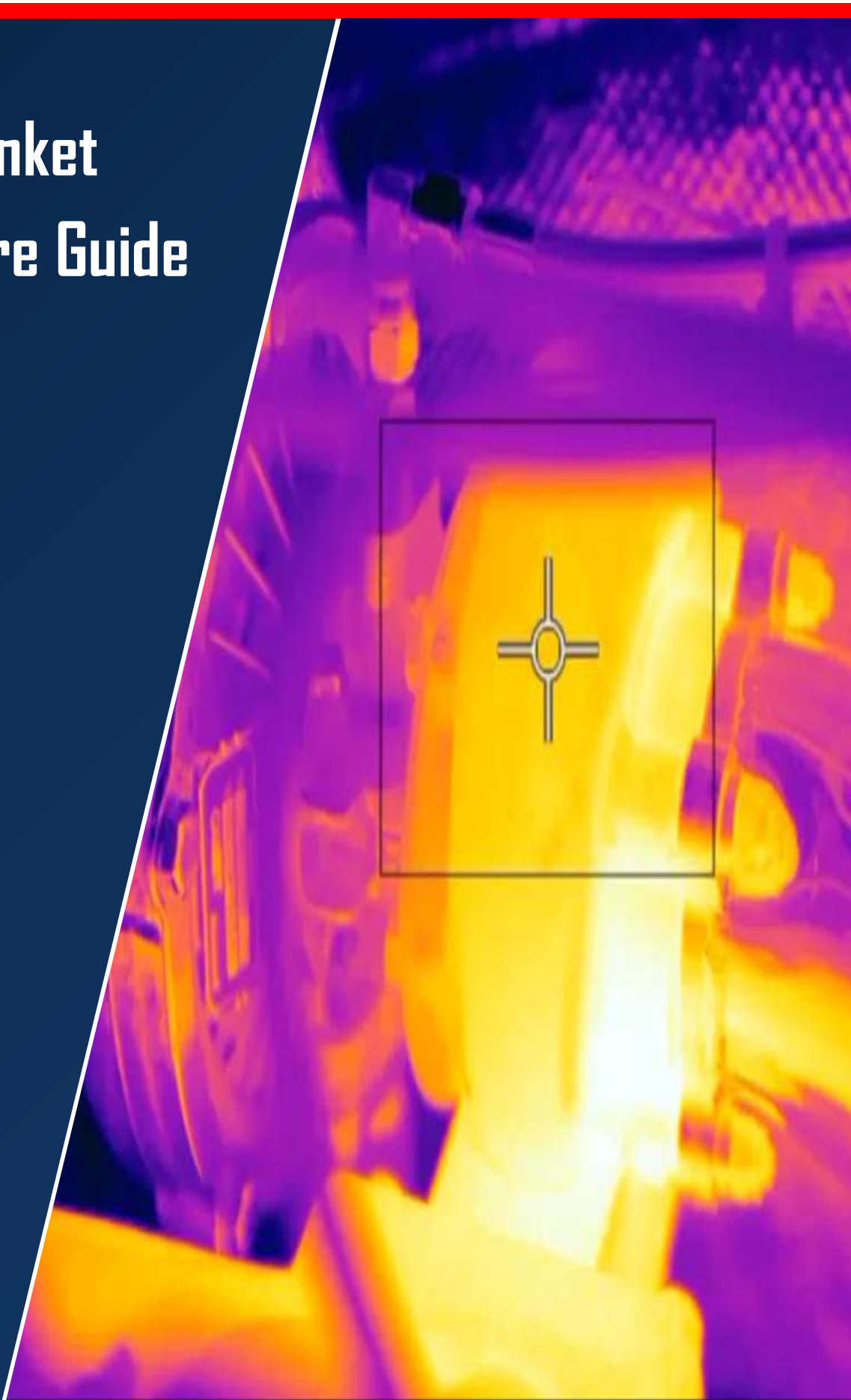
DARCO INDUSTRIES

"Your Global Solutions Experts"

Australian Owned and Operated

Outside Blanket Temperature Guide



DARCO INDUSTRIES

"Your Global Solutions Experts"

Darco Industries offers a wide range of high quality thermal insulation fabrics and accessories for a multitude of industrial equipment & applications. Our team helps fabricators engineer material systems solutions designed to suit specific chemical and physical environments

Who we are

Darco Industries is an import/wholesale business established in July 2010 by James Dar BSc, who has technical sales experience since 1980. Since 1998 his time has specifically been with high temperature textiles and advanced industrial insulation materials.

Our success is primarily based on fostering competent trust with customers and suppliers. We have long established relationships with the worlds leading glass textile suppliers and core clients spread around Australia and overseas.

Darco Industries strive to improve our product range and services by supplying our customers with cost effective, engineered material system solutions

We understand the properties of our materials and suitability for the various applications where physical and chemical factors like temperature, abrasion, vibration, tensile strength, thermal conductivity, UV, fire ratings, sound absorption, chemical resistance, liquid and vapour permeability etc.

"Your Problem, Our Solution"

The Darco Advantage

Darco Industries is Australia's leading importer and wholesaler of the widest range of specialist thermal insulation and fire protection glass textiles and accessories. Based in Perth, Western Australia, our customer focused staff has a proven record of being very responsive to customer needs and special testing demands. Our client base is worldwide and consists of the automotive OEM's, heavy-duty engine OEM's, industrial suppliers and hydraulic companies.

Darco is a leading provider of quality and thermal insulation solutions serving a wide range of industries around the world. From industrial to commercial, aeronautical to marine, Darco Industries are dedicated to adding value to fabricators products and processes, supporting their success in the global marketplace. Darco has the expertise, resources and global reach to support its clients through its extensive network of manufacturers and suppliers in over 100 countries around the world.

DARCO INDUSTRIES

"Your Global Solutions Experts"

"One stop shop for thermal insulation glass textiles, accessories and more"

Whilst we import products that are certified from renowned suppliers around the world we still carry out our own quality control which includes inspecting and testing samples for various properties from each imported batch

Core Products

MATERIALS FOR FABRICATED INSULATION JACKETING, FLEX CONNECTORS, THERMAL SEALS

- Fabrics - Assorted high temperature E glass, silica glass and ceramic fibre fabrics and infill needled mats.
- Stainless steel – Mesh, Capstan
- Fasteners - Springs, Lacing Hooks & Washers, Tie Wire, Pneumatic staplers, and fixings.
- Sewing Threads – Fiberglass, Kevlar covered Stainless Steel.

WELDING BLANKETS & SCREENS

- Assorted Glass Fabric Blankets - Standard sizes 0.9m x 1.8m and 1.8m x 1.8m.
- Plastic Welding Screens. Choice of Red and Green in sizes 1.8m x 1.8m and 1.8m x 2.4m
- Other sizes manufactured to specification
- Welding Frames 1.8m x 1.8m

FIRE PROTECTION (CERTIFIED)

- Global Solutions Fire blankets certified for Oil & Gas Industry etc. (see www.global-ww.com)
- Fire & Smoke Barrier Curtain Fabrics
- Fire Sleeves for hose & cable protection
- Navy Board Facing Fabric.

THERMAL & ACOUSTIC INSULATION

We are also distributors for:

- Ceramic Fibre and soluble fibre blankets, boards, papers etc.
- Calcium Silicate 650°C, 800°C, & 1000°C
- Boards, Pipe sections, Superplastic Castable Cement & AC1 Protective Coating
- Rockwool to 750°C & Glass wool to 480°C Blanket, Board, Pipe section
- Noise absorbers and barriers for commercial and industrial applications.
- Foams, Loaded Vinyls & Composites
- Quiet Acoustics – structural noise control panels for industrial and commercial applications.

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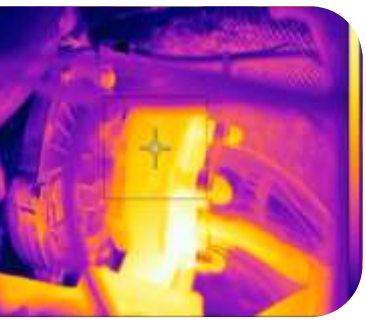


"When we speak of 'touch temperature', this refers to the temperature of the outer protective cover safe temperature limits for both metallic and non-metallic surfaces"

HOW DO I KNOW WHAT THE OUTSIDE BLANKET TOUCH TEMPERATURE WILL BE FOR MY APPLICATION?

Users of removable insulation blankets often would like to know what the outside, or cold surface, temperature will be once the insulation blankets are installed on their system. This is especially true when personnel safety is of concern — the surface temperature of the blankets must be below a certain level to be considered safe for personnel working in the area.

Background

A typical insulation blanket is made up of three sections:

1. An inner (hot) surface: Typically a stainless steel mesh, the inner liner rests directly on the hot component. Its function is to keep the insulation material in place.

2. Insulation material: The middle layer of an insulation blanket is the actual insulation media. Typically fiberglass, but other materials can be used, particularly in very high temperature applications >648°C (>1200°F).

3. Outer (cold) surface: The outer cover protects the insulation from being damaged. There are various materials that can be used, but most common is silicone impregnated fiberglass.

DARCO INDUSTRIES

"Your Global Solutions Experts"

"Engineered Material System Solutions"

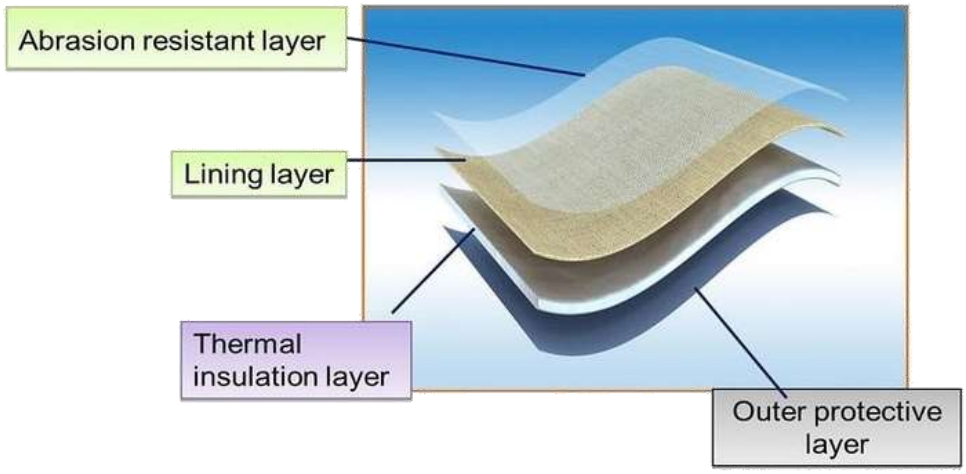
Removable reusable insulation covers are used to insulate engine parts, exhaust piping, components, industrial process piping and machinery. Applications which use diesel engines, such as power generation, commercial transport and marine vessels often require insulation covers to manage the heat they generate

How are they made?

Removable insulation covers are generally constructed in 3 layers. However certain applications may require alternative construction methods, in the case of sound or fluid barriers, an extra layer may be added

In some cases the stainless steel inner liner may be replaced by a fiber-containing material, where fiber containment is a requirement. For more demanding and unique applications Darco offers a wide range of alternative materials and construction.

Layers		Material	Temperature Limit	Function
Inner	•	Stainless Steel Mesh	1,000º C (1800º F)	Abrasion protection
Liner	•	E glass fabric	550º C (1000º F)	Encapsulate infill insulation
	•	Silica fabric	1200º C (2,192º F)	
Infill	•	E glass (long fibre)	650º C (1200º F)	
	•	CMS Wool (Short fibre)	Insulation – long fibre more resilient for handling and vibration while short fibre more suited for static applicatins.	
	•	Silica Glass (Long fibre)		
Outer	•	Silicone Impregnated Fiberglass	1200º C (2,192º F) 1,200º C (2,192º F)	



How are they installed?

Removable insulation covers are wrapped around the part to be insulated. The blankets are then fastened in place using lacing wire. Other fastening options, while less versatile, do exist, including snaps, straps, springs, and Velcro.

We can best help you by working with you to solve your thermal and acoustic insulation application problems most cost effectively. Given the essential application conditions such as physical environment of temperature, weather, UV, tension, abrasion, vibration and chemical, we can suggest appropriate combinations of materials to achieve the optimum cost effective system to suit your applications.

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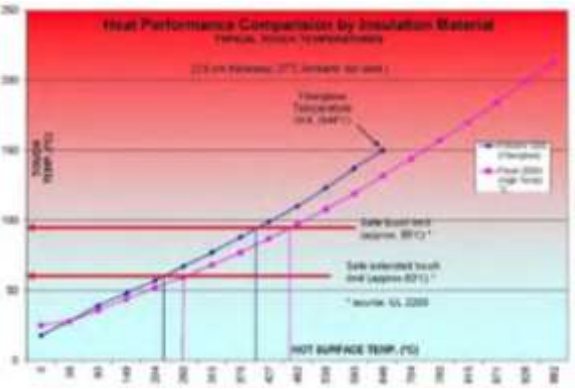
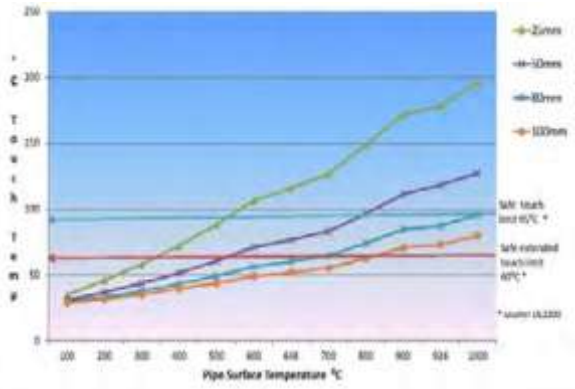
"Your Global Solutions Experts"

"Comprehensive range of insulation materials"





WHAT DETERMINES THE OUTER SURFACE TOUCH TEMPERATURE?

While there are a large number of variables to consider when calculating the outside temperature of an insulation blanket, the following are the most quantifiable and critical

Insulation Material

The effectiveness of an insulation blanket is greatly determined by the insulation material used. Some materials are better than others and so the touch temperature will be lower for those materials for a given exhaust temperature.

Insulation thickness:

The thickness of insulation material used has arguably the most effect on the resultant touch temperature of an insulation blanket. With the thicker the insulation, the more effective it'll be and the lower the outside surface touch temperature.

Ambient temperature:

The temperature in the area where the insulation resides, known as the ambient temperature, will also affect the temperature of the outer cover. The higher the ambient temperature, the higher the temperature of the outer blanket.

Air flow (wind speed):

Air flow cools off the blanket surface temperature by increasing the rate of heat escape from the surface. Therefore a faster air flow will reduce the touch temperature.

Outer cover material emittance

High emissivity value materials will release heat away from it back into the environment which will produce a lower temperature than materials with a low emissivity value. For example, silicone coated fiberglass has a higher emissivity and will produce a lower surface temperature than a aluminium faced fiberglass.

Heat flow calculators help engineers quickly calculate what outside surface touch temperature a user can expect for their application. However, if a customer has a target touch temperature in mind, the team at Darco Industries will be able to determine what insulation material and thickness will be required to achieve this goal with the use of more sophisticated and time-consuming heat flow analysis data.

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