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Roots in Mining**

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Electric Power Door Rediscovering Its Roots in Mining

Electric Power Door (EPD), Hibbing, MN has rediscovered its roots by making a bigger impact in the mining industry over the past two years. But unlike the early 1960s when the company was mainly supplying the iron ore mines of northern Minnesota, recent sales have also been going to the western US, Canada, Argentina and Chile. There was a time in the late 1980s and early 1990s when sales were strong with military installations. And the company has carved a market niche for itself supplying security doors on jails and prisons. "It's all related," explains Cary Rhude, general manager. "Our mainstay is heavy duty doors, and when a company needs a vehicle door that won't break down and will hold up under tough weather conditions, we get called." Fully 40% to 50% of EPD's sales in the past two years have been in the mining industry.

Most of the doors that have been sold to mines have been vehicle or transportation doors. At the Red Dog Mine in Kotzebue on the northwest coast of Alaska, owned by Cominco, 30 doors have been installed on their facilities since 1988. A major world zinc/lead mine, it uses EPD doors on a variety of facilities including truck shops and processing facilities that enclose crushers, concentrators, agglomerators and pelletizers. On a smaller scale, some smaller service doors for forklifts are also used. According to Jeff Jacobson, vice president-sales and marketing, "Our vertical lift doors are the primary product used on very large door openings for haul trucks. These heavy-duty doors can be insulated and weather sealed, and are strong enough to withstand heavy wind loads that are often encountered at these facilities. This is the longest lasting, lowest maintenance door for a truck facility. We have some doors that were installed in the 1960s that are still operating today, and still with very little maintenance." The company also has



EPD vertical lift haul truck doors on a maintenance facility at the Collahuasi copper mine in Chile. Since 1996 EPD has manufactured and installed 39 doors at the mine and shipping port that serves it.



Aquiles Montessi of Dinatex Ltda. (left) and Steve Bonacci, of Electric Power Door (EPD) in front of the structural system for vertical lift doors for the Los Pelambres mine. The EPD manufacturing facility is in the background.

installed craneway doors in the crusher areas, where the door is configured to allow cranes to travel on track from one area of a building to another.

The number of doors that have been installed in Chile and Argentina in the past two years has had an impact on

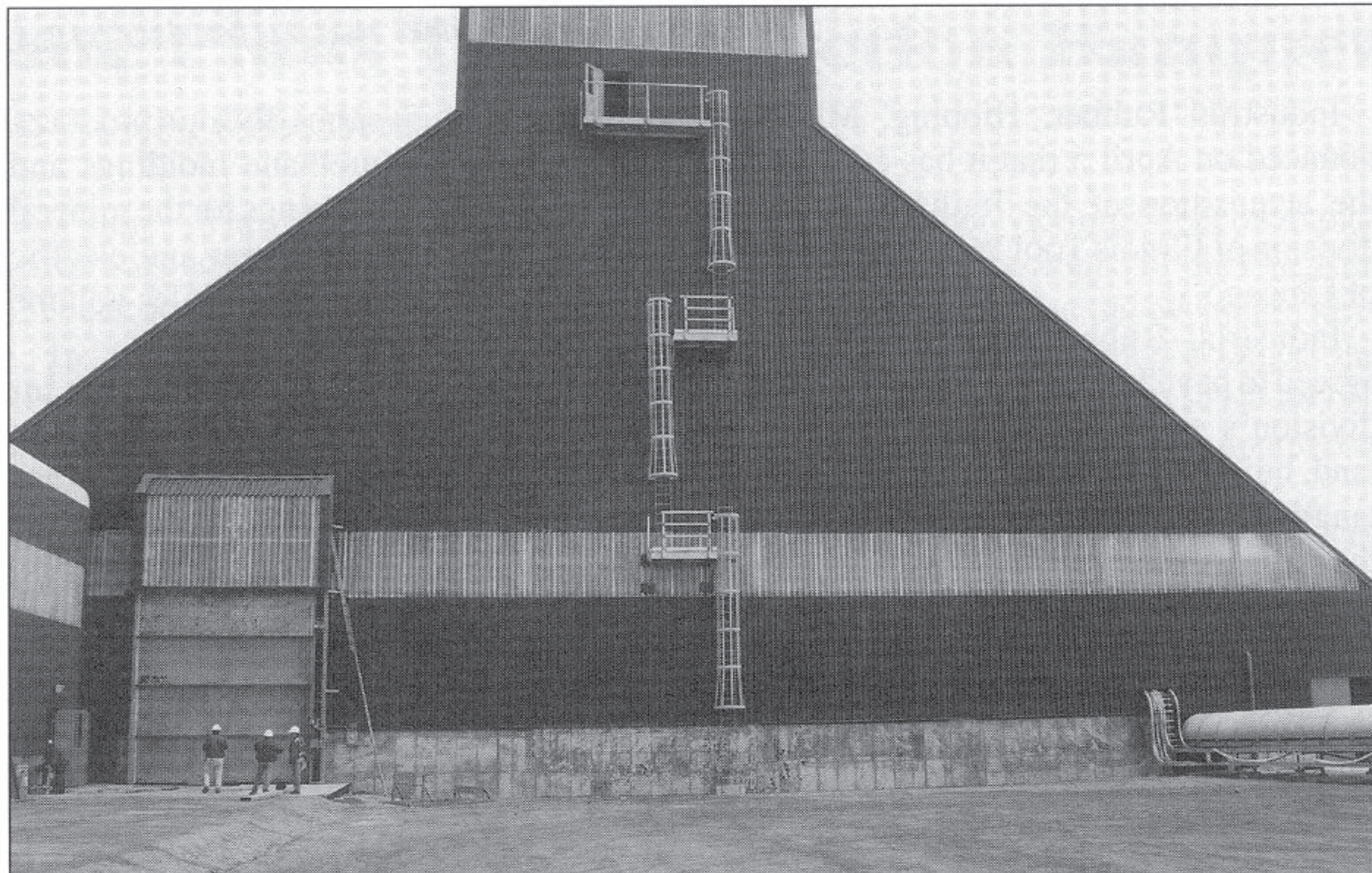
EPD. In 1995 EPD started working with Dinatex Ltda., a company that operates in Santiago, Chile, doing mechanical engineering for piping systems in mines, and also is an independent representative in the mining industry. In early January, Aquiles Montessi, a partner in

Dinatex, was in Hibbing inspecting doors that are scheduled for the Los Pelambres copper mine in Salamanca, Chile, a six hour drive from Santiago. Over \$400,000 million have been invested in this older mine that was originally established in 1964, for future production. It's expected to be at full production late in 1999. The first shipment of doors left Hibbing in early Feb. 1999, starting a flow of 26 doors to the site. Five of the doors measure 34 ft. high by 29 ft. wide to be installed on the haul truck facility. There are also 21 sliding doors of various sizes to be used throughout the facility. The mine itself is at 3000 meters (9800 ft.) elevation and the concentrator is at 1500 meters (4900 ft.) elevation. The copper will eventually be shipped from the port of Los Vilos, which is a new port created just for this purpose. The ore will be transported to the port by pipeline, crossing the towns of Salamanca and Illapel along the way. This was originally a controversial effort because of crossing an agricultural area where grapes are grown in the valley, but the concerns have been largely addressed. According to Mr. Montessi, Bechtel cemented the roads because the major concern was dust that would have been raised and would settle on the grapes. The area also has a lot of small earthquakes and is close to the Andes and the Argentina frontier.

The other partner, Sergio Bolton from Dinatex, visited Hibbing last during a sales representative meeting in the summer of 1996 when the high temperatures were at the 90° F. mark. Mr. Montessi was not as lucky. His visit in January included temperatures of 5° to 20° below zero every day he was there. That didn't cool his enthusiasm for working with EPD. "From our first impression we felt these were people we could really trust," he said. "They are honest, they make very good quality, and it will be ready when they say it will. We have had no problems with the shipping or anything working with EPD. It's like a good marriage," he added. Dinatex Ltda. has eight persons on staff. EPD doors are transported by truck to Houston and then by ship to Chile.

Other installations in Chile include the Collahuasi copper mine, at an elevation of 14,000 ft., one of the largest mines in the country. EPD has manufactured and installed 39 doors there since 1996. The Collahuasi mine transfers concentrate to the port of Iquique, Chile.

In the past year six doors measuring 34 by 28 ft. have been installed in the



A storage facility for copper concentrate at the port of Iquique, Chile, which serves the Collahuasi mine. An EPD vertical lift door provides transportation access to the building.

haul truck facility of the Candelaria Mine. The Radomiro Tomic Mine, owned by Codelco, the largest copper mining company in Chile, took delivery of six doors measuring 30 by 26 ft. in 1996. The Escondida mine, the largest copper mine in the world, operated by BHP Minerals, has 16 EPD vertical lift doors of various sizes on its facilities.

In Argentina, the Cerro Vanguardia gold mine has had 26 EPD vertical lift doors installed in its facilities in the past two years.

All of these sales to exotic sites haven't changed EPD's commitments to the companies where its roots are firmly imbedded. Northern Minnesota took its share of installations in the past two years also.

Interesting engineering design projects that EPD has completed for the mining industry are crusher cover assemblies. The covers can be closed over the crushers when in operation, and open towards the outside where trucks dump into a chute for the coarse crusher. The outside door is a 44 ft. wide by 20 ft. high vertical lift door with rubber strips installed to hold down the dust. Inside there are two sliding doors sized at 24 by 30 ft. that are installed at an angle. A similar installation to this has been set up at Minntac.

Also in Minnesota, vertical lift doors as large as 32 by 25 ft. and 38 by 34 ft. have been installed on haul truck and maintenance facilities. Wash bay doors that EPD has installed are 22 by 24 ft. vertical lift doors. The five vertical lift doors on the USX Minntac new maintenance facility (MES) in Mountain Iron measure 38 by 34 ft.. EPD has supplied doors to

every mining company in Minnesota.

"The challenge has been to keep designing doors that work up to our customers' and our standards as the openings continue to get larger and larger because of the increase in the size of equipment," explains Steve Bonacci, EPD sales representative manager. "The mining doors have to be some of the strongest we build, because of the potential for abuse just from the work done around the doors. The doors are constructed of heavy 14 gauge sheeting over structural steel, and in most cases they will still operate after being hit by a vehicle. Even with the abuse these doors can take, the life span of the vertical lift is longer than any other door type," he added. EPD doors are all custom designed and manufactured for specific applications. Climate, wind conditions, potential for icing, types of vehicles using the door, the need for automation, and other factors are taken into consideration when the doors are designed.

Mr. Jacobson adds, "We design and build doors for all types of mining facilities, surface or underground. And we not only supply the mines, but we have doors on the steel mills also." In the past two years a 21 by 23 ft. vertical lift door was installed on a steel mill at Indiana Harbor, and a 10 by 10 ft. vertical lift door went up at a steel mill in Gary, IN.

Other mining operations in the US include Phelps Dodge Chino copper mine in Santa Rita, NM that installed four vertical lift doors, sized 32 by 28 ft. Climax Molybdenum in Colorado worked with EPD on three doors sized 14 by 16 ft. ▲