

INSULATING COATING - WATERPROOFING - AIR BARRIER
WALL - ROOF - INDUSTRIAL

ThermaCote®

REVÊTEMENT ISOLANT - ANTI-HUMIDITÉ - ÉTANCHE À L'AIR
MUR - TOITURE - INDUSTRIE

Equipments & Applications Guides



ThermaCote Europe

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PRODUCT DESCRIPTION

ThermaCote® is a single component spray applied thermal barrier coating encompassed of ceramics and acrylics (water based). This product is easy to apply in new or retrofit construction and enhances the performance of insulation, 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. When used as the Primary Thermal Envelope (PTE), ThermaCote® seals the structure and minimizes Solar/Radiant Heat Gain. Lowering built-up heat due to solar heat gain results in lower roof temperatures and reduced cooling costs. ThermaCote® guards insulation against moisture, thermal transfer, thermal bridging, and conduction; it also allows entrapped moisture to escape all of which provides an environment closer 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.

ThermaCote® is a high-performance ceramic insulating coating/weather barrier coating that offers superior corrosion protection for commercial, residential, exterior, and interior applications. The advanced ceramic technology conserves energy, looks just like flat latex paint when dry, and has ultra-low VOCs at 5.3 G/L.

ThermaCote® spray-applied weather barrier coating is Certified Green to California’s standard (DHS 01350) for indoor air quality in classrooms and offices, an ENERGY STAR qualified product, and is also a CRR (Cool Roof Rating Council) “Rated” product. With built-in corrosion protection, ThermaCote® is the perfect primer or topcoat on new or existing sheetrock, wood, glass, plastic, concrete or steel projects, and helps seal the envelope of any structure. A UL® Classified product with a 0-Flame spread, ThermaCote® is the professional’s choice.

EQUIPMENT AND TOOL RECOMMENDATION

ThermaCote® is a single stage coating designed for application via heavy-duty airless spray equipment. Brushing and rolling is not recommended but may be a feasible alternative for smaller, harder to reach areas.

Sprayer Requirements:

ThermaCote® requires a sprayer capable of maintaining an output of 2 GPM / 8 LPM.

➤ Example of equipment:

- Titan POWRTWIN PT6900 DI Plus Thermique, Débit = 8.5 lpm
- Titan POWRTWIN 8900 PLUS Thermique, Débit= 9.5 lpm
- Graco GMAX II 7900 STANDARD Honda, Débit= 8.3 lpm
- Graco MARK X MAX PROCONTRACTOR (électrique), Débit= 8.3 lpm
- Graco MARK X MAX STANDARD (électrique), Débit= 8.3 lpm
- Graco DUTYMAX DH230DI PROCONTRACTOR Thermique Honda GX200, Débit= 8.9 lpm
- Graco DUTYMAX GH300DI PROCONTRACTOR Thermique Honda GX270, Débit= 11.3 lpm
- AIRLESSCO HSS9950 Thermique, Débit= 8.9 lpm



Note: It is necessary and ThermaCote, Inc. recommends the removal of all inline filters on the machine and in the spray gun(s) if filters are present to prevent clogging in the machine, unless a coarser (30 mesh) filter replacement is available.

Spray Gun:

The gun should be an airless typed designed for use with viscous materials and pressure rated for the maximum system pressure. A reverse clean style tip with a 418 to 521 orifice and 60 to 80 degree fan angle should be used at time of spraying.

Graco Contractor Gun: (Note) Remove in-line filter from handle (*Or Equivalent*)

Spray Tips: Graco Revers-a-clean (*Or Equivalent*)

Minimum: 517 Interior finish, walls, ceilings etc. (smooth finish)
 519, 521, 525, exterior finish, tanks, silos, ducts
 319, 321, 325, exterior finish; (smaller diameter) pipes small duct systems etc.

Maximum: 535 Exterior finish; roofs, exterior walls etc.

Note: where 1 ct. .016 to .020 mils is specified w/1 coat system.

Spray Lines, Hose:

A pressure rated 3/8" hose is recommended for better flow of material when spraying ThermaCote®.

Ship Hose to Gun: 1/4 O.D. spray line 6' (feet max)

The high-pressure fluid hose should be a nylon lined rated for the maximum pump pressure. For hose lengths up to a total of 200 feet, the first 150 feet of hose from the pump should be 3/8 inch I.D. and the last 50 feet, to the gun should be 1/2 inch O.D.. These combinations are necessary to minimize the pressure drop through the hose and maintain a consistent flow.

Note ThermaCote is 80% solids.

Mixing:



Mixing Paddle-We recommend the mixing paddle (“mud paddle”) pictured here when preparing ThermaCote® for application.

Variable Speed Drill- ½ hp or greater drill is recommended in conjunction with mixing paddle to properly mix ThermaCote® before spraying

Safety Equipment-Goggles and respirator

Optional Gear- Protective bodysuits, shoe covers, drop cloths, spray shield.

*Caution: Shoe covers can result in loss of traction and should never be worn on sloped or slippery surfaces.

Clean Up and Storage :

Use warm soapy water to clean tools and spatters. Product should be stored between 40° F and 120° F (4° C-48 °C) DO NOT store in direct sun light and protect the product from freezing.

For ThermaCote the batch number is either A, B or C for the first digit. This signifies which batch of the day it is (first, second, third, etc). The numbers are in a pattern as follows mmddy .

So for example: B12045 means that this product was produced December 4, 2015 and was the second batch of the day.

SURFACE PREPARATION

ThermaCote® will adhere to almost any surface which is properly prepared. Proper preparation means the surface is thoroughly cleaned, dry and free of dirt, debris, rust, grease, oil or any other foreign substance. Treat any organic growth with fungicidal solution.

- New metal surfaces may require removal of temporary protective films. Pressure washing, or vinegar wash works well to remove these protective films when necessary.
- Rusty surfaces may require wire brushing and priming with a suitable primer for the substrate to ensure the best adhesion and finish. A rusty metal surface (as shown) should be pressure washed first, cleaned with a wire brush and coated with an appropriate rust prohibiting primer, like OWATROL®OIL or OWATROL® C.I.P. (Corrosive Inhibiting Primer) <http://www.owatrol-oil.info/index.html>, before the application of ThermaCote®.



- Concrete surfaces should be pressure washed to remove all loose surface material. Treat any organic growth with fungicidal solution. An extremely porous surface may require block-filler before the application of ThermaCote®.

MIXING INSTRUCTIONS

Do not open product until ready to apply. Upon opening, notice that ThermaCote® ingredients settle up in the bucket; this is due to the light weight nature of its construction (5 lbs/gallon wet). It is recommended to use the entire contents of an opened container in one application once it has been mixed. Over mixing can result in loss of performance.

ThermaCote® is packaged in 5 gallon buckets. The lid on the bucket has 8 pre-cut notches that must be cut in order to remove the lid (unless using a “lid puller”). On a lid with no pre-cut notches use a sharp blade to make at least 8 evenly spaced slices and use a lid puller to release the lid from the bucket.

1. Insert the mud paddle into the drill and secure.
2. Push the mud paddle through the thick top layer to the bottom of the bucket.
3. Mix ThermaCote® at a slow speed initially, gradually increasing speed; use an up and down motion and be sure all lumps break up and mix until you have a smooth homogenous liquid (2 minutes or less). Do not scrape the bucket with the drill in motion as this could contaminate the coating with plastic shavings.



4. DO NOT RUN DRILL ON HIGH SPEED

A clean stir stick can be used to gently scrape clinging material from the sides of the bucket but insure that nothing that has become hard or brittle (crusty) is dislodged as this can cause your tips to clog during

spraying. A seasoned applicator can properly mix a can of ThermaCote® in less than 2 minutes. DO NOT OVER MIX as this can affect the overall performance of the product.

For optimum spray atomization and application characteristics, the material in the pail should be maintained at a minimum of 10°C / 50°F. Application should not be installed in temperatures below 0°C / 32 degrees F unless surface temperature of substrate exceeds 100 degrees F.

Product must be protected from freezing. Should this occur the product will be rendered useless.

SPRAYING INSTRUCTIONS

1. Run clean water through the spray equipment to prime and wet the lines and to generally insure a ready sprayer before application begins.

2. ThermaCote® should be applied in coats of a 10 to 25 wet mil thickness (WMT) dependent upon the application.

*The wet mil gauge pictured here is a useful tool for determining the thickness of these coats.

3. Allow ThermaCote® to dry completely between coats when applying multiple coats.



The proper installation should always spread only 12 wet mil (0.012 in. /0.3 mm), 10 dry mil (0.01 in./ 0.254 mm).

Wait until completely dry, then apply the next coating. Because the variable temperature and humidity the drying time is also a variable . One can determine whether the coating is completely dried by using the thumb test.

Thumb Test: Press your thumb on the supposedly dried coating surface firmly. Then turn your thumb 90 degrees, if the surface wrinkles it is not yet completely dry.

Coverage should average 50 square feet per gallon at 20 mils thickness/ 25m² at 0.5mm thickness, on flat surfaces. Coverage should average approximately 80 square feet a gallon on smooth metal surfaces at 13 WMT. 13-15 mil coats / Coverage should average approximately 35m² on smooth metal surfaces at 0.25/0.3mm coats of ThermaCote® will dry in 2 hours at 21°C / 70° F in low humidity

Examples of Drying Time at Ambient Temperatures:

Drying Time at	Ambient temp= 64 to 68 °F / 17 to 20°C		Substrate temp = 60 to 68°F / 16 to 20°C		Relative Humidity = 54% to 78%
	2	4	5	5	
Layer					
Total Thickness	35 mils / ~1mm	75 mils / 2mm	80 mils / 2.1mm		
1st Coat	15 mils-0.38mm DFT/2.5 hours dry time	15 mils-0.38mm DFT/2.5 hours dry time	15 mils-0.38mm DFT/2.5 hours dry time		
2nd Coat	20 mils-0.5mmDFT/25% moisture after 3.5 hours, allowed to dry overnight	20 mils-0.5mm DFT/25% moisture after 3.5 hours, allowed to dry overnight	19 mils-0.5mm DFT/32% moisture after 3.5 hours, allowed to dry overnight		

3rd Coat		20 mils -0.5mm DFT/7% moisture after 6 hours, allowed to dry overnight	6 mils DFT/6 hours dry time
4th Coat		25 mils-0.6mm DFT/3% moisture after 8 hours, allowed to dry overnight	18 mils-0.45 DFT/22% moisture after 8 hours, allowed to dry overnight
5th Coat			22 mils-0.55mmDFT/17% moisture after 5.5 hours, allowed to dry overnight

Drying Time at	Ambient temp= 85°F/29,5°C	Substrate temp = 85 °F / 29,5°C	Relative Humidity = 42% to 52%
Layer	3	3	3
Total Thickness	47 mils / 1.2mm	55 mils / 1.4mm	70 mils / 1.8mm
1st Coat	15 mils-0.38mm DFT/1 hour dry time	18 mils-0.45mm DFT/3% moisture after 1 hour, allowed to dry overnight	22 mils -0.6mm DFT/7% moisture after 1 hour, allowed to dry overnight
2nd Coat	17 mils-0.45mm DFT/3.25 hours dry time	20 mils-0.5mm DFT/5 hours dry time	23 mils-0.6mm DFT/13/5 moisture after 5 hours, recoated at this time
3rd Coat	15 mils -0.38mm DFT/60% moisture after 2.25 hours, allowed to dry overnight	25 mils-0.63mm DFT/60 moisture after 2.25 hours, allowed to dry overnight	25 mils-0.63mm DFT/60% moisture after 2.25 hours, allowed to dry overnight

Drying Time at	Ambient temp= 64 °F / 18°C	Substrate temp = 182/185°F / 80°C	Relative Humidity = 50% to 52%
Layer	3	3	
Total Thickness	60 mils / 1.5mm	55 mils / 1.4mm	
1st Coat	22 mils -0.6mm DFT/1 hour dry time / surface temp ~ 160 °F / 70°C	15 mils-0.38mm DFT/1 hour dry time / surface temp ~132°F / 55,5°C	
2nd Coat	20 mils-0.5mm DFT/1.5% hours dry time / surface temp ~147°F / 64°C	20 mils-0.5mm DFT/1.5 hours dry time / surface temp ~122°F / 50°C	
3rd Coat	18 mils-0.5mm DFT/1 hour dry time/surface temp ~108°F / 43°C	15 mils-0.38mm DFT/1 hour dry time / surface temp ~112°F / 44°C	