



Mascoat
P R O D U C T S

**Why Paint
And then
Insulate?**

The Industry Leaders in Insulation Coatings

The Truth in Insulating Coatings

As you are trying to select an insulating coating, we would like to help in your search no matter if purchasing our coatings or another manufacturer/marketing firm. Due to the success of Mascoat, the marketplace of insulating coatings has been expanding at a tremendous rate and invited other players into the arena. As the competitors have joined the marketplace, potential issues have developed generating the need for definitions of really what a true thermal insulation coatings is. We feel the “truth in insulation coatings” should be defined as a generic “backbone” so that the consumer can be aware and educated.

The true definition of an true thermal insulating coating is one that produces temperature differentials across its surface, no matter where the coating is placed (i.e. to the heat/cold source or inside or outside). Thus, we would like to help define the coatings as well as giving items for discussion to your potential vendor. We would also like to help you identify true fact from fiction as some of the vendors can potentially mislead you to believing their coating are more powerful than they really are.

Over the past years, many new products have shown up in the marketplace claiming that they are “insulating coatings.” This fact is “true insulating coatings” competitors are welcomed, but farces should be caught and truncated with their ***exaggerated/embellished*** claims. These “in-truths” make the good guys (true competitors) and develop false competition against the good vendors with exaggerated data. Being able to sort the good from the bad is the main focus of this document.

Separation of Reflective Coating and True “Thermal Insulating Coatings”

As this marketplace has grown, many more applications have developed due to the successes of coatings. The problem is determining what really does “insulating” mean when applied to an “insulating coating?” If a white coating is placed on a rooftop and compared to a normal black roof, does that mean it provides insulation-type capabilities? Not really, it solely means that the coating is providing a reflective function and, therefore, lowering temperatures into the roof. Yes, from a different point of view it might be construed as “insulation” but in reality, it still is repelling heat prior to its entry into the roof. For the most part, the



real truth is that white paint would produce almost the same effect at a far lower cost. This product can be defined as a “reflective roof coating”.

This is why it is extremely important when selecting an insulating coating, the truth is known. If the application is trying to reduce solar heat gain for a rooftop, reflective-type roof coatings will perform quite well (until they get dirty). Remove the solar reflectivity (its bright whiteness) from the equation by placing the coating on the inside of the roof, and all you have is a thick white paint. This realistically means that you have a reflective roof coating and not a thermal insulation coating. If you are considering a roof application; rooftop reflective coatings might give you the performance you need. A true thermal insulation coating would probably be overkill except in colder environments.

Reflective Roof Coatings vs. True Thermal Insulation Coatings

Remember the above definition of: ***A true thermal insulation coating (TIC) produces temperature differentials across its surface, no matter where it is placed.*** Typically, real TIC's include encapsulate-type particles that entrap air and give an “anti-conductive” type function to the coating as well as low emissive features. This translates to a coating with a mechanical makeup of a very viscous, lightweight coating in the wet format (less than 6 lbs per gallon). Conversely, rooftop type reflective coatings weigh approx. in the 9-11 lb/gallon range as they are normally laden with resin and solid particles such as Titanium Dioxide, Calcium Carbonate, and other filling materials that are naturally reflective. Apply this coating in high-temp applications and you will, in all probability, have poor performance thermally and it will almost certainly blister and fall off. Sometimes this tarnishes the good reputation of a true thermal insulation coating as the so called “competitor” really does not understand the true limitations of their product.

Penalization of the Good Guys

The success to these true thermal insulation coatings has an extraordinary amount of good science to them. The problem arises when someone over states the results or quantifies their coating with ludicrous thermal insulation-type properties such as an R value of 24 at a 20 mil thickness. Many people are sold on this premise but in actuality it is no more than a tall tale and now technically illegal by the Federal Trade Commission (FTC). This is why it is vital to understand or research the claims if they seem “too good to be true” or “buyer beware.”

Before selecting an insulation-type coating ask yourself these questions:

1. **Is the information being conveyed based on real results, hearsay, fancy graphs, claims of being on the space shuttle, or other?** Ask for testing documents and do not be afraid to call the testing company to validate. Make sure that the documents are not copies of copies and that the information provided has been validated by an engineer and not the owner of the manufacturing company. (Believe it or not – this is actually done!). If a space shuttle is seen or referenced, the coatings should be specifically referenced as to where it was used. Most of these coatings companies claim the space shuttle technology, but in fact, the only thing of commonality is the word ceramic. The shuttle tiles are ceramic composites and radically different in composition and functionality to ceramic insulating coatings.
2. **If a manufacturer claims an R value, BEWARE as there is no such thing as an R Value for an insulating coating!** (By FTC rulings, R Value must be defined by appropriate ASTM type tests – (either 518 or C177). Technically an insulation coating cannot claim an R Value. Some may claim an R Value Equivalency (RvE). This is fine as long as the data and testing are there to support the claims.
3. **What is the wet weight of the coating?** If it is higher than 6.5 lbs/gal, then it is probably a reflective-type coating. These types of coatings applied to hot pipes or temperatures above 150°F are destined for failure. The reflective coatings will actually conduct heat in high heat applications such as a steam pipe.
4. **Can the manufacturer or dealer produce substantiated documents or testing supported in their technical data?** Make sure that the data is registered to the company that made the coating. If the documents are not registered to the manufacturer, then you are probably looking at a private label brand. Also beware of companies that state a bunch of tests as “Passed” but with no data stated. With most standards (ASTM) normally numerical values are given rather than “Pass” or “Fail” criteria. Approvals may classify a numerical figure as “Passing (i.e. Passed)” which is fine, but usually driven by the Approval agency and not a norm.
5. **Does the manufacturer fall under a quality assurance program such as Underwriters Laboratories or ISO 9000:2001?** If not, then they may have little to no quality control in addition to possibly not even manufacturing their own product. Quality assurance programs are expensive and normally dictate a major force in the industry as well insuring you the best in product quality. These insulating coatings can be temperamental at times so Quality Control is very important.
6. **Inquire about the mechanics of the coating and see if the salesperson can fully describe why their coating works.** If the information conveyed seems far-fetched or too good to be true, then it probably is. Or, if the salesperson says that it is the ceramics that produce the difference – then they do not fully understand the physics behind the product. There are a lot of potential “snake oil” type pitches out there. Once again Buyer Beware.

7. **Ask where the factory that makes the coating is located.** This is important as many of the insulating coatings and reflective roof coatings have many tiers and *could be private labels of private labels (or by the time you purchase the product it has many sets of hands all adding money to the deal)*. Typically, if you can find the manufacturer, you have found the real information resource. Some of the marketers run off of pirated data and use it for their own “private label.” Marketers normally are the ones that will over state the results, as well as the marketing to look “really” impressive. This may not really be their fault as the snowball has started rolling and they are just along for the ride.

Mascoat is working diligently with ASTM (American Standards and Testing Methods) to help define insulating coatings and reflective roof coatings in a benchmarking scale so one coating can be effectively compared to another. The problem is that this is un-written ground and it will take time to set up the rules and testing procedures. There is no doubt it needs to be done; *but it needs to be quantifiable as well as reproducible.*

However, until this time of industry standards occurs, the buyer must beware of “snake oil” type sales pitches. Mascoat is ready to help you identify the “good guys” from the bad so, if needed, please give us a call (800.549.0043). We are glad to help anyone identify any coating even if it does not result in a purchase of our products.

We hope that you will find this information useful and should you have any questions either on the above or any others, please call or email us at questions@mascoat.com.