

The k flux<sub>TM</sub> product in the Lydech flux product family is designed for high temperature applications where superior and more thermally efficient materials are required. Through the combination of low emissivity metals and a high temperature low thermal conductivity insulating media, k flux provides marked thermal isolation for sensitive components even when exhaust temperatures exceed 900 °C.

## Metallic Layers

### (a) Aluminum

- 0.1 to 2.5 mm
- Flat or Embossed
- 1000, 3000 and 5000 Series Alloys
- Lightweight / Excellent formability
- Operating temperature < 300 °C

### (i) Stainless Steel

- 0.1 to 2.5 mm
- Flat or Embossed
- Ferritic and Austenitic grades selected as a f(environment)
- Operating Temperature < 1000 °C

### (s) Aluminized Steel

- 0.25 to 1.0 mm
- Flat or Embossed
- Various coating weights and draw quality steels
- Operating Temperature < 500 °C

## Insulation Layer

### (n) Lydech lambda

- Thickness: 1.0 mm to 9.0 mm
- High temperature chopped strand glass fiber
- No shot content
- Low organic content
- Low thermal conductivity
- Large diameter non-breathable fiber
- Non-hazardous material 1999/45/EC compliant
- Non-flammable

## Thermal Performance

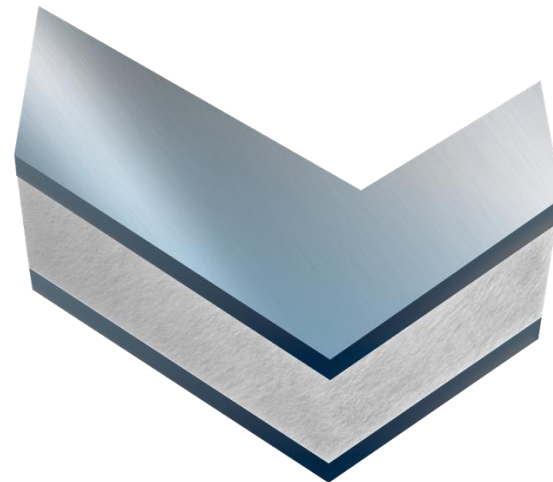
- Low emissivity surfaces for high infrared radiation environments
- High lateral thermal conductivity to spread heat
- Low vertical thermal conductivity to increase the temperature drop

## Acoustical Performance

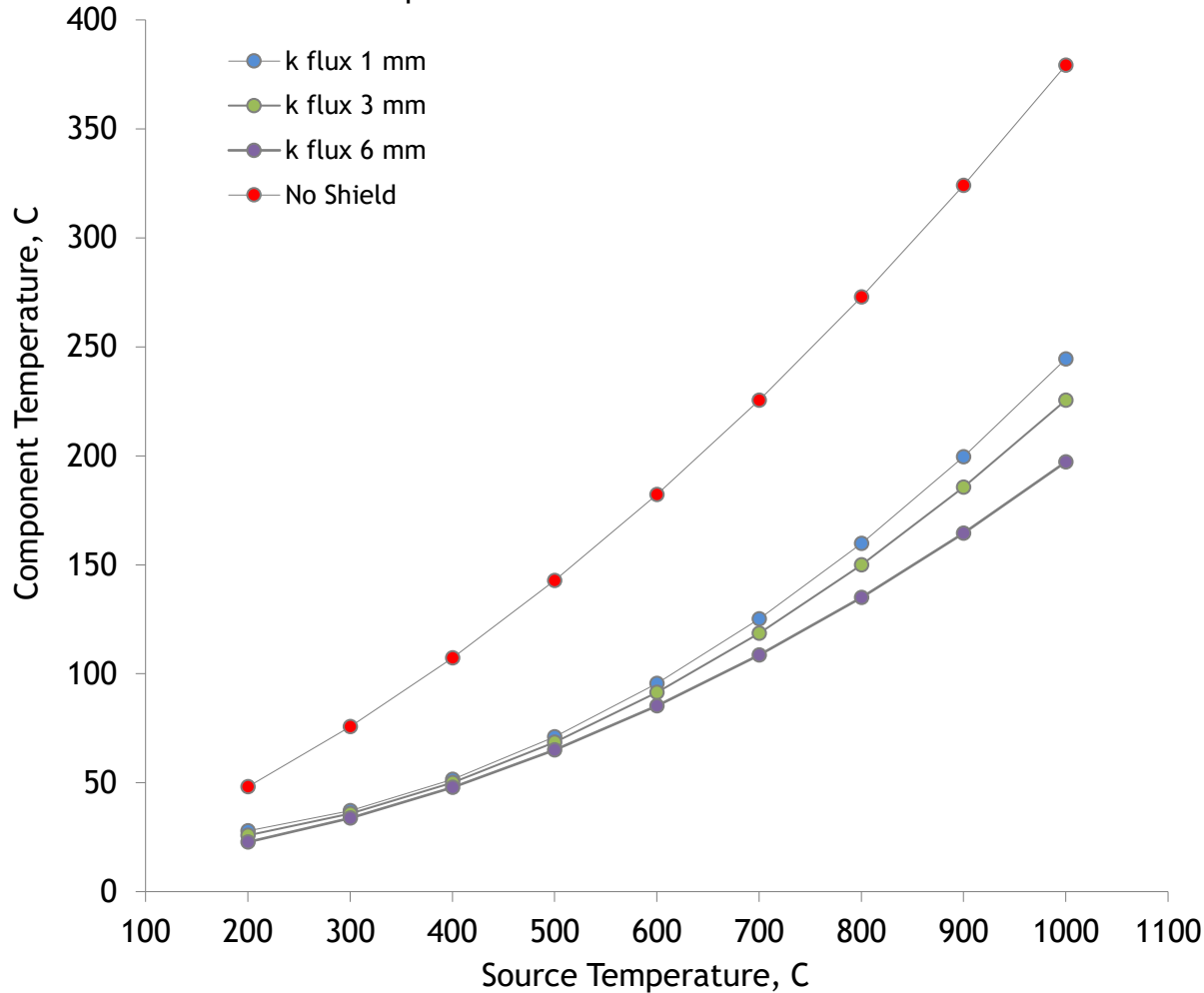
- High transmission loss for better acoustic isolation
- Low vibration amplification for reduced noise contribution

Validation Test Results		
Test Method	Composite	Fiber
FMVSS 302	DNI	DNI
ASTM E136	-	DNI
LTM T105	DNI	DNI
DHR Emissivity	Per Report	-
Corrosion	Per Report	-

Thermal Conductivity	
lambda fiber	
T. °C	k, Wm/K
204	0.048
427	0.085
650	0.150
788	0.210



Component Thermal Response as a Function of Source Temperature Double Wall Shield



## Lydech lambda™ Fiber Value Proposition

- Vertically Integrated - Fabricated in France by Lydech
- Peak operating temperature
  - 850 °C - lambda 850
  - 650 °C - lambda 650
- Non-breathable fiber that is not carcinogenic
- No ceramic fibers
- Clear legislation, no lobby effort, no protective equipment, poses no health risk to Lydech's employees and poses no health risk to our customer's employees.
- Low Organic Content Low Caloric Content Low Off-Gassing
  - LOI ≤ 4%
  - Proprietary PVOH Binder
- Does Not Burn / Flame
  - Application of hyper strict flammability test methods

## k flux naming convention - $k_{xyn}$

- The agility of the k flux product lends itself to be finely optimized through the combination of various materials for any thermal or mechanical environment
- A series of subscripts denote the metallic layers used as well as the insulation thickness.
- The first denotes Hot Side Layer metal, the second denotes the Cold Side Layer metal and the final represents the in-situ isolation thickness in millimeters.
  - The x and y are replaced by: a-Aluminum, s-Aluminized Steel, i-Stainless Steel
  - The insulation thickness can exceed 20 mm, but generally less than 10 mm