

press release

High belt speeds: a challenge for scrapers

High belt speeds represent a challenge for scrapers. Cleaning results are often less than satisfactory. But that is not always the case, as you can see at the opencast lignite mine in Jänschwalde, Germany.

These are some of the biggest mobile machines in the world. They are approximately 200 metres wide, 500 to 600 metres long, up to 80 metres high and weigh several thousand tons. We are talking about the four F 60 series conveyor bridges still operating in Germany, built by the former GDR company TAKRAF Lauchhammer. Their job is to transport and dump overburden from the mining area in the Lausitz lignite mines.

The maximum hourly load is a prodigious 34 000 cubic metres, according to Peter Hobracht. The 57-year old is responsible for heavy machinery maintenance at the Jänschwalde opencast mine near Cottbus, south of Berlin. He also has to look after the AFB F60/34, one of the conveyor bridges. Once a year, “all bridges stop running”, he says. The time is used for major maintenance and repair work. This time, primary and secondary belt scrapers also had to be renewed or replaced. Since the belts are not only hundreds of metres long and up to three metres wide but also run at very high speeds of up to ten metres per second, the demand for cleaning efficiency, ease of servicing and durability were high.

As Hobracht knows, high speeds are “extremely challenging for scrapers”.

The main No. 5 conveyor belt alone reaches a speed of nine metres per second. Cleaning efficiency is often visibly reduced at such speeds and scraper wear and tear greatly increased. “With Schulte Strathaus and their Starclean scrapers we have found another manufacturer who can supply our particular needs”, says Hobracht. Both cleaning efficiency and ease of servicing were considered “exemplary in practice”.

As Franz Hering, in charge of distribution in East Germany for Schulte Strathaus, explained, thanks to the use of individual blades the scrapers automatically adapt to the conveyed material and the belt. The automatic torsion tensioning device ensures that the segments always operate with the correct tension. Manual adjustment is unnecessary. The same principle applies to the secondary belt scrapers. Here too the individual carbide segments with polyurethane snap-on feet adapt to the belt in optimal fashion. In addition, their position ensures belt cleaning with reduced wear. Installation and maintenance are relatively simple thanks to the snap-on system. As Hering says, “the replacement of worn-out parts in a different scraper system with bolted-on elements would be considerably more complicated”.

Photo captions:

Photo 1:

Starclean primary scrapers made by German manufacturer Schulte Strathaus adjust to the amount of material being conveyed by deploying individual segments.

Photo 2:

Spindle-type tensioning device on Starclean secondary belt scraper in action on the AFB F60/34 conveyor bridge at Jänschwalde open-cast mine.

Photo 3:

Starclean secondary belt scrapers with carbide segments are also suitable for very high belt speeds.

Photo 4 or 5:

One of the biggest mobile machines in the world:
the AFB F60/34 conveyor bridge in the German opencast lignite mine Jänschwalde near Berlin.

Photos: Schulte Strathaus

Any questions?

Susanne Koller will be glad to answer your queries on + 49 2922 / 97 75 22.