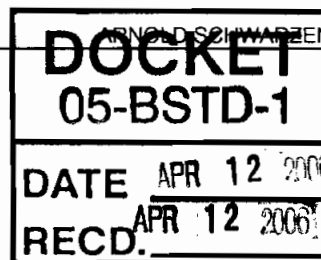


**CALIFORNIA ENERGY COMMISSION**1516 Ninth Street  
Sacramento, California 95814Main website: [www.energy.ca.gov](http://www.energy.ca.gov)

In the matter of,  
California Code of Regulations (CCR),  
Title 24, Part 6, Section 118(i)3

) Docket No. 05-BSTD-1  
)  
) NOTICE OF PUBLIC HEARING  
)  
) RE: COOL ROOF COATINGS  
) PERFORMANCE REQUIREMENTS

## Notice of a Commission Adoption Hearing

### Availability of 15-Day Language, Documents Relied Upon, and Opportunity for Comment

The California Energy Commission is hereby publishing the amendments, attached to this notice, as proposed 15-day Language Express Terms. The Energy Commission will hold a public hearing to consider adoption of the 15-day Express Terms as follows:

**WEDNESDAY, APRIL 26, 2006**

10 a.m.

CALIFORNIA ENERGY COMMISSION

1516 Ninth Street

First Floor, Hearing Room A

Sacramento, California

(Wheelchair Accessible)

Audio from this meeting will be broadcast over the Internet.

For details, please go to:

[www.energy.ca.gov/webcast/](http://www.energy.ca.gov/webcast/)

At the hearing any person may present written or oral comments on the proposed amendments and additional documents relied upon.

This notice will be posted to the project Web site at [www.energy.ca.gov/title24/roofcoatings/](http://www.energy.ca.gov/title24/roofcoatings/).

### Purpose

On May 6, 2005, the California Energy Commission published a Notice of Proposed Action (NOPA) concerning the potential adoption of cool roof coating performance language amendments to the *2005 Building Energy Efficiency Standards* (Standards) [Title 24, Part 6, Section 118(i)3, of the California Code of Regulations], including the rationale for and the text of the proposed amendments (45-day Language Express Terms). On June 7, 2005, the Energy Commission's Efficiency Committee held a public hearing to take comments on the proposed amendments. At this hearing, stakeholders and the Energy Commission did not

resolve the issues, and the Efficiency Committee directed staff to continue working with industry and to propose further amendments.

On March 22, 2006, the Energy Commission published draft amendments to the 45-day Express Terms. On April 3, 2006, the Efficiency Committee held a public hearing to take comments on these draft amendments. No stakeholders provided persuasive negative comments either at the meeting or by the deadline stated in the Notice of the hearing.

## **Documents Relied Upon**

As part of this rulemaking proceeding, in May 2005 the Energy Commission published an Initial Statement of Reasons (ISOR). The ISOR listed the following as documents relied upon for establishing and conducting the proceeding:

American Society for Testing and Materials (ASTM) D522-93a (2001), *Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings*.

American Society for Testing and Materials (ASTM) D2370-98 (2002), *Standard Test Method for Tensile Properties of Organic Coatings*.

Letter from William Kirn, National Coatings Corporation, and 22 other roof coatings manufacturers, "Petition for Adoption of an Alternate Test for Liquid-Applied Roof Coatings to Meet the Cool Roof Requirements of the 2005 Building Energy Efficiency Standards (Title 24, Part 6, § 118(i)3 and Table 118-C)," dated March 28, 2005.

The Energy Commission provides notice that in addition to the documents listed above, it also relies upon the following documents containing relevant information and/or "technical, theoretical, or empirical stud[ies]" [Government Code Section 11347.1(a)]:

"ASTM Stds Comparison - Physical Properties, Roof Coatings, from RCMA" – Excel spreadsheet provided by the Roof Coating Manufacturers Association, June 2005.

American Society for Testing and Materials (ASTM) C836-05, *Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course*.

American Society for Testing and Materials (ASTM) C1583-04, *Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)*.

American Society for Testing and Materials (ASTM) D3468-99, *Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing*.

American Society for Testing and Materials (ASTM) D5870-95 (2003), *Standard Practice for Calculating Property Retention Index of Plastics*.

American Society for Testing and Materials (ASTM) D6083-05e1, *Standard Specification for Liquid Applied Acrylic Coating Used in Roofing*.

American Society for Testing and Materials (ASTM) D6694-01, *Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing*.

Letter from Craig Smith, Superior Products International II, Inc., to Bill Pennington and Elaine Hebert of the California Energy Commission, "Comments to: 2005 Building Energy Efficiency Standards, Proposed – California Code of Regulations, Title 24, Part 6, Section 118 (i) 3, Cool Roof Coatings Performance Requirements," dated October 19, 2005.

## **Comments**

The Energy Commission will receive comments on the documents relied upon, the proposed 15-day Express Terms, and all other matters relevant to this rulemaking proceeding, until the adoption hearing on April 26, 2006. Interested persons may speak at the hearing or prepare written comments.

When preparing written comments, please include the docket number 05-BSTD-1 and indicate "Cool Roof Coatings Performance Requirements" in the subject line or first paragraph of your comments. Comments can be submitted via electronic mail to Elaine Hebert at [ehebert@energy.state.ca.us](mailto:ehebert@energy.state.ca.us) or via postal mail or in person; if by mail or in person, hand deliver or mail an original plus 10 paper copies to the following address:

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 05-BSTD-1  
1516 Ninth Street  
Sacramento, CA 95814-5512

The Energy Commission encourages comments by e-mail. Please include your name or organization's name in the title of the file. Those submitting comments by electronic mail should provide them on company letterhead in either Microsoft Word format or as a Portable Document File (PDF).

Participants may also provide an original and 10 copies at the beginning of the hearing. All written materials relating to this hearing will be filed with the Dockets Unit and become part of the public record in this proceeding.

## **Public Participation**

The Energy Commission's Public Adviser, Margret J. Kim, provides the public assistance in participating in Energy Commission activities. If you want information on how to participate in this forum, please contact the Public Adviser's Office at (916) 654-4489 or toll free at (800) 822-6228, by FAX at (916) 654-4493, or by e-mail at [pao@energy.state.ca.us](mailto:pao@energy.state.ca.us). If you have a disability and require assistance to participate, please contact Lou Quiroz at (916) 654-5146 at least five days in advance.

Please direct all news media inquiries to Claudia Chandler, Assistant Executive Director, at (916) 654-4989. If you have questions on the technical subject matter of this forum, please contact Elaine Hebert at [ehebert@energy.state.ca.us](mailto:ehebert@energy.state.ca.us) or (916) 654-4800.

Mail Lists: 50, 52, 53 and 480

Note: California Energy Commission's formal name is State Energy Resources Conservation and Development Commission.

**PROPOSED 15-DAY LANGUAGE EXPRESS TERMS  
FOR THE 2005 BUILDING ENERGY EFFICIENCY STANDARDS  
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 6, SECTION 118 (i) 3  
CALIFORNIA ENERGY COMMISSION**

**COOL ROOF COATINGS PERFORMANCE REQUIREMENTS**

**LEGEND FOR EXPRESS TERMS**

1. Existing language - all such language appears in regular text.
2. New amendments or code language (45-day language) - all such language appears underlined.
3. Repealed text in 45-day language - all such language appears in ~~strikeout~~.
4. Draft Revisions to 45-day language – draft added language appears in double underline.
5. Draft Revisions to 45-day language – draft repealed language appears in ~~double strikeout~~.

**EXPRESS TERMS**

**Section 101 (b) – Add the following definitions:**

**ASTM C836** is the American Society of Testing and Materials document entitled, “Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course,” 2005 (ASTM C836-05).

**ASTM C1583** is the American Society of Testing and Materials document entitled, “Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension” (Pull-off Method).” 2004 (ASTM C1583-04).

**ASTM D522** is the American Society of Testing and Materials document entitled, “Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings,” 2001 [ASTM D522-93a (2001)].

**ASTM D1653** is the American Society of Testing and Materials document entitled, “Standard Test Methods for Water Vapor Transmission of Organic Coating Films,” 2003 (ASTM D1653-03).

**ASTM D2370** is the American Society of Testing and Materials document entitled, “Standard Test Method for Tensile Properties of Organic Coatings,” 2002 [ASTM D2370-98 (2002)].

**ASTM D3468** is the American Society of Testing and Materials document entitled, “Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing,” 1999 (ASTM D3468-99).

**ASTM D5870** is the American Society of Testing and Materials document entitled, "Standard Practice for Calculating Property Retention Index of Plastics," 2003 [ASTM D5870-95 (2003)].

**ASTM D6083** is the American Society of Testing and Materials document entitled, "Standard Specification for Liquid Applied Acrylic Coating Used in Roofing," 2005 (ASTM D6083-05e1).

**ASTM D6694** is the American Society of Testing and Materials document entitled, "Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing," 2001 (ASTM D6694-01).

Notation

Authority: Public Resources Code Sections 25213 and 25402 (a) and (b)

Reference(s): Public Resources Code Sections 25213 and 25402 (a) and (b)

**Section 118 (i) 3 – Make the following changes:**

3. Liquid-applied roof coatings applied to low-sloped roofs in the field as the top surface of a roof covering shall
- A. be applied across the entire roof surface to meet at a the minimum dry mil thickness of 20 mils across the entire roof surface, or coverage recommended by the coating manufacturer, taking into consideration the substrate on which the coating is applied, and
  - B. meet the minimum performance requirements listed in TABLE 118-C or the minimum performance requirements of ASTM C836, D3468, D6083, or D6694, whichever are appropriate to the coating material.

**EXCEPTION 1 to Section 118 (i) 3 B:** Aluminum-pigmented asphalt roof coatings shall meet the requirements of ASTM D2824 or ASTM D6848 and be installed as specified by ASTM D3805.

**EXCEPTION 2 to Section 118 (i) 3 B:** ~~Cement-based roof coatings shall be applied at a minimum dry mil thickness of 30 mils when installed over a capsheet surface, 40 mils when installed over a metal surface, and 200 mils when installed over a rock or gravel surface.~~ Cement-based roof coatings shall contain a minimum of 20% cement, and shall meet the requirements of ASTM C1583, ASTM D822, and ASTM D5870.

**TABLE 118-C MINIMUM PERFORMANCE REQUIREMENTS FOR LIQUID APPLIED ROOF COATINGS FOR LOW-SLOPED ROOFS**

Physical Property	ASTM Test Procedure	Requirement
Initial percent elongation (break)	D2370	Minimum 60% 0 °F (-18°C) Minimum 200% 73°F (23°C)
<u>Initial percent elongation (break)</u> <u>OR</u>	<u>D2370</u>	<u>Minimum 60% 0°F (-18°C)</u>

<u>Initial flexibility</u>	<u>D522, Test B</u>	<u>Minimum pass 1" mandrel 0°F (-18°C)</u>
Initial tensile strength (maximum stress)	D2370	Minimum 100 psi (1.38 Mpa) 73°F (23°C) <del>Minimum 200 psi (2.76 Mpa) 0°F (-18°C)</del>
<u>Initial tensile strength (maximum stress)</u>	<u>D2370</u>	<u>Minimum 200 psi (2.76 Mpa) 0°F (-18°C)</u>
<u>OR</u> <u>Initial flexibility</u>	<u>D522, Test B</u>	<u>Minimum pass 1" mandrel 0°F (-18°C)</u>
Final percent elongation (break) after accelerated weathering 1000 h	D2370	<del>Minimum 40% 0°F (-18°C)</del> Minimum 100% 73°F (23°C)
<u>Final percent elongation (break) after accelerated weathering 1000 h</u>	<u>D2370</u>	<u>Minimum 40% 0°F (-18°C)</u>
<u>OR</u> <u>Flexibility after accelerated weathering 1000 h</u>	<u>D522, Test B</u>	<u>Minimum pass 1" mandrel 0°F (-18°C)</u>
Permeance	D1653	Maximum 50 perms
Accelerated weathering 1000 h	D4798	No cracking or checking <sup>1</sup>
<sup>1</sup> Any cracking or checking visible to the eye fails the test procedure.		

#### Notation

Authority: Public Resources Code Sections 25213 and 25402 (a) and (b)

Reference(s): Public Resources Code Sections 25213 and 25402 (a) and (b)

#### Appendix 1-A – Add the following references under American Society for Testing and Materials:

- ASTM C836-05      Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course (2005)
- ASTM C1583-04      Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method) (2004)
- ASTM D522-93a (2001)      Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings (2001)

<u>ASTM D1653-03</u>	<u>Standard Test Methods for Water Vapor Transmission of Organic Coating Films (2003)</u>
<u>ASTM D2370-98 (2002)</u>	<u>Standard Test Method for Tensile Properties of Organic Coatings (2002)</u>
<u>ASTM D3468-99</u>	<u>Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing (1999)</u>
<u>ASTM D5870-95 (2003)</u>	<u>Standard Practice for Calculating Property Retention Index of Plastics (2003)</u>
<u>ASTM D6083-05e1</u>	<u>Standard Specification for Liquid Applied Acrylic Coating Used in Roofing (2005)</u>
<u>ASTM D6694-01</u>	<u>Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing (2001)</u>

Notation

Authority: Public Resources Code Sections 25213 and 25402 (a) and (b)

Reference(s): Public Resources Code Sections 25213 and 25402 (a) and (b)