Kleemann │ Processing of highly-abrasive slag in Barcelona

Recycling of waste material from steelworks with an impact crusher and a scalper

Kleemann offers mobile crushing and screening plants with high material throughput rates and outstanding versatility for the recycling of concrete and other building materials. The processing of extremely abrasive slag is a particularly challenging task for crushers and screens.

The MR 110 EVO2 and MSS 802 EVO process the slag to produce aggregates for asphalt construction.

ADEC Global started out by recycling construction waste. Then the opportunity arose to recycle material from steelworks. Today, the Spanish company processes an annual volume of about 500,000 tons of material, 50 per cent of which is black slag contaminated with metallic steel. ‘We convert waste materials that used to end up in landfills into valuable products’, explains Maria Vazquez, Operations Manager at ADEC Global. The mainstays of the processing operation are a MOBIREX MR 110 EVO2 impact crusher and a MOBISCREEN MSS 802 EVO scalper – which together process the slag to produce aggregates for asphalt construction. These ensure high quality in road construction and reduce the risk of skidding in wet conditions. In addition to this, the ferrous metal content is separated out and supplied to foundries for recycling.

Extremely challenging material

The ideal process for handling the challenging material was developed by Kleemann in close collaboration with EMSA, the local Wirtgen Group dealer and contact partner for Kleemann plants in Spain. In the course of this, it was important to take a closer look at the area of wearing parts. In view of the extreme abrasiveness of the feed material, it was essential that the blow bars would offer a particularly long service life.

Oscar Hernandez, responsible for equipment and logistics at the company, was particularly impressed by the robust construction of the plants and their components: ‘There are very few machines out there that can cope with this extremely abrasive material. The slag contains traces of ferrous metal that are separated out in the crushing process. The Kleemann impact crusher stands firm here, too. I don’t know of any other plant that can handle material like this!’

The impact crusher – the mainstay of the machine pool

The entire process in Barcelona depends on the impact crusher. The plant has been in operation since 2018 and has already logged up 10,000 working hours. It processes feed material with sizes of up to 200 mm and produces 200 tons per hour under ideal conditions. A magnetic separator rounds off the process by separating the ferrous metal content from the slag. Sophisticated solutions such as the overload system, which reacts immediately to material bridging and protects the crusher, play an essential role in ensuring a smooth and efficient crushing process from start to finish.

Sustainable and cost-effective

Despite its impressive performance, the crusher has a remarkably low fuel consumption of only 19 litres per hour.

The MOBISCREEN MSS 802 EVO screening plant is used primarily for cleaning up the material. ‘Here, the dual-power drive gives us the option of operating the plant with electricity in the future, which means zero local CO₂ emissions’, says CEO Fernando Hernandez.

Hand-in-hand development of the process

The fact that this challenging material can now be processed efficiently and cost-effectively is above all due to the close collaboration between the team from ADEC Global and the applications specialists from Kleemann. This was instrumental in ensuring that a viable, cost-effective solution for achieving high final product quality with this challenging material could be found. Maria Vazquez sums it up: ‘Of course, what counts at the end of the day is a good final product. Cubicity is key for asphalt production. What we’re showing here is that recycling can go hand in hand with high quality standards and outstanding cost-effectiveness.’

Facts and figures

MOBIREX MR 110 EVO2 impact crusher

High performance, low fuel consumption, high resistance to abrasiveness

Output: 200 t/h

Fuel consumption: 19 l/h

Feed material: 0 – 200 mm

Final product: 0 – 50 mm

Downstream stationary screening plant: 0 – 5 mm, 5 – 12 mm, 12 – 20 mm

MOBISCREEN MSS 802 EVO scalper

Used for material cleaning.

Output: 300 t/h

Feed material: 400 – 500 mm

Final product: 0 – 35 mm /35 – 70 mm

**Photos:**

  
**K\_pic\_MR110EVO2\_Spain\_0002**

The powerful MOBIREX MR 110 EVO2 impact crusher from Kleemann is the mainstay of the machine pool.

  
K\_pic\_jr\_MR110EVO2\_MSS802EVO\_ADEC\_Barcelona\_0001

The MOBIREX MR 110 EVO2 easily copes with the extremely abrasive slag.

  
K\_pic\_jr\_MR110EVO2\_MSS802EVO\_ADEC\_Barcelona\_0005

A satisfied team: (l to r) Pablo Fernandez (Sales Consultant EMSA), Oscar Hernandez (Equipment Manager ADEC), Fernando Hernandez (CEO ADEC), Maria Vazquez (Operations Manager ADEC), Markus Krill (Area Sales Manager Kleemann)

Please 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.

**Video:**



[Click here to watch the video.](https://youtu.be/W0sbPupRAaE)

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