions



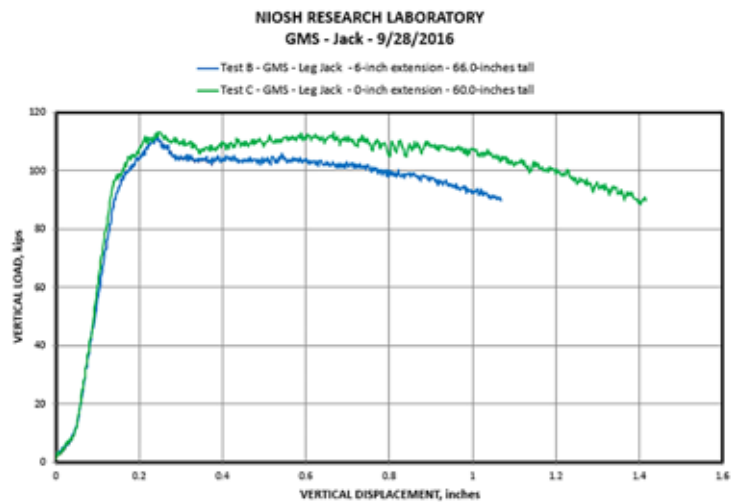


# 50T RAM Jack Prop



## 50T RAM Screw Jack Prop

- Reuseable
- Heavy duty, 50T capacity
- Quick installation
- One person can install
- Material handling efficiency
- 12 in. adjustability
- Carry handles
- Change top and bottom plates to adapt to surface control conditions



Underground Installation

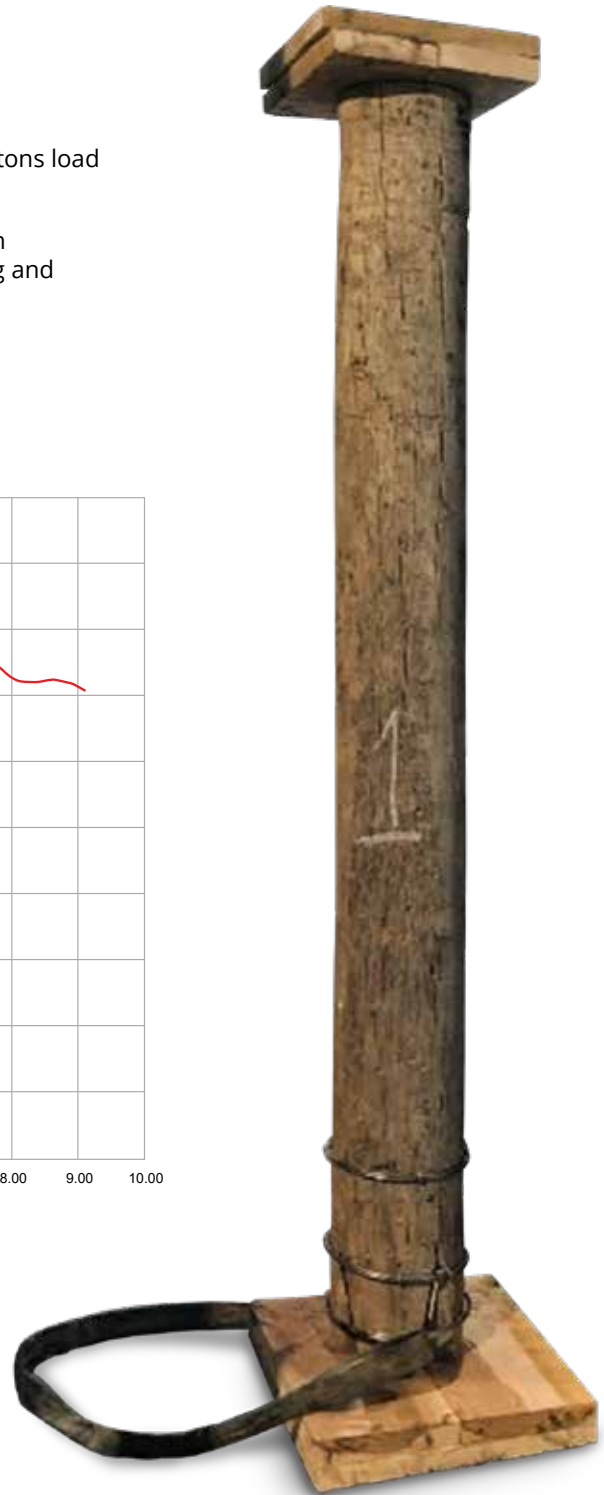
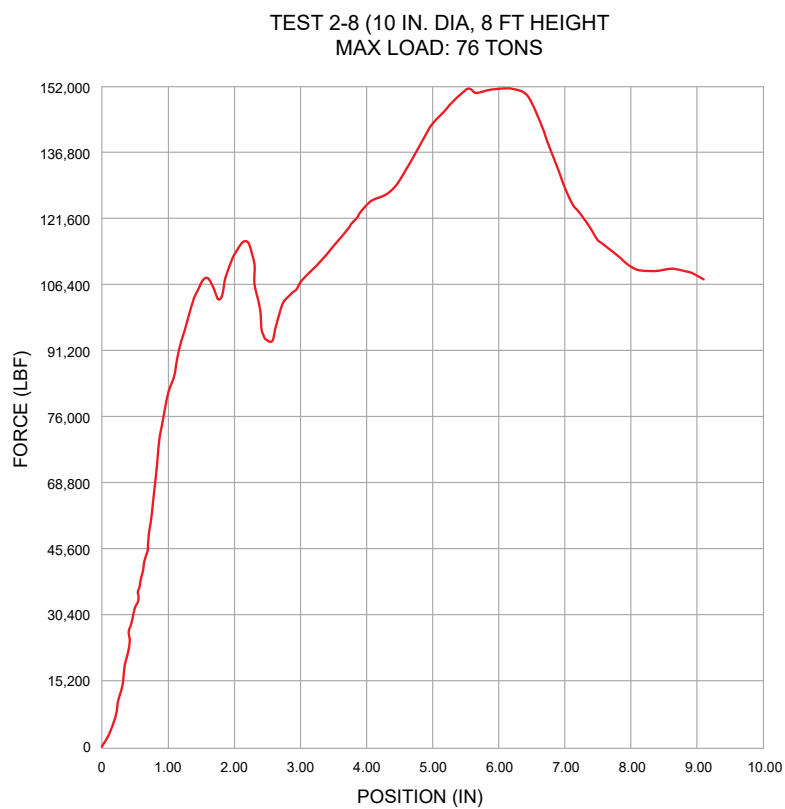


NIOSH Failure Analysis

# Yield Prop

## Standing Yielding Support

- 10 inch diameter post withstands up to 70 tons load
- Easy to transport and quick to install
- Efficiently bundled for your application with specifications to optimize material handling and transportation





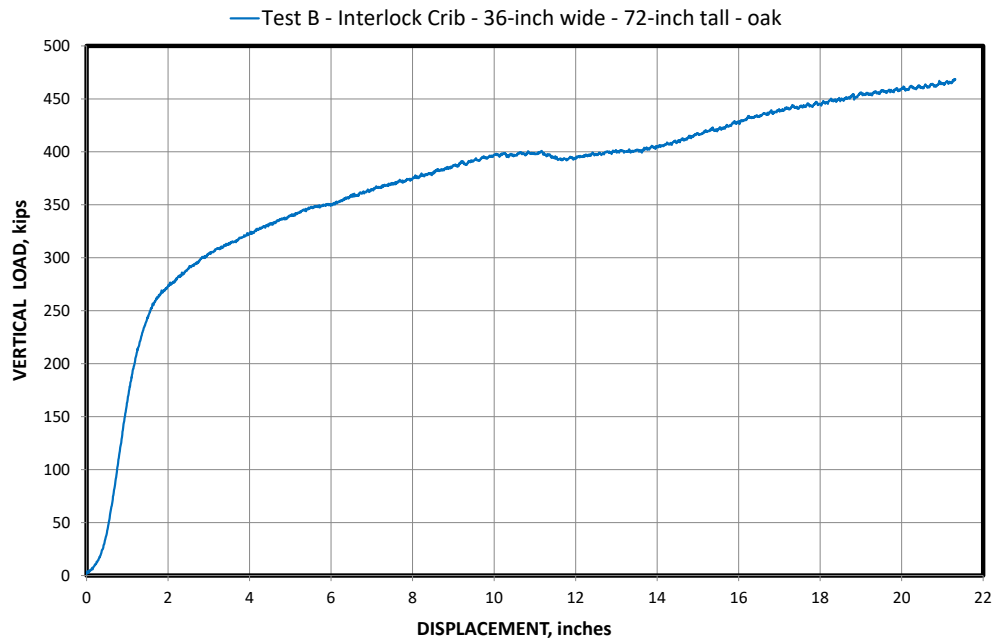
# Interlocking Timber Cribs



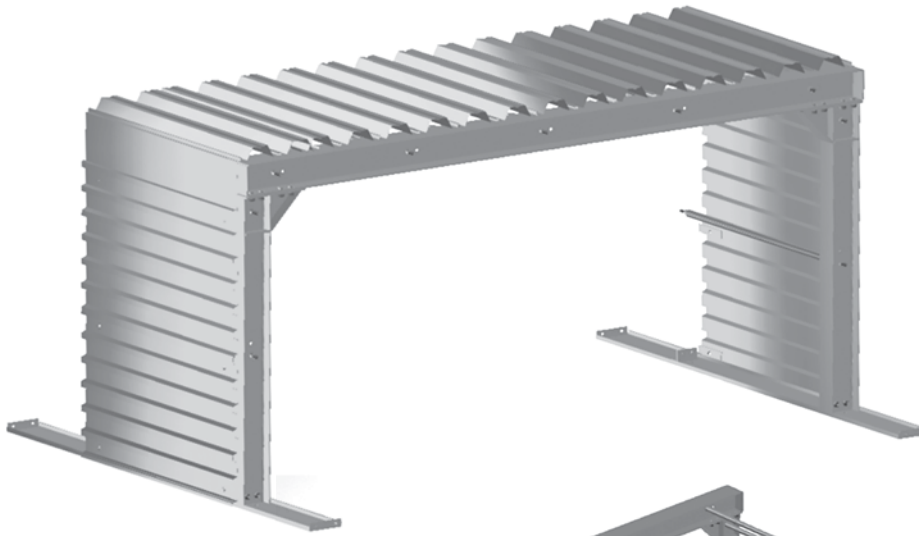
Interlocking Timber Cribs are designed to replace four and nine-point cribs in mine ceiling heights up to sixteen feet. The support system consists of interlocking timber blocks stacked in layers. Their interlocking capabilities create 100% contact between the layers, increasing strength and stability as the unit length increases.

*GMS Interlocking Timbers Crib undergoing failure analysis at a NIOSH testing facility.*

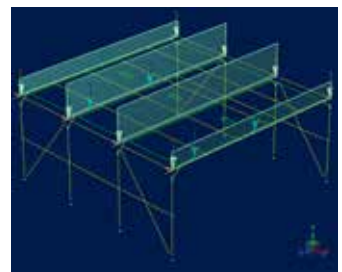
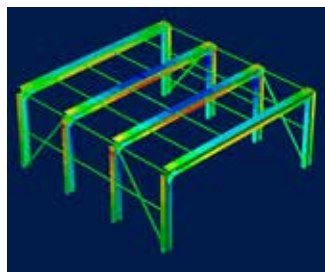
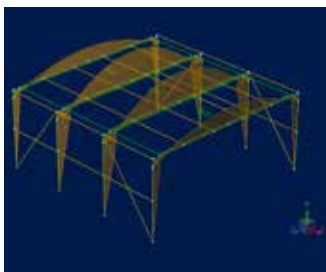
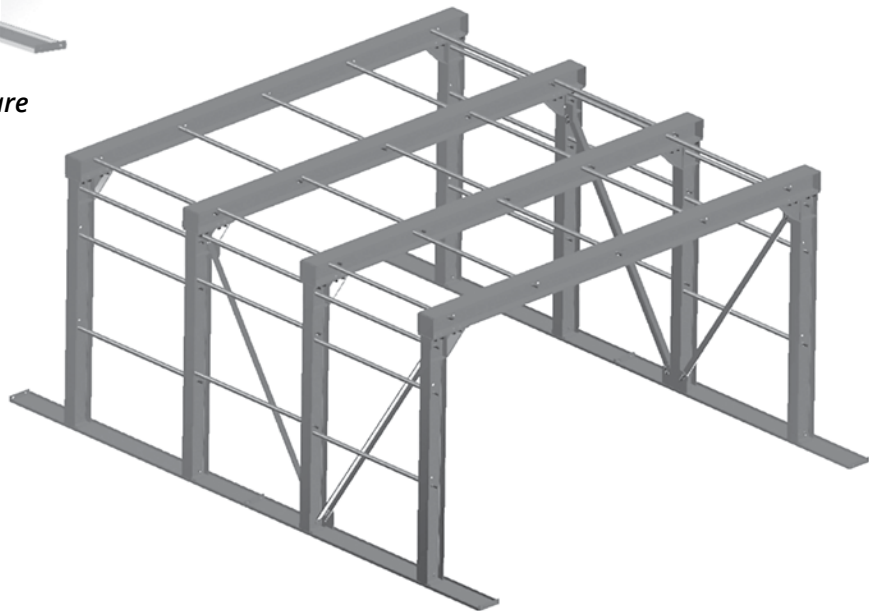
NIOSH RESEARCH LABORATORY  
GMS - INTERLOCK - 11/21/2019



# Square Sets

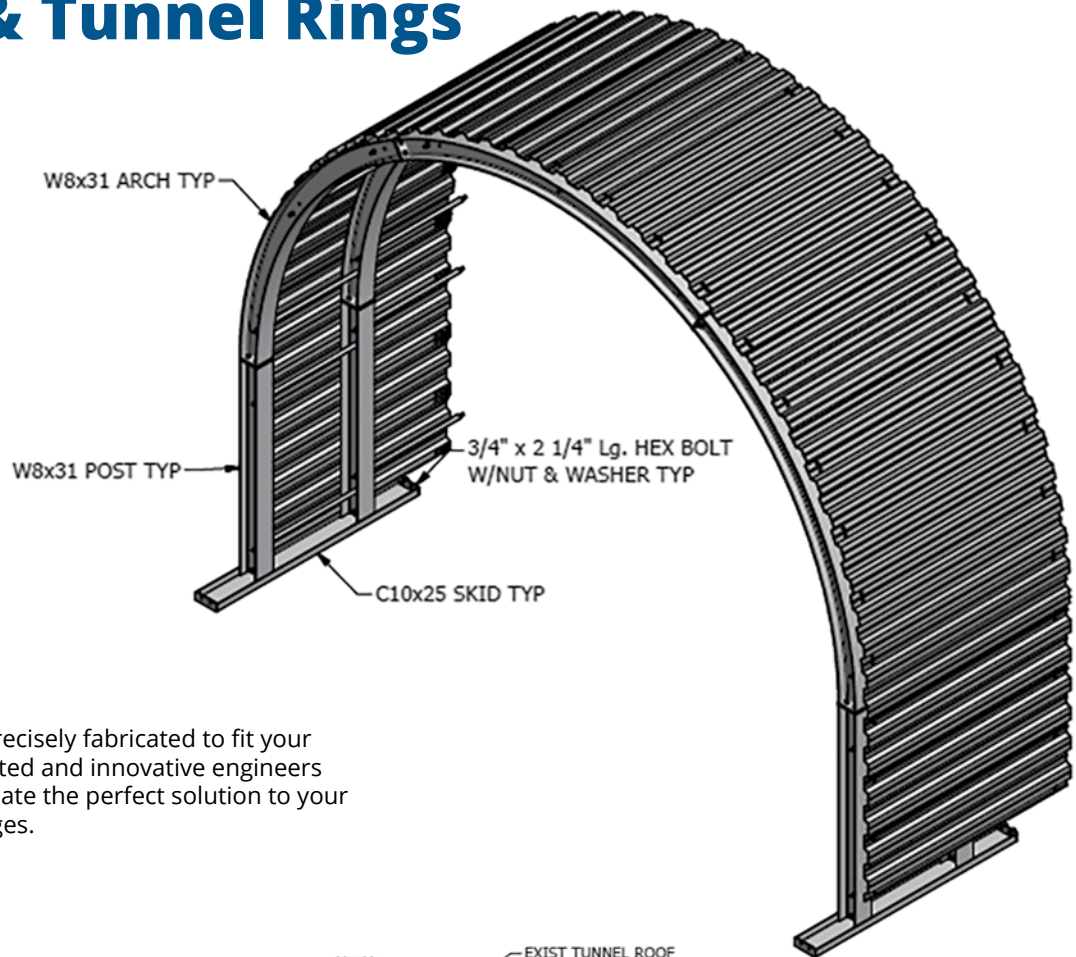


*Custom, computer-designed square sets, engineered, fabricated, and installed by GMS.*



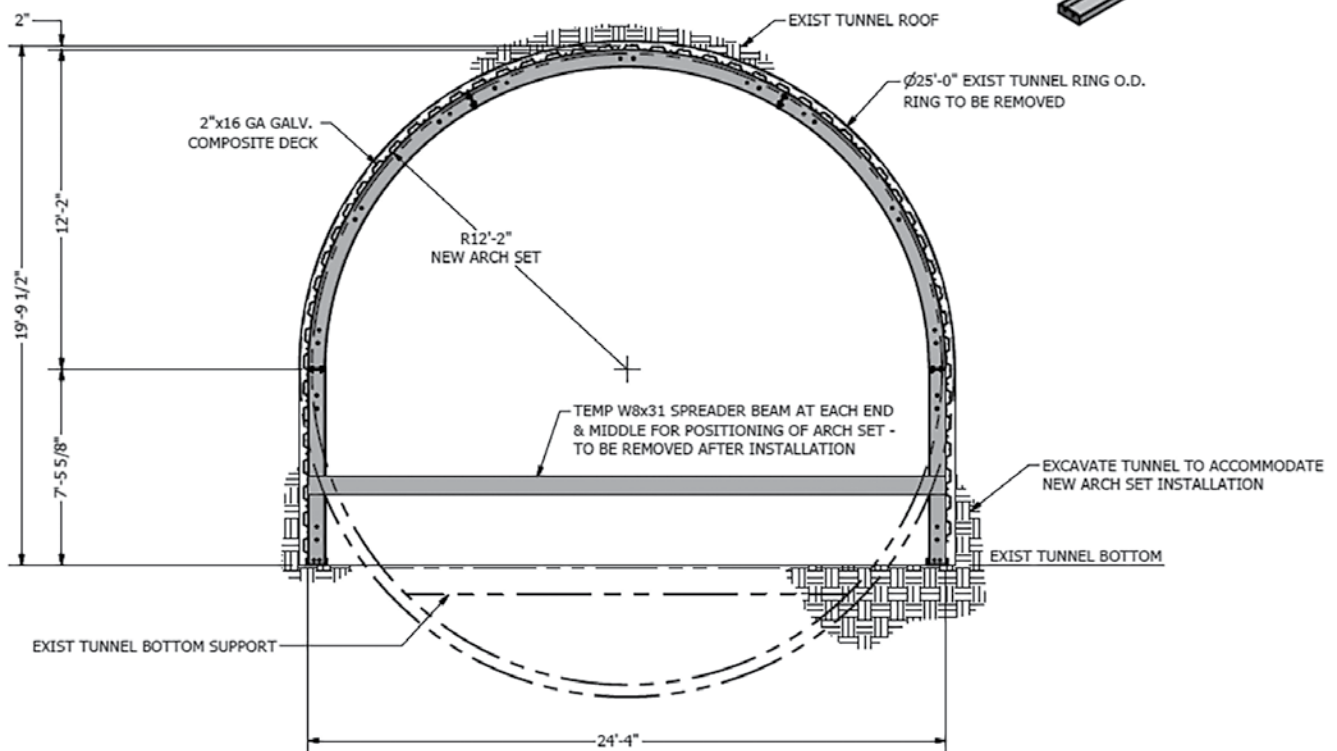


# Arches & Tunnel Rings



## Tunnel Rings

Custom designed and precisely fabricated to fit your specific needs, our talented and innovative engineers can work with you to create the perfect solution to your ground support challenges.



# The CAN®

The CAN® is a yieldable secondary roof support made from a confined core of cementitious composite, encased in a cylindrical steel canister, which resembles a can. The CAN handles mine floor heaving and roof sag better than any other type of support available today. The CAN is flexible in design in that it can be engineered to meet mine-specific load conditions regardless if the adverse conditions are induced by the roof or the floor. The simple 1 piece design of the CAN installs quickly using a mine scoop or similar piece of equipment. The smooth steel skin of the CAN improves ventilation and promotes air flow by reducing resistance in the mine entry. When installed correctly, The CAN has never failed.



## Product Specifications

- Manufactured mainly from post combustion products which then does not promote combustion
- The CAN is able to accept 50% convergence without failure
- The CAN is not brittle; it reacts and performs similarly when tested vertically and bi-axially
- The CAN promotes oxygen content in a mine environment, (drying / rotting wood depletes oxygen)

## Product Diameters

- 9-inch
- 18-inch
- 22-inch
- 24-inch
- 30-inch
- 36-inch





# Expandable Rock Bolts

The Expandable Rock Bolt meets the most demanding roof support applications. The high load-bearing capacity combined with excellent elongation properties, ensures safer working conditions and faster excavation cycles for lower costs.

There are three products available; Standard for lighter applications with a load capacity of 12 metric tons, Midi (16 metric tons), and the robust Super (24 metric tons).

## Benefits

- Immediate full length support for faster excavation cycles and safer working conditions
- Simple and clean installation
- Adjusts to borehole irregularities
- Excellent elongation properties add to application flexibility
- Flexible to variations in drill hole diameter
- Versatile bolting solution for variable ground conditions
- No grouting or use of chemicals needed to avoid contamination



*Water is pumped into the bolt under high pressure expanding the steel tube. The water is removed and the bolt is pressed against the rock providing immediate high-load friction capacity.*



*Case at top of bolt, with hole to inflate bolt with pressurized water.*



*Face plate at top of the bolt, no nut necessary.*

## Expandable Rock Bolts

SPECIFICATIONS	STANDARD	MIDI	SUPER
Length (up to), ft (m)	26.25 (8000)	26.25 (8000)	26.25 (8000)
Tube Thickness, in. (mm)	.08 (2)	.08 (2)	.12 (3)
Bolt Dia, in. (mm)	1.02 (26)	1.42 (36)	1.42 (36)
Original Tube, in. (mm)	1.61 (41)	2.13 (54)	2.13 (54)
Hole Dia, in. (mm)	1.3-1.5 (32-39)	1.7-2.0 (43-52)	1.7-2.0 (43-52)
Optimal Hole, in. (mm)	1.4-1.5 (35-38)	1.8-2.0 (45-51)	1.8-2.0 (45-51)
Min Breaking Load, t (kN)	12.2 (120)	16.3 (160)	24.5 (240)
Minimum Elongation, %	10	10	10
Yield Strength, %	80	80	80
Face Plate	150x150x6(x)	200x200x6(x)	200x200x8(x)
Face Plate Hole, in. (mm)	1.18 (30)	1.58 (40)	1.58 (40)
Weight, lb/ft (kg/m)	14.47 (2.0)	20.25 (2.8)	27.12 (3.75)



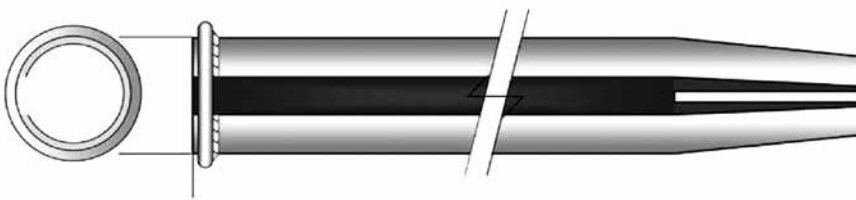
# Friction Bolts

The friction bolts are an easy fortification system that works by friction and offers immediate support. They are formed by a longitudinally grooved tube with a conical end to be easily inserted into the hole. The bolt is inserted into the hole, which has a slightly smaller diameter than the bolt. When the bolt is inserted into the hole, the impact forces the bolt against the walls generating a frictional resistance along the entire length of the bolt.



**Friction Bolts**

SPECIFICATIONS	BOLT DIAMETER			
	FS33	FS35	FS39	FS46
Mass, lb/ft (kg/m)	1.1 (1.64)	1.1 (1.64)	1.26 (1.88)	1.88 (2.8)
Ultimate Tensile Strength, Min, lb (kN)	20,000 (89)	20,000 (89)	23,000 (102)	32,500 (145)
Recommended Initial Load, t (kN)	3-6 (27-54)	3-6 (27-54)	3-6 (27-54)	6-10 (54-89)
Recommended Bit Diameter Range, in. (mm)	1.19-1.25 (31-33)	1.19-1.31 (32-33)	1.38-1.5 (35-38)	1.63-1.75 (41-45)
Bolt Length, in. (m)	18-96 (.45-2.4)	18-96 (.45-2.4)	18-120 (.45-3)	36-120 (.9-3.7)
Elongation	Minimum 21%			

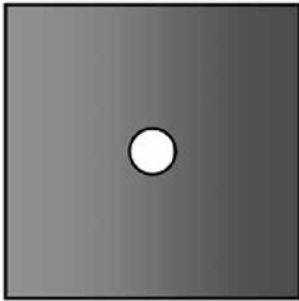


## Advantages

- Process automation
- Easy and fast installation
- Very simple process automation
- Simple, safe installation provides immediate support
- Low sensitivity to ground movements
- Low manufacturing cost



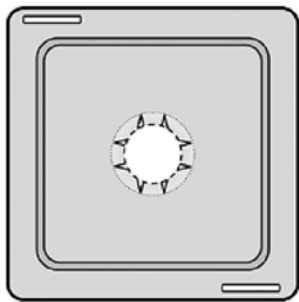
# Washer Plates



## Flat Washer

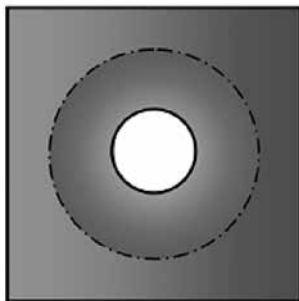
Flat Washers are available in the following standard sizes:

- 0.25 (1/4) in. x 4 in. x 4 in. (6.4 mm x 100 mm x 100 mm)
- 0.25 (1/4) in. x 5 in. x 5 in. (6.4 mm x 125 mm x 125 mm)
- 0.25 (1/4) in. x 6 in. x 6 in. (6.4 mm x 150 mm x 150 mm)
- 0.25 (1/4) in. x 8 in. x 8 in. (6.4 mm x 200 mm x 200 mm)
- 0.25 (1/4) in. x 5 in. x 5 in. (9.5 mm x 125 mm x 125 mm)
- Other sizes available on request.



## Push On Plate

The Push On Plate is *pushed* on the .625 (5/8) in. mechanical bolt. The tabs hold the plate on the dolly for ease of installation. It is a quick, economical method of double-plating when starting a new row of screen.



## Dome Washer

- 0.25 (1/4) in. x 4 in. x 4 in. (6.4 mm x 100 mm x 100 mm)
- 0.25 (1/4) in. x 5 in. x 5 in. (6.4 mm x 125 mm x 125 mm)
- 0.25 (1/4) in. x 6 in. x 6 in. (6.4 mm x 150 mm x 150 mm)
- 0.25 (1/4) in. x 8 in. x 8 in. (6.4 mm x 200 mm x 200 mm)
- Hole size as required
- The standard dome is designed to collapse at 8 tons (+/- .5 ton) giving operators a good visual reference for changing



## Butterfly Plate

- Galvanized or Standard
- Controlled edge shearing to eliminate jagged edges
- Ideal for added surface coverage with added strength
- Lightweight with large (12 in. x 12 in.) surface area

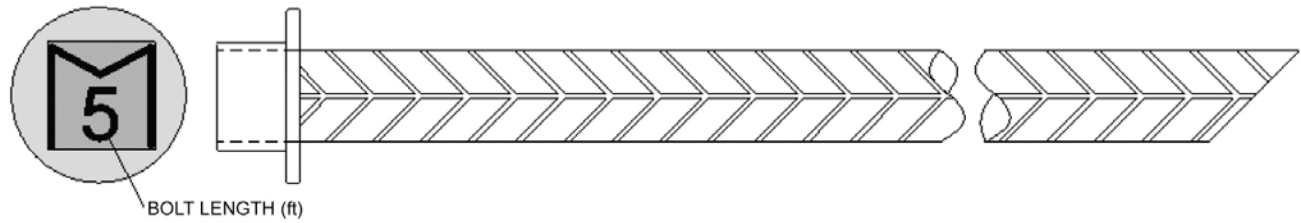


## Friction-Set Washer Plate

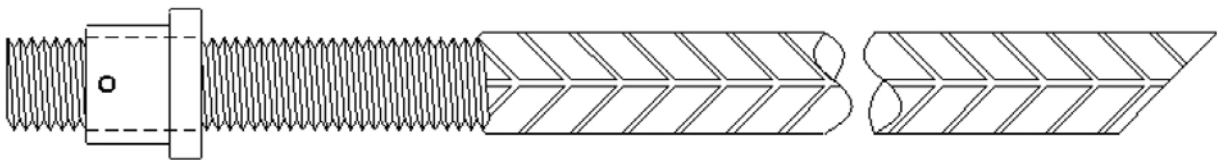
- .19 (3/16) in. x 6 in. x 6 in. (4.8 mm x 150 mm x 150 mm)
- Available for both the FS33 or FS39
- Galvanized or Standard
- 14 Ga thickness

# Rebar Bolts

## Forgerd Head Rebar



## Threaded Rebar



### Rebar Bolts

STEEL	YIELD STRENGTH (MIN)	TENSILE STRENGTH (MIN)	ELONGATION %
Grade 400 W, psi (MPa)	58,016 (400)	78,312 (540)	13

THREADED SECTION	400 MPA STEEL			
	5/8 IN. - 11 UNC	3/4 IN. - 10 UNC	7/8 IN. - 9 UNC	1 IN. - 8 UNC
Yield Strength, Min, lbs (kN)	13,112 (58)	19,377 (86)	26,803 (119)	35,158 (156)
Tensile Strength, Min, lbs (kN)	17,700 (79)	26,159 (116)	36,184 (161)	47,462 (211)

BAR SECTION	400 MPA STEEL			
	5/8 IN. - 11 UNC	3/4 IN. - 10 UNC	7/8 IN. - 9 UNC	1 IN. - 8 UNC
Yield Strength, Min, lbs (kN)	15,890 (71)	28,250 (126)	34,183 (152)	44,141 (196)
Tensile Strength, Min, lbs (kN)	21,453 (95)	38,138 (170)	46,147 (205)	59,590 (265)
Elongation, Min, %	13			

### Advantages

- Drill hole diameter can fluctuate
- Well-proven and effective system
- Grouting ensures adherence to strata
- High tensile strength



# Mechanical Anchors

## Advantages

- Simple handling and optimized installation time
- Immediate load-bearing capacity
- Field-proven and reliable anchors
- Unproblematic installation in aquiferous boreholes
- Optimized ratio of anchor force vs. borehole diameter

## System Components

### Steel Expansion Shell

- Different versions available on request
- Optimized with regards to the given borehole diameter

**Anchor Shaft** (tendon): threaded or rebar version

### Plate

- Mechanical Anchor: Flat plate with conical through-hole
- Mechanical Rebar Anchor: Domed plate with round or long hole

### Nut

- One-sided convex hexagonal nut, self-locking nut, or domed nut
- Spherical washers and driver tools available on request

**Other** dimensions, steel grades, and galvanized versions are available on request



## Mechanical Anchor

- Continuous threaded anchor bars allow flexible length adjustments and posterior extension on site
- Expansion sleeves are available for different borehole diameters

## Mechanical Rebar Anchor

- Smooth or ribbed reinforcing steel
- Forged or threaded head versions
- In accordance with ASTM F432 or CSA M430 specifications. Steel grade B 500 B according to DIN 488-1 or OENORM B 4700; **alternative steel grades available on request**
- Standard bar sizes: 5/8 in., 3/4 in., and 7/8 in. (16 mm and 20 mm)
- **Different expansion shell types and diameters available on request**

## Mechanical Anchors

SPECIFICATIONS	KS-145	KS-190	KS-220
Nominal Diameter, in. (mm)	.64 (16.2)	.71 (18)	.79 (20)
Nominal Weight, lb/ft (kg/m)	11.72 (1.62)	14.47 (2.00)	17.79 (2.46)
Nominal Cross Section, in <sup>2</sup> . (mm <sup>2</sup> )	.32 (207)	.39 (254)	.49 (314)
Yield Strength <sup>1</sup> , psi (N/mm)	65267 (450)	97175 (670)	72519 (500)
Tensile Strength <sup>1</sup> , psi (N/mm)	101526 (700)	116030 (800)	101526 (700)
Ultimate Load <sup>2</sup> , t (kN)	14.55 (145)	19.07 (190)	22.08 (220)
Ultimate Elongation, %	15	15	15
Nut Version <sup>3</sup>	S, H	K	K
Borehole Diameter <sup>4</sup> , in. (mm)	1.34-1.42 (34-36)	1.73-1.85 (44-47)	1.73-1.85 (44-47)

1) Steel tendon (anchor shaft)

2) Anchor system: anchor bar, plate and nut

3) H=hex nut, one-sided convex seat; S=stop nut; K=domed nut

4) Standard version expansion shell

# Cable Bolts

Effective ground control suited for various fields of application. Appropriate for bolting in limited space conditions, reinforcement of roadways and gateways, or bolting in the hanging wall of longwall T-junctions

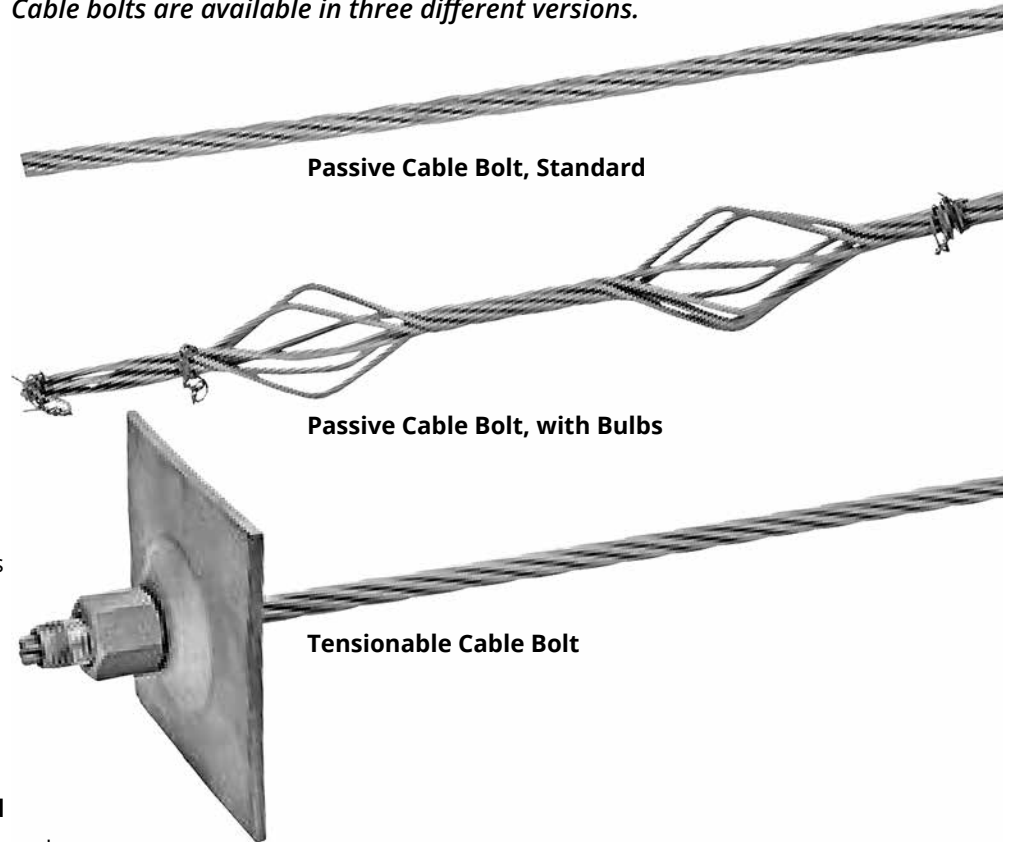
## Advantages

- Long cable bolts are easily displaceable in limited space
- High load-bearing capacity at a low weight per meter
- Flexible bolt lengths
- Installation using cement cartridges, resin cartridges, cement grout, or injection resin
- Various types of cable tensioners available on request

## System Components

- **End Holding Devices**
  - Single strand fish hook
- **Seven wire prestressing strand**
  - Uncoated, low relaxation strand
  - One center wire and six outer wires
  - Plain or bulbed version
  - Different customer-specific lengths
  - Greased strands with free lengths available on request
- **Plate**
  - Different designs and dimensions available on request
- **Domed Cable Grip**
  - Domed barrel
  - Three pieces wedge
  - Optional plastic cap
- **Tensionable Cable Bolt**
  - Press sleeve
  - Metric, UNC, or DYWI® Drill thread
  - Tension nut
- **Injection and Breather Tubes**
  - Standard versions 13 x 2 mm (0.5 x 0.08 in.) and 16 x 2 mm (0.6 x 0.08 in.)
  - Alternative designs and dimensions available on request

*Cable bolts are available in three different versions.*



## Cable Bolts

SPECIFICATIONS <sup>1</sup>	.6 DIA
Nominal Diameter, in. (mm)	0.6 <sup>2</sup> (15.2)
Cross Section, in. (mm)	.28 (7.1)
Weight, lbs/ft (kg/m)	.74 (1.1)
Tensile Strength, ksi (N/mm <sup>2</sup> )	270 (1862)
Yield Load, lbs (kg)	52740 (23922)
Ultimate Load, lb (kg)	58600 (26580)
Elongation <sup>3</sup> , %	≥ 3.5

1) According to ASTM A416

2) 0.5 in., 0.7 in., and galvanized version available on request

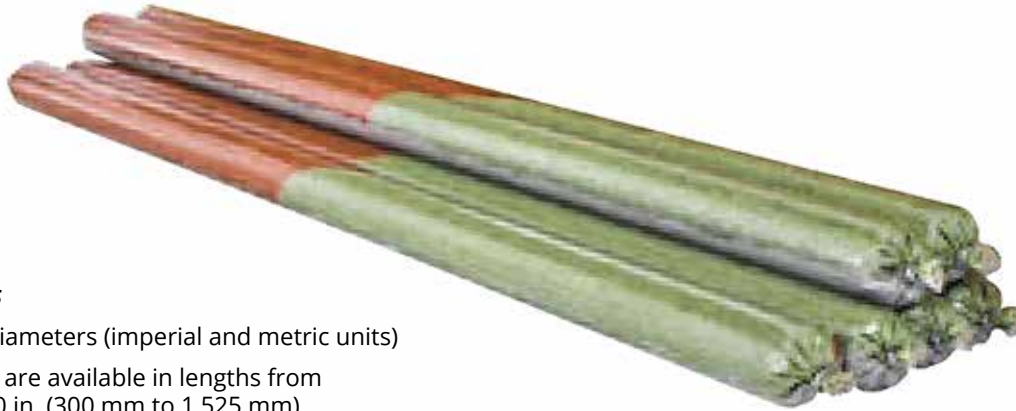
3) Measuring length: 24 in.



# Resin Cartridges

Resin cartridges are used to bond bolts to the surrounding ground. Cartridge diameter and length must be optimized to bolt length as well as borehole and bolt diameter. Bonding can either be accomplished using resin cartridges with the same setting (gel) time, or cartridges with different gel times allowing pretensioning of a bolt.

Resin cartridges consist of two compartments: one containing resin, the other one a catalyst. Separation of those two compartments is accomplished by a head-sealed polyester film tube clipped at both ends. This chemical resistant film tube prevents migration between the resin and the catalyst, and features an optimum shelf life. Hence, the film shreds quickly during the installation process. Resin cartridges are thixotropic and fast setting, allowing a low installation force and torque.



## Specifications

- Nominal diameters (imperial and metric units)
- Cartridges are available in lengths from 12 in. to 60 in. (300 mm to 1,525 mm)
- Deviating dimensions available on request
- Standard Gel Times: 15 - 400 seconds
- Alternative gel times available on request
- Spin times depending on resin cartridge type
- Storage temperature must be lower than 30 °C (86 °F), default shelf life one year
- Standard Diameters: 1 in., 1-1/8 in., 1-1/4 in. (25 mm, 28 mm, 32 mm)

## Advantages

- Maximum bonding capacity due to optimized components
- Optimized installation times
- Durable and sound resin grouting
- Constant and customized gel times
- Water-based resin cartridge system
- High catalyst/resin ratio
- Suitable for all ground types with stable boreholes

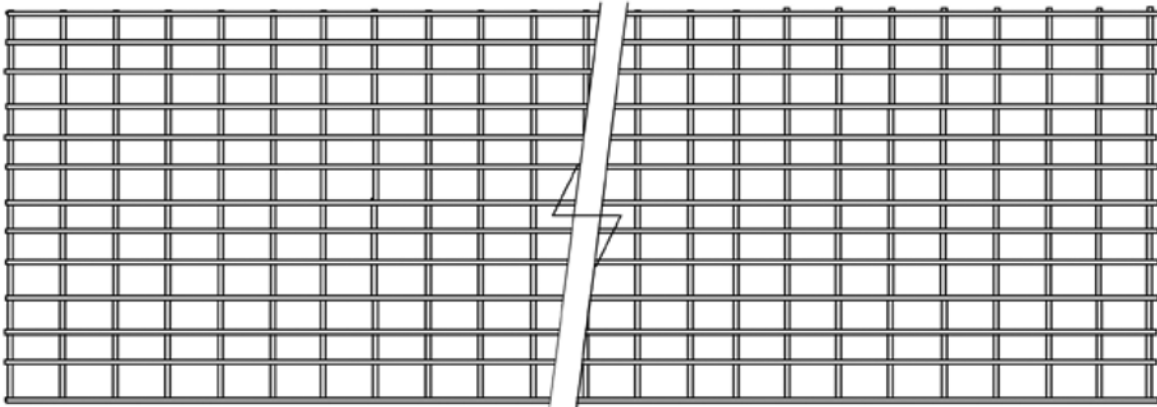
Standard Cartridge Diameters

IN.	MM
.9	23
1	25
.125	28
.141	29
1.181	30
1.259	32
1.377	35
1.574	40

# Screen

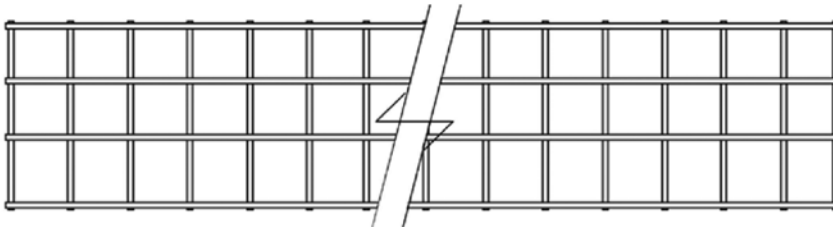
Made of straight steel bars that are joined by fusion welding at their intersections. **Flush cut for added safety!** Available in black, galvanized, straight and corrugated.

- Rolls from 48 in. (1.2 m) wide to 82 ft (25 m) long
- Sheets from 48 in. (1.2 m) wide to 19.7 ft (6 m) long



## Rectangle Screen

- 4 in. (0.10 m) x 10 in. (0.25 m) openings
- 48 in. (1.2 m) width x any length
- 9 gauge



## Screen Strap

- 4 in. x 4 in.
- Available in any length
- Width: 12 in. (305mm)
- Length: 7 ft, 10 ft (2.1 m, 3.0m)
- 0/0 gauge (.305 in. nominal)
- Overhang (flush): 3/8 in. max
- Minimum Weld Shear: 5,180 lbs min
- 7 ft Weight: 12.5 lbs (5.7kg)
- 10 ft Weight: 17.9 lbs (8.1 kg)

# Man Doors

## Gravity Close Doors

- Available in galvanized or painted versions
- Bar latch or self-latching available
- Single flanged for easy installation
- Flat gasket seal
- Custom sizes available upon request

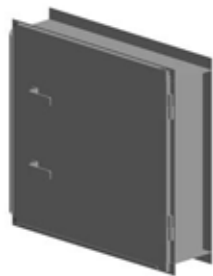


Gravity Close Doors

W (in.)	H (in.)	D (in.)	Material (Ga)
30	30	6, 8	12, 14
32	34	6, 8	12, 14
36	36	6, 8	10, 12, 14

## Reversible Doors

- Door can be utilized on either side of frame
- Available in galvanized or painted versions
- Single or double latching
- Flat or bulb gasket seal
- Custom sizes available upon request



Reversible Doors

W (in.)	H (in.)	D (in.)	Material (Ga)
30	30	6, 8	12, 14
32	34	6, 8	12, 14
36	36	6, 8	10, 12, 14

## Spring Loaded Doors

- Available in galvanized or painted versions
- Self latching or bar latching
- Flat or bulb gasket seal
- Custom sizes available upon request



Spring Loaded Doors

W (in.)	H (in.)	D (in.)	Material (Ga)
30	30	6, 8	12, 14
34	34	6, 8	12, 14
36	36	6, 8	12, 14
30	60	6, 8	12
36	60	6, 8	10, 12

## Spring Loaded, Double Latch Doors

- Available in galvanized or painted versions
- Heavy gasket and double latching for a tighter seal
- Custom sizes available upon request

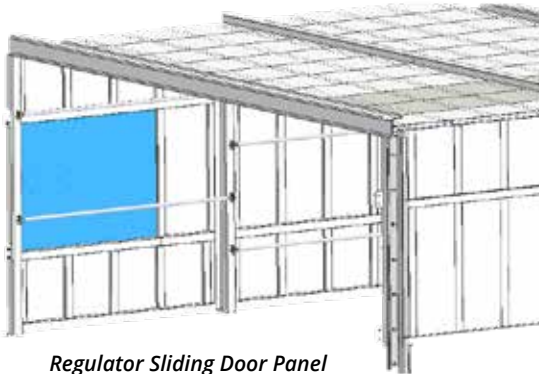


Spring Loaded, Double Latch Doors

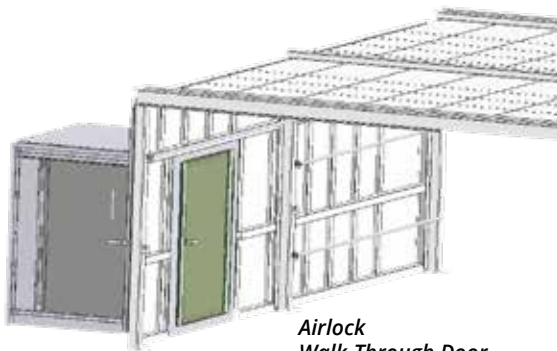
W (in.)	H (in.)	D (in.)	Material (Ga)
30	30	6, 8	12, 14
34	34	6, 8	12, 14
36	36	6, 8	12, 14
48	48	6, 8	12
30	60	6, 8	12



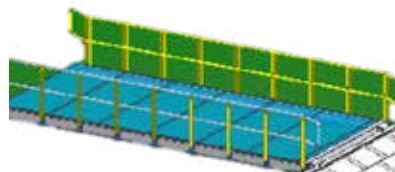
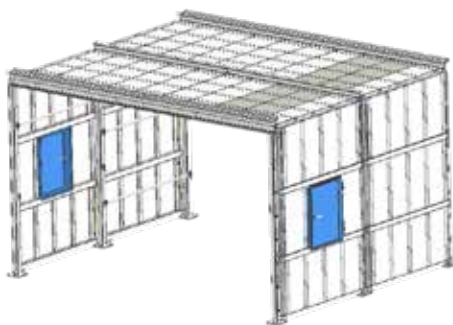
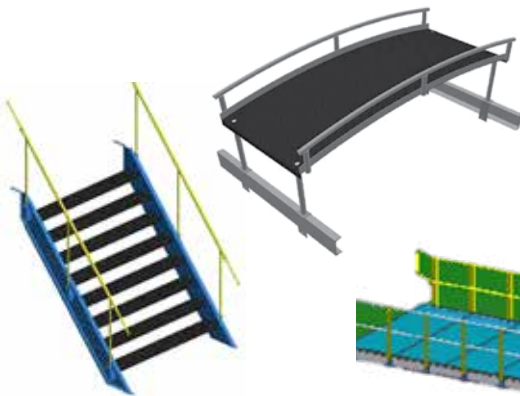
# Overcasts, Belt Crossovers, Stairs



*Regulator Sliding Door Panel*



*Airlock Walk-Through Door*



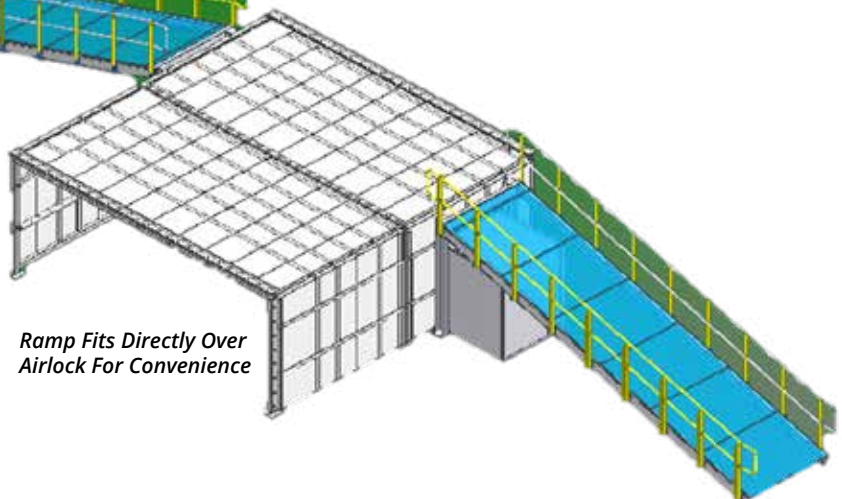
*Ramp Fits Directly Over Airlock For Convenience*

## Standard Overcasts/Undercasts

- Easy to install
- Modular (low pressure) and Permanent (high pressure)
- Can be reused
- For low pressure applications (< 8 in. of wg)
- Adjustability:
  - 5 ft to 10 ft high in 6 in. increments
  - 16 ft to 24 ft wall side in 6 ft increments
  - 14 ft to 26ft beam side in 12 in. increments
- Can be conformed to fit angled entries
- Small, compact packaging for easier handling at mine site
- Kept in inventory for quick mobilization
- Design can be sprayed with gunite or finished with sealant
- Patent Pending

## Pre-Fabricated Modular Overcast

- MSHA Suitability tested (MSHA-ST 35)
- Fully engineered and designed to customer specifications
- Overcast is mobile and reuseable
- Quick installation
- Available with:
  - Man Hole for haulage entries
  - Man Door panels
  - Airlock Walk-thru Door
  - Regulator Sliding Door Panel
  - Six ft Prefabricated Ramps for Safer Escape Way Travel



# GMS Airtight Wrap



*Non-Strength Mine Air Sealant - Suitability Number MSHA-S42/01*

## Features

- Each 5 ft x100 ft roll can cover 2-1/2 stoppings (8 ft x 16 ft)
- GMS AIRTIGHT WRAP has passed the MSHA suitability test for use as a ventilation sealant on both CMU and Steel Stoppings
- Each roll sells for \$100

## Benefits

- Reduces overall ventilation costs
- Does not deteriorate over time
- Install on Kennedy, block, or Omega stoppings
- Superior water resistance. Protects walls from damaging bulk water and air infiltration
- Enables water vapor behind the wrap to escape. Stopping wall dries from the inside out
- Clings to the stopping wall
- Fire Resistant

GMS AIRTIGHT WRAP PHYSICAL PROPERTIES

TEST METHODS	PROPERTY	VALUE	REQUIREMENT	UNITS
TAPPI T 460 Gurley Method	Air Resistance	1800 min	-	sec/100cc
ASTM E2178	Air Resistance	0.02 max	0.02 max	L/s-m <sup>2</sup>
ASTM E96 Method A	Water Vapor Permeance	5 min	>5	perms
AATCC 127 Hydrostatic Pressure Test	Water Resistance (55 cm Water Pressure)	>5	5 hr No Leakage	hrs
ASTM D5587	TEAR STRENGTH Machine Direction	13 min	-	lbs
	Cross Direction	13 min	-	lbs
ASTM D5034 ASTM D5034	GRAB BREAKING FORCE Machine Direction	40 min	-	lbs/in
	Cross Direction	35 min	-	lbs/in
ASTM E84	Flame Spread	<25 <sup>1</sup>	25	-
ASTM E84	Smoke Developed	<450 <sup>1</sup>	450	-

# Fly Pads

## AirStop® Series VentaTex® 3000 & 5000 Series

Trust the durability and quality of fly pads for safe travel in underground environments. Fly pads made with AirStop® window clear fabric and VentaTex® frosty clear fabric allow vehicles to conveniently travel in and out of crosscuts while providing visibility and directing air flow. The heavyweight material helps ensure that the curtain will hang straight once the vehicle has passed.

### AirStop® Series Window Clear Fabrics

FABRIC	WEIGHT (oz./yd. <sup>2</sup> )	WEIGHT (g/m <sup>2</sup> )	SCRIM COUNT
AS-600	18	610.30	N/A
AS-1000	30	1,017.37	N/A
AS-2500	25	847.64	2 x 2
AS-4500	45	1,525.76	N/A
AS-4550	45	1,525.76	2 x 2
AS-6000	60	2,034.35	N/A
AS-6550	60	2,034.35	2 x 2

### VentaTex® 300 & 5000 Series Frosty Clear Fabrics

FABRIC	WEIGHT (oz./yd. <sup>2</sup> )	WEIGHT (g/m <sup>2</sup> )	SCRIM COUNT
V-3110	20	678.11	9 x 5
V-3120	25	847.64	9 x 5
V-3150	30	1,017.17	9 x 5
V-5150RS	30	1,017.17	9 x 6 RipStop
V-5175RS	35	1,186.70	9 x 6 RipStop
V-3205	40	1,356.23	9 x 5
V-5200RS	40	1,356.23	9 x 6 RipStop
V-5225RS	44	1,491.85	9 x 6 RipStop
V-5300RS	58	1,966.53	9 x 6 RipStop





# Brattice

## VentaTex® & VentaLene® Series Fabrics

### Conventional Weft-Insertion Knitted Scrim

VentaTex® and VentaLene® fabrics incorporate synthetic scrims that are produced by over stitching a non-woven web. This produces a scrim with a unique geometric pattern. The substrate is laminated using PVC films, resulting in a strong, low-maintenance, fire-resistant fabric excellent for brattice and flexible ducting applications.

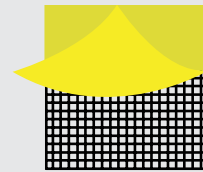
### RipStop Weft-Insertion Knitted Scrim

VentaTex® and VentaLene® fabrics with RipStop feature heavier yarns staggered sequentially in either a uni-directional or bi-directional pattern. The result is a fabric that prevents a small snag from developing into a major tear. Mine fabrics comply with all applicable United States Mine Safety and Health Administration (MSHA) regulations and policies. Extensive laboratory testing gives you peace of mind that your product will perform at specific, documented rating strengths.

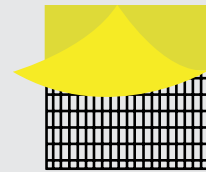
### VentaTex® 300 & 5000 Series Frosty Clear Fabrics

FABRIC	WEIGHT (oz./yd. <sup>2</sup> )	WEIGHT (g/m <sup>2</sup> )	SCRIM COUNT	COLOR
VL-695	6	204.43	9 x 5	Frosty Clear
VL-895	8	271.25	9 x 5	Frosty Clear
V-330	9	305.15	9 x 5	Frosty Clear or Yellow
V-335	9	305.15	9 x 5	Frosty Clear or Yellow
V-800	10	339.06	9 x 9	Frosty Clear
V-820	11	372.96	9 x 9	Frosty Clear or Yellow
V-840	12	406.86	9 x 9	Frosty Clear or Yellow
V-870	18	610.30	9 x 9	Yellow
V-885UD	22	745.92	9 x 9UD	Yellow
V-335UD	10	339.06	9 x 5UD	Frosty Clear or Yellow
V-540RS	12	406.86	9 x 6RS	Frosty Clear or Yellow
V-8440RS	13	440.77	9 x 9RS	Frosty Clear or Yellow
V-365UD	16	542.49	9 x 5UD	Frosty Clear
V-560RS	16	542.49	9 x 6RS	Frosty Clear or Yellow
V-570RS	18	610.30	9 x 6RS	Frosty Clear or Yellow
V-8740RS	18	610.30	9 x 9RS	Yellow

Strength in construction. Strength in quality. Strength in experience. Brattice offers mine and tunnel professionals custom line curtain solutions for the most complex applications. A number of manufacturing variables, including scrim or substrate, adhesive, and film combinations influence the overall tear and tensile strength and brattice weight. GMS experts will work with you to select the best product for your operating requirements.



9 x 9 Conventional



9 x 6 Conventional



9 x 5 Uni-directional



9 x 9 Uni-directional



9 x 6 RipStop



9 x 9 RipStop

# RigiDuct®

## Filament-Wound Fiberglass Tubing

The strength of RigiDuct® is derived from filament-wound fiberglass rovings reinforced with polyester fibers for added durability and resiliency. RigiDuct has greater strength than non-filament wound fiberglass or PVC duct; yet, the tubing is as light as other plasticmade ducting and much lighter than comparable metal ducting.

A unique feature of ABC Industries' RigiDuct is the WireGuard reinforcement. During the manufacturing process, a web of steel wire is constructed within the fiberglass rovings to increase the tubing's strength under high degrees of negative pressure. The wire provides a lightweight, economical solution for strengthening the ducting while providing superior impact resistance.

Tough polyester resins, coupled with the inherent resiliency of fiberglass and polyester fibers, make RigiDuct highly resistant to attack from acidic or alkaline conditions. UV stabilized; rubberized elastic gaskets\* resist degrading and remain pliable in cold weather applications. RigiDuct is approved by the United States Mine Safety and Health Administration (MSHA).



### Standard Duty (SD) Round RigiDuct® Sizes

8 IN. (200 MM)	18 IN. (450 MM)	28 IN. (700 MM)
10 IN. (250 MM)	20 IN. (500 MM)	30 IN. (750 MM)
12 IN. (300 MM)	22 IN. (550 MM)	36 IN. (900 MM)
14 IN. (350 MM)	24 IN. (600 MM)	42 IN. (1,050 MM)
16 IN. (400 MM)	26 IN. (650 MM)	48 IN. (1,200 MM)

### Standard Duty Oval RigiDuct® Sizes

14 IN. (350 MM)	22 IN. (550 MM)	36 IN. (900 MM)
16 IN. (400 MM)	24 IN. (600 MM)	42 IN. (1,050 MM)
18 IN. (450 MM)	30 IN. (750 MM)	45 IN. (1,150 MM)
21 IN. (550 MM)		

### RigiDuct® Tube Fittings

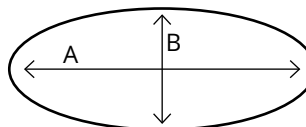


### RigiDuct® Size for Specifying

**Spigot End**  
Note: Add 1" (25 mm) to dimensions to determine bell end equivalents.

### Equivalent Round Diameter (I.D.)

RigiDuct® Size for Specifying		A		B		Equivalent Round Diameter (I.D.)	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
14	350	17.125	450	9.125	250	12.5	300
16	400	19.75	500	10.875	300	15.125	400
18	450	22.5	550	11.125	300	16.5	400
21	550	26.5	650	12	300	19.125	500
22	550	28.75	750	14.25	350	21.125	550
24	600	30	750	16	400	22.5	550
30	750	36.5	950	20.5	500	28.1	700
36	900	43	1,100	26	650	34.375	850
42	1,050	51	1,300	28	700	39.250	1,000
45	1,150	54	1,350	32.5	850	43.125	1,100



# MineDuct®

## Wire-Reinforced Ducting

Demanding mine and tunnel ventilation applications require high quality, reliable ducting to perform in extreme underground conditions. MineDuct® wire-reinforced ducting is made of premium PVC fabric for both positive and negative pressure applications. Its durable construction and heavy-duty wearstrip allow MineDuct to withstand continuous use in the harshest environments. RipStop substrate technology makes maintenance quick and easy by preventing tears from expanding.



### Specifications

FABRIC	13 oz./yd. <sup>2</sup> (441 g/m <sup>2</sup> )
SCRIM	9 x 9 RipStop
FILM	PVC laminated to both sides of scrim
COLOR	Yellow
STANDARD PITCH	3" (7.5 cm) for Exhausting 6" (15 cm) for Blowing
WIRE	Hard-Drawn Steel
INSIDE DIAMETER	Sewn: 8" - 48" (200 - 1,200 mm) Heat-Sealed: 8" - 36" (200 - 900 mm)
LENGTH	10', 20' (3, 6 m)
WEARSTRIP	Heavy-Duty, Flame Resistant
END FINISH	Wire Rope Coupling (Standard)
SUSPENSION	A-3 Hooks



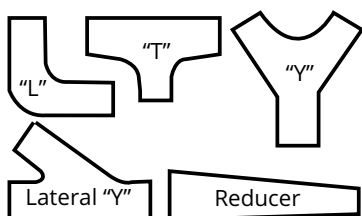
# MineVent®



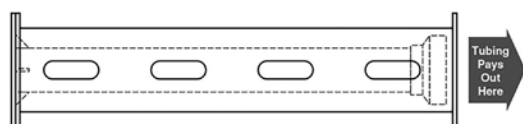
## Layflat Blower Tubing

Expect more from your collapsible, layflat blower tubing by choosing MineVent® for positive pressure applications. Its 100% welded construction eliminates air loss and weakening associated with conventional sewn ducting. MineVent features RipStop substrate technology to prevent small tears from expanding into gaping holes. Several standard and custom end finishes provide numerous configuration possibilities for your installation.

### MineVent® Tubing Accessories



### MineVent® AutoFeed™ Tubing Cassette



Holds 100-150 m (109-164 yds) of MineVent®

Molecularly bonded for positive pressure applications, MineVent is manufactured with VentaTex® material. MineVent is designed to perform from -20° F to 180° F (-29° to 82° C) continuously in underground environments. MineVent fabrics have been tested and approved by Mine Safety and Health Administration Standards (MSHA).

### Specifications

FABRIC	12 oz./yd. <sup>2</sup> (407 g/m <sup>2</sup> ) 13 oz./yd. <sup>2</sup> (441 g/m <sup>2</sup> ) 18 oz./yd. <sup>2</sup> (610 g/m <sup>2</sup> ) 22 oz./yd. <sup>2</sup> (746 g/m <sup>2</sup> )
SCRIM	9 x 9 RipStop, 9 x 9, 9x9 RipStop
FILM	PVC laminated to both sides of scrim
COLOR	Yellow
DIAMETER	8" - 72" (200-1,850 mm)
LENGTH	25', 50', 100' (7.5, 15, 30.5 m)
END FINISH	Wire Rope Coupling (Standard), Aussie Coupling, Snap-Loc Coupling, Soft Cuff, Velcro® Cuff, Velcro®/Zipper Cuff
SUSPENSION	A-3 Hooks

# Omega Block

Omega Block products are composed of non-toxic incombustible materials whose air permeability and relative fire-resistance characteristics are unequalled. Fully approved for constructing underground ventilation devices by MSHA, Omega Blocks reduce labor because they cover the area of 3 normal concrete blocks. Omega Blocks are easy to use because they can be accurately cut to size with a handsaw. A typical brattice stopping is dry stacked using alternating courses and then sealed with an approved sealant about the roof, rib and seams.

## Product Specifications

- Approved for use with any MSHA approved underground mine sealant
- Impermeable to air and will not support combustion
- Fire Resistant: Meets temperature transmission requirements of U.B.C. Standard No.7-1 and passed the 2 hour fire test for ASTM E-119 Test
- Passed the ASTM E-72 Test
- R value = 2.15 for 3" of thickness

## Product Dimensions

- Omega 443: 4 ft. x 4 ft. x 32 inches with molded forklift tine pockets
- 6" Omega 384: 6" x 16" x 24". Weighing 35 lbs. each
- 8" Omega 384: 8" x 16" x 24". Weighing 45 lbs. each



# Hard Hat Cordless Mine Lamp

## Wisdom WiseLite2 MSHA Certified Version



Designed for underground mine use, this MSHA approved mine lamp is extremely durable! It is also light weight (less than 1/2 lb) and waterproof. High/Low light modes.

INCLUDES: One Wisdom Wiselite2 lamp with stainless steel/nickel adjustable bracket. Charger sold separately.

- MSHA Approved (Part 19, Title 30 CFR)
- High-Light - 8,500 Lux / 167 Lumens / 16 Hour Run Time
- Low-Light - 1,800 Lux / 50 Lumens / 60 Hour Run Time
- Four Hour Charge Time (2A)
- IP68 Certified Water Resistant
- Battery Lifecycle - 1,200 Cycles
- LED Light Life - 100,000 Hours
- Adjustable Mounting Bracket
- Battery Charge State Indicator
- Includes SOS Flashing Mode
- Wisdom NWB-30 Charger Required (*Not Included*)

**WiseLite2 AND Charger**  
**COMBINE AND SAVE!**



### Charging Racks Available!



*Racks available with 12, 24, 36, 60, 120, or 204 charging Ports. Each lamp charges independently with its own LED charge indicator.*



# Conveyor Belt, New & Used

New & used conveyor belt for mining, agricultural and industrial applications. Standard and MSHA Underground Part 14, agricultural baler belt, industrial specialty belt and more!

***Call for pricing and availability!***

## MSHA Underground Part 14 Flame-Resistant Belt

### Rubber Belt

- 36 in. to 72 in. Width
- 2-Ply, 400 PIW
- 3-Ply, 600 PIW
- 4-Ply, 800 PIW
- Top Covers vary from 1/16 in. to 3/8 in.

### PVC Belt

- 36 in. to 48 in. Width
- 400 PIW
- 600 PIW
- 800 PIW

### PVG Belt

PVC Core with rubber compound top.

- 36 in. to 48 in. Width
- 350 PIW
- 600 PIW

## Agricultural Baler Belt

Cut to specifications for haybalers and other uses. Comes complete with splices applied.

- MRT (Mini Rough Top)
- Smooth
- MRT-IMP
- Continuous V-Cleat (Chevron)
- Diamond

## Horse & Cow Stall Mats

- Surplus rolls or cut to length
- By the piece or by the truckload

## Specialty Belt

- MOR (Moderate Oil Resistant)
- Bareback
- Continuous V-Cleat (Chevron)
- Single Cleat
- Rough Top
- Hot Belt (400° - 700° in stock)
- U-Cleat



***Huge Inventory of Used Belt!***  
***Used Conveyor Structure and Idlers***  
***also available!***

***Call for Specific Availability.***



### CONTACT

**Wayne Shreve, Sales**  
wshreve@gmsminerepair.com  
301-616-0589

# Drying Racks



## Mobile racks to hang hose, packs or gear for air drying!

- Dry or store up to 1,200 ft (1-1/2 in. to 1-3/4 in.) or 800 ft (2-1/2 in. to 3 in.)
- Heavy duty casters for easy movement
- Powder-coated for corrosion resistance



## OUR AFFILIATES



*Pioneer Conveyor is a leading, bulk material, conveyor manufacturing firm serving customers throughout North America. We have complete engineering, machining, and fabrication capabilities to design and manufacture even the most complicated conveyor systems.*



*GMS Construction offers complete construction services, from residential additions to designing and building commercial or industrial facilities, we have the resources and experience to do the job efficiently and cost-effectively.*



*GMS Oil & Gas specializes in providing qualified, safe and responsible oil & gas professionals for all areas of operation, from Rig Hands to Cleaning/Wash Down Crews, to Equipment Operators. We can even provide Security personnel to monitor and protect your sites.*



*GMS Land Design & Waterscapes is your one-stop location for all of your outdoor, decorative desires. Servicing the Morgantown and Greater Pittsburgh area, we offer a wide variety of products and services from complete outdoor kitchenettes to customized swimming pools.*



*American Mining Academy is dedicated to teaching fundamental principles and technical training involved in mining operations, as well as advancing a culture of safety to inexperienced students and experienced miners alike.*



*GMS Geotechnical is a complete turnkey provider of geotechnical services with regional offices throughout the United States and Canada.*



## LOCATIONS

### United States Locations

#### ALABAMA

**GMS South Regional Office**  
5521 Powder Plant Ln  
Bessemer, AL 35022  
TEL 205-481-1042

#### COLORADO

**GMS West Regional Office**  
832 North Crest Dr, Suite A  
Grand Junction, CO 81506  
TEL 970-208-9170

#### ILLINOIS

**GMS Midwest - Illinois Office**  
212 South 9th St  
Mt Vernon, IL 62864  
TEL 618-316-7222

#### KENTUCKY

**GMS Midwest Regional Office**  
1651 Progress Dr  
Madisonville, KY 42431  
TEL 270-821-1820

#### MARYLAND

**Global Headquarters**  
32 Enterprise Drive  
Oakland, MD 21550  
United States  
TEL 301-334-8186

#### NEVADA

**Elko Office**  
450 West Silver Street  
Suite 105  
Elko, NV 89801  
TEL 775-397-7194

#### PENNSYLVANIA

**Mt Morris Office**  
(American Mining Academy)  
111 Watkins Run Rd  
Mt. Morris, PA 15349  
TEL 304-413-2280

**North Appalachian Regional Office**  
112 Columbia Dr  
Waynesburg, PA 1570  
TEL 724-852-1017

#### UTAH

**GMS West - Utah Office**  
92 North 4th East, Suite 2  
Price, Utah 84501  
TEL 970-312-7404

#### WEST VIRGINIA

**Bruceton Mills Office**  
(Pioneer Conveyor)  
224 Moyers Rd  
Bruceton Mills, WV 26525  
TEL 304-413-2500

**Chapmanville Office**  
125 Hurricane Branch Rd  
Chapmanville, WV 25508  
TEL 304-855-3503

**Morgantown Office**  
(GMS Land Design & Waterscapes)  
3016 Earl L Core Rd  
Morgantown, WV 26508  
TEL 304-241-1780

### Canada Locations

**Canadian Headquarters**  
4145 North Service Road, 2<sup>nd</sup> FL  
Burlington, ON L7L 6A3  
TEL 705-702-3875

### CONTACT

