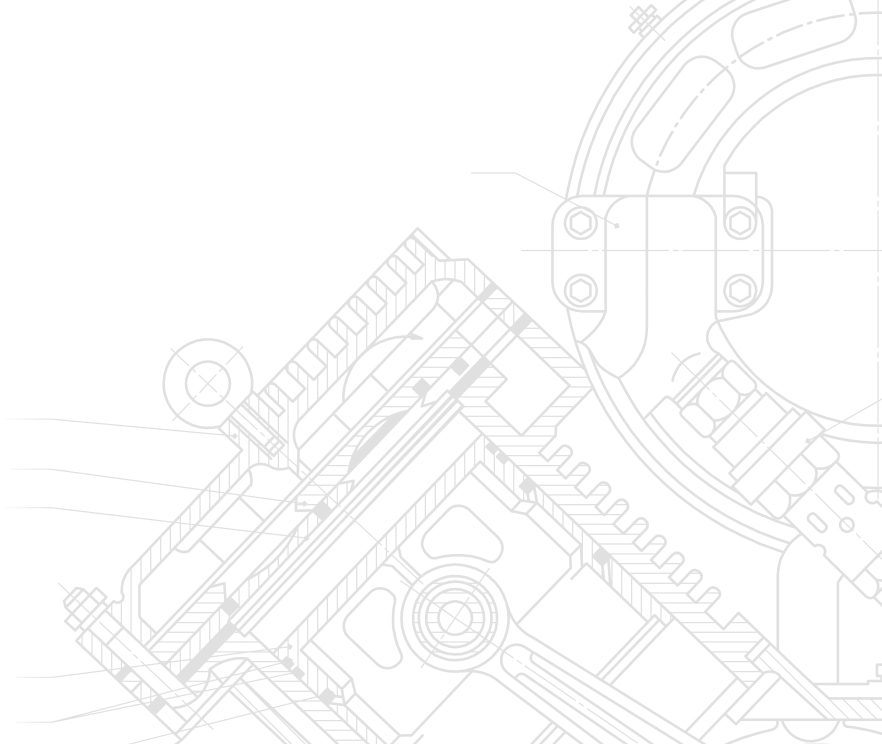


TI650 & TI1K

THE FIRST SMOKE- AND
ODOR-FREE THERMAL
INSULATION MATERIAL FOR
THREE-LAYER HEAT SHIELDS



Interface
Performance Materials





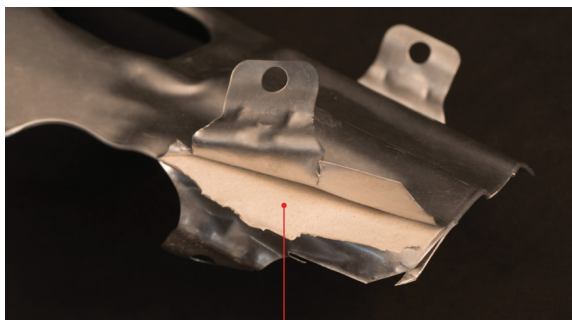
TI1K

TI650

When things heat up ... get the performance of TI650.

A leading manufacturer of advanced materials, sealing solutions, thermal management, and heat shield solutions, Interface Performance Materials is a solution-driven innovator addressing the toughest challenges in the automotive industry.

For three-layer heat shields, Interface introduces the next generation of thermal insulation materials – TI650 and TI1K. These innovative materials offer thermal protection up to 1000°C for engine applications.



*TI650 layer of superior
thermal insulation*

TI650 – For unmatched thermal protection, formability, and material integrity

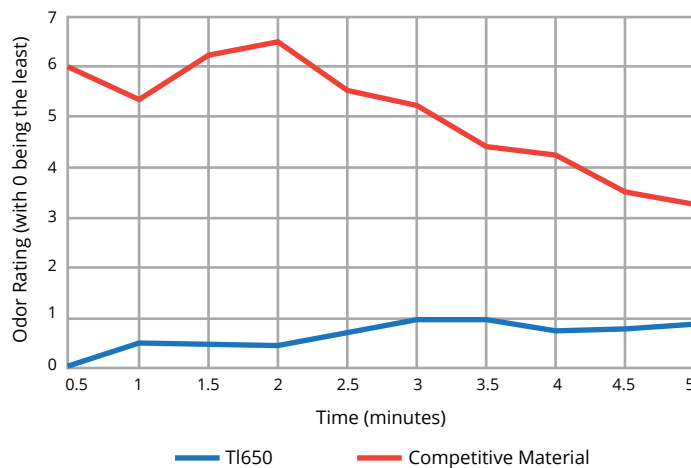


A highly inorganic material, TI650 withstands a maximum temperature of up to 650°C with virtually no detectable smoke or odor. **Competitive material smokes and burns at 400°C.**

TI650 Highlights:

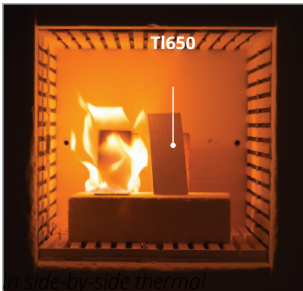
- Save manufacturing time and money by removing the need to preheat shields.
- Innovative design – resistant to dusting, cracking, and separation when being molded into the heat shield. Also, removes the need to fully hem shields.
- Maintains material and heat shield integrity when subjected to heat and continuous vehicle vibrations. No hot spots!

Odor Intensity & Offensiveness at 400°C



Unparalleled Performance

In laboratory testing, comparing TI650 to competitive materials, TI650 proved flame resistant up to 650°C while the competitive material ignited at 400°C. And, with its low heat conductivity, it protects sensitive components subjected to the high levels of heat emitted from today's power dense engines. Its high material integrity eliminates the risk of hot spots.



During side thermal testing, TI650 products have demonstrated no smoke generation and superior material integrity while the competitive materials smoke and flame at 400°C.



In laboratory testing, TI650 is proven to maintain material integrity, resistant to cracking, separation, and dusting when exposed to heat and vibration typical in vehicle applications.



When placed in a vertical tube furnace at 650°C, TI650 demonstrated no smoke or flaming.

TI1K – For the most demanding applications and protection up to 1000°C



When the heat is extreme, TI1K stands strong, delivering material toughness and formability. Unique in its ability to meet the stringent ASTM E136 flammability test standard, TI1K is ideal for three-layer heat shield applications requiring the ultimate protection – up to 1000°C.

TI1K Highlights:

- All the benefits of TI650, up to 1000°C
- Low Density
- Highly Inorganic Material
- No Detectable Smoke and Odor
- High Material Integrity, No Crumbling or Dusting
- Superior Heat Resistance
- Superior Flame Resistance
- Low Thermal Conductivity

Visit InterfaceMaterials.com for video and full test results. For assistance in determining the optimal TI650 thermal insulation material for your heat shield application, contact our Application Engineers at ae@interfacematerials.com

Typical Properites

Products Comparison

Product	Thermal Performance				Material Properties			
	Temp (°C)	Thermal K @300°C (W/mK)	Smoke	Odor	Density (g/cm3)	Compression/ Recovery (%)	Tensile (MPa)	
TI650	650	0.12	Virtually None	Virtually None	0.91	17 33	5.3	
TI1K	1000	0.09	None	None	0.88	20 27	3.2	

Available Thicknesses: 0.5mm, 0.8mm, 1.0mm



Interface Performance Materials has seven manufacturing locations across the world and provides a full range of engineering services including heat shield FEA predictive modeling, thermal performance validation, thermal efficiency and surface emissivity testing, and material recommendations, as well as validation testing of parts to OEMs and fabricators. With global manufacturing excellence, advanced engineering expertise, and an innovative portfolio, Interface Performance Materials' depth of industry and application knowledge enable the company to respond quickly to rapid and continuously changing markets with custom materials and products that precisely fit performance, certainty of operation, and cost requirements.

For support, contact an Application Engineer at ae@interfacematerials.com

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