Wirtgen | Rock Crusher WRC 240i Speeds up Recycling Project for New Trailer Port in Dresden

Extremely Cost-Efficient In-Situ Processing of Coarse Material from a Demolition Project

At the Dresden-Friedrichstadt port facilities, the state-of-the-art TrailerPort being built for rail-road transshipment requires a particularly stable, high-quality cement-treated base layer. This is why a Wirtgen Rock Crusher WRC 240i was chosen for the job. As the port has been rebuilt many times in its 130-year history, the ground on the site was interspersed with brick, stone, and the remains of foundations with edge lengths of up to 250 mm from the demolition of the old buildings and infrastructure.

In-Situ Processing of the Ground

The contracted construction company opted for in-situ processing of the ground. A WRC 240i Rock Crusher was deployed to crush and homogenize the ground material on the 12,000 m² site. This meant that the existing material could be re-used in an extremely resource-friendly way and had the added benefit of eliminating the need for transporting materials to and from the site – saving more than 1,000 truckloads in all.

Heavy-Duty Crushing and Mixing Rotor

The Rock Crusher processed the ground material with its crushing and mixing rotor to a depth of 50 cm. At an advance rate of around 8 m/min, it achieved an average productivity of approximately 450 t per hour. The HT18 crushing tools shattered the material on the crushing bars, and the screens retained this material in the crushing and mixing chamber until it met the material requirements (grain size: 0/32) and could pass through the 45 mm screen mesh. The homogeneously mixed material that remained behind the WRC was prepared for subsequent stabilization with NovoCrete ST98 cement.

Base Layer Production after the Crushing and Mixing Process

A crawler dozer spread the material evenly in the desired subgrade. 80 kg/m² of cement mix was spread by a Streumaster SW 16 MC in two passes and subsequently mixed in homogeneously by a Soil Stabilizer WR 250i. The Wirtgen WR was followed by a soil compactor for pre-compaction, a Grader for producing the fine subgrade, and a smooth drum roller for final compaction.

Significant Reduction of Transport Costs

The chosen approach had the advantage of saving transport costs, time, and resources. The recycling of the existing surface pavement and ground material in-place made it possible to realize a sustainable and resource-friendly construction method. The base layer with a thickness of 48 cm was completed within two weeks. Soil replacement would have taken 8 to 14 weeks. However, the use of the Wirtgen WRC 240i made it possible to significantly reduce construction time and eliminated the costs of transporting material to and from the site.

Project Details:

Total area: 12,000 m²  
Working width WRC: 2.32 m ⁢  
Working depth WRC: 50 cm  
Clear mesh size on the WRC: 45 mm  
Advance rate WRC: 8 m/min

Productivity of the WRC: 450 t/h  
Coarse material in the ground: > 45-250 mm  
New cement-treated base layer (CTB): 48 cm  
Asphalt overlay (asphalt surface layer): 6.5 cm

Machines Deployed

Recycler/soil stabilizer: Wirtgen WRC 240i/Wirtgen WR 250i  
Binding agent spreader: Streumaster SW 16 MC

Savings  
Saved transport movements: 1,000 truckloads  
Saved construction time compared to soil replacement: 6 to 12 weeks

**Photos:**

  
W\_pic\_js\_WRC240i\_Dresden\_2024\_0001\_HI

A new Wirtgen WRC 240i Rock Crusher was used to crush and homogenize the ground material on the 12,000 m² inland port site.

  
W\_pic\_js\_WRC240i\_Dresden\_2024\_0007\_HI

A state-of-the art TrailerPort for rail-road transshipment is currently under construction at the Dresden-Friedrichsstadt port facilities.

  
W\_pic\_js\_WRC240i\_Dresden\_2024\_0068\_HI  
The Rock Crusher WRC 240i processed the ground material to a depth of 50 cm with its heavy-duty crushing and mixing rotor.

  
W\_pic\_js\_WRC240i\_Dresden\_2024\_0080\_HI  
The result delivered by the WRC 240i: the homogeneous material mixed across the entire working width and to the full working depth provides a stable foundation for subsequent building construction.

Note: the photographs shown here are only previews. If you wish to publish them in other media, please download the higher resolution (300 dpi) versions from the link provided here.

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