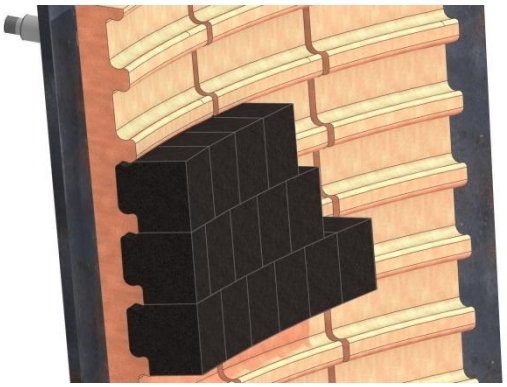
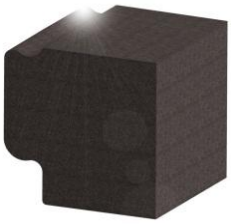
Berry METAL COMPANY

UltraLife® Copper and Cast Iron Staves with Double Locking Refractory System

(Patent Pending)



SiC and Fused Alumina



Graphite

Installation Savings

- Utilize existing holes in the furnace
- Utilize existing water system (Circle pipes, pumps, cooling, etc.)
- Minimize installation time and outage days. (Have achieved 9 day reduction in outage when installing 5 rows of staves)
- Minimize new shell holes
- Eliminate sealing old shell holes.
- Engineering and installation support included in equipment supply

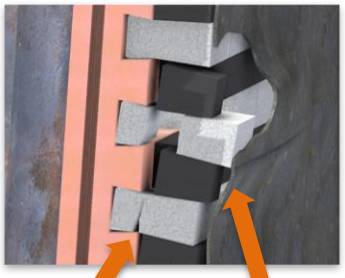
Operation Benefits

- Copper stave furnaces can achieve 15 to 30% increase in furnace volume as compared to a copper plate cooled furnace or a cast iron stave furnace
- Less heat loss to vessel walls resulting in a reduction in coke consumption
- Robust refractory system minimizes mechanical damage resulting in longer campaign life and consistent wall temperatures

Design Benefits

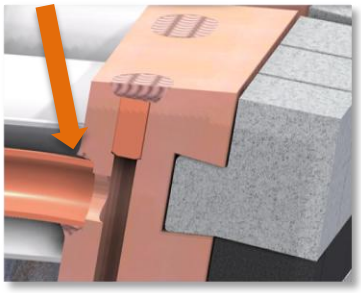
- Designs engineered to fit existing furnace
- The Ultralife® technology allows any shape stave to be produced
- Direct replacement of cast iron or copper staves and copper plate cooled furnaces
- Double compartment Ultralife® staves are designed and proven to operate if one cooling circuit is lost
- Elimination of flow voids
- Uniform flow, velocity, and pressure drop
- Elimination of plug welds and welded pipe attachments to staves
- The metallurgical bond created between the copper alloy pipe coil assembly and the copper casting results in superior heat transfer

Say goodbye to the problems of traditional stave systems

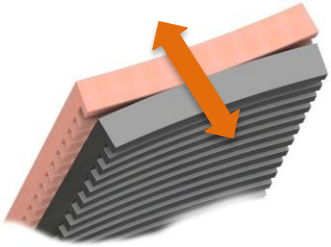


Face Washing

Plug Welds



Pipe Welds



Deflection

ADVANCED IRONMAKING TECHNOLOGY

For more information on this and other technological innovations made available through our partnering agreements, contact Berry Metal Company at: 724-452-8040 or info@berrymetal.com