**Vögele** | **Strong together for Formula 1 race track rehabilitation**

**Wirtgen Group machines produce a new surface course on the Circuit de Spa-Francorchamps**

**The challenging Spa-Francorchamps race track in Belgium was rehabilitated with the aim of enhancing its attractiveness to spectators and, above all, of improving the safety of racing drivers.**

The Circuit de Spa-Francorchamps construction project posed particular challenges to all involved, as the track was not a design fresh from the drawing board, as is usually the case, but has been in existence for over 100 years and includes ordinary roads. CEO Jarno Zaffelli, whose company Dromo Circuit Design delivered the project, emphasizes how very demanding this rehabilitation task is - due in particular to the undulating nature of the circuit. There are extreme sections featuring gradients of 20%, such as the legendary combination of the Eau Rouge and Raidillon corners. A further challenge was presented by the hairpin bend La Source (“the spring”), because spring water gets on to the road surface there. To ensure maximum driver safety on the tough Circuit de Spa-Francorchamps, extremely stringent conditions in terms of evenness and grip were applied to the asphalt surface course.

**Experience and know-how key to winning the race for quality**

Belgian company Bodarwé was contracted to complete the asphalt paving . The variations in level around the winding race track present a challenge to the paving team, as well as to racing drivers. "We have been working with contractors that use Wirtgen Group machinery for many years. We know the machines very well, and are familiar with what they deliver in terms of quality and reliability,” explains Zaffelli.

**Stringent demands deliver optimum results when paving a surface course**

The project was to pave a new surface course extending 505 meters (553 yards) from the Eau Rouge valley up to the famous sweeping Formula 1 corner at Raidillon. Another206 meter (225 yard) section was to be paved in the area of the T9Car Formula 1 corner to the north, as well as 701 meters (767 yards) of surfacing for the new T8Moto and T9Moto motorcycle race corners. The following requirements were imposed on the paving team to ensure that the sections were completed to the best possible standard: Paving had to proceed non-stop, at a rate of between 3 meters (9.8 ft.) and 4 meters (13.1 ft.) per minute. The temperature of the asphalt mix was set at 180 °C in order to maintain a sufficiently large compaction window even at the low ambient temperatures prevailing at that time. A further requirement was that the temperature of the paved surface course should be fully monitored and documented.

Benninghoven **A special plant for a special mix**

The composition of the asphalt mix plays is key to the quality of a Formula 1 track surface. The formula, code-named "Le Noir", was developed by Dromo especially for Spa-Francorchamps in accordance with the regulations of the Fédération Internationale de l'Automobile Internationale (FIA). It is a well-kept secret. The material was mixed in the asphalt mixing plant belonging to Bordarwé subsidiary Boreta S.A. The Benninghoven TBA 4000 plant is characterized by the highest quality and production standards, as well as by a wide range of options.

**Three Vögele SUPER 1800-3is equipped with Big MultiPlex Ski among other features**

Once the surface course in the relevant sections had been removed by a Wirtgen W 220i cold milling machine complete with LEVEL PRO ACTIVE milling depth regulator and 3D controller, three Vögele SUPER 1800-3i machines were deployed. The task was to pave three 4.1 m (13.5 ft.) – 4.3 m (14.1 ft.) strips without joints using the tried-and-tested hot-to-hot method.

The three pavers were each equipped with an AB 500 TV extending screed and a Big MultiPlex Ski to ensure maximum longitudinal evenness. Three multi-cell sonic sensors were fitted to the variable carriers of the Big MultiPlex Ski, each scanning the binder course and adjacent surface course to ensure precision paving.

**Full control with** WITOS Paving Docu **and Roadscan**

The three pavers were equipped with WITOS Paving Docu, incorporating the RoadScan temperature measurement system, to monitor and document the paving temperature. The system not only recorded the asphalt temperature, but also the other paving parameters: geometry, area, distance, and volume of asphalt paved. Bodarwé’s construction manager Sébastien Dandrifosse was very pleased: “WITOS Paving Docu is ideal for monitoring temperature directly on-site; where we need the information, so that we can counteract any deviation immediately.”

**Teamwork for the supreme class**

Machines and people worked together at the highest levels on the legendary race track in the Belgian Ardennes. The demands were great, but the operators were able to master all the challenges with their machinery and the technology. The race track design team were also impressed by the support provided by the Wirtgen Group, as summed up by Jarno Zaffelli: "The backup from their technical team was very good, and extremely important. It is very reassuring to have experts like that by your side when running a paving operation that can’t easily be redone.”

**Photos:**

  
**V\_1355\_264\_PR.jpg**

The legendary Raidillon uphill sweeping Formula 1 corner, with its 20% gradient, is one of the great challenges for the paving operation. The new spectator stand at the top of the hill.

  
**V\_1355\_053\_PR.jpg**

Optimum grade and slope control: All three Vögele pavers are equipped with a Big MultiPlex Ski, ensuring maximum evenness.

  
**V\_1355\_099\_PR.jpg**

WITOS Paving Docu always gives the paving team full control of the logistics and the paving temperature.

  
**V\_1355\_195\_PR.jpg**

The highest quality and production standards for asphalt mixing: The Benninghoven TBA 4000 plant was the first to be produced at the new Benninghoven facility in Wittlich.

  
**V\_1355\_002\_PR.jpg**  
Aerial shot of the new T8Moto and T9Moto motorcycle race corners on the historic Spa-Francorchamps circuit: Three SUPER 1800-3i pavers paved the surface course without joints using the hot-to-hot process.

*Note: These photographs are only intended as a preview. For reproduction in publications, please use the 300 dpi resolution photos available to download from the* Wirtgen Group *website.*

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