ThermaCote®

Thermal insulating coating

FLOORS, WALLS, ROOFS & INDUSTRY

Anti-humidity / All types of substrates / Primer & top coat, all-in-one application

thermacote

www.thermacote.com / www.thermacote.eu

THERMACOTE CLIENTS

United States Army
Coca-Cola
BASF
ARAMCO
ABB
Samsung C&T
Exxon
Shell
NASA
Johnson Controls
United States Navy
Nestle
Northrop Grumman
Princess Cruise Lines
Dole, Chiquita
Budweiser Racing
Dubai Airports Company
SIKORSKY
State Farm Insurance
Thermo King
AMMROC
Emirates Airlines
Baker & Hughes
Hartsfield International Airport
UAE Air Force
GAC Logistics
Habitat for Humanity
United States Coast Guard
Kharafi National
Atlanta Gas Light Company
Helmerich & Payne
Kempinski Hotel
International Drilling Co
Ingalls Shipbuilding
University of Georgia
University of Mississippi
Margaritaville Beach Hotel
Moorehouse College
Alabama State Department of Education
HCA Midwest Medical Research Center
Walker Construction
XERVON

RATINGS & ACCREDITATIONS

Intertek ISO 9001:2008
UL Classified
USGBC Member
Abu Dhabi Quality & Conformity Council
Better Business Bureau Member
CRRC Rated Product
MAS Certified Green
US Department of Commerce
Collaborative for High Performance Schools
ENERGY STAR Certified Roof Product
ECRC Rated Product
ICC-ES International Code Council
CE EN-1504-2

THE SPRAY-APPLIED THERMAL BARRIER SINCE 1985

ThermaCote® is a paint-like single component spray-applied water-based acrylic material that incorporates Ceramic Technology. Its ease of application for new or retrofit construction allows for the performance enhancement of insulation of Floors, HVAC Duct Work, Wall Systems, and Roof Systems for all types of substrates including metal, brick, cement block, concrete, wood, or sheet rock. ThermaCote® is MAS Certified Green and UL® Classified as a Class A Fire Retardant with a 0 zero) Flame Spread.

ThermaCote® is a high performance thermal barrier, which incorporates ceramic technology to prevent the transfer of heat or cold and minimise solar and radiant heat gain.

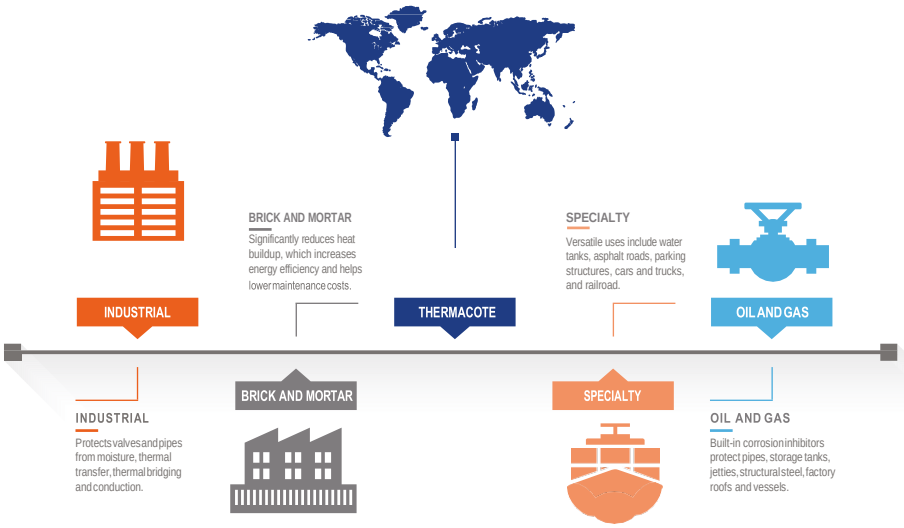
Thermal Barrier
Air Permanence
Anti-humidity
Breathability
Emissivity
Corrosion Inhibitor
Ultra Lightweight
Ultra Low VOCs
Waterproof
Fire Retardant
Elasticity
Adhesion
All types of substrates

ThermaCote® is a superior spray applied reflective thermal barrier which in its simplest definition can be described as an 'energy saving paint'. When dry, ThermaCote looks just like any flat latex paint, yet it helps to significantly conserve energy. Technically, ThermaCote is a high-performance thermal barrier, which incorporates ceramic techno- logy to prevent the transfer of heat (or cold). It also has corrosion protection and control properties in addition to condensation control.

ThermaCote® saves energy by boosting the performance level of insulation in Commercial and Residential Buildings. When used as the Primary Thermal Envelope (PTE), ThermaCote® seals the structure and minimizes Solar/Radiant Heat Gain.

ThermaCote® guards insulation against moisture, thermal transfer, thermal bridging, and conduction; it also allows entrapped moisture to escape. All of this provides an environment close to replicating the lab conditions where insulation is assigned its "R" value.

ThermaCote® is sustainable as it lowers the energy consumption of a structure, prolongs the life of the building materials and adds no harmful VOCs to the indoor or outdoor environment during installation, service or dismantling and recycling.



INDUSTRIAL

ThermaCote® incorporates advanced ceramic technology to prevent the transfer of heat and cold and save energy and maintenance costs in industrial applications.

WAREHOUSES, HVAC, CHILLERS, STEEL, ALUMINUM, STEAM LINES, STEEL BEAMS, FRAMING, STEEL CONTAINERS, SILOS, PIPES, VALVES.

ThermaCote® is the perfect solution for insulating valves and pipes in an industrial line. For hot applications ThermaCote® can be applied while the unit is operational and at temperatures to 149C/300F and with special training up to 210C/410F. Since ThermaCote® incorporates corrosion inhibitors, no primer is necessary in most cases.

Industrial applications utilizing ThermaCote are applied in approximately 0.25mm coats, allowing for complete drying before recoating until proper thickness or 'build' is achieved. Without complete drying between coats, moisture encapsulation will ultimately result in product failure. Cryogenic applications must be performed at ambient temperature and fully dried and cured before returning to cold service.

Protects against moisture, thermal transfer, thermal bridging and conduction, and self primes. Apply directly to freshly blasted steel as well as stainless steel and aluminum.

Protects valves and pipes from moisture, thermal transfer, thermal bridging and conduction.

Built-in corrosion inhibitors, personnel protection, and consistent flow through piping.

OIL, GAS AND PETROCHEMICALS

PIPES, STORAGE TANKS, JETTIES, VESSELS, STRUCTURAL STEEL, FACTORY ROOFS

ThermaCote® was the first fluid applied water based coating used to combat CUI (corrosion under insulation) in the mid-80s. With built in corrosion inhibitors ThermaCote® can protect fresh blasted steel from 'flash' or surface rust by applying it as a primer & topcoat all in one product. Areas that already have corrosion issues or that are extremely prone will require an additional primer prior to application. ThermaCote® has been used in North America for decades to prevent heat loss on industrial pipe systems (oil pipelines) which carry materials that must maintain temperatures at or above 325°F/161.5°C.

ThermaCote® is a product that protects substrates, and personnel from contact burns. As well, this product delivers all of the insulation needed in most cases for piping, tanks and other vessels for temperatures up to 410°F/210°C in continuous operation while systems are hot.

LNG Gas 'balls' (storage tanks) and all other related equipment can benefit from the lowered surface temperatures which will remain closer to the ambient temperature conditions with ThermaCote®. A simple 1-1.5mm thickness is all that is needed to control temperature 'heat gain'. ThermaCote® on a substrate controls the temperatures inside a LNG gas system during storage and transport as well.

Can be applied to surfaces as hot as 410°F/210°C. No harmful fumes emitted at any point before, during or after application. Flame spread of 0 (zero).

Exxon applied ThermaCote to one oil well pipe line

- *"Applied to one oil well pipe line in Florida with temperatures exceeding 265 degrees. With ThermaCote temperature was reduced by 100 degrees plus. Previously Exxon had problems keeping any type of paint coating on this well, because of extreme temperature."*

Shell Western has also used ThermaCote to an oil well

- *'Shell Western has also used ThermaCote to an oil well with highly concentrated heat with temperatures reduced by at least 100 degrees."*
- *"We have applied ThermaCote on a metal office building for Shell Western E & P, Inc. Monitoring the building the temperature dropped 20 degrees. We also applied 19 mils of ThermaCote to the bottom of metal with eyewitnesses the temperature dropped 28 degrees within a hour.'*

Oil Tank and lines insulated and protected to Fino Oil & Chemical Company

- *"ThermaCote has been applied to Fino Oil & Chemical Company….purpose for applying to insulate and prevent hardening the oil, making it difficult to load. ThermaCote keeps the oil at a constant temperature until loading time…..also prevents rusting of tanks, lines and treaters."*

Atlanta Gas Light Company

- *"Since our work was done we have no further leaks and have reduced cooling costs considerably. It is really a fine product that performs as promised."* Robert M. Herring, Atlanta Gas Light Company

ThermaCote on steam traps, valve bodies, pipe flanges or even boiler fire doors

- *"Note to express my amazed high level of satisfaction. I use the product for areas where standard insulation is difficult to near impossible-to-apply areas frequently access such as steam traps, valve bodies, pipe flanges or even boiler fire doors……. I am retaining enough heat in my equipment to lower the room temperature approximately 20 to 30 degrees."*

Insulate the exhaust systems on our offshore equipment

- *"We use this to insulate the exhaust systems on our offshore equipment. We have found three coats to reduce the exhaust temperature from 360 degrees to a temperature which may be touched without burning."*

Valve insulated For Nestlé

Before=172°C

With ThermaCote = 69°C

Glycol lines and related equipment for the cooling system with ThermaCote for Dubai Airport

Liquid oxygen Tank insulated

Liquid oxygen Pipe Insulation

Tank protection in Oman

Boiler Tube and Pipe insulation to Bucharest Henri Coandă International Airport

Passenger Boarding at Hartsfield-Jackson International Airport

PRODUCT DATA SHEET ThermaCote®

Révision : 29/09/2019

CHARACTERISTIC	DESCRIPTION	
Appearance	Creamy Liquid	
Color	Bone White	Color charts available
Coverage (thickness= 20 mils / 0.5mm)	1,30 m²/liter (24,7m² per Buckets)	Coverage will vary depending upon substrate, surface texture
Density	ASTM D-792	0,41 (g/cm³)
	EN ISO 2811-1:2002	0,622 g/ml
Drying Time	1 to 2 Hours at 21° C & Humidity <60%	
Flash Point	No Flash to Boil	
Maximum Surface Application Temperature	149° C / 300° F	
pH	8,45-9,50	
Solids by Volume	80% ±4	
Specific Gravity	0,594	
Thickness	0,5 mm	EN ISO 2808 : 2007 = 323,8 pm
Viscosity	2,000-10,000 cps	Using Brookfield viscometer with #3 spindle at 12 rpm
VOC	VOC Max: 5.3g/L	Valeur limite UE de COV : Catégorie A / Sous-catégorie c < 40g/l
Weight of Non-Volatiles	43%	
Determination of non- volatile-matter content	EN ISO 3251:2008	54,62% Min.45
Weight per liter	0,600 kg/liter	

GENERAL PROPERTIES	STANDARD	RESULTS	
Thermal conductivity: λ (lambda)	EN 12667:2002	0,0345 W/mK	
In-situ Energy measurement	EU ISO 9869	Energy Reduced by 38%	
In-situ measurement of R Value	EU ISO 9869	R Value up to 1,87m²K/W	
In-situ measurement of U Value	EU ISO 9869	U Value up to 0,53W/m²K	
Air Permeance	ASTM E-2178	0,0001 L/(s·m²) at 75 Pa	(0,00002 cfm/ft² at 1,56 lb/ft²)
Flame Spread	ANSI/UL 723	0	
Smoke Developed	ANSI/UL 723	5	
Fire EUROCLASSES (on OSB)	EN 13501-1:2007	D-s2,d0	
Moisture Vapor Barrier	ASTM D-1653	0,0755	
Water Vapor Permeance (Desiccant Method: water vapor from external environment to Structure)	ASTM E-96	207 ng/(Pa·s·m²) ---------- 3,617 perms	Sd = 1,69 m
Water Vapor Permeance (Water Method: water vapor from Structure to external environment)	ASTM E-96	387 ng/(Pa·s·m²) ---------- 6,779 perms	Sd = 0,87 m
Thermal Performance Hot Box	ASTM C1363-11	Increase R value: Up to 32,4 %	
Accelerated Aging	ASTM G-53	200 Hours	Passed
Salt spray test	EN ISO 9227:2007	1 500 Hours, without any damage	
Cross Hatch Adhesion	ASTM D-3359	100	
Density (g/cm³)	ASTM D-792	0,41	
Elongation (Elasticity)	ASTM D-882	65%	
Emissivity	ASTM C-1371	0,88 initial (0,86 at 3 year)	88% (86% at 3 year)

GENERAL PROPERTIES	STANDARD	RESULTS	
Normal Emittance	ASTM E-408	.94	
Pull Adhesion (Method B-Concrete)	ASTM D-4541	1,447 kPa	209,9 psi
Tensile testing on concrete base	EN ISO 4624:2003	0,78 Mpa	
Pull Adhesion (Method B-Plywood)	ASTM D-4541	1,348 kPa	195,6 psi
Testing on hard metal grid	EN ISO 2409:2007	1	
Bend testing (on cylindrical mandrel)	EN ISO 1519:2003	No cracks or separation of support	
Réflectivity	ASTM C-1549	0,83 Initial (0,75 at 3 year)	83% (75% at 3 year)
Solar Reflectance Index (SRI)	ASTM E-1980	104 Initiale	(77 à 3 ans)
Tensile Strength (lb/in^2)	ASTM D-882	66,7	
Water Resistance	AATCC 127	No water leakage at 55 cm	
Determination of resistance to moisture (condensation repeated) Metal & Concrete	ISO 11503:1997	64 cycles, No damage to the coating	
Change of temperature	EN 60068-2-14:2001	64 cycles, No damage to the coating	
Determination of the effect of heat	EN ISO 3248:2001	7 Hours at 125°C: no change	
Determination of resistance to liquids	EN ISO 2812-1:2007	24 Hours In a gas oil bath: no change	
Rapid-deformation (impact resistance) tests	EN ISO 6272-1:2004	On metal base, Weighing: 1 kg - 100 cm / Weighing: 2 kg - 100 cm	
		On concrete base, Weighing: 1 kg - 100 cm	
Exposure of coatings to artificial weathering	EN ISO 11507:2007	Cycle: 8 hours UV at a temperature of 60 (± 3)°C; 4 hours condensation at a temperature of 50 (± 3)°C; 100 cycle: slight yellowing of the film	
Resistance of Synthetic Polymeric Materials to Fungi	ASTM G21-13	Class 0 :No growth after 4 weeks	
	ASTM G21-15	Class 1: less than 10% after 12 weeks	
Dynamic Slip Resistance	ASTM E303-93 (2008)	Average Wet BPN: 54	
Surface Skid resistance		Coefficient of Friction: Avg: 0,38	
Static Coefficient of Friction	ASTM C1028	Dry: 0,92 / Wet: 0,80	
Dynamic Coefficient of Friction Test	ANSI A137.1	Overall average: Wet: 0.53 / Dry: 0.56	
	ANSI B101.3	Average with SBR rubber slider: Wet: 0.52	
Slip Resistance Test Results	EN 13036-4	with Four S (96) hard slider: Dry: 65 / Wet: 57	
		with CEN soft slider: Dry: 101 / Wet: 44	
Assessment for Sustainable Slip Resistance (SSR) (500 cycles)	ASTM E 303	(PTV) with Four S hard rubber slider before wear: 65 / After wear: 57	
Permeability Water Vapour	EN ISO 7783	Sd = 1,0m	European Harmonised Standard: EN 1504-2
Capillary absorption and Permeability to water	EN 1062-3	0,011 W	
Adhesion Strength by pull of test	EN 1542	1,23 Mpa	
Thermal Cycling w/o De-Icing Salt Impact	EN 13687-3	1,11 Mpa	
Carbon Dioxide Permeability		59 (Sd > 50 m)	
Dangerous substances	Comply with 5.4		

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