

HRSG Boilers

SCOPE for LANCASTER GAS TURBINE BASALT (GTB®) MATERIALS in HRSG BOILERS and ASSOCIATED DUCTS

GTB® materials are the benchmark choice for internal insulation in highly dynamic hot gas environments. With their reputation of being "fit for purpose" in gas turbine silencers, the high fibre diameter of these thermal acoustic materials promotes freedom of silencer design and exoneration from classification under the European Directive on Man Made Vitreous Fibres.

More recently, GTB® materials have become established as an alternative to refractory ceramic fibres, soluble ceramic substitutes, and combination make-ups (ceramic substitutes plus bonded mineral fibre batts) within internally lined HRSG boilers, associated hot ducts and stacks. Scope for the success of Lancaster Gas Turbine Basalt materials in boiler and duct lining applications is attributable to the following key factors:

1. ENVIRONMENTAL

EU Directive 97/69EC classifies refractory ceramic fibre as a Category 2 Carcinogen. In contrast, GTB® materials are unclassified by their fibre size.

2. TECHNICAL

Proven capability within gas turbine silencer baffles, internally lined diffusers, transition ducts and silencer casings has confirmed the suitability of GTB® materials for HRSG applications, as indicated below:

Hot Gas Silencing Environment

High gas velocity, significant impingement
Very severe flow dynamics
Perforated s/steel sheet, low thermal mass
Rapid heat-up, especially if close to the turbine
Direct impingement from turbine washing solutions

Boiler Lining Environment

Low gas velocity, no direct impingement
Mild flow dynamics
Solid s/steel sheet, higher thermal mass
Slow heat-up of structure and insulation.
Little direct impingement from turbine solutions washing solutions.

Lancaster GTB® materials can reliably sustain working temperatures of 750°C and cope with transient conditions to 800°C.

3. COMMERCIAL

GTB® materials in roll form offer significant commercial advantage when compared with ceramic fibre materials. Furthermore, the acoustic absorption capabilities of these materials presents considerable scope for improved boiler lining design, enabling useful acoustic attenuation capabilities to be incorporated into the duct and boiler casings.



'Lancaster Gas Turbine Basalt materials offer environmental, technical and commercial advantages when compared with ceramic materials or ceramic substitutes.'