



DESIGN ENGINEERING, INC.
604 MOORE ROAD AVON LAKE, OHIO 44012
440-930-7940 • 800-264-9472

FLOOR & TUNNEL SHIELD II™

Floor & Tunnel Shield II is a superior alternative to traditional metal thermal shields. High-performance materials used in this product include an embossed 10 mil aluminum sheet bonded to a mechanically needle-punched high temperature resistant fiber composite spacer. Capable of withstanding direct heat up to 1750°F, Floor & Tunnel Shield II is backed with a super-aggressive pressure-sensitive adhesive for attachment.

The in-use thermal performance differential between Design Engineering's Floor & Tunnel Shield II and traditional metal shields, with a .20 in. air gap, widens considerably over time due to emissivity changes. Floor & Tunnel Shield II is lightweight, moldable to almost any shape and contour, easy to trim while being priced competitively with other forms of under-vehicle thermal shielding

TEST RESULTS: DURABILITY

Sample sections were attached to mudflaps on 40-foot trailers and under the frames of large trucks for one winter of durability testing. The material was exposed to the winter weather of the Northeast, including water, snow, gravel and freeze/thaw conditions. After over 100,000 miles, there was no recognizable fiber failure.

TEST RESULTS: HEAT RESISTANCE

Exposure in an oven at 475°F for 30 hours resulted in no failure.

- Ideal for firewall, under-vehicle, floor pans, oil tank box areas, transmission tunnels, wrapping fuel cells, under hoods & more
- Blocks radiant heat from entering driver compartment
- Withstands direct high heat temperatures up to 1750°F
- Serves as a barrier to unwanted road, tire & engine noise
- Constructed from 10 mil aluminum bonded to a finely woven layer of high temperature resistant high temperature insulation
- Minimum clearance required
- Aggressive self-adhesive
- Wind & water will not affect adhesion
- Easy to form to shapes & contours
- Trim, peel & stick
- Adheres to almost any surface or material including fiberglass

PROPERTIES

Material:	Aluminum with polyglass insulation
Insulation Thickness:	Polyglass fibers .125"
Aluminum Face Thickness:	10mil dimpled aluminum
Overall Thickness:	3.97mm (avg) / .156in (avg)
Adhesive:	High temperature acrylic
Tensile Strength:	762lbs
Weight per unit area, g/m² FLTM BN 106-01:	1491.4 avg
Tear Resistance:	482lbs
Moisture Absorption:	.3%
Thermal Conductivity: ASTM C177-13	93C: .044 w/m/°K
Adhesion to Metal:	45lbs at 90 degree pull after 30 minute time
Flamability FMVSS302:	Self extinguishing
Storage Temperature:	Above 32°F
Minimum Application Temperature*	50°F 10°C
Minimum Service Temperature*	-40°C -40°C
Maximum Service Temperature*	350°F 176°C

* References adhesive temperature

Storage/Shelf Life One year when stored at 64-72°F (18-22°C) / 30-70% relative humidity, out of direct sunlight and in original packaging.

Ford WSS-M9P32-E6 and Ford WSS-G172-A