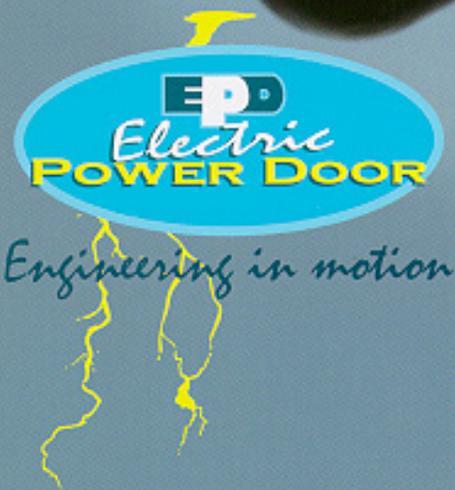


If You Don't Compare
Apples to Apples,



You Might Just
End Up with a
Lemon

Selecting the right door for

Facility designers have a wide array of door choices available. Mining facilities have up to 10 different door types. Only a select few doors will perform without trouble in the most severe environmental and abrasive conditions. Getting a lemon. If you don't select the right door, you'll pay more for it in the long run.

A Technical Report -- Misconceptions About Mining Doors

There are many misconceptions regarding door usage and performance in the mining industry. This is especially true with large sized doors that are used in extreme weather conditions and abrasive operating conditions.

This report will explore the differences between a variety of door types, with emphasis on the need for heavy-duty vertical lift steel doors in high utility and extreme weather applications, especially high wind loads.



Long Life

EPD Vertical Lift Doors are designed to last the life of the building. Vertical lift doors have been in operation on some mine maintenance bays and haul truck facilities for over 60 years. Rubber doors and fabric doors have only been available on mine facilities for a short time, so the life span of the doors hasn't yet been proven. And in many cases these lighter weight doors have already been replaced or else repaired many times.

EPD has doors installed in over 100 mining facilities in 17 states and five countries, and most doors are still in operation today. Replacement parts record data at the company show that there have been a minimal amount of repairs on any of the doors over this time period.



Industrial, Durable Construction

On any type of industrial facility the construction of the door needs to meet the nature of the work in the facility. Huge haul truck doors need to be designed and built with the strongest construction manufacturing techniques. On a vertical lift door, the overall specifications may fit the job, but there are fine points that can make a door more durable. For example, the heavy gauge sheeting on Electric Power Door's door panels have 1 1/2" long high quality welds every nine inches on center around the perimeter and at the seams. Competitors' vertical lift doors have been documented to have just a tack weld every 18" on center. Tack welding doesn't reinforce the panels and allows more of a potential for the panels to buckle if a vehicle comes in contact. In addition, less welding leaves bigger gaps between the sheeting and the door panel frame which allows dust and water to gather inside of the panel adding weight

and corrosion. Electric Power Door uses an adhesive caulk in addition to the welding to seal all external sheeting to the door frames. The extra heavy duty operating system and structural steel materials used in EPD doors often makes them 35% to 40% heavier than the competitors' vertical lift doors. Rubber or fabric curtains cannot be compared to a structural steel door.



Proven Problem Areas

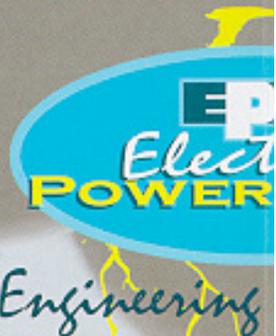
History shows us that on the large size openings and severe conditions at mining facilities there are predictable wear spots on large industrial doors that cause expensive downtime and repair. For instance, a guaranteed trouble spot is a spring mechanism that operates a door, which is common on roll up doors. Doors that use springs suffer from spring fatigue and one of the most common problems is broken springs that need to be replaced. A cable and counter balance operating mechanism will have a 20 times longer life span than a spring operated system. That means that a spring operated mechanism will have to be repaired 20 times for every one time that a cable and counter balance mechanism has to be serviced.

When lighter-weight door types are used on mining facilities, there is high maintenance and repair on high wear components such as springs, rollers, hinges, guides and operating mechanisms. On lighter weight doors, including some vertical lift doors, the door panels are allowed to rub against the guides without a roller guide system, resulting in wear and expensive repairs.



Material Failures

The life of the material on fabric and rubber industrial doors is still uncertain. It's well known that these materials deteriorate over time when exposed to ultraviolet rays of the sun, and extreme heat and cold temperatures. Heat can cause rubber to stretch and sag, and how does that affect the door operation? When the rubber cools off will it refit itself to the original specifications? Fabric doors can rip fairly easily. These materials have been used in mining applications for



or the mining industry

ifferent types, and every manufacturer says theirs will work in all applications. asive applications. In other words, with all these choices you have a chance of

Mining Doors

a short time, and in many cases the doors have been replaced and have been subject to expensive service contracts.



Wear on Operator

Due to the heavy design, EPD doors have less operator wear in high wind loads than flexible fabric doors, rubber doors, roll-up doors, lighter constructed or under designed vertical lift doors that haven't been built to specifications. When the wind blows, a flexible material on a door will bow or act like a sail, causing the guide mechanisms (which often are made to slide without guide rollers) to bind and operate under more pressure. As a result the operator has to work harder, and its life span will decrease. Rigid door panels that are made of structural steel won't bow or deflect and won't bind, and the guide systems always glide smoothly, so the operator has less wear. EPD doesn't require or recommend using grease on door guides. Greased guides collect abrasive material that can lead to premature wear. The counterbalance design eases the motor operator and doesn't fatigue or wear out. The EPD counterbalance design applies even pressure on the counterweight box, which puts less pressure on the guides and less stress on the motor operator.



Energy Efficiency

There is a higher insulation potential on thicker panel doors than on thinner material doors. Roll-up doors provide only minimal insulation value. Rubber and fabric doors provide air space at best. The extra thick cavity on EPD Vertical Lift Doors can be more heavily insulated against hot weather conditions; or cold weather conditions of

extreme temperatures, ice, snow and wind. EPD door panels can be heavily insulated with a variety of insulation materials so the doors are more energy efficient, with heavy structural steel construction. Sometimes lighter weight doors will sacrifice durability for insulation value. Light gauge, foamed-in-place panels on some door types are not damage resistant and not repairable. EPD Vertical Lift Doors have a tight sealing system to keep out weather, dust and air flow.



Quality of Cables, Sheaves, and Reeving System

Doors that have larger sheaves and higher quality cables in the reeving system will run more smoothly and have less failures. Smaller sheaves cause the cable to be wound tighter, so there is more wear on the sheave and the cable. A poor quality cable is not as flexible as a higher quality cable, and wears faster. Before buying a door for a large opening, check out the critical moving parts for quality components. Large doors need to be supported with larger sheaves for the larger cable size used so when the motor-operator turns the mechanism there is little strain and the door moves more smoothly and reliably. Lighter quality cables and smaller sheaves will lead to higher wear and more frequent failures, leading to expensive repairs and downtime. EPD Vertical Lift Doors implement a superior design reeving system where the operator drive components -- sheaves, cables, cam rollers and shaft size are larger, heavier and designed to last longer.



Emergency Operation

When there is a need to open doors during a power failure or other maintenance bay problem, there needs to be a convenient and dependable method. A separate drive system from the gear box and a shift lever that disconnects from the motor is needed. EPD doors can be operated with a hand crank or hand chain, smoothly and safely. Most other door types, including some vertical lift doors are manually operated through the motorized gear box. The manual operating process will be slow and laborious, and may not be possible if there's a gear box failure.



Meeting Specifications

When a facility is being designed, the door should be planned to last the life of the building. There's no "one size or type fits all" door. Consideration needs to be given towards what will hold up over time. To design a door to hold up over time, EPD's engineering staff custom designs the door to exactly fit the facility. EPD uses operators, door panels and drive systems that are the heaviest on the market. Before choosing a door, make sure the design and specifications meet the requirements of the facility. This is especially important with large door openings often found in



mining applications. EPD has experienced professional design engineers to insure that every door adheres to specification requirements.

There are three steps to success: Compare all of the choices available for mining facility doors. Make an apples-to-apples comparison with the EPD Vertical Lift Door, including expected maintenance costs over time. Compare company experience, including a proven record of long-lasting doors, and experience of the engineering staff who will make sure the door meets specifications.



EPD Welcomes Comparisons to It's Vertical Lift Doors in Mining Facility Applications

With years of experience comes confidence. EPD urges you to compare its Vertical Lift Mining Doors with any competitive door types for longevity and low maintenance. EPD will go side-by-side, apple-to-apple, to compare performance with any other kind of door. Heavy duty EPD vertical lift metal doors have been proven in

mining applications for well over 60 years and most EPD doors are still in use with a minimum amount of maintenance costs.

Under the requirements of the facility and the weather, abrasive and environmental conditions you can expect the EPD door to last the life of the facility. In most cases it's the only door you'll ever need to buy.

The highly experienced EPD engineering and sales staff will help you with designs to meet the needs of clients by providing a dependable door system to meet the needs of the facility. It's common for design engineers to come to EPD for assistance to insure that the door specifications are correct for a facility, and that the door fits.

The door that costs less, and is lighter duty than is needed for your mining facility may end up to be a lemon. It may cost less now, but it can cost you a lot more in the long run. There really isn't a comparison when it comes down to the final buying decision. The EPD heavy-duty Vertical Lift Doors stand the test of time.



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