Vögele │ Spectacular race track construction in the mountains of Japan

Four Vögele machines create a demanding circuit

Tight corners and uphill gradients of up to 19%: a private racing circuit not far from Tokyo has been built against a breathtaking backdrop. Three Vögele pavers, a SUPER 1800-3i, a SUPER 1803-3i and a SUPER 1900-2, paved just under 100,000 m² in four layers. A MT 3000-3i Offset material feeder ensured additional efficiency and quality.

Unique race track

It’s a spectacular project commissioned by CORNS & Company Limited about 70 km from Tokyo and close to the town of Minamiboso, namely an extensive leisure facility for sports car enthusiasts which includes Japan’s first race track for customers with their own vehicles. The 3.5 km circuit features steep downhill gradients of up to 16% and uphill gradients of as much as 19%. The longest straights extend for 800 m and deliver truly high-speed racing. In between, chicanes and tight corners (radius 14 m) demand real driving skill.

Vögele paving train in operation

Maeda Road Construction Co., Ltd used four Vögele machines to manage the challenging new-build. Two SUPER 1800-3i and SUPER 1803-3i Universal Class pavers and a 1900-2 Highway Class paver completed the paving, whilst an MT 3000-3i Offset material feeder transferred asphalt from the truck to the material hoppers of the pavers.

Four layers extending to 100,000 m²

The three pavers paved four layers totalling just under 100,000 m² – an 18-cm non-bonded base course, a 12-cm bonded base course, a 6-cm binder course and a 4-cm surface course. In addition to the racing circuit measuring 36,000 m², paving work involved another 60,000 m² of run-off area, pit lane and service roads. A SUPER 1900-2 paver, which the general contractor has been using successfully for many years, was responsible for producing these secondary areas and the base courses.

A wheeled and a tracked paver - an effective team

The pavers worked mainly “hot to hot”: two machines paved together at a slight offset to produce an asphalt surface without joints, measuring 8 to 12 m across the full width of the carriageway. This ensures that the carriageway has both high resistance to deformation and a long service life. The paving team also exploited the benefits of the different undercarriage concepts: the SUPER 1800-3i tracked paver is characterised by a high degree of traction and maintains consistent straight-line travel, whilst the SUPER 1803-3i wheeled paver is particularly good at producing corners with a tight radius, as its undercarriage enables it to steer particularly sensitively and smoothly. As a consequence, the paving team used the SUPER 1803-3i primarily on inside corners.

Material feeder guarantees quality

Besides the pavers, a key factor in the high paving quality of the race track was an additional Vögele machine: the MT 3000-3i Offset material feeder. The PowerFeeder decouples the transfer of material from the truck to the paver to ensure a constant, efficient paving process. Conical augers in the receiving hopper of the material feeder convey the material crosswise to render it thermally homogeneous. The material feeder has effective heating of both conveyor and transfer points, actively counteracting cooling and segregation of the material, which is why Vögele material feeders are frequently used on job sites, such as this one in Minamiboso, which demand high quality and are also on a tight schedule.

Pivoting conveyor increases efficiency

Another characteristic of the material feeder was important in the mountains of Japan: the “Offset” version of the machine has a height-adjustable conveyor which can pivot 55° to the left and right. The discharge point into the extra material hopper of SUPER pavers can be as high as 3.6 m, optionally up to 3.9 m. It is controlled ergonomically by a joystick. This is part of the ErgoPlus 3 operating concept aimed specifically at the requirements of material feeder operators and designed to be intuitive. Despite the extreme grade and slope, the pivoting conveyor meant that on the race track job site, the MT 3000-3i Offset could continuously feed two pavers with material alternately without the need to manœuvre constantly. This dramatically increases efficiency and paving quality.

**Photos:**

  
JV\_Job\_Report\_Japan\_Race\_Track\_001.jpg  
Unique race track near Tokyo: three pavers and a material feeder from Vögele completed the four-layer paving operation in this undulating landscape.

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JV\_Job\_Report\_Japan\_Race\_Track\_002.jpg

Paving without joints: the Vögele pavers worked “hot to hot” to deliver a high-quality asphalt surface across the full width of the carriageway.

  
JV\_Job\_Report\_Japan\_Race\_Track\_003.jpg

Extreme uphill gradient: there are uphill gradients as steep as 19% on the Magarigawa Club’s race track - and downhill gradients as much as 16%.

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