

# THERMOLINC® ELITE

## DESCRIPTION

Lincoln Industries ThermoLinc® Elite is a multilayer textile solution that solves a variety of heat management challenges in both diesel and gas exhaust engines. Performing up to 950°C (1742°F), Elite is able to conform to complex geometries and offers significant surface temperature reduction.

A current motorsports exhaust header application showed an insulated surface temperature well below 150°C at approximately 927°C exhaust gas temp (EGT). This versatile, cost effective and high performing heat management technology is ready for use in many exhaust applications.

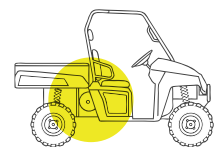
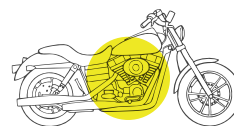
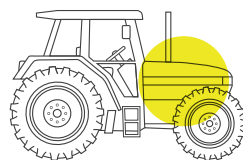
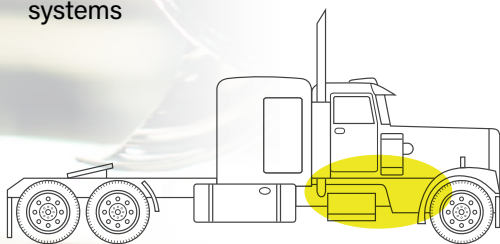
## APPLICATION EXAMPLES

▶ Exhaust after-treatment systems

▶ Fire mitigation

▶ Rider comfort

▶ Protects neighboring exhaust system components



## INDUSTRIES

- ▶ Agriculture
- ▶ Heavy truck
- ▶ Marine
- ▶ Motorcycle
- ▶ Rail
- ▶ UTV/ATV
- ▶ Power generation

## PRODUCT BENEFITS

- ▶ Performs up to 950°C EGT
- ▶ Conforms to complex geometries
- ▶ Minimal tooling investment
- ▶ Textile cover provides durable outer layer
- ▶ High degree of thermal and performance flexibility

PREMIUM PROVEN QUALITY SOLUTIONS

# THERMOLINC® ELITE

## TESTING MATRIX

ATTRIBUTE	VALUE	SAMPLE TESTED	STANDARD
Thermal Conductivity	0.06 W/m/k at 260°C, 0.133 at 538°C, 0.244 at 816°C, 0.327 at 982°C	Fiber mat insulation (uncompressed)	ASTM C1114
Appearance	Uniform cover-multiple tinting options available	Black cover and insulation on 4" diameter pipe	Lincoln Industries' Standard
Vertical Burn Test	Cover did not ignite or propagate, loss of cover resin and compression layer	Tinted (black) cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	Lincoln Industries' Standard: Direct flame (MAPP) 2000°C for 60 seconds
Gravelometer	Passed - Softening of the cover, some resin loss, no holes formed in cover	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	SAE J400, repeat 100 cycles
Drop Impact	Passed - No external damage	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	ASTM D-2794 modified
Cold Cracking	No visual degradation	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	Lincoln Industries' Standard: Dry Ice (-78°C) for 2 hours, 260°C for 2 hours, repeat 10x
High Pressure Wash Adhesion	No visual degradation	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	STD 423-0015 modified
Vibration	No visual degradation	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	Lincoln Industries' Standard: Immerse in water 1hr, install on vibrate table 24hr, repeat 4X. Equipment: Vibco 4P-100, 24"x24" Vibration Table, 1800 vpm, 0.071" displacement, 3.4G's, 30 Hz.
Neutral Salt Spray	Passed - No visual degradation to insulation cover	Tinted (black) thermoset glass braid cover and insulation on a 4" diameter pipe, heat aged for 48 hours at 260°C min.	ASTM B-117, 96 hour
Chemical Resistance	Passed - No visual degradation to sample material coupons	Thermoset glass impregnated textile samples, natural color	Lincoln Industries' Standard: 240 hour chemical immersion (see table below)

## CHEMICAL RESISTANCE TESTING

CHEMICAL TESTED	PASSED CHEMICAL IMMERSION AT 240 HRS	CHEMICAL TESTED	PASSED CHEMICAL IMMERSION AT 240 HRS
Antifreeze (50/50)	X	Diesel Fuel	X
Antifreeze (extended life)	X	Gasoline	X
Antigel	X	Heat	X
ATF	X	Metal Polish (Aluminum Polish)	X
Water	X	Metal Polish (Chrome Polish)	X
Brake Fluid	X	Motor Oil	X
Brake Fluid (synthetic)	X	Motor Oil (synthetic)	X
Dawn Soap	X	Water	X
DEF	X	Windshield Wiper Fluid	X