

### ULTIMATE GUIDE TO LEED V4 & V4.1

# **IEQc2:** Low Emitting Materials

**A Resource Guide for General Contractors** 

BY GREEN BADGER FOUNDER & CEO, TOMMY LINSTROTH



# Earning IEQc2 Low Emitting Materials in LEED v4.1

#### Ah, remember the good old days? You take an MSDS sheet, find a VOC content, make sure its under the limit, and you call it a day. That was so 2012 of us!

Low-Emitting Materials now covers almost everything inside your building from the typical paints and adhesives to the door frames, drywall and anything else you can poke with a finger.

LEED v4.1 made earning more than point for this credit much more achievable, and you've got a pretty good fighting chance to earn multiple points these days - but it is definitely a case of less is more.

There now a whole new range of product categories that get tracked for compliance - but some of them are now much more trouble than they are worth. Don't worry - we'll tell you which you should focus on, and which you forget.

> BY TOMMY LINSTROTH, GREEN BADGER FOUNDER & CEO LEED FELLOW

### REQUIREMENTS



### **Requirements for IEQc2 Low Emitting Materials in LEED v4.1**

Use materials on the building interior (everything within the waterproofing membrane) that meet the low-emitting criteria below. Points are awarded according to Table 1:

Reach 90% threshold in at least three product categories	Exemplary performance <u>OR</u> 1 additional point if only 1			
5 product categories	3 points + exemplary performance			
4 product categories ───→	3 points			
3 product categories ───→	2 points			
2 product categories →	1 point			

or 2 points acheived above

There are 8 total product categories, and you can pick and choose which ones to pursue (HINT! Don't waste your time chasing all of them). Each category has a different requirement that must be met (because of course why would it be standardized?) Here's the breakdown:

Paints/Coatings	<b>→</b>	75% Emissions, 100% VOC compliance
Adhesives/Sealants	<b>→</b>	75% Emissions, 100% VOC compliance
Flooring	-	90% Emissions compliance
Walls	<b>→</b>	75% Emissions compliance
Ceilings	<b>→</b>	90% Emissions compliance
Insulation	<b>→</b>	75% Emissions compliance
Furniture	<b>&gt;</b>	75% Furniture Emissions Evaluation
Composite Wood ———	<b></b>	75% Formaldehyde Evaluation

### What is Emissions Compliance?

#### The kicker comes in the wording of VOC compliance is pretty straightforward.

Same as the older versions of LEED, wet-applied products need to make sure they VOC content (in g/L) is less than the referenced standard for that product type. Emissions Compliance is new for LEED v4/4.1 - for the most part in the US, all you'll ever see is CDPH v1.2-2017 as your compliance standard (though projects opting into v4.1 from v4 can still use the CDPH v1-2010 standard).

If you care, this test measures the amount of emissions from products after time - VOC content is what's in the can - emissions is how much is coming off after its been installed. At this point, there's no limit - it can emit like a smokestack as long as it was tested to measure those emissions using the CDPH requirements.

Every product must meet these emission requirements to count - if it doesn't, it goes against your emissions budget. So you can use products that don't have the testing - just not too much of them.

You'll see this information in any number of 3rd party certifications. Here's example from GreenGuard Gold from UL, IAQ from SCS, Green Label Plus from CRI. All show the testing standard and the end TVOC emissions.

# **CERTIFICATE** OF COMPLIANCE



LOW CHEMICAL EMISSIONS ULCOM/GG UL 2818

GOLD

### Sherwin-Williams Company

ProMar 200 Zero VOC Interior Latex Eg-Shel B20-2600 Series 14049-420 Certificate Number

07/11/2008 - 07/11/2020 Certificate Period

Certified Status

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Wall finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.2-2017 using a Classroom Environment with an air change of 0.82 hr<sup>-1</sup> and a loading of 94.60 m<sup>2</sup>, and Wall finishes are determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.2-2017 using an Office Environment with an air change of 0.68 hr<sup>-1</sup> and a loading of 33.40 m<sup>2</sup>.



UL investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

### Armstrong Flooring, Inc.

2500 Columbia Avenue, Lancaster, PA, United States

For the following product(s):

#### Vinyl Composition Tile:

ChromaSpin™, Companion Square<sup>®</sup> Tile, Crown Texture™, Designer, Feature™ Tile Strips & Insets, Imperial<sup>®</sup> Texture & Imperial<sup>®</sup> Texture with Diamond 10, Multicolor with Diamond 10<sup>®</sup>, Multicolor™, Raffia™ & Raffia with Diamond 10 Technology, Raffia™ Stream, Safety Zone™ Tile, SDT™ Tile, Stonetex<sup>®</sup>, Terrazza

The product(s) meet(s) all of the necessary qualifications to be certified for the following claim(s):

#### FloorScore®

Indoor Air Quality Certified to SCS-EC10.3-2014 v4.0

Conforms to the CDPH/EHLB Standard Method v1.2-2017 (California Section 01350), effective April 1, 2017, for the school classroom and private office parameters when modeled as Flooring. Measured Concentration of Total Volatile Organic Compounds (TVOC): Less than/equal to 0.5 mg/m<sup>3</sup> (in

compliance with CDPH/EHLB Standard Method v1.2-2017)

#### Registration # SCS-FS-01337

**SCS**global

Valid from: September 1, 2019 to August 31, 2020 SCS Global Services is currently the only certification body approved by the Resilient Floor Covering Institute (RFCI) to provide FloorScore® product certification; certified products are only listed on the SCS Green Products Guide. http://www.scsglobalservices.com/certified-green-products-guide.





roduct Certification Bc #0821

Stanly Mathie Ram

Stanley Mathuram, PE, Vice President SCS Global Services 2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA

## **GREEN LABEL PLUS**

INDOOR AIR QUALITY TESTING PROGRAM THIS CERTIFIES THAT

#### Japan Carpet Co. Ltd.

Address: 8-12 Chikkohamadera-nishimatchi, Nishiku Nishi-Ku, Sakai, 592-8352, Japan



17X Pre-dyed Nylon with PVC Backing

Range of Total VOCs 0.5 mg/m<sup>3</sup> or less

> Certification Date: 12/26/2012 Expiration Date: 12/31/2021

To view all GLP-Certified products visit www.carpet-rug.org/glpproducts.

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#### GLP8200

This product complies with California DPH Section 01350 Version 1.2 Private Office Scenario.

A USGBC<sup>®</sup> recognized third party certification program for LEED v4 EQ Credit Low-Emitting Materials.



ISO/IEC 17065 Product Certification Body #0754

Joe W. Yarbrough, President he Carpet and Rug Institue, In

# CERTIFICATE **OF COMPLIANCE**

	Herman Miller Asia	Certificate Number
P	Aeron	04/07/2010 - 03/19/2016
GREENGUARD	Restrictions:	Certificate Period
RODUCT CERTIFIED FOR		Certified
OW CHEMICAL EMISSIONS JL.COM/GG JL 2818		Status
GOLD		
	UL 2818 - 2013 Gold Standard for Chemical Emissions for Building M	aterials, Finishes and Furnishings

### What is the Furniture Emissions Evaluation?

To comply with the furniture emissions If 75% of the furniture also complies evaluation, products must be tested in accordance with ANSI/BIFMA Standard Method M7.1-2011 (R2016) and complies with ANSI/BIFMA e3-2014e Furniture Sustainability Standard, Sections 7.6.1 (for half credit, by cost) OR 7.6.2 (for full credit, by cost).

with Section 7.6.3 in addition to 7.6.2, the category counts for exemplary level (90%).

You'll find this information on GreenGuard Gold certificates from UL, or Indoor Advantage Gold from SCS.



### What is the Formaldehyde Emissions Evaluation?

This one is much more complicated from the older versions of LEED where you could use manufacturers' statements that they were free of added formaldehyde.

Now, the two primary compliance routes are:

- EPA TSCA Title VI or California Air Resources Board (CARB) ATCM for formaldehyde requirements for ultra-lowemitting formaldehyde (ULEF) resins or
- EPA TSCA Title VI or CARB ATCM formaldehyde requirements for no added formaldehyde resins (NAF).

You need the actual EPA or CARB documents as well - you can't just show a manufacturer letter stating they are compliant.

Inherently Non-Emitting or Salvaged - the exclusions

If products are inherently-nonemitting or salvaged/reused, they automatically comply - they don't need any testing - they will count in your favor. Keep that in your back pocket - it will come in handy at some point!



### STRATEGIES



### **Strategies for IEQc2**

#### While there are 8 categories of products available, you only need 4 of them to earn all 3 points. What should I target?

This is another case where I'm lazy. Yes, you could track every product for every category and try and get the teacher's pet award, or you can laser focus on a few categories and knock them out of the park. And that's what I suggest.

#### In fact, I suggest punt completely on Adhesives and Sealants, for 3 reasons:

- First, it's the category that has the most products you're dealing with at least 20 all from different subcontractors.
- Second, from our experience, it has the least number of compliant products in the marketplace.
  Manufacturers just are not getting all of these products tested against the CDPH standard.
- Third, you're going through dozens of submittals to get them all. The categories I suggest targeting can all be completed (in most cases) from individual submittals, and can likely be knocked out by 3 different subs.

### What categories should you focus on?

•	75% Emissions, 100% VOC compliance
•	75% Emissions, 100% VOC compliance
•	90% Emissions compliance
•	75% Emissions compliance
•	90% Emissions compliance
•	75% Emissions compliance
•	75% Furniture Emissions Evaluation
•	75% Formaldehyde Evaluation

#### I'll go after Paints/Coatings, Flooring, and then any combination of Ceilings, Walls and Insulation.

Paints tends to be a standalone submittal, with lots of compliant options. Even if you need to use something noncompliant, the odds it is more than 25% of your primer, flats, and eggshells is slim.

Flooring is only one submittal, maybe two for cove base or ceramic tile, but again almost every major carpet and VCT product is compliant, so there's room for error.

Your walls, ceilings, and insulation are different submittals but probably the same sub. Lots of compliant products for all three and if you've really got some specialty products, then pick a different category. If you need one in your back pocket, composite wood and/or furniture are available, especially if you don't have a lot of it on site.

### Can you track Adhesives & Sealants?

Sure, knock yourself out. If you don't end up earning it, it isn't hurting anyone. But I recommend that you save yourself the time, headache, submittal rejections and everything else that comes with it. Trust me, you've got at least 20 different submittals you'll have to check this on versus just looking at the paint submittal.

### A few notes on product categories:



#### **Paints & Sealants**

Most of the major manufacturers (Benjamin Moore, PPG, Sherwin Williams) have CDPH testing done for a wide number of products. You may run into some specialty products that don't have it - not to despair! This category is most easily tracked by quantity, and you're likely using vastly more primer/flat/semi-gloss than any specialty application. The only biggie - floor coatings. If you're doing some epoxy or other resinous type floor coating, it falls into paints - and you potentially use a lot of it.



#### Walls

While the national manufacturers have plenty of options, this goes well beyond just drywall. The wall panels product category includes all finish wall treatments (wall coverings, wall paneling, wall tile), surface wall structures such as gypsum or plaster, cubicle/curtain/partition walls, trim, interior and exterior doors, wall frames, interior and exterior windows, and window treatments.



#### Flooring

Almost all carpet and vinyl flooring have CDPH testing. Ceramic and porcelain tile are all inherently non-emitting. The flooring product category includes all types of hard and soft surface flooring (carpet, ceramic, vinyl, rubber, engineered, solid wood, laminates), raised flooring, wall base, underlayments, and other floor coverings.



#### Ceilings

Plenty of compliant options here. Just be aware it goes beyond acoustical ceiling tiles - this category includes all ceiling panels, ceiling tile, surface ceiling structures such as gypsum or plaster, suspended systems (including canopies and clouds), and glazed skylights.



#### Insulation

Most major manufacturers have plenty of compliant options. The insulation product category includes all thermal and acoustic boards, batts, rolls, blankets, sound attention fire blankets, foamed-in place, loose-fill, blown, and sprayed insulation.



#### Furniture

For dedicated office furniture, most major manufacturers have plenty of options - specialty furniture can get you. For projects that have a lot of work stations and standard office fare, this may be pretty easy. For other projects may be a challenge - thus we keep this one in our back pocket. The furniture product category includes all seating, desks and tables, filing/storage, free-standing cabinetry, workspaces, and furnishing items purchased for the project.



#### **Composite wood**

Composite wood is wacky. If a product doesn't fall into another category, you address it here. We've seen it become much more cumbersome to get the actual CARB paperwork - thus keep this one in the pocket as well unless you really need an additional product category.



#### **Adhesives & Sealants**

We've already told you to punt. If you don't, have fun tracking PVC cement, duct mastic, carpet adhesive, thin-set mortar, VCT glue, building sealants, construction adhesives, and everything else in a tube or a bucket. And get your calculators out because you need to quantify it all in a common volume have fun with the 4 oz can of CPVC cement, the 5 gallon bucket of flooring adhesive, and that tube of caulk. Don't say we didn't warn you.

### Summary of Strategies



Start your efforts with paints, flooring, ceilings, walls and insulation



Check the finish schedule early and often, and if possible, review with the architect to roadmap product selection





Try and knock these out in as few of submittals as possible, and move on.

### MORE BEST PRACTICES

### for Low Emitting Materials

The strategies we've provided will help you earn the Low Emitting credit, and likely the EPD and MIR credits as well. But you've still got to corral all of that information, get it stamped/approved, and track it all over months or years of construction. Here's a few other best practices for consideration to help make it as seamless as possible.



#### 1. Use Green Badger

Sort of goes without saying but using your Green Badger project license makes this all so easy, so automated, so headache free



#### 2. Roadmap early with architect

Roadmap as early as possible with the architects. We are seeing more and more architects detail out products to go for, but when they don't, get on the same page and have a joint strategy to make sure you're on the path to success



#### 3. Use LEED submittal coversheet

Use a LEED materials coversheet for your subcontractors. Making them fill this out solves a number of problems - it helps you nail down material cost and quantities in a clean manner, requires the sub to put some thought into LEED attributes, and gives you a way to cross check the backup documentation.



#### 4. Have updated CDPH documents

Make sure the CPDH certificates are valid or at least within a year of the expiration date.



### 5. Create a LEED Low Emitting folder for organization

If you're not using Green Badger, go ahead and create a LEED Low Emitting folder - you've got to submit ALL of them to USGBC, so having them in one folder you can zip up and upload at the end will make life a lot better come submission time.

### **Summary for IEQc2**

#### Recaping how to earn 2 points:

- Make sure you are using LEED v4.1!
- Roadmap early with the design team
- Focus on paints, flooring, ceilings, walls and insulation
- Verify and log your low-emitting products into a folder for easy submission to USGBC



#### **BADGER TIP:**

By using a LEED materials coversheet, where you require the subcontractor to provide cost and any relevant LEED data, you get all this information up front.

Or reject the submittal and send it back. Pretty straightforward!

Download your coversheet here.

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