

ALKEGEN APPLICATION STORY

Product Solution: Fiberfrax Board 120ZK and Isofrax Board 120LD

Industry: Steel

Application: Anti-splash boards for ladle to tundish molten metal transfer

Location: Germany

Anti-Splash Board

BUSINESS CHALLENGE

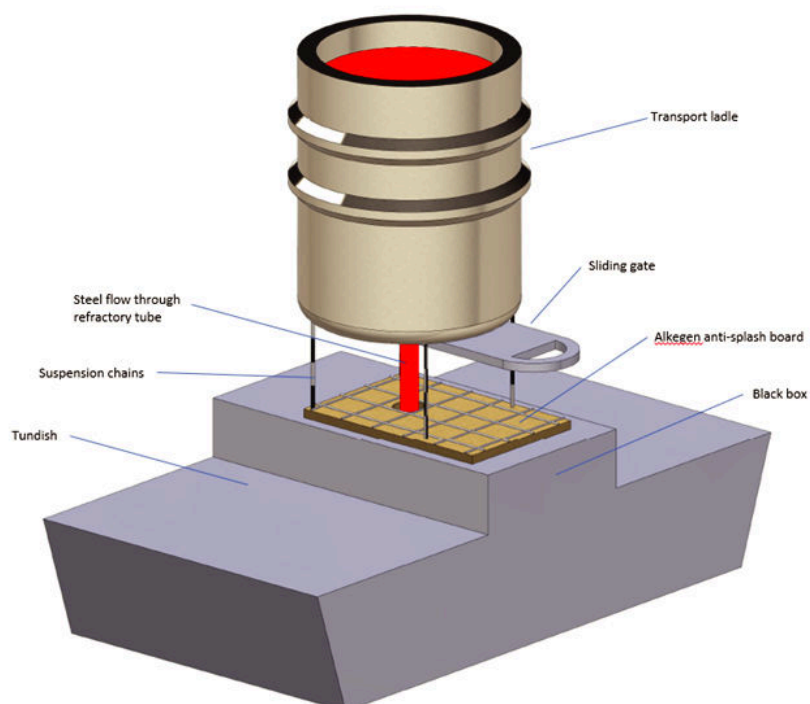
Some ladle to tundish steel transfer processes are impaired by molten metal splash damage to the sliding gate mechanism and loss of processing gases such as argon, which are used to prevent undesired reactions in the “black box” (i.e. Argon box) section of the tundish.

Damage to the sliding gate can lead to operational issues due to the fact that the steel is poured at approximately 1550 °C and any splashback can cause damage to the closing mechanism. In addition, excessive losses of process gas from the tundish can lead to oxidation and the formation of inclusions in the steel.

SOLUTION

Alkegen developed a unique steel reinforced Fiberfrax 120ZK board, which is optimised to provide the required flexibility, extended life, durability, and thermal shock resistance to cope with this arduous process.

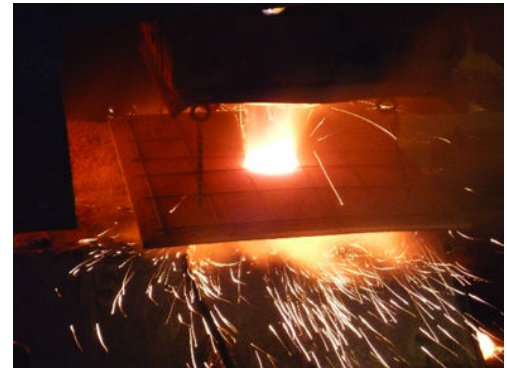
The board is laid down on the black box section of the tundish to form a seal, preventing the escape of critical process gases and splashback from the black box/tundish.



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Anti-Splash Board

Alkegen developed two product solutions for this challenge and customized them to meet specific customer needs. Fiberfrax Board 120ZK was found to be the best solution in some plants. For customers that required a non-classified product, Isofrax Board 120LD was offered and has also been used successfully in the same application.



BENEFITS

The anti-splash boards provide the following benefits to the ladle to tundish molten metal transfer process as follows:

- Prevents damage to the sliding gate mechanism caused by molten steel splash.
- The boards provide a seal around the refractory tube and over the open area of the black box, reducing the influx of cold air into the tundish and preventing escape of process gases. This reduces the level of oxidation and inclusions.
- Preferred solution, providing optimal performance vs cost.
- Low thermal shock.

Alkegen anti-splash boards are available in alumina-zirconia (AZS) and low-biopersistent (LBP) product variants.

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