

### LONGWALL MINING SERVICES

Don't let the name fool you – Longwall Mining Services (LMS), based in Pennsylvania, US, has become known for more than its work with the specialty coal operations of the globe. One of the other specialties it has taken on over the past few years is ventilation – specifically semi-rigid tubing for even the highest air-level demands.

The company has worked with Engineered Performance Ventilation Systems (EPVS) to grow the interest in HardLine ventilation tubing along with the latter company's sister product FlexLine, and to change

*LMS' Cerklefskie inspects some of the company's flexible ventilation tubing ready for placement*



the idea many mines have that ventilation tubing needs to be stiff and unyielding.

No two mines are the same, and many have unique characteristics that traditional vent tubing struggles to work around. Not so with these products, which can offer greater capabilities for airflow gains.

"The coal market has proved to be the most challenging task, as the tubing sees high negative pressure during startup and operation," LMS vice president of sales and marketing Bryon Cerklefskie says.

"With a majority of operations using tubing on development sections, the tubing is constantly moved. As you might suspect, this isn't a gentle process, and each operation operates a little different."

Cerklefskie has worked with counterpart Michael Shulte, who serves as EPVS' USA sales manager, in somewhat of a 'tag team' approach to bring mine projects the best result.

Beginning with a thorough audit of a site's current ventilation system that includes an underground tour and discussions with key personnel, the pair becomes educated to the specific challenges of an operation as well as those who will be tasked with handling the new system.

Often, he says, top issues include inadequate air volume, excessive noise generation and inherent flaws of fibreglass tubes (failing and breaking).

"Anyone who has dealt with the irritation of getting material embedded into their skin, or have cut themselves on sharp edges, is glad to entertain an alternative," Cerklefskie points out.

This makes this area of mining, which already causes pressure for staff, a little easier to handle when the section's tubing doesn't make the job more unsafe and just plain uncomfortable; this is often examined in great detail by the US Mine Safety and Health Administration (MSHA).

With the problems identified, Cerklefskie says the pair come together to provide detailed ventilation models – which use the latest version of VentSim – that outlines various layouts using existing fan curves and the mine's section map.

"This is where customers can

begin to see the drastic differences between HardLine and fibreglass," he explains. "The most extreme scenario has been a mine in Alabama that was using 28in (71.2cm) and 24in (61 cm) fibreglass reinforced pipe (FRP). They are now using 20in (50.8cm) HardLine for a majority of their needs."

One trend LMS and EVPS have made note of in the growth of the product lines is requests for longer runs. LMS is several months into a testing project in Colorado to prove the operation can increase its block distances and, thus, offer cost savings for the mine.

"It will allow quicker development as well as a reduction in the number of seals and stoppings that are required. This is all being done concurrently with a reduction from 24in FRP to 20in HardLine," Cerklefskie says.

Despite the progress made, both companies note the process has not been an easy one and that the products will continue to evolve, with their staff learning from every deployment and absorbing the feedback of mines to make the tubing the best it can be from a performance and environmental perspective.

"It could be as simple as location of the Pitot hole or handles, but [the feedback] can make a huge difference," Cerklefskie says.

Standard diameters for the tubing include 16in (40.6cm), 20in and 24in for coal, but the lines can extend to a 72in (182.8cm) diameter in positive pressure environments.

"Don't let the name fool you," Cerklefskie stresses, adding LMS can also stand for Limitless Mining Solutions.

"Although our core business is in longwall mining, we provide equipment for all types of underground mines."

Among LMS' product lines are axial and centrifugal main fans, complete fan-to-face packages, Tiger Bretby, conveyor accessories, Morley motors, dust scrubbers and shield pocket fillers.