

# *ThorburnFlex*



ThermaCover™

## **REMOVABLE INSULATION JACKETS** Engineered Solutions For Pipe Motion

Canada   
[www.thorburnflex.com](http://www.thorburnflex.com)

## Thorburn ThermaCover™ Removable Insulation Jackets



Thorburn's custom ThermaCover™ insulation jackets are layers of insulating materials that wrap around rigid and flexible pipe spools, engine and exhaust parts, heat processing equipment and other hot fixtures. Valves, flanges, and other components left uncovered can result in unnecessary process adjustment due to heat loss, false readings or alarms being sent to the control room and equipment failures due to operation outside of normal temperature ranges. Thorburn's ThermaCover™ reduces the risk of thermal damage to heat-sensitive components, protects machine operators from heat-related injuries while also creating better heat efficiency by keeping the heat in place.

### What Are ThermaCover™ Removable Insulation Jackets?

Thorburn's ThermaCover™ removable Insulation jackets serve as complete insulation systems consisting of three primary components.

**Outer protective cover:** designed to shield and protect the insulation from the environment in which it finds itself. Made of PTFE coated fiberglass or silicone coated fiberglass.

**Model TCT** (PTFE coated Fiberglass)  
Temperature Range: -100°F (-73°C) to 600°F (315°C)

**Model TCS** (Silicone coated Fiberglass)  
Temperature Range: -67°F (-55°C) to 446°F (230°C)

**Insulation:** layers of insulation minimize heat loss within a system. The insulation material used depends on the needs of the equipment and the facility, such as operating temperature range, safety and regulatory standards, and touch temperature constraints.

**Inner liner:** helps to keep the insulation in place and also acts as a barrier to protect the insulation from fluid leakage.

**Fastening Systems:** ensure the jackets fit securely and tightly around the equipment.

### ThermaCover™ Heat Traced Removable Insulation Jacket

Thorburn's ThermaCover™ heat traced removable insulation jackets Series TCT-HT/TCS-HT are made of the same materials as our standard ThermaCover™ with an added electric heat trace cable. These electrically heat trace cables can be incorporated into Thorburn's ThermaCover™ or installed by the end user directly on the rigid or flexible pipe spools, valves, flanges, fittings and other pipeline equipment.

Thorburn's ThermaCover™ heat traced removable insulation jackets can be designed for freeze protection against arctic temperatures down to -60°C (-76°F). This allows the transit fluid in the piping system to flow optimally even in these low temperature conditions. In addition, Thorburn's ThermaCover™ heat traced jackets can be designed to maintain a constant temperature and be self regulating to adjust for temperature fluctuation.



Cross Pipe Design



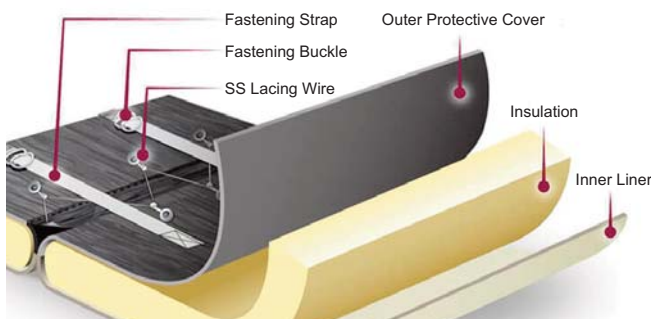
Elbow Pipe Design



Tee Pipe Design



Straight Pipe Design



The outer protective cover and inner liner form a waterproof seal for the interior insulation

## Thorburn Jacketed Insulation Covers



### Thorburn's K7 Specifications

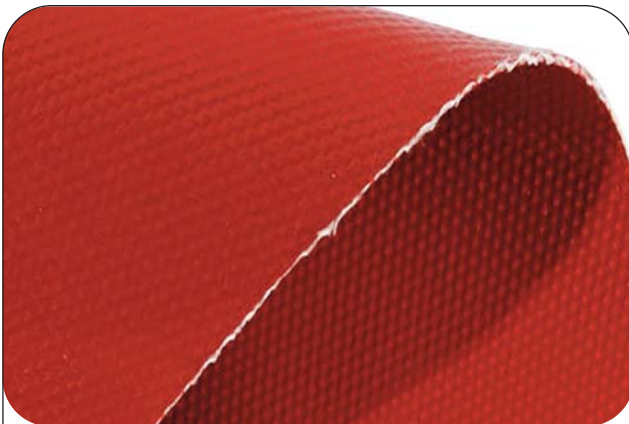
**Basic Material:** Fiberglass fabric  
**Coating Material:** PTFE, two sides  
**Thickness:** 0.40 mm  
**Standard Width:** 1500mm  
**Temperature Range:** -73°C (-100°F) to 315°C (600°F)  
**Weight:** 610 g/m<sup>2</sup>  
**Tensile Strength:** 715 N/cm (Warp) - 536 N/cm (Weft)

### Thorburn Series K7 PTFE Coated Fiberglass Covers

Thorburn's Series K7 PTFE coated fiberglass covers are specifically designed for use in Thorburn removable insulation blankets. K7 is used as the outer layer in Thorburn's removable insulation jackets. Thorburn's K7 is ideally suited for demanding environments that require chemical resistance, oil resistance, heat resistance and robust handling. K7 is made of pure unpigmented PTFE coated high tensile fiberglass that withstands continuous temperature up to 315°C (600°F). K7 can also be used as an inner layer when water resistance is a design requirement. Thorburn's K7 is pliable which facilitates fabrication into different shapes and sizes.

### Advantages

- Excellent performance on thermal insulation
- Ageless, long service life
- Robust handling
- Soft and high strength, easy to bend and wrap
- Easy to be sewn and fabricated
- Easy to clean, is non-stick to almost all materials
- Ideal cover for pipeline equipment in low and high temperatures
- Chemical and oil resistant
- Flame retardant
- Excellent dielectric properties



### Thorburn's S7 Specifications

**Basic Material:** Fiberglass fabric  
**Coating Material:** Silicon, two sides  
**Thickness:** 0.40 mm  
**Standard Width:** 1000mm  
**Temperature Range:** -55°C (-67°F) to 230°C (446°F)  
**Weight:** 620 g/m<sup>2</sup>  
**Tensile Strength:** 700N/cm (Warp) - 500N/cm (Weft)

### Thorburn Series S7 Silicone Coated Fiberglass Cover

Thorburn's Series S7 silicone coated fiberglass covers are specifically designed for use in Thorburn removable insulation blankets. S7 Silicone coated fiberglass covers is an alkali-free fiberglass cloth impregnated with our special formulated liquid silicone rubber on one side or both sides. The material withstands a long-term temperature resistance up to 230°C and a short-term temperature of 280 °C. Thorburn's S7 silicone rubber has comprehensive properties such as heat resistance, high insulation, weather resistance and chemical resistance. Thorburn's S7 silicone coated fiberglass not only retains the high strength, temperature resistance and fire resistance but also adds unique water resistance.

### Advantages

- Excellent non-stick and abrasion resistant surface
- Good chemical resistance
- Suitable for indoor and outdoor environments
- Flexible, easy to cut and sew
- Flame retardant, good as welding curtain
- Ozone, oxide and weathering resistant
- Oil and water resistant
- Withstand high voltage loads, high electrical insulation

## ThermaCover™ Flexible EPDM Insulation Series R-Flex™



Thorburn's R-Flex™ is a flexible elastomeric EPDM closed cell foam insulation that is environmentally friendly and CFC-free. Thorburn's R-Flex™ insulation is a component in Thorburn's ThermaCover™ removable insulation jacket. R-Flex™ insulation is used to retard heat gain and prevent condensation or frost formation on cold equipment, ducts, or large O.D. flexible or rigid pipes. It also effectively retards heat loss when used on hot equipment, ducts, or large flexible or rigid pipes and can be used as duct covering. R-Flex™ insulation has a very tough skin which withstands tearing, rough handling, and severe environmental conditions, and yet is quite flexible for easy installation.

### R-Flex™ Specifications

**Thermal Conductivity:** 0.245 Btu·in/h·ft<sup>2</sup> ·°F (0.035 W/m·k)

**Density:** 3 to 6 lb/ft<sup>3</sup> (48 to 96 kg/m<sup>3</sup>)

**Operating Temperature:** - 65°F (-54°C) to 300°F (150°C)

## ThermaCover™ Thermo-Gel Series TGI™ Insulation



Thorburn's Thermo-Gel Series TGI™ insulation is a flexible high-temperature insulation blanket that is made of silica aerogel, which has the lowest thermal conductivity of any known solid, and reinforced with a non-woven, glass-fiber batting offering excellent protection against corrosion under insulation (CUI). Thermo-Gel Series TGI™ insulation is hydrophobic and breathable that ensures long-lasting water resistance for both the insulation layer and underlying pipes or equipment and offers industry leading thermal performance that dramatically reduces handling dust and simplifies installation.

### Thermo-Gel Series TGI™ Specifications

**Thermal Conductivity:** 0.10 to 0.16 Btu·in/h·ft<sup>2</sup> ·°F (0.014 to 0.023 W/m·k)

**Density:** 16.8 lb/ft<sup>3</sup> (270 kg/m<sup>3</sup>)

**Operating Temperature:** 1200°F (650°C)

## ThermaCover™ Fiberglass Silica Insulation Series SFI™



Thorburn's Series SFI™ fiberglass silica insulation is a unique insulating blanket material with excellent performance in high-temperature applications with stability and resistance to chemical attack. Thorburn's Series SFI™ insulation is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying. SFI insulation is resistant to thermal shock and provides low thermal conductivity and low heat storage. Thorburn's Series SFI™ insulation is cleaned during production to remove any organic matter to minimize out-gassing on initial startup.

### SFI™ Specifications

**Thermal Conductivity:** 0.798 Btu·in/h·ft<sup>2</sup> ·°F (0.115 W/m·k)

**Density:** 9.5 to 12 lb/ft<sup>3</sup> (152.18 to 192.22 kg/m<sup>3</sup>)

**Operating Temperature:** 2012°F (1100°C)

## ThermaCover™ Mineral Wool Insulation Series TBS-960™



Thorburn's Series TBS-960™ mineral wool insulation is a non-combustible stone wool (mineral fiber) thermal insulation blanket that is fire, moisture and corrosive resistant, and provides excellent sound absorbency. Thorburn's Series TBS-960™ maximum insulating temperature is 1200°F (650°C). Thorburn's Series TBS-960™ is recommended for thermal and acoustic applications where the insulation would be subjected to light mechanical loads at high temperatures.

### TBS-960™ Specifications

**Thermal Conductivity:** 0.25 Btu·in/h·ft<sup>2</sup> ·°F (0.036 W/m·k)

**Density:** 4.4 lb/ft<sup>3</sup> (70.48 kg/m<sup>3</sup>)

**Operating Temperature:** 1200°F (650°C)

## ThermaCover™ Heat Traced Removable Insulation Jacket

Series TCT-HT (PTFE Coated Fiberglass Heat Trace) | Series TCS-HT (Silicone Coated Fiberglass Heat Trace)



### ThermaCover™ removable insulation jackets can not add heat

Removable insulation jackets are great at managing heat either by lowering the ambient heat in an engine room, protecting the workers from hot surfaces, or shielding pipe media from cold external temperatures. Where Thorburn's ThermaCover™ removable insulation jackets can help is when heat tracing is added to a rigid or flexible piping system, Thorburn's ThermaCover™ can minimize the amount of heat loss to the environment and thus maximize the efficiency of heat tracing.



Thorburn's ThermaCover™ Series TCT-HT removable insulation jacket with integral heat tracing elements

### Freeze Protection Against Arctic Temperatures -60°C (-76°F)

Thorburn's heat trace insulation jackets can be designed to maintain a constant temperature and be self regulating when temperature fluctuations occur and cause an increase or decrease in the required heat generation. Thorburn's ThermaCover™ Series TCT-HT and Series TCS-HT are custom designed for specific applications where the goal is either freeze protection or maintaining the flow media at a constant temperature. In any case, the desired media temperature and the ambient temperature must be considered when designing Thorburn's ThermaCover™



Thorburn's ThermaCover™ Series TCT-HT elbow design insulation jacket with integral heat tracing elements

## Jacketed Insulation Cover Attachments and End Connectors

Removable insulation covers can be snapped, strap tied, wire laced or velcro fastened which makes the covers much easier to adjust or temporarily remove during inspections. Removable insulation covers feature high temperature sewn construction and incorporate flaps, closures, and cutouts to provide easy access to ports and controls.



Velcro



Straps



Snaps



Stainless Steel Lacing Wire

## Benefits of Removable Insulation Jackets

Insulation is essential for heat management in industrial facilities and can also assist with retaining heat generated by equipment to keep it from freezing up in cold or outdoor environments. Uninsulated heat systems and heat processing equipment are inefficient because the heat can dissipate into the surrounding area and must constantly be replenished. Insulation covers help maintain the safe operation of heat and processing equipment so the systems require less energy to run. They also shield the surrounding environment from the equipment's temperature. This keeps nearby workers safe from heat-related injuries and eliminates the risk that someone will brush up against unprotected pipes. Insulation covers don't just block temperature, they can also block sound. Industrial process equipment can generate ambient noise at levels that distract workers, contribute to long-term hearing loss, or prevent people from communicating or hearing safety alerts. Removable insulation covers can reduce the total amount of noise in a space.



Rigid & Flexible Pipe Spools, Fittings & Flanges



Valves and Equipment



Containment Vessels

## Industry Applications



Clean Nuclear Power Generation



Clean Combined Cycle Power Generation



Petro-Chemical Processing



Hydro/pyro metallurgical Processing

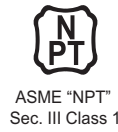


Ship Building



Marine & Offshore

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## How To Order Thorburn ThermaCover™ Removable Insulation Jackets

Thorburn Model	Pipe OD Size (in)	Style	Length(s) (in)	Insulation Type	Insulation Thickness	Cover Type	Attachment	End Connector
<b>TCT-HT</b>	<b>6</b>	<b>EL</b>	<b>24-60</b>	<b>R-Flex</b>	<b>3</b>	<b>K7</b>	<b>SN</b>	<b>VE</b>
	6"	Elbow	L1=24" L2=60"	EPDM	3/4" Thick	PTFE Coated Fiberglass	Snaps	Velcro
<b>TCT</b> = PTFE Coated Fiberglass <b>TCS</b> = Silicon Coated Fiberglass <b>Options</b> <b>HT</b> = Heat Trace Use Prefix <b>(N)</b> for Nuclear applications at the beginning of the part number	Indicate the <b>Outside Diameter</b> of the pipe	<b>ST</b> = Straight <b>EL</b> = Elbow <b>TE</b> = Tee <b>CR</b> = Cross	Straight (L1) Elbow (L1, L2) Tee (L1, L2) Cross (L1, L2, L3, L4)	<b>R-Flex</b> (EPDM) <b>TGI</b> (Thermo-Gel) <b>SFI</b> (Silica Fiberglass) <b>TBS-960</b> (Mineral Wool)	1 = 1/4" 2 = 1/2" 3 = 3/4" 4 = 1"	<b>K7</b> (PTFE Coated Fiberglass) <b>S7</b> (Silicone Coated Fiberglass)	<b>VE</b> = Velcro <b>ST</b> = Straps <b>SN</b> = Snaps <b>LW</b> = Lacing Wire	<b>VE</b> = Velcro <b>SN</b> = Snaps

## ThermaCover™ Removable Insulation Jacket Lengths

