

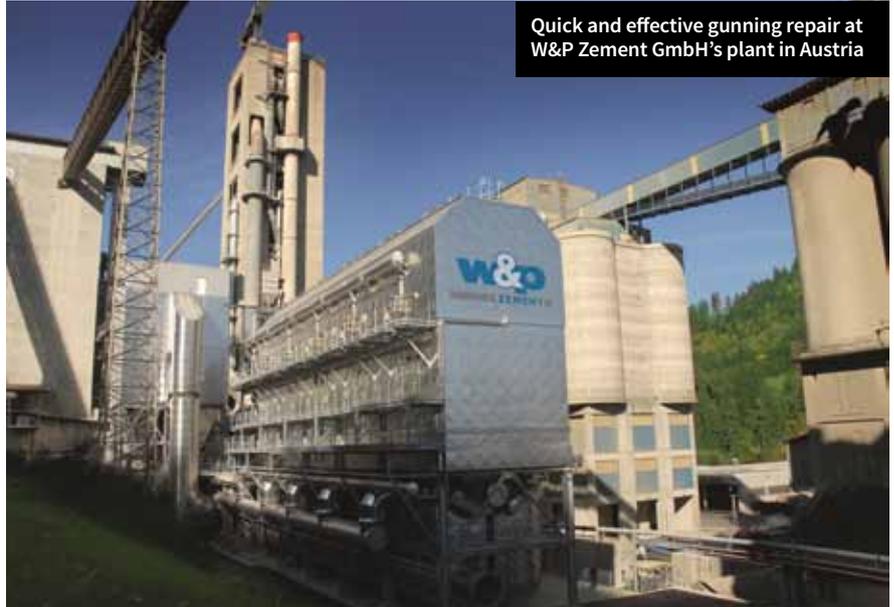
Gunning for a quick repair

Austria-based W&P Zement GmbH has undertaken a quick, easy and effective gunning repair of the lining in some of its critical, high temperature areas at its plant in Austria. Using a range of dry-gunning mixes from HASLE Refractories, in total, more than 12t of gunning mix was installed.

■ by **HASLE Refractories, Denmark**

During its annual shutdown in January 2020, W&P Zement GmbH discovered that there was significant damage to its kiln hood door and kiln hood walls. The Austrian cement plant has a capacity of 2200tpd and operates on approximately 90 per cent alternative fuels. This caused significant build-up and alkali attack on the previous refractory lining, which needed to be repaired annually.

Needing a long-life, sustainable alternative, W&P Zement initially considered the installation of HASLE Refractories' precast Modular Lining to extend the lining lifetime. The Modular Lining has very low open porosity (10 per cent), a smooth impact surface and is made from raw materials that make it highly resistant to alkali attack and build-up. This makes it ideal for cement plants using alternative fuels, without risking unscheduled shutdowns necessary to remove build-up.



Quick and effective gunning repair at W&P Zement GmbH's plant in Austria

However, during any shutdown, valuable production time is wasted. In this instance, there was no time to install a precast lining. Therefore, W&P Zement opted for a quick repair method and restored the lining with HASLE D59A and HASLE GUN59A gunning products. Gunning is a quick and inexpensive way to repair the lining in any high temperature process and requires minimum preparation time and no formwork.

"This time, we were in need of a quick and easy repair," comments Thomas Neuwirth, production manager at W&P Zement. "But since our plant runs on about 90 per cent alternative fuels, we also had to find a gunning product that is highly resistant to alkali attack and build-up. We did not want to risk unnecessary future shutdowns due to refractory problems."

The gunning option

HASLE has offered low cement gunning products since 2013 and aims to provide gunning mixes with the highest strength, best alkali resistance and lowest rebound possible. With a skilled operator, rebound rates as low as 10 per cent – or less – are fully achievable.

HASLE GUN39A and GUN59A are dry-gunning mixes based on the well-known low-cement castables D39A and D59A. Both are favoured around the world for their high strength, exceptional alkali- and abrasion resistance, good workability and uniform quality. GUN 39A dry-gunning mix is based on the same raw materials as HASLE Low Cement Castable D39A and D39A-EF, and GUN 59A dry-gunning mix is based on the same raw materials as HASLE Low Cement Castable D59A and D59A-EF. All castables combine the best refractory properties from several natural high-alumina raw materials, including andalusite and mullitised bauxitic clay, and exhibit similar performance.

While a gunning installation cannot be expected to have the same durability



GUN59A on kiln hood wall

GUN59A on kiln hood wall



as a precast or in-situ cast solution, it will be good enough for many applications – especially when time is of the essence. Gunning does require a special machine and, most importantly, a skilled operator, for a good result.

When using a gunning machine, the monolithic product is loaded into a hopper and from there compressed air is used to transport it in a dry condition to the nozzle. At the nozzle, water is added before the gunning mix is sprayed onto the installation surface. The machine operator controls the water addition, the distance from the nozzle to the installation surface, as well as the pattern and rate at which the material is sprayed. These controls ensure both speed and quality of the application. If these measures are not executed correctly, the installation will be affected.

With no formwork required, gunning is also an obvious choice for roof

installations. There is no need to cut the outer steel shell or erect complicated formwork, meaning that costly preparations and unwanted intrusive hot works in mechanical steel parts can be avoided.

W&P Zement installation

As this was the first time W&P Zement used HASLE gunning materials, a supervisor from HASLE took part in the installation, which was carried out by installation company, LSH Feuerfest GmbH. Using HASLE's D59A and GUND59A, LSH Feuerfest's installation team was able to repair the damaged areas of the cement plant's kiln hood door and hood walls in a short time.

"The installation was uncomplicated and didn't take long at all", comments Wolfgang Hofstetter, managing director of LSH Feuerfest GmbH.

"The castables were easy to work with and set very fast. You can see what you have done after a short time and we experienced a very low rebound rate, actually below 10 per cent," he adds.

Ready to resume operations

With the kiln hood door and kiln hood walls efficiently repaired with HASLE's castables, W&P Zement is once again ready to take up production.



D59A on kiln hood entrance

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Wolfgang Hofstetter,
managing director of
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HASLE always has several types of gunning mix in stock, ready to ship for emergency repairs. All HASLE castables are manufactured at its highly-automated plant in Denmark, where processes are engineered to secure consistency and high quality. The mixes are manufactured from fresh raw materials with excellent chemical properties and based on the company's unique recipes. HASLE's internal quality assurance procedure specifies the highest standards for particle size distribution and flowability. ■



D59A on kiln hood door