

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

<b>DOCKET</b>	
<b>05-BSTD-1</b>	
DATE	MAY 5 2006
TIME	MAY 5 2006

**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 single underlined.
3. Repealed text in 45-day language - all such language appears in ~~single-strikeout~~.
4. Revisions to 45-day language – added language appears in double underline.
5. Revisions to 45-day language – repealed language appears in ~~double-strikeout~~.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	<del>Minimum 60% 0 °F (-18°C)</del> Minimum 200% 73°F (23°C)
Initial percent elongation (break) <u>OR</u> Initial flexibility	<u>D2370</u>  <u>D522, Test B</u>	<u>Minimum 60% 0°F (-18°C)</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> OR <u>Initial flexibility</u>	<u>D2370</u>  <u>D522, Test B</u>	<u>Minimum 200 psi (2.76 Mpa) 0°F (-18°C)</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> OR <u>Flexibility after accelerated weathering 1000 h</u>	<u>D2370</u>  <u>D522, Test B</u>	<u>Minimum 40% 0°F (-18°C)</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)
- ASTM D1653-03      Standard Test Methods for Water Vapor Transmission of Organic Coating Films (2003)
- ASTM D2370-98 (2002)      Standard Test Method for Tensile Properties of Organic Coatings (2002)

ASTM D3468-99      Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing (1999)

ASTM D5870-95 (2003)      Standard Practice for Calculating Property Retention Index of Plastics (2003)

ASTM D6083-05e1      Standard Specification for Liquid Applied Acrylic Coating Used in Roofing (2005)

ASTM D6694-01      Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing (2001)

[Notation

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

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