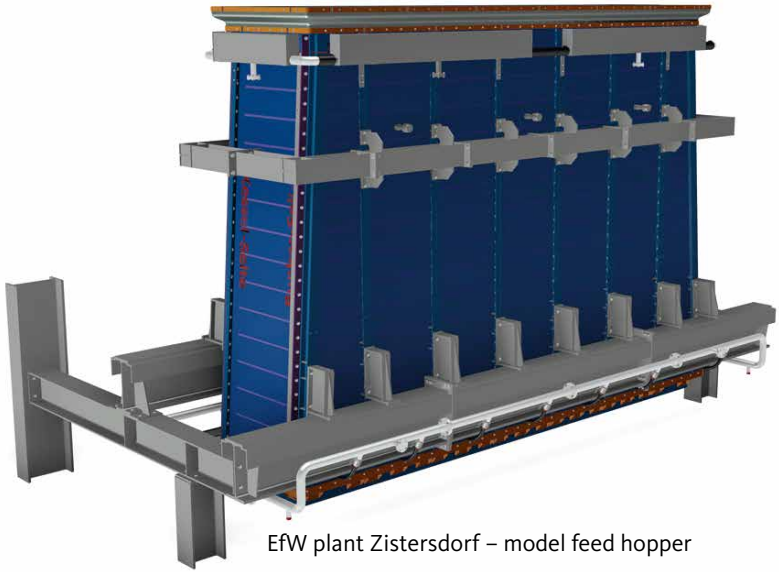
Hitachi Zosen
INOVA

HZI Feed Hopper

Patented HZI Technology

HZI Feed Hopper – Patented Design for Extended Operating Periods and Low Maintenance Costs

Hitachi Zosen Inova's (HZI) modular feed hopper concept is designed with practical use firmly in mind, harnessing HZI's wealth of experience in addressing wear and tear, maintenance costs, and troubleshooting. Its development focused on extending the lifetime with reliable and uniform water cooling, as well as shortening the erection period and reducing maintenance costs.



EfW plant Zistersdorf – model feed hopper

Structure

The HZI feed hopper comprises individual water-cooled modules that are bolted together at the joints. Each module is mounted on the support frame, which is outside the heat-affected zone and thus not subject to any wear. The HZI feed hopper is incorporated in the existing steel structure, adapted in line with the specific circumstances, with a buckstay ensuring the necessary stability. The modules can also be equipped with temperature sensors if required.

Materials

The interior surfaces are made of wear-resistant materials to withstand heavy use. Each module can be customized to precisely meet the client's requirements, ensuring optimal value for money. All welding is carried out from the reverse side to prevent wear on the inside of the hopper as a result of friction. Given that HZI does not use any additional protection plates, all of the modules have a continuous, smooth and directly cooled interior surface. This rules out waste jams.

EfW plant Zorbau L2 – various materials were used for the inner surfaces of the bunker (cladding with alloy 12+4 and S235JR 16mm).

Water Cooling

Water is fed into the modules from below via a circular pipeline. To keep consumption to a minimum, the water is collected at the outlets and recycled. Separate inlets ensure uniform cooling. The hopper thus boasts a very good lifetime, even in the event of a temporary increase in temperature, for example as a result of a backfire.

If damaged, each module can be shut off individually using a ball valve. This ensures that the remainder of the hopper is water-cooled, and the repair can take place during the next planned standstill.

Erection

The HZI feed hopper can be easily erected during the annual overhaul of a plant, using either the waste crane or a mobile auxiliary crane. To prevent potential weak points, welded joints are avoided in the erection where unnecessary, and are limited to the sealing to the combustion chamber and the water piping.

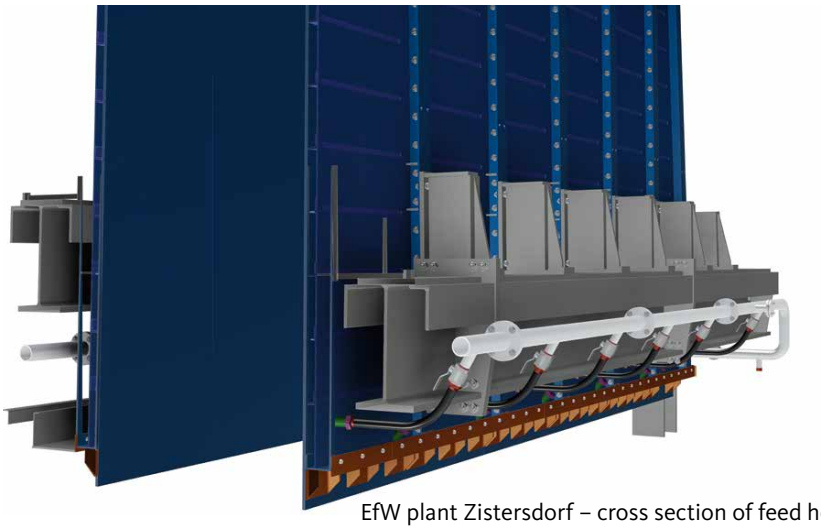
Maintenance

The middle sections of the hopper are standard modules that are identical in construction. Experience shows that these are subject to varying levels of wear, and they can therefore be equipped with different materials. Thanks to the modular construction, in the event of damage it is no longer necessary to exchange the entire hopper. The individual modules can instead be repaired or replaced independently of each other. Furthermore, a standard middle module is stored in reserve, allowing for installation at very short notice should there be an unplanned standstill, thus ensuring even greater flexibility.

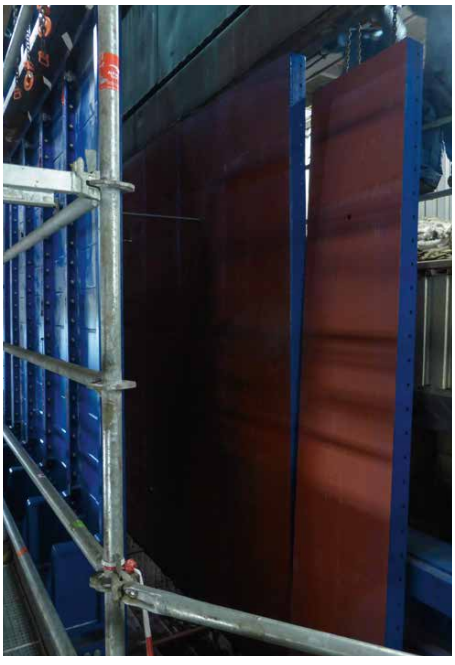
References

Zorbau (Germany) Line 2: 2013
Zorbau (Germany) Line 1: 2014
Zistersdorf (Austria) Line 1: 2015
Umea (Sweden) Line 1: 2016

EfW plant Zistersdorf – water fed in from below



EfW plant Zistersdorf – cross section of feed hopper



EfW plant Zistersdorf (l) – erection of the modules; EfW plant Zorbau L2 (r) – inspection of the inner surfaces (cladding with alloy and S235JR) after 2 years' running time

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