



3 machine columns are operational in the former open-cast mine in clean-up duty.

Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft (LMBV)

## Deep compaction – Extreme Duty for all compressors

Deep compaction is one of the toughest applications for any compressor. Compressed air used as a tool is a proven medium in deep compaction. Deep compaction serves ground improvement by increasing the load capacity (shear strength, compressed strength) and /or reducing the sensitivity setting (stiff modules, cross contraction ratios) of one or more loose rock layers.

In the territories of the former coal mines in the Lausitz, deep compaction is also used to secure the ground surface, for example on sloped embankments of artificial mining lakes on behalf of the Lausitz and Central Germany Mining Administration Company (LMBV) is used. Here deep compaction is only carried out with the available

loose sloping surface. This may also visibly partially lower the surface. Currently, the TDE Central Germany Mining Service GmbH is running a project east of Cottbus. There, in the open-cast mine, loose waste material can be found on the shore of a future, man-made lake, which is to be geo-technically secured against slippage using deep compaction.

ing to the swivelling range of the boom, the machine operates almost completely automatically. During the vibration process the current power consumption of the vibrator, the depth and other parameters are continuously measured, logged and displayed to the machine operator. The creation of daily, weekly or monthly reports all the way

### User

Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft mbH  
www.lmbv.de

### Project

Shore line protection using deep compaction of loosely placed material at a later artificial lake in an open-cast mine east of Cottbus.

### Machines used

Three C 210 TS-12 versions support the placement of the vibration lance into the existing soil using compressed air.

The vibration sealer penetrates more than 60 metres deep in the process, supported by water and compressed air, into the loose soil and then begins its compression work from the bottom to the top. Based on a predefined grid the vibration lance works through the clean-up area. The electric shaker is suspended to the boom of a hydraulic crawler crane. A generator and a water pump are installed behind the counter weights of the crawler crane. The CompAir compressor, a skid version, is next to it. This is a Bi-turbo version that operates very economically. On the grid correspond-



With the help of water and compressed air the vibrator works its way up to a depth of 60 metres.

up to invoicing of the entire construction project is possible. The Operator monitors all processes and drives the machine to the next grid.

### **Diesel consumption at a glance – heavy-duty continuous use for 3 compressors**

At the construction site in the former mining area at Lausitz, the highest performance is demanded from all the units. Three working columns from TDE will still be in use until the end of summer 2015. The compressed air of the compressor supports the run-in of the vibration lance into the existing soil. The view of the operating time metre shows the enormous stress on the C210 TS-12 compressors. Through 3-shift operation, each machine runs up to 300 hours per month.

The CompAir TS-compressors are, on account of their bi-turbo technology, best-in-class when it comes to low fuel consumption. Among other things, this is possible through the use of a second exhaust gas turbocharger, which pre-compresses the intake air to the screw compressors. This patented concept results in a significant improvement of the compressor unit espe-



### **The CompAir Turbo Screw Compressors use a bi-turbo technology and therefore boast exemplary economy.**

cially in daily partial-load operation, i.e. with the same flow rate usage a CompAir TS-compressor uses up to 30% less diesel fuel than other comparable compressors on the market. Furthermore, each compressor is equipped with a radio-controlled start/stop circuit to ensure that the machine is only run when compressed air is needed.

Horst Komaritzan, CompAir's on-site Technical Consultant, believes: „This is a monthly fuel saving per machine in the order of 3,000 litres of diesel as against comparable

compressors from other suppliers. Even if a supplier were to give away his machine, this would be, after approximately 6,000 hours, a loss-making venture for the user, because by then the CompAir machine has already paid for itself and brings in additional revenue.“ TDE Construction Manager Holger Jehne confirms these details and suggests that when making an investment, diesel costs are decisive. Even when purchasing 3 new crawler cranes from Liebherr, the low fuel consumption has been included in the considerations.



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