

ONE LESS THING TO WORRY ABOUT



The boiler is the heart of the extraction plant, providing renewable energy so that everything else can happen.

Our refractory solutions help plants avoid predictable problems, maximizing operating time and efficiency, while decreasing maintenance costs over time. You focus on keeping your plant running, and with an Allied boiler there is **one less thing to worry about**.

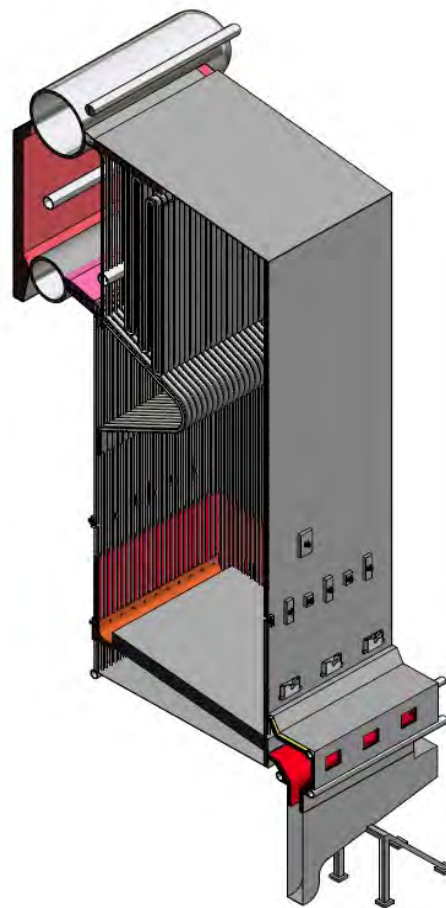


BOILERS

Allied has over 30 years of experience in the power generation industry. We design products based on the common issues with boiler usage and the severity of them. Globally, our results are excellent in carbon based fuels and many types of waste; including, biomass, municipal and construction trash. We offer products for a range of boilers used in agro-industries including:

- Fluidized bed
- Pinhole
- Travelling grate
- Vibrating grate
- Step grate
- Cyclones

COMBUSTION CHAMBER
TUFF-FLO 847 FAST-TURN® 47 TUFF-FLO 62 M TUFFCRETE® 8608 TUFF-FLO 80 SiC GUNCAST® 28 LI CASTMAX® 30 S HR
NOSE OF ASH DISCHARGE
SUPER PLASTIC ECONOCAST® 26TR
ASH HOPPER
TUFF-FLO 847 FAST-TURN® 47 TUFFCRETE® 8608 CASTMAX® 30 S HR
REPAIRS
QUICK-FIRE® ONE PATCH B QUICK-FIRE® ONE PATCH M



ROOF
ECONOCAST® 24, 26, 27 TUFF-FLO 847 Precast Shapes
DOORS
TUFF-FLO 847 ECONOCAST® 26 TR ECONORAM® 45 AS SUPER PLASTIC
BURNERS, AIR DUCTS, CHUTES
LCF 798A ARMORMAX® 70SR
EXPOSED TUBE PROTECTION
ECONOSET® SIC 85 ECONORAM® SIC 75 TR ECONORAM® SIC 85
PROTECTIVE REFRACTORY COATINGS
MATRIKOTE 90 AC EW MINRO-Z WASH 77 Z

Common Refractory Failure Modes

Application	Thermal Shock	Abrasion	Chemical Attack	Mechanical Abuse	Tube Movement
Opposite wall ash discharge	Red	Red	Red	Red	Yellow
Side walls, back walls	Yellow	Yellow	Red	Red	Red
Doors	Red	Red	Yellow	Yellow	Yellow
Nose of ash discharge	Red	Red	Red	Red	Yellow
Burners, Air Ducts, Chutes	Red	Yellow	Yellow	Yellow	Yellow
Roof	Red	Yellow	Yellow	Yellow	Yellow

OUR SERVICES

- 01 Engineering
- 02 Refractory Design
- 03 Refractory Installation
- 04 Problem Solving
- 05 Mechanical & Electrical
- 06 Fabrication
- 07 Process Improvement
- 08 Repairing Parts & Maintenance

OUR PARTNER'S

Research & Development

We have extensive research and product services capabilities that allow us to develop and recommend application-specific products. Allied's R&D team feature the following resources:

- Patent-generating research
- Shotcreting and gunning laboratory.
- Modern analytical testing equipment (XRF, XRD, SEM)
- Forensic analysis capabilities, postmortem analysis.
- Slag and clinker analysis Product testing under simulated conditions

Product Technology

Allied manufactures and supplies a large portfolio of high performance refractory products for high heat and other aggressive applications ranging from boilers, smelters, kilns to foundries, steel mills.

- Superior raw material quality
- Unique, tailored installation properties: vibration cast, pump cast, gunning and shotcrete.
- Wide range of bonding systems; cement, low cement, no cement, chemical bonded.
- Product mixes designed to meet a variety of application demands such as high temperatures, thermal cycling, abrasion and chemical attack.

Engineering

Allied's team designs refractory systems based on understanding the operations, equipment, plant level preferences and requirements.

Our engineering department features:

- Optimized product zoning
- Thermal analysis and modeling
- Detailed 3D models
- Metal and process simulations to predict wear.
- Comprehensive proposal and construction drawings.





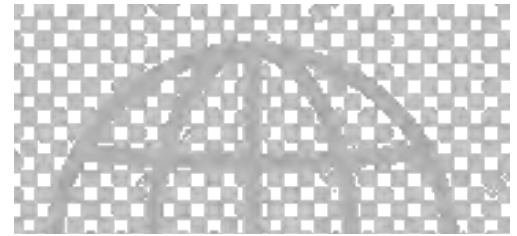
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