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## *How Do I* **Get a Color Family Product Rating?**

In order to have Color Family<sup>1</sup> products rated by the CRRC, a company must first become a CRRC Licensed Seller or Other Manufacturer, which is separate and distinct from CRRC Membership (see *How Do I Become a Licensed Seller or Other Manufacturer*). Once a company has been approved as a Licensed Seller or Other Manufacturer (together a “Licensed Roofing Company”) and issued an ID number, it is then eligible to apply for product ratings.

This document describes the two-part process by which a Color Family Group<sup>2</sup> is established and then populated with Color Family Elements<sup>3</sup>. **Part 1** below outlines the process for applying for a Color Family Group within a given binder/resin technology<sup>4</sup>, which includes rating a Color Family Representative Element<sup>5</sup>, and **Part 2** below outlines the process for rating Color Family Additional Elements.

**All referenced forms and agreements are available for download from the Product Rating Program section of the CRRC website, [www.coolroofs.org](http://www.coolroofs.org). For more complete details about the CRRC Product Rating Program, please refer to the Product Rating Program Manual (CRRC-1) and Procedure 3: Color Family Program.**

### **What Is a Color Family and Color Family Group?**

The CRRC’s Color Family Program was created only for metal products and their coatings (factory-applied coatings). A Color Family is a pre-defined color space with set default solar reflectance and thermal emittance values. The CRRC has defined seventeen Color Families, which are shown in Table 1 below. A Color Family Group is a group of products (one or more) that a Licensee rates with the CRRC that fit within one of the Color Families. All products in a Color Family Group are listed in the CRRC’s Online Product Directory using the default values from Table 1 (not the values measured by the testing laboratory). The benefit of using the Color Family Program is that the Licensee only has to age test one product for each Color Family Group.

### **How to Establish a Color Family?**

In order to establish a Color Family Group, a Licensee must first rate the Color Family Representative Element<sup>8</sup>. The Color Family Representative Element is tested for initial *and* aged radiative properties by an Accredited Independent Testing Laboratory (AITL) as with a Standard Roofing Product, and the values must meet or exceed the default values for the Color Family, shown in Table 1 below. Additional products to be submitted into an already established Color Family Group are called Color Family Additional Elements. Color Family Additional Elements must also be tested for initial radiative properties by an AITL, but aged testing not required (see Part 2 for a more detailed explanation of why). All Color Family

<sup>1</sup> **Color Family:** A CRRC pre-defined range of Hunter “L”, “a”, and “b” color values that establishes the color space for a CRRC pre-defined set of eighteen colors.

<sup>2</sup> **Color Family Group:** One or more Production Line Roofing Products that are factory coated metal Roofing Products, that are rated by one CRRC Licensed Roofing Company, that have the same binder/resin technology, and that have color properties and Radiative Properties that fall within the ranges established for the respective CRRC Color Family. All Color Family Elements within a single Color Family Group are assigned the same CRRC Product ID number.

<sup>3</sup> **Color Family Element:** A uniquely formulated Roofing Product that is CRRC-rated as a member of a Color Family Group and that is either a Factory-Applied Roof Product Component that serves as the top coating on a factory coated metal Roofing Product or a metal Roofing Product that has as its top coating a Factory-Applied Roof Product Component.

<sup>4</sup> **Color Family Binder/Resin Technology:** General class of Factory Applied Coatings used in metal Roofing Products which are defined by the family of related binder/resin chemicals used to formulate such coatings.

<sup>5</sup> **Color Family Additional Element:** A Color Family Element that is not the Color Family Representative Element.

<sup>8</sup> **Color Family Representative Element:** A Color Family Element that is used to initially establish a Color Family Group.



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Elements must be tested for Hunter “L”, “a”, “b” values. To be considered a Color Family Element, a product must have Hunter “L”, “a”, “b” values that fall within the appropriate Color Family range and have solar reflectance and thermal emittance values that meet or exceed the default values for the Color Family. If a product does not meet these requirements, it can still be rated as a Standard Product, but it cannot be considered a Color Family product.

## **Part 1: Color Family Representative Element Product Rating**

### **Procedure**

#### **Initial Product Rating Procedure**

1. Determine the Hunter “L”, “a”, “b” values for the product. This test can be performed by an AITL, an AMTL or a Licensed Roofing Company. Use the Hunter “L”, “a”, “b” values to place the product in one of the 17 Color Families defined in the CRRC-1 program manual (see below: TABLE 1. *CRRC Color Families and Characteristics*).
2. Select and contact an Accredited Independent Testing Laboratory (AITL) from CRRC website to arrange for testing and payment. A list of AITLs can be found at [http://www.coolroofs.org/productratingprogram\\_laboratories.html](http://www.coolroofs.org/productratingprogram_laboratories.html).
3. Contact a Test Farm to arrange for placement and payment. A list of Test Farms can be found at [http://www.coolroofs.org/productratingprogram\\_test\\_farm.html](http://www.coolroofs.org/productratingprogram_test_farm.html).
4. Prepare product samples as for Standard Roofing Product. For each product being tested, prepare a total of nine (9) samples randomly selected from two batches of your products, distributed as follows into the following sets:
  - a. Three samples from one batch
  - b. Three samples from the second batch
  - c. Three samples, for which both batches must be represented

Label each sample such that it can be uniquely identified (throughout a three-year period of outdoor exposure) by product, set, and batch. See Section 3.5 of CRRC-1 for further instructions on sample selection.

5. Complete the appropriate sections of the Test Results Report (form CRRC-F-2) and check ‘Initial Rating Test’.
6. Complete the top section (boxes 2-12, except 10) of the Test Farm Notification Form (form CRRC-F-7).
7. Send package to selected AITL including all of the following:
  - a. Test Results Report (top section completed)
  - b. Test Farm Notification Form (top section completed)
  - c. Nine (9) product samples
8. Once initial rating testing is completed by AITL, AITL will send a completed Test Results Report, Initial Rating (form CRRC-F-2) to Licensed Manufacturer. **Check that the radiative properties of the Color Family Representative Element meet the minimum requirements to belong to the proposed Color Family Group** (see below: TABLE 1. *CRRC Color Families and Characteristics*).

Note: Once AITL has shipped samples to the Test Farm and weathering exposure has been initiated, the Test Farm will send a copy of Test Farm Notification Form (form CRRC-F-7) directly to the CRRC.

- 9. Once the Test Results Report form has been received, submit complete Initial Product Rating Application packet to CRRC, including the following items, (this step**



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**covers both the establishment of the Color Family Group and the Color Family Representative Element Product Rating):**

- a. Product Rating Application (form CRRC-F-3)—**signature required**.
- b. Corresponding Test Results Report (form CRRC-F-2) for Initial Rating. [Or alternatively, if you are a Licensed Seller utilizing an Other Manufacturer’s test results, submit the OM Rating Authorization (form CRRC-F-6)].
- c. Name and contact information of the quality control manager(s) (required for each product).
- d. Appropriate Color Family Group and Color Family Element fee (see Fees and Dues Structure on the Product Rating Program page of the website).

**Additional Requirements for Licensed Sellers only: (These items relate to the Random Testing program--see Procedure 1 or CRRC-1 for Random Testing details)**

- e. Contractor/Distributor Information form (CRRC-F-9)<sup>9</sup> (custom colors excluded).
- f. Random Testing Sample Collection Instructions form (CRRC-F-10)<sup>10</sup>
- g. Copy of letter to contractors and/or distributors<sup>11</sup>

**NOTE: Licensed Sellers relying on an OM rating for a factory-applied metal coating that has been rated as a Color Family Element by the OM may not establish a Color Family Group with the authorized rating. Only a Standard Product application may be submitted when relying on OM Ratings for Color Family products. If LS wishes to establish their own Color Family Group(s) they must follow all of the steps in this document. See Procedure 3: Color Family Program Details for more information.**

10. Upon acceptance and approval of Product Rating Application materials by CRRC\*, the product will be added to the online CRRC Rated Products Directory (which is updated at least monthly) with initial ratings listed and aged 3-year ratings noted as “pending”. Upon posting to the online CRRC Rated Products Directory, Licensed Seller is authorized to print CRRC product Labels with initial rating information.

**\*CRRC processing of Product Rating Application may take up to 30 days.**

**Aged Product Rating Procedure (after three years):**

1. Upon completion of three-year exposure at Test Farm, communicate with Test Farm as to which AITL (need not be the same AITL used for initial ratings) product samples should be sent.
2. Complete the top section of a second Test Results Report (form CRRC-F-2) and check ‘Aged Rating Test’. Send to selected AITL.
3. Once aged rating testing is completed by AITL, receive from AITL:
  - a. Completed Test Results Report, Aged Rating (form CRRC-F-2)
  - b. Completed Test Farm Notification Form (form CRRC-F-7), which must show aged testing stop date and removal information. [Note: this form is forwarded from Test Farm to AITL along with weathered product samples].

<sup>9</sup> List of no less than three contractors or distributors from whom product samples can be obtained

<sup>10</sup> Instructions on how to collect or prepare a sample for testing purposes that will be given to contractors or distributors in the event of collection for random testing

<sup>11</sup> Licensed Seller shall provide a generic letter requesting help in sample collection. This letter will be used by the CRRC in sample requests to distributors/contractors (per Procedure 1). It is recommended that you send this letter to the listed parties as a courtesy to them.



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4. Once forms in 3 (above) are received, submit complete Aged Product Rating Application packet to CRRC:
  - a. Aged Product Rating Application (form CRRC-F-11)—**signature required**.
  - b. Corresponding Test Results Report (form CRRC-F-2) for Initial Rating. [Or alternatively, if you are a Licensed Seller utilizing an Other Manufacturer’s test results, submit the OM Rating Authorization (form CRRC-F-6)].
5. Upon acceptance and approval of aged ratings by CRRC, the product’s listing in the online CRRC Rated Products Directory (which is updated at least monthly) will be updated with the 3-year data. For Color Family Representative Elements aged values are subsequently established for the Color Family Group as *either* the measured aged values of the Color Family Representative Element *or* the initial Color Family default values, whichever is lower. Upon posting to the online CRRC Rated Products Directory, Licensed Seller is authorized to print CRRC product Labels with aged rating information.

## **Part 2: Color Family Additional Element Product Rating Procedure:**

Once a Color Family Group is established by rating a Color Family Representative Element, additional products of the same binder/resin technology that fall within the specified Hunter “L”, “a”, “b” color range can then be added to the Color Family Group as “Color Family Additional Elements” by following the steps below:

1. Prepare six (6) samples of the Color Family Additional Element, three from one Batch and three from a second Batch. Sample size and substrate requirements are the same as for Standard Roofing Products. Confirm that the Hunter “L”, “a”, “b”, values of the samples are appropriate for the intended Color Family Group. Note: this color testing can be handled in step 3.
  2. Complete the LS/OM portion(s) of the CRRC Color Family Additional Element Test Results and Application form (CRRC-F-8). A separate form is required for each Color Family Additional Element to be submitted into a Color Family Group.
  3. Submit product samples and paperwork to an AITL. The AITL will measure SR and TE--and possibly Hunter “L”, “a”, “b” values if so requested and capable--and report this information to the LS/OM on the CRRC Color Family Element Test Results and Application form (CRRC-F-8). **No aged testing is necessary for Color Family Additional Elements.**
- 4. Once the Color Family Additional Element Test Results and Application form (CRRC-F-8) has been received, submit complete Product Rating Application packet to CRRC:**
- a. Name and contact information of the quality control manager(s) (required for each product).
  - b. Appropriate Per Product Rating Application fee (see Fee and Dues Structure on the Product Rating Program page of the website).

### **Additional Random Testing Requirements for Licensed Sellers only: (see Procedure 1 or CRRC-1 for Random Testing details)**

- c. Contractor/Distributor Information form (CRRC-F-9)<sup>12</sup> (custom colors excluded).
- d. Random Testing Sample Collection Instructions form (CRRC-F-10)<sup>13</sup>
- e. Copy of letter to contractors and/or distributors<sup>14</sup>

<sup>12</sup> List of no less than three contractors or distributors from whom product samples can be obtained

<sup>13</sup> Instructions on how to collect or prepare a sample for testing purposes that will be given to contractors or distributors in the event of collection for random testing



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5. Upon acceptance and approval of Product Rating Application materials by CRRC, the Color Family Additional Element will be added to the online CRRC Rated Products Directory (which is updated at least monthly) under the respective Color Family Group inheriting the default values for initial Solar Reflectance and Thermal Emittance, and aged values established for the Color Family Group. Upon posting to the online CRRC Rated Products Directory, Licensed Seller is authorized to print CRRC product Labels with initial rating information.

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<sup>14</sup> Licensed Seller shall provide a generic letter requesting help in sample collection. This letter will be used by the CRRC in sample requests to distributors/contractors (per Procedure 1). It is recommended that you send this letter to the listed parties as a courtesy to them.



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**TABLE 1: CRRC Color Families and Characteristics**

	<b>Color Family</b>	<b>Hunter “L” range</b>	<b>Hunter “a” range</b>	<b>Hunter “b” range</b>	<b>Default SR</b>	<b>Default TE</b>
1	Red	17 to 29	+7 to +36	0 to +15	0.25	0.83
2	Terra Cotta	20 to 38	+15 to +30	+6 to +16	0.35	0.83
3	Bright Red	23 to 38	+35 to +49	+10 to +48	0.35	0.83
4	Beige / Off-White	59 to 86	-5 to +5	-3 to +23	0.55	0.83
5	Tan	51 to 65	-2 to +7	+6 to +21	0.45	0.83
6	Dark Blue	13 to 33	-7 to +6	-25 to -2	0.25	0.83
7	Med to Light Blue	34 to 55	-12 to -3	-25 to -8	0.32	0.83
8	Dark Brown	17 to 30	-1 to +9	0 to +10	0.25	0.83
9	Med to Light Brown	25 to 58	-2 to 17	+5 to +26	0.32	0.83
10	Dark Green	18 to 45	-20 to -3	-25 to +11	0.25	0.83
11	Med to Light Green	24 to 70	-20 to 0	-25 to +11	0.32	0.83
12	White	76 to 89	-3 to +2	-3 to +10	0.65	0.83
13	Bright White	>85	-3 to +1	-3 to +6	0.70	0.83
14	Black	<26	-1.5 to +1.5	-1.5 to +1.5	0.25	0.83
15	Dark Gray	24 to 42	-4 to +2	-8 to +4	0.25	0.83
16	Med to Light Gray	40 to 77	-4 to +3	-3 to +8	0.35	0.83
17	Pearlescent Colors	25 to 75	-15 to 17	-15 to 24	0.35	0.75