High Solar Reflective Photocatalytic Silicone based coating for building's masonry & facades

ACTIVE COOL

Energy Savings
Thermal Comfort
Air Purification
Extreme Durability

For Building's Facades

www.abolinco.com

High solar reflective photocatalytic coating which noticeably combines thermal comfort conditions with the reduction of energy and money consumption.

Architects traditionally have recognized that reflective building colors can reduce building thermal loads. Many current references equate 'cool roofing' and "cool exterior walls" with whites. Certainly whites are good reflectors of the sun's heat. However, offering any color as long as it's White is not always the most viable design strategy.

Fortunately, COOL BARRIER & ACTIVE COOL technology allows for the design of products that remain cool under the sun – without sacrificing color. The offered technology is characterised by high solar reflectance and high infrared emittance values.

Active Cool Reduce Urban Temperatures and Fights Air Pollution

As vegetation has been replaced with non-reflective materials, our cities have grown steadily. This places a heavy demand on peak energy loads and creates health risks in non-air-conditioned edifices. In addition, heat generates smog, which negatively affects the health of community residents. Moreover, Active Cool is provided with special photocatalytic active ingredients which perform excellent mould and algae resistance while transform air harmful pollutants into harmless residues.

Active Cool

The special silicone/siloxane resin/binder combination generates water repellent (Lotus effect), highly water vapour permeable facade paint coating. Active Cool is suitable for coating mineral renders/ plasters and for renovation of sound, adherent silicate paints, matt dispersion/emulsion paints, synthetic resin renders/plasters and intact external thermal insulation composite systems (ETICS/EWI systems).

ACTIVE COOL TECHNOLOGY Enhance Quality of Life

Special Characteristics

- ✓ Saves energy by reducing the needs for cooling
- ✓ Contributes to "Urban Heat Island" mitigation
- ✓ Mitigates the consequences of the Global Warming phenomenon
- ✓ Creates thermal comfort conditions
- ✓ Saves money by reducing the billing costs for energy
- ✓ Environmentally and user friendly
- ✓ Transforms harmful city smog into harmless residues

Typical Data:		
Volume Solids	ASTM D 2697	39, 02%
Fungi Resistance	UNI EN 15458	Zero Rating
Algae Resitance	UNI EN 15458	Zero Rating
Solar Reflectance*	ASTM E903-96	0, 90
Infrared Emittance	ASTM E408-71	0, 89
Solar Reflectance Index*	ASTM E 1980-01	114
*** values refer to white colour**		

Typical Data according to EN 1062-1	Paints and varnishes —Coating materials and coating systems for exterior masonry and concrete
Water Permeability	W3 — $W=0,058 Kg/m^2h^{0,5}$
Water Vapor Transmission Rate	V1 — Sd= 0,0636
Carbon Dioxide Permeability	C0 — $Sd_{CO2}=2,077m$
Crack Binding Properties	A0 — No Requirement
Specular Gloss (G)	G3 — Matt
Dry film Thickness	E2 — > 50 ≤ 100
Grain Size	S1 — Fine < 100 µm

Designation Code	W3	V1	C0	A0	G3	E2	S1

Typical Data according to EN 1062-11 UV/Moisture Weathering Test	Paints and varnishes —Coating materials and coating systems for exterior masonry and concrete — Part 11: Methods of conditioning before testing	
EN ISO 4628-6:2011 Chalking degree	1000 Hours	Light Chalking^
EN ISO 4628-2:2007 Blistering degree	1000 Hours	No Blistering
EN ISO 4628-4:2007 Cracking degree	1000 Hours	No Cracking
EN ISO 4628-5:2007 Flaking degree	1000 Hours	No Flaking

*Light chalking is reasonable due to the photocatalytic activity

Typical Data according to EN 1504-2 Performance characteristics according to the principles defined in EN 1504-9 (tables 1 and 5 of EN 1504-2)	**Products and systems for the protection and repair of concrete structures. Definitions, requirements, quality control and evaluation of conformity. Surface protection systems for concrete**	
Principles	Minimum requirements (table 5 EN 1504, part 2)	Active Cool characteristic values
Principle 2 Moisture control Principle 8 Increase of resistivity		
Permeability to water vapour Test method EN ISO 7783 – 1 EN ISO 7783 – 2	Class I: Sd < 5 m Class II: 5 m ≤ Sd ≤ 50 m Class III: Sd > 50 m	Class I Sd= 0,0636 m
Capillary absorption and permeability to water Test method EN 1062 – 3	W < 0,1 kg/m^2 x h$^{0.5}$	W=0,058Kg /m^{2}h^{0,5}
Adhesion strength by pull-out test Test method EN 1542	Crack bridging Rigid or flexible systems No traffic ≥ 0,8 N/mm^2 ≥ 1,0 N/mm^2	≥ 0,8 N/mm^{2*}
* Abolin Co recommends ADHESION TESTS prior to bidding the project to ensure adhesion and compatibility between the coating and the substrate.		

Suitable Substrates: The substrate must be sound/stable, dry, clean, and free from all substances that may prevent good adhesion. Where applicable follow VOB, part C, DIN 18363, section 3.

Substrate Preparation

New and Existing, Sound ETICS/EWI Systems with Surfaces of Synthetic Resin-Bound (Organic) Render/Plaster, Silicone Resin Render/Plaster, Lime Plaster (PIc) and Lime Cement Plaster/ Minimum Compressive Strength according to EN 998-1: 1 N/mm^2. Clean existing renders/plasters by suitable wet cleaning method. Maximum temperature for high pressure water jet: 60 °C.
Pressure: max. 60 bar. Allow to dry thoroughly.

New Renders/Plasters in Mortar Groups/Classes P Ic (Hydraulic Lime Plaster), PII (Lime-Cement Mortars), P III (Cement Mortars) / Minimum Compressive Strength according to EN 998-1: 1 N/mm^2: New renders/plasters must be left untreated for a sufficiently long time, normally for 3 weeks at 20 °C and 65 % relative humidity. Adverse weather conditions, e.g. influenced by wind or rain, extend the curing process and correspondingly longer idle times must be respected.
The risk of calcareous efflorescence on alkaline finish renders of mortar classes PIc, PII and PIII can be minimised by an additional priming coat of Cool Barrier Grip or Cool Barrier Grip IPS and the finishing render/plaster may be coated after an idle time of 7 days.

Existing renders/plasters: Repairs must have adequate time to cure and dry. Highly porous, absorbent, slightly sanding renders/ plasters: Apply one or two coats of Cool Barrier Grip.
Prime highly sanding, chalking substrates with 2 coats Cool Barrier Grip Nano.

New Silicate Finish Renders: Prime with two coats wet on wet of Cool Barrier Grip or Cool Barrier Grip IPS.

Existing Coatings of Silicate Paints: Clean adherent, sound coatings mechanically or with high-pressure water jet, in compliance with the regulations. Remove unstable, weathered coatings by abrading, sanding/grinding or by scraping off. Prime with Cool Barrier Grip or Cool Barrier Grip IPS.

Sound/Stable Coats of Matt (Flat) Emulsion Paint: Clean soiled, chalking coatings by high pressure water jet, in compliance with the regulations. Prime with Cool Barrier Grip or Cool Barrier Grip IPS, if other cleaning methods are used (washing, wire brushing, hosing with water).

Sound/Stable Coatings of Synthetic Resin-Bound (Organic) or Silicone Resin Render/Plaster: Clean existing coatings by suitable means. Allow wet cleaned surfaces to dry thoroughly before further treatment.

Unsound Coatings of Emulsion Paint or Synthetic Resin-Bound (Organic) Render/Plaster: Remove completely by suitable means, e.g. mechanically or via paint stripper, followed by surface cleaning with a high pressure water jet, in compliance with the regulations. Apply one priming coat of Cool Barrier Grip or Cool Barrier Grip IPS on slightly absorbent or even surfaces. Prime chalking, sanding, absorbent surfaces with Cool Barrier Grip or Cool Barrier Grip IPS respectively.

Unsound Mineral Paint Coatings: Remove the coating completely by sanding off, brushing off, scraping off, using high pressure water jet in compliance with the regulations, or treat with other suitable methods. Allow wet cleaned surfaces to dry thoroughly before further treatment.
Prime with Cool Barrier Grip or Cool Barrier Grip IPS.

Fair-Faced Brickwork (Masonry): Only bricks and clinkers of frost-resistant quality and free of foreign inclusions are suitable substrates for exterior coats of paint. Masonry must be dry and free of salts/salty efflorescence, jointing must be free of cracks. Apply one priming coat of or Cool Barrier Grip or Cool Barrier Grip IPS.

Sand-Lime Brickwork (Masonry): Only frost resistant bricks, free of foreign inclusions, e.g. sand or loam, are suitable for being painted. Jointing must be free of cracks. Clean chalking surfaces. Remove salty efflorescence by dry wire brushing. Prime with Cool Barrier Grip or Cool Barrier Grip IPS.
Surfaces with Fungal (Fungi/Mildew/Mould) or Algal Attack: Remove mould and algal with proper surface treatment. Prime with Cool Barrier Grip or Cool Barrier Grip IPS
Surfaces with Salty Efflorescence: Remove salty efflorescence thoroughly by dry wire brushing and apply one priming coat of Prime with Cool Barrier Grip or Cool Barrier Grip IPS. Coating of such surfaces must be considered a risk for which we cannot accept responsibility, since even after the most thorough treatment the efflorescence may recur.

See also: "Active Cool Better Facades Here" brochure for details about masonry surfaces and related instructions.
Note: Abolin Co recommends ADHESION TESTS prior to bidding the project to ensure adhesion and compatibility between the coating and the substrate.

Method of Application: roller, brush or Airless Spray
Tips for application with airless equipment:
Spray angle: 30°
Nozzle**:** 0.016" - 0.019" double nozzle
General: Apply a first or intermediate and finishing coat of undiluted Active Cool with the airless equipment, and then roll evenly over the surface with a standard facade roller. On sound/stable existing coatings very often one liberally applied restorative coat (min. 300 ml/m^2) is sufficient. Minimum drying time between coats: 12 hours.

Consumption: Approx. 250 ml/m^2 depending on surface's profile condition. The exact consumption is best established by a trial coating on site.

Application Conditions
Lower Temperature Limit for Application and Drying: +5 °C for material, substrate and ambient air.

Drying/Drying Time: At + 20 °C and 65 % relative humidity surface-dry after 2–3 hours and recoatable after 12 hours. Completely dry after 5–7 days. Lower temperatures and higher relative humidity extend the drying time.

Tool Cleaning: Clean tools (paint equipment) immediately after use with water.

Notes: Do not use on wood, metal, enamels, etc. Do not apply on horizontal surfaces exposed to rain or moisture and direct strong sunlight. Scaffolding nets or protective tarpaulins should be used, if necessary, depending on weather conditions. Facade plates, also if covering some levels of scaffolding, are to be coated plate by plate and wet-on-wet, followed by very thoroughly and uniform rolling in one direction, thus avoiding texture irregularities which otherwise may be noticeable in adverse lighting conditions, e.g. sidelight.

EU limits value for the VOC content of this product: (category A/c): max. 40 g/l (2010).
This product contains max. 25 g/l VOC.

Further Details: Before use, see Material Safety Data Sheet (MSDS).

LIMITATION OF LIABILITY

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the Coatings products made by Abolin Co, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

Abolin Co has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Abolin Co Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product. The English text of this document shall prevail over any translation thereof.

The management system has been certified according to EN ISO 9001

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EN 1062-1
Compliant