

**Industry:**  
Metals

**Plant:**  
Fume

**Lining System:**  
K-ALOX

## K-ALOX LINED FUME PLANT REACTOR

### Key Benefits:

- ✓ Reduce material build-up
- ✓ Improve process efficiency
- ✓ Eliminate cost to repair

**Problem:** Kingfisher initially entered the realm of reactor lining in 2004 by introducing K-ALOX lined Reactor bottoms as a replacement for the conventional hard metal linings typically provided from other suppliers. The superior performance of the K-ALOX lined reactor prompted a shift towards using the K-ALOX lining system for all future replacements on site. In 2016, reports of lining failures surfaced, prompting a review and reassessment of the lining specification. Kingfisher sought to enhance the lining specification by implementing a high-strength epoxy adhesive system and the inclusion of mechanical fixing to secure the K-ALOX tiles.

**Solution:** The K-ALOX 92% High Alumina tailored lining system was designed to use 13mm thick weld-on tiles, with an emphasis on enhancing durability. The design also incorporated the use of 6mm thick K-ALOX 92% High alumina ceramic cylinders for lining the fresh & enriched alumina feed pipes. Additionally, the design accounted for variations in reactor height and offset across the six reactors with a bespoke K-ALOX lined make up piece. Kingfisher has proposed and installed a superior specification for the lining system, offering mechanical fixings for each tile and using K-FIX EP HT for bonding and bedding the tiles to the substrate.

**Benefits:** Kingfisher's journey with reactor lining underscores a commitment to continuous improvement and collaboration. By addressing challenges, refining specifications, and maintaining open communication with clients, Kingfisher aims to deliver durable and reliable solutions for reactor lining needs.



## Protecting Industry Worldwide