High Solar Reflective Elastomeric Coating
High performance, Anti-carbonation, Crack-bridging

COOL BARRIER FACADE

Energy Savings
Thermal Comfort
Weather Resistance
Long Term Protection

For Building Envelope and Concrete Protection

www.abolinco.com

High solar reflective Cool 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 technology allows for the design of products that remain cool under the sun – without sacrificing color. COOL BARRIER technology is characterised by a high solar reflectance and high infrared emittance values.

COOL BARRIER Reduce Urban Temperatures and 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.

Cool Barrier Facade

We Can Make the World Cooler!

Cool Barrier Facade for masonry and concrete is an excellent quality, low emitting decorative and protective elastomeric coating based on "cool" raw materials technology. It forms an extremely high reflective mat surface that blocks the incoming solar radiation and remains cooler, contributing to the saving of energy for cooling needs. An improved coating composition allows the application even on vertical surfaces where optimum sag control and early dirt pick up resistance is critical. It retains its elasticity, even in low temperatures ranging between -20ºC to 80ºC, covers completely all existing hairlines or small cracks and withstands in difficult weather conditions such as rain, snow, UV radiation. It prevents mould and green spots. Cool Barrier Facade performs an excellent quality anticarbonation crack-bridging coating suitable for concrete structures protection as per EN 1504 and EN 1062 std requirements.

COOL BARRIER 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

Typical Data:		
Volume Solids	ASTM D 2697	70, 08%
Weight Solids	ASTM D 1644	64, 87%
Initial Tensile 0°F	ASTM D 2370	606, 7 psi
Initial Elongation 0°F	ASTM D 2370	102, 8%
Fungi Resistance	ASTM G21	Zero Rating
Water Swelling	ASTM D 471	5, 65%
Solar Reflectance*	ASTM E903-96	0, 89
Infrared Emittance	ASTM E408-71	0, 89
Solar Reflectance Index*	ASTM E 1980-01	113
*** values refer to white colour**		

Typical Data according to EN 1602-1	Paints and varnishes —Coating materials and coating systems for exterior masonry and concrete						
Water Permeability			W3		W=0,004Kg/m²h^{0,5}		
Water Vapor Transmission Rate			V2		Sd= 0,4699 m		
Carbon Dioxide Permeability			C1		Sd_{CO2}=164,147 m		
Crack Bridging Properties			A3		0,809 mm		
Specular Gloss (G)			G3		Matt		
Dry film Thickness			E4		> 200 ≤ 400 µm		
Grain Size			S1		Fine < 100 µm		
Designation Code	**W3**	**V2**	**C1**	**A3**	**G3**	**E4**	**S1**

Typical Data according to EN 1602-11 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	No 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

Anticarbonation Properties

Cool Barrier Façade when properly applied performs excellent protection to concrete based structures and to the most mineral-based substrates against aggressive atmospheres, moisture ingress and carbonation.

Cool Barrier Façade Coating is certified according to PI, MC and IR principles

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)	Cool Barrier Façade characteristic values
Principle 1 Protection against ingress		
Permeability to CO_2 Test method EN 1062 – 6	Sd > 50 m	$SdCO_2$=164,147 m (anticarbonation)
Principle 1 Protection against ingress Principle 2 Moisture control Principle 8 Increase of resistivity	Minimum requirements (table 5 EN 1504, part 2)	Cool Barrier Façade characteristic values
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= 0,4699 m
Capillary absorption and permeability to water Test method EN 1062 – 3	W < 0,1 kg/m² x $h^{0.5}$	W=0,004Kg/m²$h^{0,5}$
Adhesion strength by pull-out test Test method EN 1542	Crack bridging Rigid or flexible systems No traffic ≥ 0,8 N/mm² ≥ 1,0 N/mm² Traffic ≥ 1,5 N/mm² ≥ 2,1 N/mm²	≥ 0,8 N/mm²*
* Abolin Co recommends ADHESION TESTS prior to bidding the project to ensure adhesion and compatibility between the coating and the substrate.		

Suitable Substrates: It is suitable for every kind of new or old mineral substrate, ceramic and concrete surfaces. For other substrates please ask for technical details.

Colors: It is available in a standard white and in a number of shades through Abolin Cool Barrier Colors Palette.

Consumption Rates: For an excellent performance 3 m^2 per litter must be obtained.

Surface preparation, Primer and Agent systems: Surfaces must be clean, dry and free from all defective and poorly adhering materials, dirt, grease and salts. Before working with Cool Barrier Coating systems a thorough power wash with water of the surface with commercial power washer, between 2500 - 3500 psi is highly recommended. If you are going to apply the Cool Barrier Facade coating as the final top coating system, apply first the recommended Hydrophobic agent and/or primer system by Abolin Co for the specific surface and then apply the needed coats of Cool Barrier Facade.

Recommended Primers: Cool Barrier Grip, Cool Barrier Grip Nano, Epoxy Hydrodur Primer.

Recommended Hydrophobic Agents: Cool Barrier Grip Crème, Cool Barrier Grip SWR, Cool Barrier Grip WWR.

General: Cool Barrier Facade should be applied at a minimum of 6-8 dry mil thickness (about 1 lit per 3 Sqm) in two or three passes. Allow adequate time between passes before applying the following coat, usually two to four hours under normal conditions. Always ensure that properly adhesion between the coating and the substrate has been achieved.

Cool Barrier Facade should be NOT be applied:

- At temperatures below 5°C (or 40°F).
- At very high (>90%) relative humidity or when rain has already begun or is expected during the next 24 hours.
- When impending rain is expected to last more than one hour.

Drying Time and recoatability: Touch dry during summer season after 6 hour and recoatable after 24 hours. Drying time depends on weather conditions and can be quite different in accordance to conditions of humidity or temperature.

Packaging: 10.0 and 18,00 liter cans.

Storage: 6 months under appropriate storage conditions

Application method & Thinning Rates: Roller, brush, airless spray gun up without thinning. Airless spray equipment is best suited for field applications, although rollers can be used as necessary if overspray is a concern. Clean immediately the painting equipment after the application. For more information, please consult our technical department for further instructions.

The following minimums are recommended for commercial applications:

PUMP: 4 Litters per minute output and at least 2,500 psi (17,236 kPa) pressure capability.

GUN: Any airless spray gun compatible with pump used.

TIP SIZE: Tip size should be between .027" and .039" (0.7 and 1.0 mm) with a fan angle of 40° to 50°.

FLUID HOSE: A minimum 3/8" (1 cm) inside diameter high pressure hose is recommended in conjunction with any airless handgun compatible with pump used. Cool Barrier Facade overspray may not wet into the surface, particularly in high temperatures, which will create a rough surface texture that will collect dirt.

VOC's Classification: EU limits value for this product (cat A/c): 75 g/l (2007) and 40 g/l (2010). This product contains max 38 g/l VOC.

Safety and Health Information: Follow instructions and recommendations of the MSDS.

GREEN LABEL SINGAPORE PERFORMANCES

TEST REPORT: S08CHM06962-Part 1-CSY

RESULTS

Table 1 : The Formaldehyde results for “COOL BARRIER FACADE”.

Test	Result
Formaldehyde Content	Not Detected[a]

[a] – The method detection limit was 0.1%.

Table 2 : The Elemental results for “COOL BARRIER FACADE”.

Test	Result
Mercury	Not Detected[b]
Lead	Not Detected[b]
Cadmium	Not Detected[b]
Chromium	Not Detected[b]

[b] – The method detection limit was 0.01%.

Table 3 : The Flash Point results for “COOL BARRIER FACADE”.

Test	Result
Flash point @61^{O}C	No Flash

Table 4 : The Volatile Organic Compound (VOC) content for “COOL BARRIER FACADE”.

Test	Result
VOC Content[c]	7.1 g/L

[c] - Volatile organic compound (VOC) means any organic compound having an initial boiling point less than or equal to 250^{o}C measured at a standard pressure of 101,3kPa.

Table 5 : The analytical results for “COOL BARRIER FACADE”.

Test	Result
Halogenated solvent	Not Detected[d]
Epichlorohydrin	Not Detected[d]
Aromatic solvent	Not Detected[e]

[d] – The method detection limit was 0.01%.
[e] – The method detection limit was 0.1%.

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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