

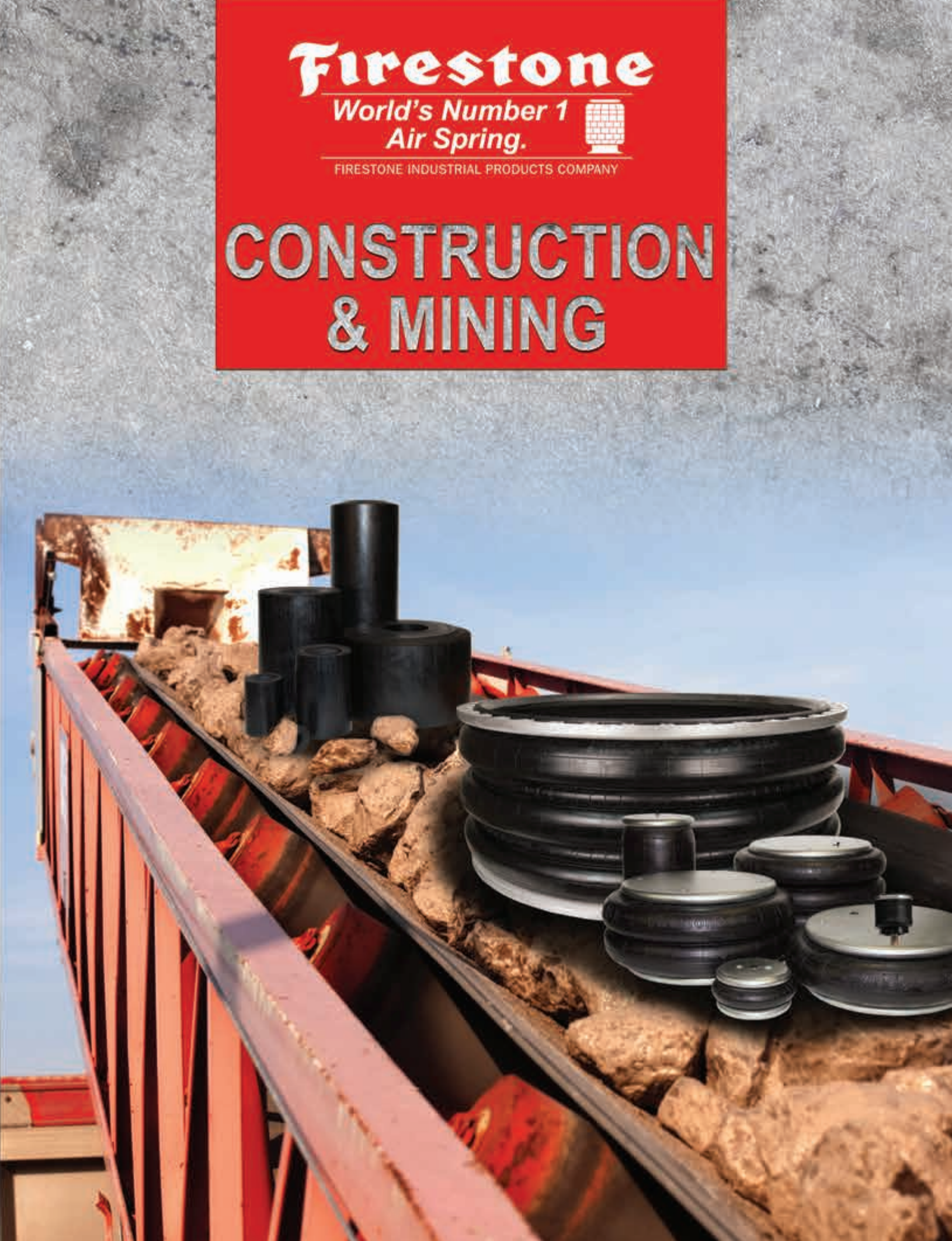
Firestone

World's Number 1
Air Spring.



FIRESTONE INDUSTRIAL PRODUCTS COMPANY

CONSTRUCTION & MINING



Firestone Industrial Products offers more than air springs for the transportation industry. Firestone's rugged, reliable products provide a variety of durable solutions for the construction and mining industries. To follow are just a few of the advantages of using Firestone Industrial Products:

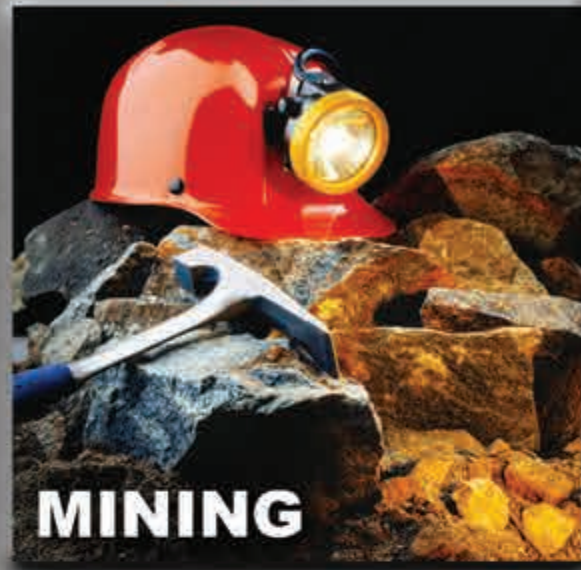
Air Springs Benefits:

- Friction-free with no sliding seals, so the smallest pressure change initiates an immediate response
- Saves space thanks to a very compact starting and installed height
- Flexibility to handle variations in material density with just one isolator
- Extends equipment life by handling vibratory input to the highest degree of isolation
- Stands up to wet, dirty outdoor environments with no internal rod, piston or sliding seals

Marsh Mellow™ Spring Benefits:

- Corrosion-resistant thanks to rubber and fabric construction
- Consistent vibration isolation with variable loading due to variable spring rate
- Quiet operation with no spring chatter or high-frequency structural noise
- Protects equipment by not bottoming out under overload
- Carries greater loads with the greater deflection capabilities of fabric reinforcement

Firestone Industrial Products are manufactured globally in an ISO-certified, quality-controlled environment. Connect with Firestone Industrial Products on LinkedIn for the latest industry news and information; or contact us with questions at www.firestoneip.com or 1-800-888-0650.



Everyday, construction and mining companies face mounting challenges around the world – ever-changing regulatory and emissions requirements, lower-cost competitors and fluctuating global economies. In order to drive toward continued profitable growth, companies must continue to seek reliable, alternative solutions that reduce overall operating costs.

A powerful solution exists with Firestone Industrial Products. Our air springs and MarshMellow springs are often a superior alternative to pneumatic or hydraulic cylinders or coil springs.

- In the mining and construction industries, you'll find Firestone Industrial air springs on conveying, material handling, concrete form production equipment and in sorting applications.
- Virtually indestructible when applied according to factory recommendations, Marsh Mellow™ springs are commonly used for vibration isolation on both mining and construction equipment.
- Our air springs have a high ratio of stroke-to-collapsed height, and their unique capabilities make them ideal for friction-free, leak-free, flexible-force applications.



**Firestone Marsh Mellow™ springs
 Aggregate Conveyor/Screen Application**

- Isolates and reduces vibrations to protect supporting structure
- Requires virtually no maintenance for fabric and rubber springs
- Does not require air to function
- Will not trap debris, corrode, or bottom out
- Accommodates a wide load range with consistent performance

**Firestone Airmount™ isolators/ Airstroke™ actuators
 Concrete Block Manufacturing Application**

- Provides both the compression and the vibration isolation needed to eliminate air pockets
- Offers high-force output as a cost-effective alternative to hydraulics
- Provides force needed while protecting equipment from the damaging effects of vibration

**Firestone Airstroke™ actuators
 Conveyor Belt Scraper Application**

- Provides firm but compliant pressure allowing for excellent belt cleaning without causing damage to conveyor belt or structural hardware
- Resists dirt and corrosion with sealed, friction-free air springs
- Responds directly to small changes in air pressure
- Performs exceptionally in wet, dirty outdoor environments
- Accepts and easily accommodates misalignment



AIRMOUNT™

ISOLATORS

Airmount™ isolators are used to support and isolate delicate objects from external vibrations, or support a vibrating load and prevent its energy from disturbing the surroundings. Airmount isolators provide the highest degree of protection of any type of vibration isolator and can also reduce structurally transmitted noise. Firestone isolators are capable of isolating loads of 100–100,000 pounds per mounting point.

MARSH MELLOW™

SPRINGS

Marsh Mellow™ springs are a fabric-reinforced rubber cylinder used like the Airmount™ isolators to protect systems from the effects of structurally transmitted vibration, without needing air inflation. Marsh Mellow springs are an effective passive isolator with superior characteristics to steel springs. Rubber springs have long been a subject of interest in the vehicular suspension and industrial application fields because of their reliability, corrosion resistance, low cost and basic simplicity. The superior characteristics of rubber and fabric springs surpass steel and rubber-only springs in performance.

AIRSTROKE™

ACTUATORS

Airstroke™ actuators perform the same type of actuation tasks as a hydraulic or pneumatic cylinder. Long used in the industrial market as pneumatic actuators, they have been incorporated into a wide variety of machinery designs in a vast array of industries. The advantages of a flexible-walled pneumatic actuator include: durability; operates well in dirty, corrosive and abrasive industrial environments; easily accepts angular and lateral misalignment; and a high ratio of stroke-to-collapsed height. Its unique capabilities make it ideal for friction-free, leak-free, flexible force applications

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www.firestoneip.com/actuators-isolators

AIRPICKER™

END EFFECTORS

AIRGRIPPER™

END EFFECTORS

AirPicker™ and AirGripper™ end effectors offer the user a wide range of advantages over traditional pick-and-place work-holding devices. Simply by varying the air pressure in the picker or gripper, the user can conform the end effectors to the shape and diameter that is being handled, and to the force being applied to the workpiece. This is especially critical in applications with sensitive, thin-walled or fragile objects. AirPicker and AirGripper end effectors have an elastomeric bladder construction that conforms to any shape. Each picker and gripper can work with a wide range of diameters and workpiece weights. Firestone offers a wide range of standard configurations and sizes of end effectors to meet most industrial applications. Special units can be developed to meet specific application needs.

