

Brecon Vibrationstechnik GmbH, 50933 Cologne, Germany

# Vibration monitoring for quality assurance

Vibration is crucial to the concrete compaction process to achieve the required strength and surface quality. VibraMon is a new system for documenting this vibration process. Recording the relevant data during the compaction process enables the complete documentation of the whole process for every single precast concrete element. By filling an important gap in the process chain, monitoring the vibration process offers companies, for whom quality reproduction is a particularly difficult requirement to fulfil, the means to do so.

## Complete documentation

Documenting the production of concrete components is becoming increasingly important. Yet, until now there has not been an instrument for recording the production parameters as well as the composition of the concrete and the quality of the components during the compaction process. Since the compaction process plays a major part in production, by developing this system, Brecon was responding to demands from leading precast manufacturers on the market. They required not only that the data be documented, but also that the process be visualised, which would allow them to draw conclusions as to a long-term optimisation of the use of vibration.

## Recording all the relevant data

Therefore Brecon developed and produced VibraMon which makes recording the rele-

vant characteristics for the production process possible. Besides vibration frequency, vibration time and total current, it records both the behaviour of every single vibrator and that of the controlled groups during a production cycle. VibraMon enables the data to be recorded for any number of formworks and any number of concrete elements as required.

During each production cycle a documentation module records the data in real time, precisely to the second, and then a processor sends them to the Brecon web server for evaluation. Here special software processes the data in graph form and makes them available for analysis. Close contact with the company specialising in vibration technology means information obtained about the data can be exchanged, discussed and interpreted quickly if necessary.

## Evaluating and archiving the data is simple

Customers can evaluate their data in their protected login area, using a standard web browser. The data from all the production cycles already carried out on all the connected formworks can be accessed at any time. Once a formwork is selected, all the production processes transferred so far are displayed in chronological order. Selecting the date accesses the relevant evaluation. Naturally, the software offers the option of printing an overview of the evaluation for a particular production cycle on a single page and inserting comments and assessments.

## Detecting damage early

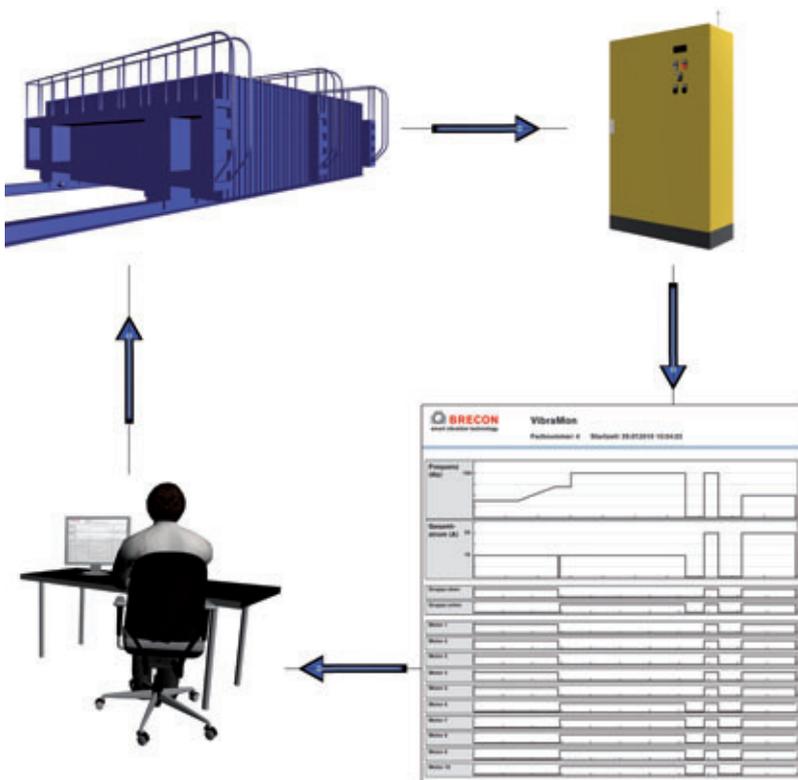
As well as documentation the new VibraMon also has the potential for using the data generated as a means of detecting possible damage to the form and/or vibrators. Certain features of the curves in the evaluation reveal risks, enabling inspections to be carried out in good time. Prompt maintenance or repair resulting from this can reduce costs and downtimes.

## Optimising concrete compaction

In addition, VibraMon enables statistical analysis of the concrete compaction process for the first time. Improvements or reductions in quality can be identified easily by changing the individual parameters. This means customers now have a basis for making verifiable, long-term improvements in vibration compaction for the first time. It is difficult to understand application errors which have an adverse effect on quality if there is no permanent record. However, VibraMon can reveal these.

## Conclusions

With VibraMon, Brecon is launching the first product for recording all the data relevant to compaction. The recorded data fill the gap which previously existed in the documentation of precast concrete ele-

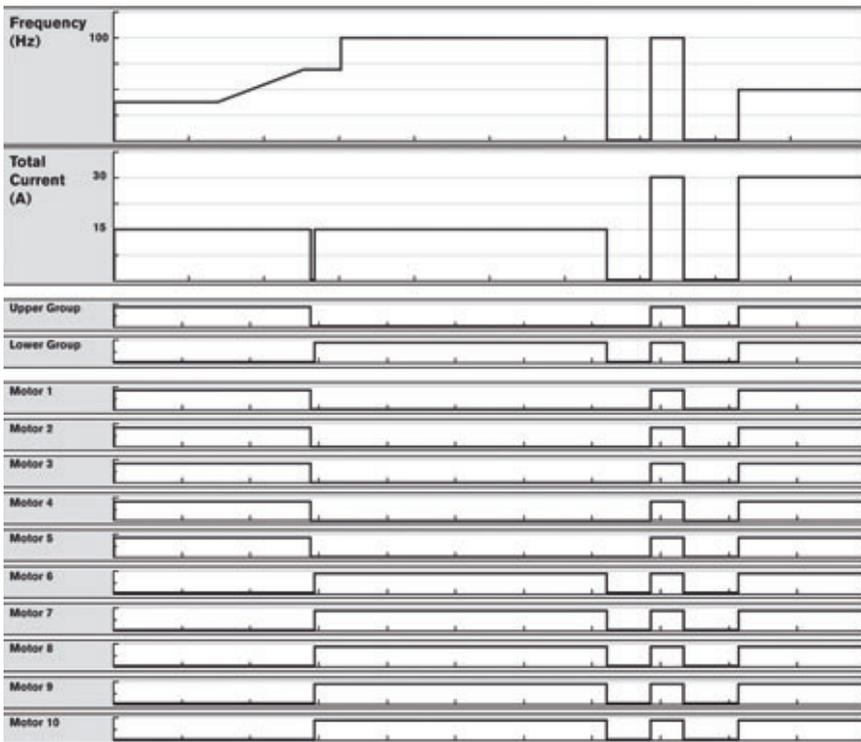


VibraMon: Quality assurance and improvement



**VibraMon - Monitoring your vibration**

Formnumber: 4 Starting Time: 29.07.2010 10:34:23



Assessment of a concrete compaction process

ments. Furthermore, the VibraMon data allow customers to identify possible damage to a formwork early on.

**FURTHER INFORMATION**



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