

BSE Spray Cooling Technology

Safe, simple, reliable
Cooling of EAF Components



Principles.

- Support structure with cooling elements consisting of water header and spray-bars providing a pressure-less water flow.
- Heat transfer through steel plate cooled by a thin water layer.
- Water amount adjustable according to individual heat load areas.
- Suitable for the furnace roof and the elbow.
- Tested and proven at BSW, the steel plant of the Badische group, and at many customers' plants worldwide.



Spray bars with nozzles providing a pressure-less, balanced and efficient water cooling

Concept.

- Collector ring as an integral part of support structure used for water supply and return for cooling elements; water-cooled centre piece and fume take-off adapter.
- Area around electrode openings designed for refractory-lined, easily exchangeable centre piece.
- Usage of clog resistant spray nozzles and access hatches.
- Designed for lower weight, thus increasing the lifetime of the gantry bearing.



Top view of roof with holes for the electrode centre piece and the furnace elbow

Advantages.

- Maximum safety in operation, based on pressure-less function, thus eliminating the risk of explosions.
- Reliable operation and long lifetime due to proven design with well-balanced cooling performance.
- Lower consumption of cooling water compared to tubular design.
- Reduction of production delays – in many cases production can continue until next shutdown.
- Quick repair of minor damages and good access to all areas.
- Easy cleaning of roof surface for an optimised maintenance.



Bottom view of the roof equipped with centre piece for the electrodes

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Since 1983, the Badische Stahl-Engineering GmbH (BSE) has been acting as a service provider for increasing the efficiency and productivity in the electric steel industry world-wide.

BSE is a sister company of the Badische Stahlwerke GmbH (BSW), one of the world's most efficient Electric Arc Furnace steel plants.

This unique partnership between BSW and BSE ensures that all products and services provided by BSE are not just based on mere theory, but on more than 4 decades of own proven operational experience.

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