

YOUNGTHERM®

PREMIUM RADIANT BARRIER

GENERAL DESCRIPTION

YOUNGTHERM® Premium Radiant Barrier is a double-sided aluminium foil reflective barrier featuring a woven fibreglass reinforcement core, bonded throughout with a high-performance adhesive.

Developed for demanding South African conditions, it is suited to residential, commercial, retail, hospitality, medical, and heavy industrial building applications where robust radiant heat control, structural resilience, and compliance with fire regulations are non-negotiable.

PRODUCT COMPOSITION

The product is a five-layer laminate construction. The outer faces consist of two 7-micron aluminium foil layers, each bonded to a central 100G woven fibreglass cloth via a high-bond adhesive interlayer on either side.

Laminate Build

- Outer Face: Aluminium Foil (7 microns)
- Adhesive Bond Layer
- Core: Woven Fibreglass Cloth (100G)
- Adhesive Bond Layer
- Inner Face: Aluminium Foil (7 microns)

FIRE PERFORMANCE

YOUNGTHERM® Premium Radiant Barrier complies with the following fire performance standards and classifications:

FIRE STANDARD	CLASSIFICATION	APPLICATION
SANS 53501-1 (EN 13501-1)	A2-s1, d0	All building types
SANS 428 Protocol	A/A1/1/H&V	Horizontal & Vertical (SP & USP)

The product is approved for installation in single- and multi-storey structures, including residential, commercial, retail, hospitality, medical, and heavy industrial facilities, where documented compliance with fire performance requirements is required.

APPLICATIONS

Suitable for use in:

Roof and ceiling assemblies in residential, warehouse, factory, and heavy industrial buildings

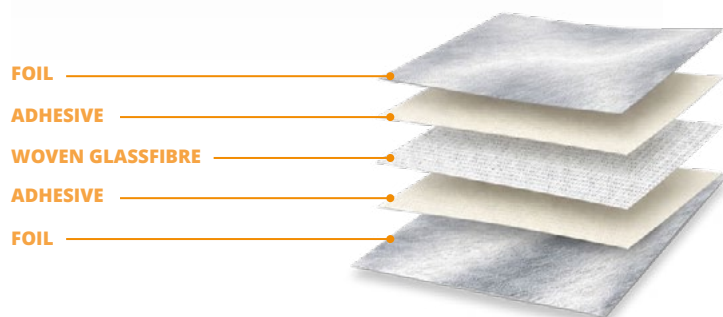
Commercial, retail, hospitality, medical, and multi-residential facility roof systems

Installed beneath roof decking or over attic rafters in pitched and flat roof configurations

Large open-span ceiling installations in warehouses, supermarkets, and production facilities

Air conditioning ductwork and pipe wrapping

Floor and wall assemblies requiring radiant heat control



SPECIFICATION CLAUSE

Reflective radiant barrier shall be **Youngtherm® Premium Radiant Barrier**, installed in accordance with the manufacturer's recommendations.

Product shall achieve a fire classification of A2-s1, d0 per SANS 53501-1 (EN 13501-1). Install with a minimum 150mm overlap on all joints, supported on galvanised straining wires at 275mm centres, and seal all laps and penetrations with 24mm aluminium foil tape.

KEY PRODUCT ATTRIBUTES

- Reflects 97% of incident radiant heat, contributing directly to lower energy costs
- Both aluminium foil faces carry a low emissivity value of 0.03, limiting re-radiation from either surface
- Woven fibreglass core delivers high tensile strength and resistance to tearing during and after installation

- Wrinkle-free handling makes on-site cutting and fitting straightforward
- Strong water vapour resistance protects the building assembly from moisture-related deterioration
- Fire-resistant foil surfaces on both faces — A2-s1, d0 certified

PHYSICAL & MECHANICAL PROPERTIES

PROPERTY	VALUE	TEST STANDARD
Mass per Unit Area	135 gsm	—
Foil Thickness (per face)	7 Microns	—
Tensile Strength — Longitudinal	500 N/25mm	ASTM D 828
Tensile Strength — Transverse	350 N/25mm	ASTM D 828
Burst Strength	70 N/CM ²	ASTM D 774
Temperature Resistance	Flexible, no delamination (-29°C to 66°C)	ASTM C 1263
Water Vapour Permeance	5.75 ng/N.s	ASTM E96
Emissivity — Both Foil Faces	0.03	ASTM E408
Fire Classification	A2-s1, d0	SANS 53501-1 (EN 13501-1)

ROLL SPECIFICATIONS

PARAMETER	VALUE
Surface Appearance	Silver (both faces)
Roll Length	40m
Roll Width	1250mm
Gross Roll Area	50m ²
Net Effective Coverage	44m ²
Recommended Lap	150mm

INSTALLATION GUIDELINES

Residential Installation: Tiles

- Unroll the Youngtherm Radiant Barrier horizontally across the rafters, with the printed aluminium side facing up
- Overlap all joints by 150 mm using the printed guidelines
- Secure the material between truss rafters & battens, ensuring it is laid evenly and without sagging
- Install roof tiles promptly after installation

Recommended good practice: Seal all overlaps, cut edges, and service penetrations with 50mm aluminium foil tape.

Industrial / Commercial Installation

- Using straining wires fixed at 275mm or 367mm above the purlins and tension evenly
- Unroll the Youngtherm Radiant Barrier vertically across purlins
- Ensure the printed aluminium surface faces the air gap
- Overlap all joints by 150mm using the printed guide lines
- Draw the material hand-tight across purlins, avoiding overstretching
- Install roof sheeting as soon as possible after installation

Residential Installation: Metal Sheets

- Unroll the Youngtherm Radiant Barrier vertically across purlins
- Ensure the printed aluminium surface faces the top
- Overlap all joints by 150mm using the printed guidelines
- Draw the material hand-tight across purlins, avoiding overstretching
- Install roof sheeting as soon as possible after installation

THERMAL RESISTANCE PERFORMANCE

The barrier achieves its best thermal resistance values when installed with air gaps on one or both sides.

Values below apply to a horizontal double-sided reflective foil installation tested at a temperature range of 36°C/10°C (mean 23°C) per the TIPSASA Technical Code 2017:

AIR GAP CONFIGURATION	DOWNWARD HEAT FLOW (M ² ·K/W)	UPWARD HEAT FLOW (M ² ·K/W)
0mm above / 80mm below	1.276	0.396
20mm above / 80mm below	1.385	0.595
40mm above / 60mm below	1.91	0.571

SUPPLIER AND TECHNICAL SUPPORT

YOUNGTHERM® Radiant Barrier is supplied and supported by **Youngman Roofing & Insulation**, an established South African manufacturer and distributor of roofing and insulation solutions for industrial and commercial applications. For technical assistance, product selection, specification support, and project-specific guidance, contact:

T: +27 (0) 21 511 8125
E: info@youngman.co.za
W: www.youngman.co.za

Technical consultation is recommended to confirm product selection, thickness, and installation requirements for specific project conditions.

Member of  **TIPSASA**
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