THE PERFECT DUO FOR ASPHALT COMPACTION.

GPS NETWORKED ASPHALT MANAGER ROLLERS WITH BCM NET ON THE A3.
RAPID RENOVATION AND WIDENING OF THE A3 BETWEEN KÖLN-MÜLHEIM AND LEVERKUSEN-ZENTRUM.

Wolff & Müller have chosen fully equipped BOMAG tandem rollers for maximum efficiency on asphalt work on the A3 maintenance and widening project.

The stretch between the junctions of ‘Leverkusen-Zentrum’ and ‘Köln-Mülheim’ is one of the most heavily used sections on the A3. The roadworks require narrowing of the carriage way which means thousands of vehicles a day must pass through the restricted lanes, putting high public and political pressure on the contractors.

HIGH QUALITY WORK UNDER ACUTE TIME PRESSURE.
Wolff & Müller needed to ensure that traffic disruption was kept to a minimum during construction and also by materials being delivered. As they also wanted to ensure that asphalt was laid as accurately and as quickly as possible, Wolff & Müller decided to upgrade their well-equipped high-tech tandem rollers: already featuring ASPHALT MANAGER, the contractor added the BOMAG Compaction Management System “BCM net” to increase quality control and allow continuous documenting of the rolling process.

FIRST TESTED, THEN PURCHASED.
This decision was based on extensive testing carried out in Magdeburg under real conditions on the A14 in 2016. Wolff & Müller set up an internal quality group consisting of Jürgen Kleindopp (Branch Manager for Logistics), Siegfried Cammerer (Head of Technical Logistics), Ingolf Klärle (Branch Manager Künzelsau), Dirk Wippermann (Branch Manager Dortmund) and the asphalt finisher Thomas Mazureck. The BCM net test project on the A14 was supervised by BOMAG, including by Roland Brecht (Regional Sales Manager BOMAG).

Following intensive analysis and consideration of cost/benefit ratios, Wolff & Müller decided to acquire and upgrade ten tandem rollers.

The rollers were upgraded in February 2017 under the direction of Jürgen Wagner, BOMAG application engineer.

Three of the five fully equipped BOMAG tandem rollers used by Wolff & Müller in the redevelopment and extension of the A3.
AROUND 4,500 TONNES ARE LAID EVERY NIGHT SHIFT.

Wolff & Müller works at night because of the heavy traffic on this section of the A3 and, from a logistical point of view, to achieve the massive placement of 4,500 tonnes per shift. The night shifts require that the whole team is highly focused, especially the roller operators. To assist the roller operators and reduce strain as much as possible, the BOMAG tandem rollers are equipped with a range of safety devices and handling features to support them in their work. ASPHALT MANAGER combined with the compaction measurement and documentation system BCM also provides the roller operators with significant help.

It should be noted that roller operators must continuously deal with a variety of variables, e.g. to maintain the correct distance to the paver in front or the correct asphalt temperature. Also, the distance to fellow roller operators has to be maintained to compact the asphalt as efficiently as possible. To manage all of these requirements the roller operators are systematically assisted by the precision interaction of ASPHALT MANAGER and BCM. All rollers on the contract are equipped with a tablet computer and a GPS receiver and linked to each other by the compaction control system. This provides the fleet of roller operators with an overview of passes made, temperatures, and compaction progress.

All drivers can keep an eye on their own results using the tablet, and optimise their rolling pattern accordingly. A simple colour display indicates immediately where further compaction is still required.

Continuous documentation of the rollers working together helps the operators to intuitively evaluate their work, and also serves to record the process.

Or to put it in a nutshell as Thomas Mazureck did when visiting the site: “Documentation is absolutely crucial in optimising our quality output. The BCM system from BOMAG systematically helps us to achieve this.”
Furthermore, the insights and knowledge Wolff & Müller have gained are a major plus in added value, which the contractor values greatly. We’re already using these present-day technologies which clients will be specifying in invitations to tender in the future. So now we already have the innovative and competitive edge which can be fully demonstrated.”

In industry circles, this high tech construction project has attracted huge attention. Other companies have visited the site to see for themselves the impressive networked BCM documentation system.

The redeveloped section of the A3 undertaken by Wolff & Müller encompasses a length of 3.2 km with carriage way widths of between 18.25 m and 19.40 m. With five BOMAG rollers, three BW 174 AP-4 AMs and two BW 154 AP-4 AMs, an asphalt bearing course AC 22 TS is placed in 2 layers, 22 cm thick. This is followed by the AC 16 BS asphalt binder course, 8 cm thick. On top of this comes a 2.5 cm thick MA 8S mastic asphalt layer. The last layer is an open-pore PA 11 asphalt applied 4.5 cm thick.

**INTELLIGENT AND FLEXIBLE: ASPHALT MANAGER.**

*ASPHALT MANAGER, which is only available from BOMAG, covers all three compaction systems: vibration, oscillation, and purely linear oscillation, which can be continuously adjusted between horizontal and vertical.*

The dynamic movement of the drum applies directed forces to the material being compacted. This dynamic process provides a faster increase in density, depth effect and greater final density than conventional systems. To ensure the dynamic forces are effective they are adjusted to the material, layer thickness, placement temperature and ambient parameters.

This is where ASPHALT MANAGER really excels as it is more flexible than any other system. The operator simply selects the layer thickness and the rest is automatically handled by the ASPHALT MANAGER. In the process, the variable amplitude allows compaction to be carried out with both very powerful or sensitive force; this is a distinct advantage, which gives the fastest compaction results especially on material which is difficult to compact.
For instance, the amplitude is decreased when asphalt starts to stiffen, which automatically prevents aggregate crushing or drum bounce. This intelligent automatic control has no other system. In addition, amplitude can be switched to oscillation on sensitive areas such as bridges or joints.

ASPHALT MANAGER also prevents bow waves or the drum sinking in because the direction of vibration is automatically adjusted to the direction of travel, and automatically switches to horizontal vibration when stationary.

**THE PERFECT DUO FOR HIGH QUALITY ROAD AND ASPHALT COMPACTION: ASPHALT MANAGER AND BCM.**

Rollers equipped with ASPHALT MANAGER continuously measure the current stiffness of the asphalt. This allows the driver to recognise when the optimal number of passes has been reached, which is why these rollers have been called ‘rolling test labs’. They provide the perfect basis for comprehensive documentation with the BCM net system.

This is due to the fact that the BCM net allows the entire compaction area to be fully visualised and documented. This is regardless of how big the site is or how many rollers are used.

BCM net immediately links up all rollers engaged in the compaction process. All roller operators constantly have a display of the real-time compaction pattern on their tablets.

The networked rollers are directly connected by WiFi and do not need a mobile communications network. This allows the real-time image to be shown on each tablet. The Starfire receiver integrated in BCM achieves its high accuracy without complex RTK technology and uses the free SF1 correction signal; this is the signal used by the five rollers working on the A3 roadworks.

In the final planning talks on the A3 site, from left to right: Roland Brecht and Jürgen Wagner from BOMAG and Thomas Mazureck, the asphalt finisher from Wolff & Müller.