

## HYBRID METAL/CERAMIC FERRULES

Hybrid Ceramic/Metal ferrules are designed for use in moderate temperature, mildly abrasive or corrosive environments, or in the secondary reformer waste heat boiler. Typically, metallic ferrules (produced in a range of high nickel alloys) are used in conjunction with a cast refractory material that is placed up against the tubesheet, in between the ferrules, and cured in place.

This placement of refractory is cumbersome and time consuming and its performance relies on the skill and equipment of the field installer.

Imagine, if you will, a series of precast shapes that are designed to fit exactly the ferrule entrance, and the pitch between the ferrules themselves, so that when the ferrules are installed, the refractory is already complete. No field curing, no guesswork, and no time wasted.

Further, as precast shapes, there is no moisture, and ceramic fiber may be used in conjunction with the precast heads, to greatly increase the insulating value, and reduce the likelihood of damage to the tubesheet.

### Benefits

Blasch's Hybrid Metal/Ceramic Ferrules can prevent the typical tube-end corrosion/ erosion, minimize stress corrosion cracking, localized pitting and weakened tube to sheet joints that can occur without a ferrule in place, and when used in conjunction with a precast ceramic head, installation time may be cut dramatically.

### Features

- Tapered inlet and/or outlet
- Precision engineered design
- Flares, flanges, slots, holes or stop pins, as required
- Ceramic fiber wrap available
- Can be combined with a ceramic head to improve tubesheet protection
- ProLok™: Mechanical tab-and-slot lock prevents premature head and stem separation

