

The Essential Guide to Earning LEED v4/4.1 BPDO Credits

A Resource Guide for General Contractors

BY GREEN BADGER FOUNDER & CEO, TOMMY LINSTROTH



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Introduction

Years after the release of LEED v4, with quarterly tweaks within the still un-balloted LEED v4.1, we still have daily discussions with project teams to figure out which of the Building Product Disclosure and Optimization (BPDO) credits are achievable, and how the F@*K to earn them.

At Green Badger, we do our best to help teams figure out their BPDO credits by consistently engaging with teams across the country, diligently reviewing quarterly updates/addendums/CIRs (because what's the point of creating a set of rules/standards if you're not going to change them every three months), and venting/raging/problem solving with peer groups who feel the same frustrations as the rest of us.

While we could rant daily with the many “fun challenges” that come with earning

LEED certification (I think Dante wrote about dealing with LEED review comments at some point), we're taking the high road. We strive to be solution providers, and firmly believe in our motto of making “Sustainability Simplified”.

We believe that people want to do the right

thing, but they just want to know what it is, without having to slog through and figure out what to do. While this might be an overly general statement for everything in life, it tends to hold true for LEED projects.

“Don't make me guess what paint/drywall/pipe complies. Just tell me which ones to use to earn the credit!” And we think USGBC hears that.

Their effort to pre-approve products to let teams know they are compliant may help (and I know manufacturers have been begging to pay for yet another certification!). If so, hopefully it comes sooner rather than later.

In the meantime, we've created a guide to help teams plan a strategy to earn all of the Building Product Disclosure and Optimization credits for LEED v4.1.



It may take some very careful planning, but with the April 2021 updates to the BPDO credits all of the options are now at least potentially earnable which is a huge update over prior iterations.

With the latest updates, Environmental Product Declarations (EPD) Option 1, Sourcing of Raw Materials, and Material Ingredient Optimization are all very achievable. EPD Optimization (Option 2) and Material Ingredient Optimization (Option 2) now have very achievable requirement thresholds, but especially for the former, there are barely 20 products that exist (as of this writing).

Even with the more straightforward EPD and Ingredient reporting credits, we see too much finger pointing.

The general contractor gets a generic spec that says “Obtain EPDs where available,” but no strategy/guidance of where to look, or a spec that calls for a product with an HPD but it costs 20% more. That’s where this guide comes in. It’s a starting point for where to most easily and readily find products that meet the requirements for all the BPDO.

This is NOT a comprehensive list of every single product that has LEED compliant documentation. Go spend a few hundred hours going product by product through all the various databases out there if you want that.



About this Guide

This BPDO guide offers a framework of the product categories that we at Green Badger see the broadest number of manufacturers and product lines with EPDs, HPDs, Cradle to Cradle certifications, Declare labels and anything else you need to earn the BPDO credits.

Use it as a starting point. Hopefully you can find your 20 products in these few categories quickly and easily and get on with your life. The alternative involves scouring databases, reading through 500 page submittals, and earning a PhD in chemistry to determine if a product will help you earn your certification.



Precursor

A quick note before we get started. Do you know the differences between LEED v4 and LEED v4.1? Yes? Great! You didn't know LEED v4.1 existed? Here's what you need to know.

Green Badger unequivocally recommends that each and every project team opt into LEED v4.1 for the BPDO Material Credits (and low-emitting materials, but that's not what this guide is covering). Don't argue with the team, don't wonder if you can. Just do it. Life will be so much easier for you!

For those who don't want to take a Badger at their word, here's the quick breakdown of why you should immediately opt into v4.1 with a short Q+A.

Question & Answer

Question: My project is registered as LEED v4. Can I use v4.1?

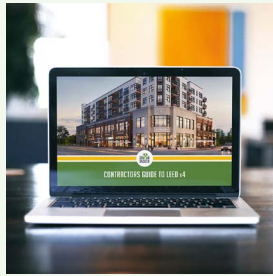
Answer: YES! Any LEED v4 project can opt into v4.1 on a credit by credit basis – no questions asked! You are eligible – the Badger guarantees it! It is not for the whole project. It is on a credit by credit basis, so if you only want to do it for the BPDO and Low Emitting Credits, you can.

Question: My project is registered as v4.1 – can I use v4.1?

Answer: STFU

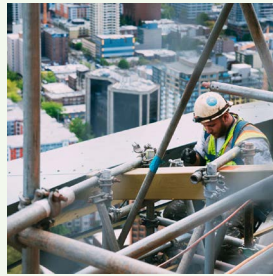
More Green Badger Resources

Visit getgreenbadger.com/resources



LEED v4 Webinar

Free, on-demand training video to get your project team equipped with the knowledge to tackle LEED v4.



LEED v4.1 Update

A review of all the changes to construction related credits in the new LEED v4.1 update.



VOC Products

While this guide only covers BPDO materials credits, but our website has all your VOC needs covered as well.



LEED v4 PDF Guide

Don't want to watch the LEED v4 webinar? Download the PDF guide instead and read at your own convenience!

Question: What makes v4.1 better for the materials credits?

Answer: The Badger will make this as short and sweet as possible. For a more detailed answer, go to getgreenbadger.com/resources and check out the whole section dedicated to v4.1 updates.

One:

Lower thresholds for certain project types. If your project is Commercial Interiors, Core and Shell, or Warehouse, the threshold for earning EPD and MIR Option 1 drops from 20 products to 10 products - its 50% easier to get!

Two:

Most EPDs count for more. By far and away, most EPDs we see are Product Specific Externally reviewed products. This counted as 1 product under v4, but under v4.1, third-party externally review products count as 1.5 for both EPD and MIR.

We see less of those in MIR (for example, there are only 40 third party reviewed declare labels and 125 third party HPDs (as of Spring 2020), but there are thousands of EPDS.

That means you really only need 14 products, rather than 20 which is a 30%

reduction in the number of compliant products necessary for credit achievement.

Three:

Sourcing of Raw Materials is much easier - we're not discussing strategies for this credit, but two big changes.

1. The threshold dropped from 25% to 20% making it much easier to achieve. A second point is available at 40% as well
2. The structure/enclosure cap went away. That means no limitations on structural steel, rebar, concrete, etc that crippled project teams in v4

Four:

The calculators are awesome and super user-friendly! Just kidding, the calculators are still a nightmare of Excel crap that I couldn't imagine having to use on a day to day basis.

So there you go - use v4.1. Thresholds are lower across the board, and you need fewer compliant products.

And now, onto the show!



The Ultimate Guide to LEED v4 Construction

2.5 HOUR ONLINE COURSE

Our comprehensive LEED Academy training platform will take you from LEED Novice to LEED Ninja in 2.5 hours!

- Are you confused about the differences between LEED v4 and v4.1 credits and which you should be pursuing?
- Do you want practical and actionable strategies to make achieving LEED v4 credits easier?
- The Ultimate Guide to LEED v4 Construction course on Green Badger's LEED Academy has everything you need for LEED training.

getgreenbadger.com/academy

Earning MRc2 Option 1 Environmental Product Declarations in LEED v4.1

*There's three things you'll need,
and 40 pages you won't.*

**Environmental product
declarations used to be rare as
an albino jackalope, but these
days there are a lot of options
across the spectrum.**

That's not to say you'll be walking the jobsite and trip over a pile of environmental product declarations (EPDs). In fact, most products still don't have them, but if you know where to look it's like shooting fish in a barrel. Where do I look, you may ask? Well that's what I'm about to tell you.



BY TOMMY LINSTROTH,
GREEN BADGER FOUNDER & CEO
LEED FELLOW

REQUIREMENTS



Requirements for MRc2 Option 1 for v4.1

1 Point

For most LEED BD+C Projects:

20 products with qualifying environmental product declarations.

1 Point

For Commercial Interiors, Core and Shell, and Warehouse projects:

10 products with qualifying environmental product declarations.

Exemplary
Performance Point

40 products

(20 for CI, C&S, Warehouse)

You may be asking, why is the word qualifying in italix? What's the hidden meaning behind that?

Unsurprisingly, not all EPDs are created the same, and LEED has a number of different requirements and standards that an EPD must have incorporated, or you're SOL. Let's break it down for you.

What is an Environmental Product Declaration?

Environmental product declarations are independently verified reports based on life-cycle assessment (LCA) studies. The LCA studies must have been conducted according to a set of common rules ("product category rules," or PCRs) for each product category and then peer-reviewed.

EPDs are managed and created by "program operators" — organizations that ensure that the EPDs meet the various requirements. In the U.S. you'll see those from UL, SCS, ASTM or NSF, though there are a few others that are coming around.

Requirements for MRc2 Option 1 Cont.

There are 4 types of EPDs currently accepted by USGBC:

- Product specific LCA,
- Industry Wide,
- Product Specific Type III, Internally Reviewed
- Product Specific Type III, Externally Reviewed

The first three all count as 1 product in your quest towards 20, while Product Specific Type III, Externally reviewed counts as 1.5 products.

Broadly speaking, there are 2 main types of EPDs that we come across:

- Industry Wide
- Product Specific Type III Externally reviewed.

Industry wide means it is not brand specific. The EPD shown below is for concrete from the **National Ready Mix Concrete association**. You can apply it to any of 72 ready mixed concrete products, as long as the plant you get it from a plant that participated in the EPD.

Manufacturers must be specifically identified as participants in the EPD, or it won't count (*or in this case, available to be verified through the link underlined below*).

There aren't a lot of compliant industry-wide EPDs out there, but you'll see them for some pretty common items like Type X gypsum board and glas-mat gypsum.

For concrete, keep in mind that there are 72 mix designs listed, and each one counts as a separate product - so you can potentially have multiple products from this single EPD.



National Ready Mixed Concrete Association
Ready Mixed Concrete

According to ISO 14025

NSF International Certified

This industry-wide or sector average environmental product declaration is in accordance with ISO 14025 and describes the environmental characteristics of 72 ready mixed concrete products. It is a certified declaration and all relevant environmental information is disclosed as per the governing product category rules. A list of plants that are eligible to claim participation in this EPD is available at: www.nrmca.org/sustainability/EPDProgram/search

| | |
|--------------------|---|
| PROGRAM OPERATOR | NSF International 789 N. Dixboro Ann Arbor, MI 48105 www.nsf.org |
| DECLARATION HOLDER | The National Ready Mixed Concrete Association (NRMCA) 900 Spring Street Silver Spring, MD 20910 www.nrmca.org |
| DECLARATION NUMBER | EPD 10080 |
| DECLARED PRODUCT | This industry wide EPD covers 72 ready mixed concrete products on a per cubic meter (cubic yard) basis |

You can apply this Ready Mix Concrete EPD to any of 72 ready mixed concrete products, as long as the plant you get it from a plant that participated in the EPD.

Who is the EPD for?

That's the manufacture
(or the Declaration Holder)

Who created the EPD?

That's the Program Operator

What is the EPD for?

That's your product specific
(Declared Product).

Is it Internally or Externally Reviewed?

Finally a box that will be checked
for internal or external, and it is
almost always external, because
that's what the manufacturer is
shelling out the big bucks for.

**Product Specific Type III
Externally Reviewed EPDs count
as 1.5 products on your quest to
10 or 20 total products.**

**SHERWIN-WILLIAMS.**
Environmental, Health, Safety, and Regulatory Affairs
101 Prospect Avenue NW, Cleveland, Ohio 44115-1075



Environmental Product Declaration – PrepRite® Block Filler¹

PrepRite Block Filler Block Filler is effective on above grade and unpainted masonry surfaces. Allows topcoat on concrete block to be smooth and uniform.

The product image to the right is an example of one of the formulas covered by the EPD. A list of all relevant PrepRite Block Filler formulas is shown in Table 1 on page 2 of the EPD.

| | |
|----------------------------------|---|
| Program Operator | NSF International |
| Declaration Holder | The Sherwin-Williams Company |
| Declaration Prepared by | Doug Mazeffa (douglas.p.mazeffa@sherwin.com) |
| Declaration Number | EPD10084 |
| Declared Product | PrepRite® Block Filler |
| Product Category and Subcategory | Architectural Coatings – Interior Coatings |
| Program Operator | NSF International ncss@nsf.org |
| Reference PCR | PCR for Architectural Coatings – 7-18-2015 |

| | |
|--------------------|-------------------|
| Date of Issue | February 10, 2017 |
| Period of Validity | 5 Years |

| | |
|-----------------------------|---|
| Contents of the Declaration | <ul style="list-style-type: none">– Product definition and material characteristics– Overview of manufacturing process– Information about in-use conditions– Life cycle assessment results– Testing verifications |
|-----------------------------|---|

| | |
|---------------------------------|--|
| The PCR review was conducted by | Thomas P. Gloria, Ph. D. t.gloria@industrial-ecology.com |
|---------------------------------|--|

| | |
|--|---|
| This EPD was independently verified by NSF International in accordance with ISO 21930 and ISO 14025. <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External | Jenny Oorbeck joorbeck@nsf.org |
| This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by | Jack Geibig - EcoForm jgeibig@ecoform.com |

| | |
|--|--|
| Functional Unit: | 1m ² of covered and protected substrate for a period of 60 years (the assumed average lifetime of a building) |
| Market-Based Lifetime Used in Assessment | 5 years |
| Design Lifetime Used in Assessment | 3 years |
| Test Methods Used to Calculate Design Life | ASTM D2805-11, ASTM D2486-06, ASTM D6736-08, ASTM D4828-94 |
| Estimated Amount of Colorant | Varies (see Table 2) |
| Data Quality Assessment Score | Very Good |
| Manufacturing Location(s) | Various Plants Throughout the United States |

By far and away, the most common EPs out there is Product Specific Type III, Externally reviewed.

That means they are for one manufacture, for a specific product line, and the information has been verified by a 3rd party.

And that's almost every EPD – that's what the manufacturer is paying someone for

– to verify it! So pretty much any EPD you get from UL, SCS, NSF or ASTM will all be third party verified and product specific.

Here's what you'll need to look at just to be sure. Frankly you can ignore 20 of the 21 pages in these documents.

There's always a little summary table that will tell you Program Operator – that's who created the EPD.

STRATEGIES



Strategies for MRc2 Option 1

Now that you know what an EPD is and what types qualify for LEED, let's dive in to where on earth will you find enough to earn the points? Its easy! I'm sure your architect provided a very detailed spec roadmap that identifies 25 products that they've picked out to ensure credit compliance - boom, you're set!

Wait, they didn't? There's just a generic spec saying provide EPDs for 20 products? Well, that doesn't help! Fortunately, I'm here to tell you where to look (and take notes, this will be the exact same guidance for earning Material Ingredient Reporting or MRc4 Option 1).

Where to find 20 products that have LEED Compliant Environmental Product Declarations

Green Badger recommends focusing on 6 different submittals, and its where you'll find boatloads of EPDs.

Here's where to start:

1. Insulation
2. Flooring
3. Gypsum board
4. Ceiling tile
5. Paint
6. Doors and hardware

Why focus on these six categories? Because each one has multiple manufacturers with lots of options so you're not pigeonholed into sole sourcing. Plus, every construction project has these products.

I'll offer a precursor before I go into the details. Neither I nor Green Badger endorse, recommend, prefer, sponsor, etc. any of the brands and products listed. Nor is this a comprehensive list of every single product that exists with an EPD or HPD. It's simply some guidance on product categories to get your points without banging your head into a wall. Now, let's take a quick run-through.

1. Insulation

Noisy? Use acoustical insulation. Cold? Bundle up that thermal insulation. Condensating pipes? There's insulation for that! Odds are that you have at least 3 types of insulation on your project if not more. All the big players are here – Owens Corning, Johns Manville, Knauff, Certainteed – plus a lot of options including thermal, acoustic, batt, spray, faced, unfaced.



Pictured: Owens Corning EcoTouch Kraft Faced Insulation

| Manufacturer | Product | Compliance |
|-------------------------------------|---|---------------|
| Certainteed | FIBERGLASS DUCT WRAP INSULATION | EPD |
| | FIBERGLASS BLANKET INSULATION | EPD |
| | Sustainable Insulation Unfaced & Kraft Faced Batts | EPD |
| | Blowing Wool Fiberglass Insulation | EPD, MIR |
| International Cellulose Corp | K-13 Acoustical/Thermal Insulation System | SRM, MIR |
| | Ure-K Acoustical/Thermal Insulation System | MIR |
| Johns Manville | ENRGY 3®.E | MIR |
| | 800 SERIES SPIN-GLAS® | EPD |
| | PERMACOTE LINACOUSTIC R-300 | EPD |
| | 1000 SERIES SPIN-GLAS | EPD |
| | LINACOUSTIC® RC-HP | EPD |
| Knauff | Knauf Insulation EcoBatt® Insulation with ECOSE® Technology Unfaced Batts | EPD, SRM, MIR |
| | Knauf Insulation EcoBatt® Insulation with ECOSE® Technology Faced Batts | EPD, SRM, MIR |
| | JetStream Ultra Blowing Wool Insulation | EPD |
| | Earthwool® Redi-Klad® 1000° Pipe Insulation with ECOSE® Technology | EPD |
| Owens Corning | EcoTouch Kraft Faced Insulation | EPD, SRM, MIR |
| | 700 Series Fiberglas® Insulation Faced | EPD, SRM, MIR |
| | Thermafiber® Mineral Wool Insulation | EPD, SRM, MIR |
| | FOAMULAR Extruded Polystyrene (XPS) Insulation | EPD, SRM, MIR |
| | ECOTouch Insulation Unfaced | EPD, SRM, MIR |
| | 700 Series Fiberglas® Insulation Unfaced | EPD, SRM, MIR |
| | Fiberglass Pipe Insulation | EPD, SRM, MIR |
| | Thermafiber UltraBatt Mineral Wool Insulation | EPD, MIR |

2. Flooring Products

Next, we suggest the Flooring category. There are a ton of options for carpet, VCT, and ceramic tile. All the brands that show up – Armstrong, Shaw, Interface, Milliken – come with EPDs and HPDs. Don't forget the adhesives! Laticrete alone has over 100 products with HPDs, plus WF Taylor, XL brands, and others.



Pictured: Armstrong Luxury Vinyl Tile (LVT) via Armstrong.

| Manufacturer | Product | Compliance |
|----------------------------|--|------------|
| American Olean | American Olean Brand Tile - El Paso TX Wall Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Monterrey Mexico Floor Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Muskogee NA Body Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Fayette AL Quarry Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Muskogee OK Super White Body Tile Manufacturing | EPD |
| Armstrong | Luxury Vinyl Tile (LVT) | EPD, MIR |
| | Vinyl Composition Tile (VCT) | EPD, MIR |
| | BioBased Tile | EPD, MIR |
| | Summit-all-in-one Hardwood Adhesive | MIR |
| | S-799 High Moisture Adhesive for Linoleum and Rubber Tile | MIR |
| Beaulieu Commercial | Nexterra Carpet Tile (Nylon 6,6 Face Fiber) | EPD, MIR |
| | Beaulieu Standard Broadloom (Nylon 6,6 Face Fiber) | EPD, MIR |
| | Level Hybrid Flooring Tile | EPD |
| | Level Tile with Nexterra Backing System | MIR |
| | Nexterra Carpet Tile (Nylon 6 Face Fiber) | EPD, MIR |
| Knauff | AFFIX Tile - Piece Dyed Nylon 6,6 | EPD |
| | AFIRMA™ Hardback Tile- Piece Dyed Nylon 6,6 | EPD |
| | AFFIX Tile - Solution Dyed Nylon 6,6 | EPD |
| | NexStep Piece Dyed N66 | EPD, MIR |
| | Healthbond 2300 Adhesive | MIR |

Flooring Products

| Manufacturer | Product | Compliance |
|-------------------------------|--|---------------|
| ECORE International | UltraTile | EPD |
| | ECOsurfaces | EPD |
| | PlayGuard | EPD |
| | Expona Commercial Resilient Vinyl Floor Covering | EPD, MIR |
| | QT Sound Control | |
| Forbo Flooring Systems | Marmoleum Tile 2.0mm and 2.5mm | EPD, SRM, MIR |
| | Colorex SD | EPD, SRM, MIR |
| | Flotex Sheet | EPD, MIR |
| | Marmoleum 2.0mm and 2.5mm | EPD, MIR |
| | Coral Duo | EPD, MIR |
| Interface | Modular Carpet Tile Type 6,6 Nylon with GlasBac | EPD, SRM, MIR |
| | Modular Carpet Tile Type 6 Nylon with GlasBacRE | EPD, SRM, MIR |
| | Modular Carpet Tile Type 6 Nylon with NexStep | EPD, SRM, MIR |
| | Modular Carpet Tile Needlefelt with Graphlar | EPD, SRM, MIR |
| | Modular Resilient Flooring - LVT | EPD, MIR |
| Laticrete | L&M EMERYTOP 400 | MIR |
| | SPARTACOTE FLEX SB | MIR |
| | SPARTACOTE FLEX SB Low Gloss | MIR |
| | L&M FGS HARDENER PLUS | MIR |
| | SPARTACOTE FLEX PURE CLINICAL PLUS | MIR |
| Milliken | Solution Dyed Nylon 66 with Milliken ES Comfort Plus Backing | EPD, MIR |
| | Milliken Solution Dyed Nylon 6 with Milliken ESP Underscore Backing | EPD, MIR |
| | Digital Dye Injected Nylon 6 with Milliken ES Comfort Plus Backing | EPD, MIR |
| | Aquafil Econyl Solution Dyed Nylon 6 with Milliken ES Underscore Backing | EPD, MIR |
| | Milliken Continuous Dyed Nylon 66 Broadloom | EPD, MIR |
| Shaw Industries | EcoWorx Tile with Nylon Face Fiber | EPD, MIR |
| | EcoWorx PX Tile with Nylon Face Fiber | EPD, MIR |
| | Residential Broadloom with LifeGuard Backing System | MIR |
| | Classicbac™PC with NYLON Face Fiber | MIR |
| | Engineered Ply-Core Hardwood Flooring | MIR |

3. Gypsum Board

The next category we suggest is Gypsum Board. The big players are here too, including National Gypsum, USG, Certainteed, and American.

Gypsum board is another category with a wide variety of products like Type X, Fire Rated, Mold Resistant, GlasMat, Tile Backerboard, Shaftliner, abuse resistant – the list goes on and on! And they all count as separate products.



Pictured: Certainteed, Type X Gypsum Board

| Manufacturer | Product | Compliance |
|------------------------|---|------------|
| American Gypsum | ClassicRic Gypsum Wallboard | MIR |
| | M-Bloc Gypsum Wallboard with Mold and Moisture Resistance | MIR |
| | M-Glass Glass Mat Gypsum Panels | MIR |
| | Exterior Soffit Gypsum Sheathing | MIR |
| | Exterior Gypsum Sheathing | MIR |
| Certainteed | Type X Gypsum Board Vancouver, British Columbia Facility | EPD, MIR |
| | Type X Gypsum Board, Seattle, WA Facility | EPD, MIR |
| | Type X Gypsum Board (Montreal Facility) | EPD, MIR |
| | M2tech Moisture & Mold Resistent Gypsum Board 12.7MM (1/2") (Montreal Facility) | EPD, MIR |
| | Type X Gypsum Board (Toronto Facility) | EPD, MIR |
| National Gypsum | Gold Bond XP Fire-Shield Gypsum Boards | MIR |
| | Gold Bond SoundBreak XP Gypsum Boards | MIR |
| | Gold Bond XP Fire-Shield C Gypsum Boards | MIR |
| | Gold Bond Fire-Shield C Gypsum Boards | MIR |
| | Gold Bond Fire-Shield Gypsum Boards | MIR |
| USG | Sheetrock Brand EcoSmart Panels Mold Tough Firecode X | EPD, MIR |
| | Sheetrock Brand EcoSmart Panels Firecode 30 | EPD, MIR |
| | Sheetrock Brand EcoSmart Panels Firecode X | EPD, MIR |
| | Sheetrock Brand Firecode C Panels | MIR |
| | Sheetrock Brand Glass-Mat Panels Mold Tough AR Firecode | MIR |

4. Ceiling Tile & Grid

Armstrong, Certainteed and USG all have multiple options, and when was the last time you had a project that just used 1 single ceiling tile throughout? And if you need to, you can always hang a different tile in the mechanical room! I didn't just say that, I'd never suggest such a shameless tactic to pick up a point!



Pictured: Mars ClimaPlus Healthcare

| Manufacturer | Product | Compliance |
|--------------------|-------------------------------------|------------|
| Armstrong | Ultima Ceiling System | EPD, MIR |
| | Metalworks Snap In | EPD, MIR |
| | Metalworks Clip On | EPD, MIR |
| | Metalworks Torsion Spring | EPD, MIR |
| | Dune Ceiling System | EPD, MIR |
| | Ultima+ | EPD, MIR |
| | Mesa Ceiling System | EPD, MIR |
| Certainteed | Baroque Ceiling Tile | EPD, MIR |
| | Cashmere Style Edge Ceiling Tile | EPD, MIR |
| | Protectone Cashmere Ceiling Tile | EPD, MIR |
| | Fine Fissured High NRC Ceiling Tile | EPD, MIR |
| | Sereno Fine Fissured Ceiling Tile | EPD, MIR |
| | Sky Ceiling Tile | EPD, MIR |
| | Symphony m and Rx Symphony m | EPD, MIR |
| USG | Mars ClimaPlus Healthcare | EPD, MIR |
| | Mars ClimaPlus HRC | EPD |
| | Mars ClimaPlus High-NRC | EPD |
| | Mars ClimaPlus | EPD |
| | RADAR™ | EPD |
| | RADAR™ Basic | EPD, MIR |
| | Radar ClimaPlus High-NRC | EPD |

5. Paint Products

All the big manufacturers show up with compliant products in the paint category. What's great

is that each sheen of paint counts as a product, so that means if you're using Sherwin Williams Promar 200 zero VOC paint, you can count the primer, flat, eggshell, semi-gloss, and gloss paints all as unique products! Throw in block fillers and direct to metals and you're nearly halfway there.



| Manufacturer | Product | Compliance |
|-------------------------|--|------------|
| Imperial Paints | ECOS Interior Matte Wall Paint Dark Base | MIR |
| | ECOS Interior Gloss Paint White Base | MIR |
| | ECOS Interior Eggshell Dark Base | MIR |
| | ECOS MDF Passivating Primer Paint | MIR |
| | ECOS Atmosphere Purifying Paint White Base | MIR |
| | ECOS Interior Semi-Gloss White Base | MIR |
| | ECOS Clear Gloss Varnish | MIR |
| | ECOS Interior Gloss Paint Dark Base | MIR |
| | ECOS Interior Semi-Gloss White Base Paint | MIR |
| | ECOS Electromagnetic Radiation (EMR) Shielding Paint | MIR |
| PPG | SPEEDHIDE zero Interior Flat Latex | EPD, MIR |
| | SPEEDHIDE zero Interior Semi-Gloss Latex | EPD, MIR |
| | SPEEDHIDE Interior/Exterior Masonry Hi Fill Latex Block Filler | EPD |
| | SICO Ecosource - Melamine | EPD |
| | SICO Ecosource - Primer/Sealer | EPD |
| | Ultra Zero VOC by Dulux Interior Latex Paint - Eggshell | EPD |
| | Ultra Zero VOC by Dulux Interior Latex Paint - Primer | EPD |
| Sherwin Williams | ProMar 200 Zero VOC Latex paint - Flat | EPD, MIR |
| | ProMar 200 Zero VOC Latex Primer | EPD, MIR |
| | Loxon Concrete & Masonry Primer | EPD, MIR |
| | PrepRite Block Filler | EPD, MIR |
| | Pro Industrial DTM Acrylic - Gloss | EPD |
| | Harmony Latex Paint - Semi-Gloss | EPD |
| | ProMar 400 Zero VOC - Primer | EPD |

6. Doors & Hardware

Finally, we've arrived at the doors and hardware category.

There are a ton of options here from doors and frames to kickplates, gaskets, locks and closing devices. This one always slips through the cracks, but you could knock out half of your EPDs here.



Corbin Russwin IN120 Wifi Electronic Access Control Mortise Lock

| Manufacturer | Product | Compliance |
|-------------------------------------|--|------------|
| Arrow Lock and Door Hardware | 5016N Series Door Closer | EPD |
| | 7700 Series Swinging Door Operator | EPD |
| | 7800 Series Swinging Door Operator | EPD |
| | 7900 Series Swinging Door Operator | EPD |
| | 900N Series Door Closer | EPD |
| Assa Abloy | Attack Resistant Opening Wood Doors | EPD |
| | Pemko Mortise Aluminum Heavy Duty Geared Hinge | EPD |
| | Sketch Door | EPD |
| | Markar FM300 Stainless Steel Edge Mount Continuous Pin and Barrel Hinges | EPD |
| | HES 1600 Series | EPD |
| | Earth Door Wood Door | EPD |
| | Attack Resistant Hollow Metal Steel Door | EPD |
| | Pemko PDB411E Acoustic Automatic Door Bottom | EPD |
| | High Pressure Laminate Wood Door | EPD |
| Corbin Russwin | IN120 Wifi Electronic Access Control Mortise Lock | EPD |
| | CL3300 Series Cylindrical Lock | EPD |
| | ED5400 SVR Exit | EPD |
| | IN100 Aperio Mortise Lock | EPD |
| | ED5000 Series Mechanical Exit Device | EPD |
| | CL3100 Series Vandal Resistant Lock | EPD |
| | ML2000 Series Mortise Lock | EPD |
| | ML20900 ECL Electromechanical Mortise Lock | EPD |
| | Access 600 RNE1 | EPD |

6. Doors & Hardware

| Manufacturer | Product | Compliance |
|---------------------------------------|--|---------------|
| DORMA Deutschland GmbH | BTS 80 BTS 80 EMB and RTS 80 EMB Series concealed door closers | EPD |
| | BTS 75 V and RTS 87 Series concealed door closers | EPD |
| | 8600 and 8900 Series surface applied door closers | EPD |
| | 8000 and 9000 Series exits | EPD |
| | RTS 85 RTS 88 and BTS 84 Series concealed door closers | EPD |
| Norton | Norton 7500 Series Door Closer | EPD, SRM |
| | 5800 Series ADAEZ Door Opener | EPD |
| | Norton 1600 Series | EPD |
| | 6300 Series ADAEZ Door Opener | EPD |
| | 8000 Series Door Closer | EPD |
| | 9300 Series Door Closer | EPD |
| | Norton 7700PT Series Door Closer | EPD |
| | Norton DC 5600 Operator | EPD |
| | Norton 9500 Series Door Closer | EPD |
| | Norton 7200 Series Door Closer | EPD |
| Sargent | 80 Series Mechanical Exit Device | EPD |
| | 8200 Series Electromechanical Mortise Lock | EPD |
| | 7900 Series Mortise Lock | EPD |
| | Sargent Exit 80 Series 56- Electromechanical | EPD |
| | 281 Series Door Closer | EPD |
| | 1131 Ruen Series Door Closer | EPD |
| | 10 Line Cylindrical Lock | EPD |
| | 8200 Series Mortise Lock with EcoFlex | EPD |
| | 8200 SERIES MORTISE LOCK | EPD |
| | Harmony Mortise Lock | EPD |
| Schlage | Schlage L9000 Series Lock | EPD, SRM, MIR |
| | L9010 Mortise Lock | EPD, MIR |
| | Schlage AL Series Lock | EPD |
| | Schlage ND Series Lock | EPD |
| | Schlage B5000 Series Lock | EPD |
| Yale | 3000 Series Door Closer | EPD |
| | 6000 SCR Exit | EPD |
| | Yale 4400 Series Door Closer | EPD |
| | 51 Series Door Closer | EPD |
| | 6000 Rim Exit | EPD |

Recapping the Strategy Roadmap

Using this roadmap, most projects could pick up 6 paints, at least 4 flooring products, 3 door components, 4 wall products, 2 ceiling products, and 2 insulation types and you're home-free.

All without counting that they are worth 1.5 products apiece because all those EPDs are – you guessed it – Externally Reviewed!

So there you go. Hit up these submittals and I'm confident you'll have completed your requirements for EPDs and Ingredient reporting for Options 1 without having to get in fistfights with the architect, subcontractors, or anyone else.

Let's recap the strategy:

- Start your efforts with insulation, flooring, gypsum board, ceiling tiles, paint and doors/hardware
- Check the finish schedule early and often, and if possible, review with the architect to roadmap product selection
- Get to 20 products quickly, and you can change the acronym EPD from environmental product declaration to Every Person Drinking!

Summary of Strategies



6 Paints



4 Flooring Products



3 Door Components



4 Wall Products



2 Ceiling Products



2 Insulation Types

MORE BEST PRACTICES

For Environmental Product Declarations



1. Utilize 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 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 a LEED materials cover sheet for your subcontractors.

Making them fill this out solves a number of problems - it helps you nail down material cost 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. Always double-check your Environmental Product Declarations

Double check the EPDs to make sure they detail what you need as you learned earlier. Make sure the whole EPD is included, not just 1 page of it.



5. Create a LEED EPD folder

If you're not using Green Badger, go ahead and create a LEED EPD 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 MRc2 Option 1

Recaping how to earn 1 point:

- Make sure you are using LEED v4.1! Remember, you don't have to update your entire project to LEED v4.1 – you can opt-in on a credit by credit basis.
- Roadmap products early with the design team.
- Focus on insulation, flooring, gypsum board, ceiling tile, paints and doors/hardware.
- Verify and log your EPDs 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.

[illegible]

hereby certify that the material information submitted here is an accurate

SUMMARY

Earning MRc2 Option 2 Multi-Attribute Optimization in LEED v4.1

It can be done... but you're really going to have to plan for it!

A credit that was dead on arrival in LEED v4, Multi-Attribute Optimization, now has a very slight pulse in LEED v4.1.

The credit thresholds have been re-written so that only 5 products are needed, and there's actually a confirmed standard to demonstrate compliance. The challenge that remains? There are still only a handful of these products, so you better plan on using all of them and have them identified from spec to installation. There's literally no room for error.



BY TOMMY LINSTROTH,
GREEN BADGER FOUNDER & CEO
LEED FELLOW

REQUIREMENTS



1 Point

Requirements for MRc2 Option 2 for LEED v4.1

To earn one point, you need to use at least 5 permanently installed products that comply with one of the criteria we'll discuss shortly from 3 different manufacturers.

- Life Cycle Impact Reduction Action Plan (½ product)
- Life Cycle Impact Reductions in Embodied Carbon (value at 1 product)
- Life Cycle Impact Reductions in Embodied Carbon - 10% reduction global warming potential (value at 1.5 products)
- Life Cycle Impact Reductions in Embodied Carbon - 20% reduction in global warming potential and 5% reduction 2 other impact categories (value at 2 products)

And that's the cliff notes version.

The full language will have you mispronouncing eutrophication, learning about tropospheric ozone, and pounding bourbon like you're Al Swearengen.

So what does any of that mean? Let's try and break this down in plain English.

You need 5 permanently installed products from 3 different manufacturers. These products need to either have a plan in place to reduce lifecycle impacts OR show some actual reductions. Here's what this entails.



5 products
from 3 different
manufacturers



Plan in place OR
demonstrated
reductions



What qualifies as a Lifecycle Impact Reduction Plan?

The manufacturer needs to have a product specific LCA using EN 15804 or ISO 21930 for the product it is claiming. If it has an EPD that qualifies under Option 1 here, you're in good shape.

Then, the manufacturer has to provide a publicly available action plan to mitigate or reduce life cycle impacts. It must be critically-reviewed, and include the following components.

- Description of the LCA used by the manufacturer to complete the analysis (pretty straightforward, would already be found in the EPD).
- Identification of the largest life cycle impact areas identified in the analysis and a narrative description of the impact areas targeted for reduction in the action plan.
- Description of specific steps anticipated in implementation of the action plan, with dates and a timeline for implementation.

This is just a plan for reducing the product's impact down the road - to get 50% credit (or $\frac{1}{2}$ a product), the manufacturer needs to develop a plan to reduce impact, but it doesn't actually need to be implemented. You've got to crawl before you walk.

What qualifies as Life Cycle Impact Reductions in Embodied Carbon?

This one gets complicated pretty quickly if you read all the details. Literally, check it out below if you're a glutton for punishment:

Products that have demonstrated environmental impact reductions for the specified functional unit based on a current third-party EPD or verified LCA that conforms to the comparability requirements of ISO 14025 and ISO 21930.

Here's where your good old EPD comes in. On top of that, it needs to be demonstrated that there is a reduction in the global warming potential (GWP) impact category.

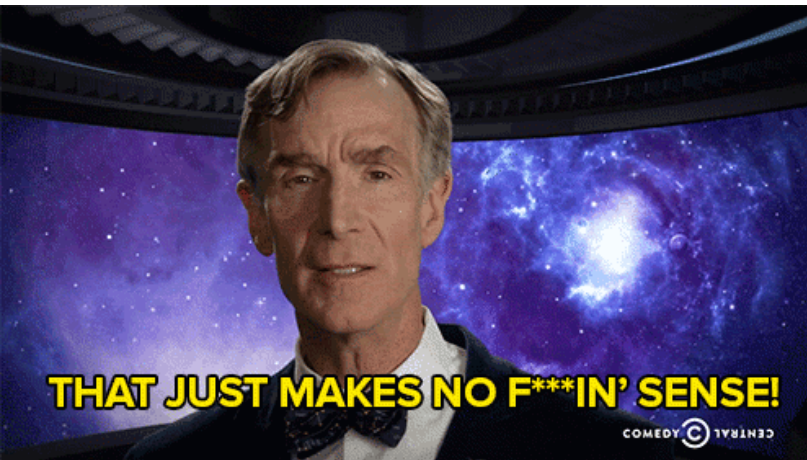
Any reduction in GWP is good for 1 product, a 10% reduction counts for 1.5 products, and 20% reduction AND at least a 5% reduction in 2 other impact categories yields 2 products.

What are these impact categories, you may be asking? Well, I'll tell you. The impact categories are:

- Global warming potential (greenhouse gases), in CO₂e;
- Depletion of the stratospheric ozone layer, in kg CFC-11e;
- Acidification of land and water sources, in moles H⁺ or kg SO₂e;
- Eutrophication, in kg nitrogen equivalent or kg phosphate equivalent;
- Formation of tropospheric ozone, in kg NO_x, kg O₃ eq, or kg ethene; and
- Depletion of nonrenewable energy resources, in MJ using CML / depletion of fossil fuels in TRACI.

Moles H+? MJ using CML? Kg NOx? Wtf?

Seriously, this would drive Bill Nye to drink, muchless this hapless guy.



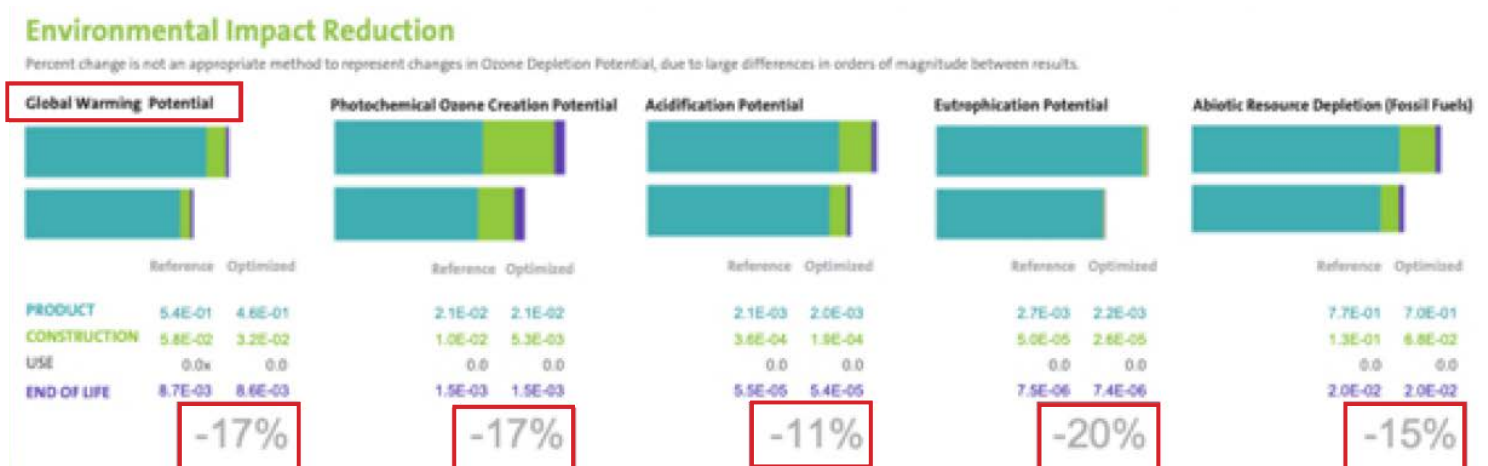
The good news is that the documentation being provided makes this pretty easy to understand, and there's nice, easy to read charts that demonstrate compliance - you don't need to count any moles, megajoules, or kilograms. Just read the chart like below.

This image shows you what the documentation looks like and you don't need a labcoat to understand it. These are the 5 impact categories called out in the credit mentioned, and any associated reductions (or additions) from the lifecycle analysis. In this case, the Eco Touch insulation from Owens Corning is demonstrating a 17% reduction in GWP.

This earns 1.5 products (or 150% by cost) towards credit compliance. IF the GWP was over 20%, it would count as 2 products (or 200%) because at least 2 of the other 4 impact categories show a reduction of at least 5% (in this example, all 4 other categories do).

To restate, using documentation similar to below:

if the GWP shows ANY reduction (is a negative number, not 0 or a positive number), THEN it counts as 1 product. If it is at least 10% reduction (-10) then it counts as 1.5 products. Finally, if GWP is a 20% reduction or greater AND at least two of those other impact categories show a 5% reduction, then it counts as 2 products towards the goal of 5.



STRATEGIES



Strategies for Achieving MRc2 Option 2 in v4.1

Here's the plan. We need to get 5 total products that either have a plan or show reductions in LCA impact categories.

There are thousands of products on a construction site so this can't be too hard, right? Well as we mentioned in the introduction, this is possible – but there's barely 10 products we've seen with the required documentation, so you'll be using all of them!

Side note: Some of the products here are at odds with products available for Material Ingredient Optimization, so you may have to choose which point to go after.

Here are the products Green Badger has documentation on that qualifies for Multi-Attribute Optimization:

FLOORING:

- Interface Modular Carpet Tiles on Glasbac, Nylon 6,6 styles (39% GWP reduction) - Counts for 2 products

INSULATION:

- Owens Corning Eco Touch Fiberglass Insulation (17% GWP reduction) 1.5 products

GYPSUM BOARD:

- USG Sheetrock Ecosmart Firecode X Panels (15% GWP reduction) 1.5 products

TOILET;

- Kohler Highcliff Toilet (13% GWP reduction) 1.5 products

WALL PANELS:

- 3form Pressed Glass Panels (21% GWP reduction) 2 products
- 3form Chroma Panels (35% GWP reduction) 2 products
- 3form Varia Panels (6% GWP reduction) 1 product

PAINT:

- Sherwin Williams Loxon (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Harmony (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Pro Mar 200 (all sheens) (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Pro Mar 200 HP (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Pro Mar 400 (all sheens) (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Preprite Block Filler (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Preprite Primer/Sealer (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Multi Purpose Interior/Exterior Latex Primer (Lifecycle Impact Reduction Plan) 0.5 product
- Sherwin Williams Pre-Catalyzed Waterbased Epoxy (Lifecycle Impact Reduction Plan) 0.5 product



Flooring



Insulation



Gypsum Board



Toilets



Wall Panels



Paint

Let's put the strategy together.

Here's a surefire way. Slapping down Interface carpet tiles (2 products), USG Sheetrock Ecosmart Fire-code X drywall (1.5 products) and Owens Corning EcoTouch Insulation (1.5 products) will get you to the 5 you need, and represents three manufacturers. If you can specify this, you're set! If not, consider the glorious Kohler Highcliff (1.5 products) toilet to keep compliance.

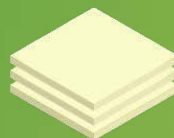
If those products don't align for your project, let's look at options. If you're using 3form wall

panels, you're likely set. Otherwise, it comes down to Sherwin Williams paint – and you'll need a lot of it! Each product has an impact reduction plan, which counts as 1/2 a product - so we may need a few to round out the math. Fortunately, each sheen of paint counts as a separate product, so let's say we're using the ProMar 200 primer, flat, semi-gloss, eggshell, and gloss. That's 5 - with counts for 2.5 total products.

Finish it off with some PrepRite Block filler and PrepRite Primer/Sealer and you've reached that magical total of 5 - good for 1 point!



Interface carpet tiles
(2 products)



USG Sheetrock Ecosmart
Firecode X drywall
(1.5 products)



Owens Corning Eco
Touch Insulation
(1.5 products)



Kohler Highcliff toilet
(1.5 products)



3form wall
panels



Sherwin Williams paint
(7 sheens at
1/2 product each)

Recapping the Strategy Roadmap

As you can see, there is almost no wiggle room for earning the Multi-Attribute Optimization credit.

The good news is that if you take this very scripted approach with the intent of earning this credit from the start, you can almost guarantee success. Additionally, for a product to qualify for Multi-Attribute Optimization, it pretty much has to have a Product Specific Environmental Product Declaration.

So you'll already have tallied 3 to 7 products (valued at 1.5 each since all their EPDs are externally reviewed), resulting in 4.5 to 10.5 products towards the EPD Option 1 goal of 20 (or if its a Core and Shell or Commercial Interiors you're earning the point and are well on the way to the exemplary performance bonus point).

Summary

How to earn 1 point:

- 1 point may be achievable, using a sum of 5 products across 3 manufacturers
- Take a scripted approach from the 6 manufacturers who have Multi-Attribute Optimization documentation
- Spec/sole-sourcing these products will ensure compliance (and may not be an option on federally funded projects)
- This will also get you 50% of the way to earning EPD Option 1

Summary of Strategies



1 point may be achievable here. Use 5 products from 3 manufacturers.



Take a scripted approach using the 6 manufacturers who have Multi-Attribute Opt documentation.



Spec/sole-sourcing these products will ensure compliance.



This strategy will also get you 50% of the way to earning EPD Option 1

Construction Jobsite Sustainability Portal



Jobsite Sustainability software to track sustainability metrics like carbon, waste, water, and energy for construction and operations.

- Demonstrate compliance with the Contractor's Commitment
- Benchmark and validate project sustainability metrics
- Access real-time data of material streams and diversion percentages

getgreenbadger.com/jobsite-sustainability

Earning MRc3 Sourcing of Raw Materials in LEED v4.1

Earning this point could be a steel!

Sourcing of Raw Materials is a streamlined, more achievable version of the LEED v4 credit. The

v4 credit had an unachievable Option 1 (for corporate sustainability reporting), and a 2nd option that required 25% of products by cost to meet a variety of environmental metrics. However, it limited the ability of structural and envelope products to comply.

The newly rewritten v4.1 Sourcing of Raw Materials focuses solely on the leadership extraction practices, eliminates the cap on structure and enclosure, and reduces the threshold for earning the point. A second point is also available if you are really hitting it out of the park.

The good news? This credit is now pretty achievable. It tends to be easier on new construction projects, but plenty of interiors projects are navigating this as well.



BY TOMMY LINSTROTH,
GREEN BADGER FOUNDER & CEO
LEED FELLOW

REQUIREMENTS



Requirements for MRc3 for LEED v4.1

There are 2 points available under sourcing of raw materials under v4.1.

For 1 point, you need to use products sourced from at least three different manufacturers that meet at least one of the responsible sourcing and extraction criteria we'll talk about for at least 15%, by cost, of the total value of permanently installed building products in the project **(1 point)**.

To earn the 2nd point, you need to use products sourced from at least five different manufacturers that meet at least one of the responsible sourcing and extraction criteria below for at least 30%, by cost of the total value of permanently installed building products in the project **(2 points)**.

- Extended Producer Responsibility (valued at 50% by cost)
- Biobased Products
- Wood Products
- Material Reuse (valued at 200% by cost)
- Recycled Content

There you go - a menu of options that all wrap up in aggregate the need to be at least 15% of total material cost Divisions 3-10 for one point, or 30% for two points.

How do I earn points for Sourcing of Raw Materials?

Of all of the BPDO credits, Sourcing of Raw Materials may be most understood, as almost all the compliance paths are interactions of older versions of LEED. Good old recycled content (counting the same as post-consumer % + ½ pre-consumer), FSC wood, material reuse - the band is back together! Biobased products has replaced rapidly renewable, and new to the game (for v4 and 4.1) is extended producer responsibility. All of those attributes add up in one bucket in your quest to 15% by cost.

What is extended producer responsibility?

Extended producer responsibility (EPR) is commonly known as a takeback program, or closed loop program. In short, when an installed product's useful life is over, the manufacturer will take it back and reprocess it into new products. The most common example is carpet - you change our carpet every few years. When you rip it out, the manufacturer will take it back and turn it into new carpet. Of course there's some additional requirements the project must have - for carpet, the program has to meet NSF/ANSI 140-2007, whatever the hell that is.

Frankly, we don't see too many of these programs - most are flooring or ceiling tiles. Even so, put a pin in this, because it may become useful for you. (Hint, hint).

1-2 Points



Strategies for Achieving MRc3 in LEED v4.1

On to the (not so) secret sauce. First, an important note: while this credit can be straightforward to achieve, your project type may dictate your strategy.

New construction projects are going to take a different approach than Commercial Interior projects because new construction tends to benefit greatly from 2 things interior projects lack - Structural Steel and Rebar.

Let's cut to the chase. Out of all the options USGBC provides, recycled content makes up the vast majority of it. In fact, the easiest way to earn this credit is to focus on structural steel, rebar, interior metal studs, and see how far you get. That was always our hunch, so we decided to research it. We surveyed over a dozen Green Badger projects and analyzed how they achieved this point.

These projects represented over \$300,000,000 in Divisions 3-10 materials cost, and resulted in about \$100,000,000 of products that complied with Leadership Extraction Practices. Of that - 85% originated from recycled content! FSC wood only accounted for 7%, and EPR was less than 0.5%. Biobased wasn't found on any of them, and material reuse only came up once (but in a big way - more on that in a bit).

This is a small sample size, but recycled content is clearly where you'll want to focus, especially for new construction.

What to focus on for SRM for New Construction Projects

As mentioned, new construction projects get the significant benefit of lots of steel - structural steel, metal decking, steel joist, interior metal studs and rebar.

In fact, in our study rebar alone made up 25% of the recycled content contributions. Structural steel and all its iterations was the number one option though - 48% of the contribution originated within that category. That totals 73% of all recycled content materials in rebar and structural steel. The rest came from a combination of interior metal studs, doors/hardware, and storefront. Barely 1% comes from flooring, drywall or ceiling tile. If you happen to have a lot of FSC casework or if furniture is part of your project, you can look there as well, but otherwise stick to metal.

Our guidance as always - focus on big-ticket, expensive metal items that we mentioned - structural steel, joist/deck, interior metal studs, doors/hardware and anything FSC certified. Don't sweat the small stuff unless you really need it - that \$128 dollars of recycled content in that gasket is more trouble than it's worth.

Side note: Many of these products also have EPDs and HPDs. As always, the fewer submittals you can earn these points with, the better!

Survey of Green Badger Projects

Based on \$300,000,000 in Divisions 3-10 materials cost:

- Resulted in about \$100,000,000 of products that complied with Leadership Extraction Practices.
 - Of that - 85% originated from recycled content!
- FSC wood only accounted for 7%
- EPR was less than 0.5%
- Biobased wasn't found on any of them
- Material reuse only came up once

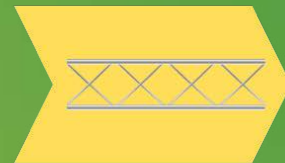
New Construction Projects



Structural Steel



Rebar



Interior Metal Studs



Doors and Hardware



Storefront/Aluminum Glazing Systems



Any FSC wood products

- **Structural Steel:**
 - Recycled Content
 - Steel tube
 - Metal Deck
 - Structural Steel
 - Steel joist
 - Metal Stairs
 - Flats/Plates/Angles
 - **Rebar**
 - Recycled Content
 - Reinforcing bar
 - Reinforcing wire
 - **Interior Metal Studs**
 - Recycled content
 - **Doors and Hardware**
 - **Storefront/Aluminum Glazing Systems**
 - Recycled Content
 - **Any FSC wood products**
- If those don't get you to the 20% goal:
- Drywall
 - Ceilings/Grid
 - Insulation
 - Flooring



Source: Canva

What to focus on for SRM for Commercial Interiors Projects

Well hot damn, my interior project doesn't have any of that glorious structural steel, nor 1 lick of rebar anywhere to be found. Am I fixen to be hogtied here? A better question would be why did this deep south accent just come about - but bless your heart, we've got options for your commercial interiors project.

Your project may not have all that expensive steel, but it also has much a smaller materials costs, so the products you do go after have a much more profound impact.

Some items are still important - interior metal studs and doors and hardware being two big categories that will also be on CI projects. But here's where other product types start to play a much larger role. Let's start with flooring.

You may recall we mentioned most flooring manufacturers have take-back programs and comply with Extended Producer Responsibility - and if you don't, we just told you. Flooring made up 16% of interiors contribution because all the major manufacturers have these programs - which means at least 50% by cost of all that flooring is going to your benefit. Add on that you can compound

with recycled content, and you can be near 100% contributing value of your flooring products, which really starts to move the needle in your favor.

Drywall and ceilings play a more prominent role in interiors projects, accounting for almost 10% of the total contribution.

The secret weapon? Furniture, in two different ways. If you luck into a certain situation, furniture can take care of this whole credit solo. That situation may be rare, but if you're reusing furniture (moving it from an old office location into your new project), it all counts under material reuse, which has a 200% multiplier! We haven't seen it happen too many times, but if you fall into this scenario, you can apply market rates to what new furniture would cost, and then double it for credit compliance. You'll be kicking back your heels in that nice, reused Aeron chair in no time!

Even if you're not reusing it, furniture can play an oversized role in an interiors project budget. The good news is that a lot of chairs, workstations partitions, etc have recycled content and/or FSC wood components, and they will play an overly important role in earning this credit. Throw in FSC or metal casework, and you're set.

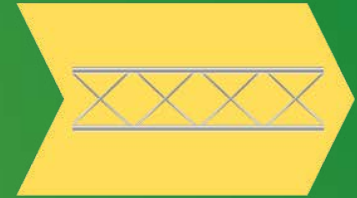
Commercial Interiors Projects



Flooring



Insulation



Interior Metal Studs



Ceiling Tiles & Grid



Furniture & Casework



Gypsum Board



Doors & Hardware

Side note: Many of these products also have EPDs and HPDs. As always, the fewer submittals you can earn these points with, the better!

- **Flooring:**
 - Extended Producer Responsibility
 - Interface
 - Shaw
 - Milliken
 - Armstrong
 - Tarkett
- Interior Metal Studs
 - Recycled content
- Insulation
 - Recycled content

- **Gypsum Board**
 - Recycled Content
- **Doors and Hardware**
 - Recycled content
- **Ceiling Tiles and Grid**
 - Extended producer responsibility
 - Recycled content
- **Furniture and Casework**
 - Reused furniture (200%!)
 - Recycled Content
 - FSC

Recapping the Strategy Roadmap

Depending on project type, there may not be too many items you'll need to track.

Either way, anything metal or FSC wood is a good place to start, and on interiors projects, double up on flooring and furniture where you can. Most of these products will help you earn the EPD/HPD credits as well.

Important Note: Make sure your recycled content information is up to par. Documentation needs to be product specific (and project specific if possible). If you've got a cut sheet from a rebar manufacturer, and they list 10 different mills, make sure you specify which one your steel came from. If your ceiling tile sheet says Up to 73% recycled content! That won't cut it - you need the actual pre and post-consumer recycled content information for your project.

Summary

How to earn points:

- 1 point is achievable for using 15% by cost of compliant products, and a 2nd point is available if you hit 30%, though that is still a tall order.
- Structure or enclosure no longer matters, so focus on big-ticket steel products
- New construction relies heavily on structural steel, rebar, interior metal studs and doors/hardware
- Commercial Interiors projects have a greater emphasis on flooring, drywall, ceilings and furniture

Summary of Strategies



**1-2 points available:
1 point, 15% by cost
2 points, 30% by cost**



**New Construction:
Structural steel, rebar,
interior metal studs and
doors /hardware.**



**Commercial Interiors:
Flooring, drywall, ceilings,
metal studs and furniture.**

ON-DEMAND WEBINAR

Nailing Your LEED Submittals: Expert Advice from Start to Finish



Emily Purcell
Green Building
Specialist at Solomon
Cordwell Buenz



Garrett Ferguson
Sustainable Building
Advisor at
Perkins&Will



Emily Moody
Sustainability Director,
Certifications &
Compliance at Jacobs

Key Takeaways

Moderated by Green Badger CEO Tommy Linstroth, you'll hear from a panel of experts. Here are some key takeaways:

- **You need a LEED submittal cover sheet that can collect all relevant LEED information.** There are many versions of cover sheets out there, and there isn't an industry standard. You can download Green Badger's LEED submittal cover sheet [here](#).
- **Communication and teamwork are key.** A 15-minute phone call or quick email can make a huge difference if someone on the construction side has a question for the design team along the way.
- **A LEED administrator's role can vary** throughout the construction process depending on the organization, on the client, and the project type. Regardless, there are a few situations where you should definitely consult them!

Watch the Webinar Now

Earning MRc4 Option 1 Material Ingredient Reporting in LEED v4.1

Have you ever wondered what's really inside some of those products you are using inside of your building? No? Me neither! But hey, someone smarter than me decided that you should be informed of what exactly is hanging on your walls or under your feet, and that is what this credit is all about. This credit is going to sound a lot like Green Badger's guidance on EPDs.

Most products still do not have documentation to comply with this credit - in fact, prescreened/verified for LEED products total less than 3,000. These are predominantly Health Product Declarations, but both Cradle to Cradle and Declare are growing (more on all of those in a bit).

HPDs - 2,044 Prescreened for LEED v4

Cradle to Cradle - 418 products

Material Health Certificates - 226 products

Declare Labels - Approximately 350 products that show alignment with LEED

That said, products with compliant documentation are abundant when you know where to look for them.



BY TOMMY LINSTROTH,
GREEN BADGER FOUNDER & CEO
LEED FELLOW

REQUIREMENTS



Requirements for MRc4 Option 1 for LEED v4.1

1 Point

1 Point: For most LEED BD+C Projects: 20 products with qualifying material ingredient reports that demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

1 Point

1 Point: For Commercial Interiors, Core and Shell, and Warehouse projects, 10 products with qualifying environmental product declarations.

Exemplary Performance Point: 40 products (20 for CI, C&S, Warehouse)

There are nine compliance options that USGBC lists (for the entire list, click [here](#)), but since we're pretty pragmatic Badger's, we'll only focus on the options that you'll actually see in the marketplace. They were alluded to earlier, but they are:



Health Product Declaration. The end use product has a published and complete Health Product Declaration with full disclosure of known hazards in compliance with the Health Product Declaration open Standard.



Cradle to Cradle. Product has Material Health Certificate or is Cradle to Cradle Certified™ under standard version 3 or later with a Material Health achievement level at the Bronze level or higher.

Declare. The Declare product label must meet the following requirements:



- Declare labels designated as Red List Free or Declared.
- Declare labels designated as LBC Compliant that demonstrate content inventory to 0.1% (1000 ppm).

These documents show you what's in a product - but is anyone actually reviewing chemical components and making product selections based on them? No one we know. Just having an HPD does not mean a product is any healthier than another - it is simply a detailed list of what is inside something. You can use that chemistry degree you keep in your back pocket to make those decisions.

What is a Health Product Declaration?

Health Product Declarations (HPDs) provide a full disclosure of the potential chemicals of concern in products by comparing product ingredients to a set of priority “hazard” lists based on the GreenScreen for Safer Chemicals and additional lists from other government agencies.

HPD’s qualify for LEED v4 and 4.1 if the end use product has a published and complete Health Product Declaration with full disclosure of known hazards in compliance with the HPD open Standard. It must demonstrate the chemical inventory of the product to at least 0.1% (1000 ppm).

Not all HPDs are fully LEED v4 compliant. Here’s what you need to be on the lookout for: The big one, make sure that the Threshold Level is either 100 ppm or 1000 ppm – that is a must. Important

note! 100 ppm is MORE stringent than 1000 ppm - we’ve seen LEED reviewer comments stating that an HPD wasn’t compliant because 100 ppm was checked, not 1000 ppm. BOTH OPTIONS COUNT, AND 100 ppm is MORE stringent!

Second, make sure the YES box is checked for substances being Characterized and Screened. Finally, check the bottom of page 1 and see if it is 3rd party verified (there’s only about 100 that are) and that it hasn’t expired.

HPDs count as 1 product towards the 20 required to earn the point and third-party verified HPDs count as 1.5 products, though as of 10/29/20, there are only 160 products (120 of which have been prechecked for LEED compliance).

Armstrong Suspension Systems Prelude
by Armstrong World Industries

CLASSIFICATION: 095300
PRODUCT DESCRIPTION: Steel Suspension System

Health Product Declaration v2.1

created via: HPDC Online Builder

Section 1: Summary

Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format
☐ Nested Materials Method
☒ Basic Method

Threshold level
☐ 100 ppm
☒ 1,000 ppm
☐ Per GHS SDS
☐ Per OSHA MSDS
☐ Other

Residuals/Impurities
☒ Considered
☐ Partially Considered
☐ Not Considered

Explanation(s) provided for Residuals/Impurities?
☒ Yes ☐ No

Are All Substances Above the Threshold Indicated:

Characterized
Percent Weight and Role Provided?
☒ Yes ☐ No

Screened
Using Priority Hazard Lists with Results Disclosed?
☒ Yes ☐ No

Identified
Name and Identifier Provided?
☒ Yes ☐ No

CONTENT IN DESCENDING ORDER OF QUANTITY
Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

Number of Greenscreen BM-4/BM3 contents..... 0
Contents highest concern GreenScreen Benchmark or List translator Score..... LT-1
Nanomaterial..... No

MATERIAL | SUBSTANCE | RESIDUAL OR IMPURITY
GREENSCREEN SCORE | HAZARD TYPE

STEEL FOR SUSPENSION SYSTEMS [GALVANIZED STEEL LT-UNK]
COATING FOR SUSPENSION SYSTEMS [TITANIUM DIOXIDE LT-1 | CAN | END]

INVENTORY AND SCREENING NOTES:
Residuals/impurities in select raw materials are quantitatively measured, and are displayed in the HPD when greater than 1000ppm.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT
VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE See Section 3 for additional listings.
LCA: Environmental Product Declaration
Other: International Living Future Institute - Declare Label

CONSISTENCY WITH OTHER PROGRAMS
Pre-checked for LEED v4 Material Ingredients, Option 1

Third Party Verified?
☐ Yes
☒ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2017-08-23
PUBLISHED DATE: 2017-08-23
EXPIRY DATE: 2020-08-23

Characterized AND Screened must both be Yes (or Yes Ex/SC depending on HPD version)

Identified can be any of the options.

The box 1000 ppm or the more stringent 100 ppm must be selected.

Residuals/Impurities must be filled in – it cannot be blank.

If Partially Considered or Not Considered is selected: It must be explained in the Notes in section 2 of why that is the case.

It will also indicate if this HPD was third-party verified. (There aren’t many that are, but if it is, then it counts for 1.5 products under LEED v4.1.

At the bottom of page 1, there needs to be a link where the HPD is available. Either from the HPD repository or the manufacturers site

Armstrong Suspension Systems Prelude
www.hpd-collaborative.org

HPD v2.1 created via HPDC Builder Page 1 of 5

Final Assembly Locations are collectively represented on a single label.

Embodied Carbon (optional) discloses the cradle-to-gate impacts of manufacturing the product as reported by manufacturer-specific Type III Environmental Product Declarations.

End-of-life options: take back programs; salvageable or reusable in its entirety; biodegradable/compostable (%); recyclable (%); landfill (%); hazardous waste.

Ingredients are reported by component. Ingredients without restriction appear in grey; **Red List chemicals** appear in dark orange; **Watch List Priority for Inclusion chemicals** appear in light orange.

LBC Temporary Exceptions recognize specific market limitations and provide a compliance pathway for products to obtain LBC Compliance recognition.

Declare Identifier for company and product, valid for 12 months. **Original Issue Date** indicates how long a product has been a registered product in the program.

Declare.

Product Name
Manufacturer

Final Assembly: First City, State, Country;
Second City, State, Country; Third City, State, Country
Life Expectancy: 50 Years
Embodied Carbon: # kg CO₂-eq ■
Declared Unit: # m²
End of Life Options: Recyclable (95%), Landfill (5%),
Take Back Program (Program Name/Location)

Ingredients:

Your First Component: Sustainably Sourced Ingredient;
LBC Red List Ingredient: **Your Second Component:**
LBC Watch List Priority for Inclusion: Non-Toxic Ingredient;
Undisclosed (<0.1%)²

¹LBC Temp Exception RL-009 Formaldehyde
²LBC Temp Exception RL-004var.a Proprietary Ingredients

Living Building Challenge Criteria: Compliant

I-13 Red List:
☐ LBC Red List Free **% Disclosed:** 99.9% at 100ppm
☒ LBC Red List Approved **VOC Content:** # g/L
☐ Declared

I-10 Interior Performance: CDPH Standard Method v1.2-2017
I-14 Responsible Sourcing: Product Available with FSC Chain of Custody

XXX-XXXX
EXP. 01 OCT 2021
Original Issue Date: 20XX

MANUFACTURER CLAIMS VERIFIED BY THIRD PARTY VERIFIED ASSESSOR
INTERNATIONAL LIVING FUTURE INSTITUTE™ living-future.org/declare

Third Party Verified

LBC Criteria Compliance demonstrates compliance with all Imperatives applicable to the selection of building products within the Living Building Challenge. If a product meets the requirements for all applicable Imperatives, the product is considered fully compliant with the Living Building Challenge, and will be noted as such on the Declare label graphic itself.

I-13 Red List requires that manufacturers disclose the ingredients and VOC content (if applicable) in their products to ensure that they are free of Red List chemicals.

I-10 Interior Performance requires compliance with the California Department of Public Health (CDPH) Standard Method v1.1-2010 (or international equivalent) for all interior building products that have the potential to emit Volatile Organic Compounds (VOCs). The Declare label confirms a product's compliance with CDPH or an equivalent emissions standard.

I-14 Responsible Sourcing requires that manufacturers of wood products demonstrate sustainable extraction through certification with the Forest Stewardship Council, by meeting ILFI's definition of low risk or salvaged wood, or through the use of a formal LBC Exception.

Third Party Verification indicates assessment by a professional third-party assessor to ensure the accuracy of the manufacturer's supply chain, purchasing, ingredient claims, LBC compliance, and embodied carbon if reported.

What are Declare labels?

Next up are Declare labels. Declare labels are another form of material ingredient reporting that are growing in popularity. According to the International Living Future Institute, who created and administers the program, a Declare label tells you three things:

1. *Where does a product come from?*
2. *What is it made of?*
3. *Where does it go at the end of its life?*

Similar to HPDs, not all Declare Labels are created equally in the eyes of LEED.

Per USGBC, Declare labels contribute toward the credit when they meet the following requirements:

- Declare labels designated as Red List Free OR Declared, and are very clearly marked if they are also third-party reviewed.

Declare labels meeting those requirements count as 1 product towards earning Material Ingredient Reporting in LEED v4 and v4.1. Third-party verified Declare labels count as 1.5 products for v4.1.

Declare labels are self-disclosed by manufacturers, and are Third Party Verified if the sticker appears on the label.

Declare.

Product Name Manufacturer

Final Assembly: City, State, Country

Life Expectancy: 50 Years

Embodied Carbon: #kg CO₂-eq —

Declared Unit: #m²

End of Life Options: Biodegradable/Compostable (10%),
Landfill, Recyclable (84%), Landfill (6%)

Ingredients:

Your First Component: Sustainably Sourced
Ingredient; Non-Toxic Ingredient; **Your Second
Component:** Living Building Challenge Red List;
Proprietary Ingredient (0.07%); Sourced Ingredient;
Living Building Challenge Watch List;
Non-Toxic Ingredient

¹LBC Temp Exception I10-E4 Proprietary Ingredients <1%

Living Building Challenge Criteria: **Compliant**

☒ LBC Red List Free ☐ Red List Approved ☐ Declared

I-10 Interior Performance: CDPH Standard Method v1.2-2017

I-14 Responsible Sourcing: Product Available with FSC Chain of
Custody

XXX-XXXX

EXP. 01 OCT 2020

Original Issue Date: 2019

Third
Party
Verified

MANUFACTURER RESPONSIBLE FOR LABEL ACCURACY

INTERNATIONAL LIVING FUTURE INSTITUTE™ living-future.org/declare

OPTION 1

LBC Red List Free and Declared products fulfill the disclosure credit requirements.

Red List Approved products that have disclosed at least 99.9% of ingredients fulfill the disclosure credit requirements.

Undisclosed proprietary ingredients that exceed 0.1% of the disclosure are not eligible for LEED v4 credits. Calculate the total proprietary content by summing the amounts in parentheses.

v4.1: Third Party Verified labels are worth 1.5 products for credit achievement calculations.

OPTION 2 (v4.1 only)

Third Party Verified, Red List Free labels fulfill the optimization credit requirements (valued at 100% by cost).

Source: International Living Future Institute

What is a Cradle to Cradle or Material Health Certificate?

Last up, Cradle to Cradle – both C2C certified and C2C material health certificates – both count the same. According to the Cradle to Cradle Institute who administers the program, products

are assessed for environmental and social performance across five critical sustainability categories: material health, material reuse, renewable energy and carbon management, water stewardship, and social fairness.

A product is assigned an achievement level (Basic, Bronze, Silver, Gold, Platinum) for each category. A product's lowest category achievement also represents its overall certification level.

Products comply with MIR Option 1 if it has Material Health Certificate or is Cradle to Cradle Certified under standard version 3 or later with a Material Health achievement level at the Bronze level or higher. If it is Cradle

to Cradle certified Bronze or higher, it complies, as the overall certification is based on the lowest level of achievement.

Even better, C2C is considered third-party verified, so any C2C product will count for 1.5 products towards your goal in v4.1.

| Cradle to Cradle Certified Product Scorecard | |
|--|--------|
| MATERIAL HEALTH | Silver |
| MATERIAL REUTILIZATION | Silver |
| RENEWABLE ENERGY & CARBON MANAGEMENT | Silver |
| WATER STEWARDSHIP | Silver |
| SOCIAL FAIRNESS | Gold |
| OVERALL CERTIFICATION LEVEL | Silver |

Image Source: Cradle to Cradle

CRADLE TO CRADLE

PRODUCTS

INNOVATION

INSTITUTE

LICENSED MARKS:



Cradle to Cradle Certified™ Silver

THE LICENSED MARKS IDENTIFIED ABOVE MAY BE LICENSED TO:

Benjamin Moore & Co.

FOR THE BELOW LISTED CERTIFIED PRODUCTS ASSOCIATED WITH THE NAME:

Ultra Spec® 500 Waterborne Interior Paint

Peter J. Singleton

Cradle to Cradle Products Innovation Institute

ISSUE DATE: 22 June 2018

CERTIFICATION #: 3568

EXPIRATION DATE: 17 July 2020

LEAD ASSESSMENT BODY: MBDC

Only the following products are considered Certified Product(s) within the scope of this certification and the associated Trademark License Agreement:

Ultra Spec® 500 Waterborne Interior Paint in the following versions:
Flat, Low-Sheen, Eggshell, Semi-Gloss, Gloss, and Primer

Product packaging meets banned list requirements but has not been assessed to determine certification level.

MBDC

Certified under Version 3.1 of the Cradle to Cradle Certified™ Product Standard. Use of Licensed Marks is subject to terms and conditions of the C2CPII Trademark License Agreement and Trademark Use Guidelines. Cradle to Cradle Certified™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.

Image Source: Cradle to Cradle

STRATEGIES



Strategies for Achieving MRc4 Opt 1 in LEED v4.1

Now that you know what types of material ingredient reports are available, and what each needs to have to qualify for LEED, let's figure out where these products live.

Similar to EPDs, I'm sure the team has already pre-identified all of these products, so you don't even have to worry about it, right? Oh yea, that's right, they did not....

Here's where to go (and it's the same strategies we recommend for EPDs, so if you've memorized that, this may be a bit redundant).

Where to find 20 products that have LEED Compliant Material Ingredient Reporting

Green Badger recommends focusing on 6 different submittals, and it is where you'll find boatloads of MIR. Here's where to start.

1. *Insulation*
2. *Flooring*
3. *Gypsum board*
4. *Ceiling tile*
5. *Paint*
6. *Doors and hardware*

Why? Because each category has multiple manufactures with lots of options – you're not pigeonholed into sole sourcing, and you've got these products on every single construction project.

I'll offer a precursor before I go into the details. Neither I nor Green Badger endorse, recommend, prefer, sponsor, etc. any of the brands and products listed. Nor is this a comprehensive list of every single product that exists with an EPD or HPD. It's simply some guidance on product categories to get your points without banging your head into a wall.

1. Insulation

Noisy? Use acoustical insulation. Cold? Bundle up that thermal insulation. Condensating pipes? There's insulation for that! Odds are that you have at least 3 types of insulation on your project if not more. All the big players are here – Owens Corning, Johns Manville, Knauff, Certainteed – plus a lot of options including thermal, acoustic, batt, spray, faced, unfaced.



Pictured: Owens Corning EcoTouch Kraft Faced Insulation

| Manufacturer | Product | Compliance |
|-------------------------------------|---|---------------|
| Certainteed | FIBERGLASS DUCT WRAP INSULATION | EPD |
| | FIBERGLASS BLANKET INSULATION | EPD |
| | Sustainable Insulation Unfaced & Kraft Faced Batts | EPD |
| | Blowing Wool Fiberglass Insulation | EPD, MIR |
| International Cellulose Corp | K-13 Acoustical/Thermal Insulation System | SRM, MIR |
| | Ure-K Acoustical/Thermal Insulation System | MIR |
| Johns Manville | ENRGY 3®.E | MIR |
| | 800 SERIES SPIN-GLAS® | EPD |
| | PERMACOTE LINACOUSTIC R-300 | EPD |
| | 1000 SERIES SPIN-GLAS | EPD |
| | LINACOUSTIC® RC-HP | EPD |
| Knauff | Knauf Insulation EcoBatt® Insulation with ECOSE® Technology Unfaced Batts | EPD, SRM, MIR |
| | Knauf Insulation EcoBatt® Insulation with ECOSE® Technology Faced Batts | EPD, SRM, MIR |
| | JetStream Ultra Blowing Wool Insulation | EPD |
| | Earthwool® Redi-Klad® 1000° Pipe Insulation with ECOSE® Technology | EPD |
| Owens Corning | EcoTouch Kraft Faced Insulation | EPD, SRM, MIR |
| | 700 Series Fiberglas® Insulation Faced | EPD, SRM, MIR |
| | Thermafiber® Mineral Wool Insulation | EPD, SRM, MIR |
| | FOAMULAR Extruded Polystyrene (XPS) Insulation | EPD, SRM, MIR |
| | ECOTouch Insulation Unfaced | EPD, SRM, MIR |
| | 700 Series Fiberglas® Insulation Unfaced | EPD, SRM, MIR |
| | Fiberglass Pipe Insulation | EPD, SRM, MIR |
| | Thermafiber UltraBatt Mineral Wool Insulation | EPD, MIR |

2. Flooring Products

Next, we suggest the Flooring category. There are a ton of options for carpet, VCT, and ceramic tile. All the brands that show up – Armstrong, Shaw, Interface, Milliken – come with EPDs and HPDs. Don't forget the adhesives! Laticrete alone has over 100 products with HPDs, plus WF Taylor, XL brands, and others.



Pictured: Armstrong Luxury Vinyl Tile (LVT) via Armstrong.

| Manufacturer | Product | Compliance |
|----------------------------|--|------------|
| American Olean | American Olean Brand Tile - El Paso TX Wall Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Monterrey Mexico Floor Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Muskogee NA Body Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Fayette AL Quarry Tile Manufacturing Facility | EPD |
| | American Olean Brand Tile - Muskogee OK Super White Body Tile Manufacturing | EPD |
| Armstrong | Luxury Vinyl Tile (LVT) | EPD, MIR |
| | Vinyl Composition Tile (VCT) | EPD, MIR |
| | BioBased Tile | EPD, MIR |
| | Summit-all-in-one Hardwood Adhesive | MIR |
| | S-799 High Moisture Adhesive for Linoleum and Rubber Tile | MIR |
| Beaulieu Commercial | Nexterra Carpet Tile (Nylon 6,6 Face Fiber) | EPD, MIR |
| | Beaulieu Standard Broadloom (Nylon 6,6 Face Fiber) | EPD, MIR |
| | Level Hybrid Flooring Tile | EPD |
| | Level Tile with Nexterra Backing System | MIR |
| | Nexterra Carpet Tile (Nylon 6 Face Fiber) | EPD, MIR |
| Knauff | AFFIX Tile - Piece Dyed Nylon 6,6 | EPD |
| | AFIRMA™ Hardback Tile- Piece Dyed Nylon 6,6 | EPD |
| | AFFIX Tile - Solution Dyed Nylon 6,6 | EPD |
| | NexStep Piece Dyed N66 | EPD, MIR |
| | Healthbond 2300 Adhesive | MIR |

Flooring Products

| Manufacturer | Product | Compliance |
|-------------------------------|--|---------------|
| ECORE International | UltraTile | EPD |
| | ECOsurfaces | EPD |
| | PlayGuard | EPD |
| | Expona Commercial Resilient Vinyl Floor Covering | EPD, MIR |
| | QT Sound Control | |
| Forbo Flooring Systems | Marmoleum Tile 2.0mm and 2.5mm | EPD, SRM, MIR |
| | Colorex SD | EPD, SRM, MIR |
| | Flotex Sheet | EPD, MIR |
| | Marmoleum 2.0mm and 2.5mm | EPD, MIR |
| | Coral Duo | EPD, MIR |
| Interface | Modular Carpet Tile Type 6,6 Nylon with GlasBac | EPD, SRM, MIR |
| | Modular Carpet Tile Type 6 Nylon with GlasBacRE | EPD, SRM, MIR |
| | Modular Carpet Tile Type 6 Nylon with NexStep | EPD, SRM, MIR |
| | Modular Carpet Tile Needlefelt with Graphlar | EPD, SRM, MIR |
| | Modular Resilient Flooring - LVT | EPD, MIR |
| Laticrete | L&M EMERYTOP 400 | MIR |
| | SPARTACOTE FLEX SB | MIR |
| | SPARTACOTE FLEX SB Low Gloss | MIR |
| | L&M FGS HARDENER PLUS | MIR |
| | SPARTACOTE FLEX PURE CLINICAL PLUS | MIR |
| Milliken | Solution Dyed Nylon 66 with Milliken ES Comfort Plus Backing | EPD, MIR |
| | Milliken Solution Dyed Nylon 6 with Milliken ESP Underscore Backing | EPD, MIR |
| | Digital Dye Injected Nylon 6 with Milliken ES Comfort Plus Backing | EPD, MIR |
| | Aquafil Econyl Solution Dyed Nylon 6 with Milliken ES Underscore Backing | EPD, MIR |
| | Milliken Continuous Dyed Nylon 66 Broadloom | EPD, MIR |
| Shaw Industries | EcoWorx Tile with Nylon Face Fiber | EPD, MIR |
| | EcoWorx PX Tile with Nylon Face Fiber | EPD, MIR |
| | Residential Broadloom with LifeGuard Backing System | MIR |
| | Classicbac™PC with NYLON Face Fiber | MIR |
| | Engineered Ply-Core Hardwood Flooring | MIR |

3. Gypsum Board

The next category we suggest is Gypsum Board. The big players are here too, including National Gypsum, USG, Certainteed, and American.

Gypsum board is another category with a wide variety of products like Type X, Fire Rated, Mold Resistant, GlasMat, Tile Backerboard, Shaftliner, abuse resistant – the list goes on and on! And they all count as separate products.



Pictured: Certainteed, Type X Gypsum Board

| Manufacturer | Product | Compliance |
|------------------------|---|------------|
| American Gypsum | ClassicRic Gypsum Wallboard | MIR |
| | M-Bloc Gypsum Wallboard with Mold and Moisture Resistance | MIR |
| | M-Glass Glass Mat Gypsum Panels | MIR |
| | Exterior Soffit Gypsum Sheathing | MIR |
| | Exterior Gypsum Sheathing | MIR |
| Certainteed | Type X Gypsum Board Vancouver, British Columbia Facility | EPD, MIR |
| | Type X Gypsum Board, Seattle, WA Facility | EPD, MIR |
| | Type X Gypsum Board (Montreal Facility) | EPD, MIR |
| | M2tech Moisture & Mold Resistent Gypsum Board 12.7MM (1/2") (Montreal Facility) | EPD, MIR |
| | Type X Gypsum Board (Toronto Facility) | EPD, MIR |
| National Gypsum | Gold Bond XP Fire-Shield Gypsum Boards | MIR |
| | Gold Bond SoundBreak XP Gypsum Boards | MIR |
| | Gold Bond XP Fire-Shield C Gypsum Boards | MIR |
| | Gold Bond Fire-Shield C Gypsum Boards | MIR |
| | Gold Bond Fire-Shield Gypsum Boards | MIR |
| USG | Sheetrock Brand EcoSmart Panels Mold Tough Firecode X | EPD, MIR |
| | Sheetrock Brand EcoSmart Panels Firecode 30 | EPD, MIR |
| | Sheetrock Brand EcoSmart Panels Firecode X | EPD, MIR |
| | Sheetrock Brand Firecode C Panels | MIR |
| | Sheetrock Brand Glass-Mat Panels Mold Tough AR Firecode | MIR |

4. Ceiling Tile & Grid

Armstrong, Certainteed and USG all have multiple options, and when was the last time you had a project that just used 1 single ceiling tile throughout? And if you need to, you can always hang a different tile in the mechanical room! I didn't just say that, I'd never suggest such a shameless tactic to pick up a point!



Pictured: Mars ClimaPlus Healthcare

| Manufacturer | Product | Compliance |
|--------------------|-------------------------------------|------------|
| Armstrong | Ultima Ceiling System | EPD, MIR |
| | Metalworks Snap In | EPD, MIR |
| | Metalworks Clip On | EPD, MIR |
| | Metalworks Torsion Spring | EPD, MIR |
| | Dune Ceiling System | EPD, MIR |
| | Ultima+ | EPD, MIR |
| | Mesa Ceiling System | EPD, MIR |
| Certainteed | Baroque Ceiling Tile | EPD, MIR |
| | Cashmere Style Edge Ceiling Tile | EPD, MIR |
| | Protectone Cashmere Ceiling Tile | EPD, MIR |
| | Fine Fissured High NRC Ceiling Tile | EPD, MIR |
| | Sereno Fine Fissured Ceiling Tile | EPD, MIR |
| | Sky Ceiling Tile | EPD, MIR |
| | Symphony m and Rx Symphony m | EPD, MIR |
| USG | Mars ClimaPlus Healthcare | EPD, MIR |
| | Mars ClimaPlus HRC | EPD |
| | Mars ClimaPlus High-NRC | EPD |
| | Mars ClimaPlus | EPD |
| | RADAR™ | EPD |
| | RADAR™ Basic | EPD, MIR |
| | Radar ClimaPlus High-NRC | EPD |

5. Paint Products

All the big manufacturers show up with compliant products in the paint category. What's great

is that each sheen of paint counts as a product, so that means if you're using Sherwin Williams Promar 200 zero VOC paint, you can count the primer, flat, eggshell, semi-gloss, and gloss paints all as unique products! Throw in block fillers and direct to metals and you're nearly halfway there.



| Manufacturer | Product | Compliance |
|-------------------------|--|------------|
| Imperial Paints | ECOS Interior Matte Wall Paint Dark Base | MIR |
| | ECOS Interior Gloss Paint White Base | MIR |
| | ECOS Interior Eggshell Dark Base | MIR |
| | ECOS MDF Passivating Primer Paint | MIR |
| | ECOS Atmosphere Purifying Paint White Base | MIR |
| | ECOS Interior Semi-Gloss White Base | MIR |
| | ECOS Clear Gloss Varnish | MIR |
| | ECOS Interior Gloss Paint Dark Base | MIR |
| | ECOS Interior Semi-Gloss White Base Paint | MIR |
| | ECOS Electromagnetic Radiation (EMR) Shielding Paint | MIR |
| PPG | SPEEDHIDE zero Interior Flat Latex | EPD, MIR |
| | SPEEDHIDE zero Interior Semi-Gloss Latex | EPD, MIR |
| | SPEEDHIDE Interior/Exterior Masonry Hi Fill Latex Block Filler | EPD |
| | SICO Ecosource - Melamine | EPD |
| | SICO Ecosource - Primer/Sealer | EPD |
| | Ultra Zero VOC by Dulux Interior Latex Paint - Eggshell | EPD |
| | Ultra Zero VOC by Dulux Interior Latex Paint - Primer | EPD |
| Sherwin Williams | ProMar 200 Zero VOC Latex paint - Flat | EPD, MIR |
| | ProMar 200 Zero VOC Latex Primer | EPD, MIR |
| | Loxon Concrete & Masonry Primer | EPD, MIR |
| | PrepRite Block Filler | EPD, MIR |
| | Pro Industrial DTM Acrylic - Gloss | EPD |
| | Harmony Latex Paint - Semi-Gloss | EPD |
| | ProMar 400 Zero VOC - Primer | EPD |

6. Doors & Hardware

Finally, we've arrived at the doors and hardware category.

There are a ton of options here from doors and frames to kickplates, gaskets, locks and closing devices. This one always slips through the cracks, but you could knock out half of your EPDs here.



Corbin Russwin IN120 Wifi Electronic Access Control Mortise Lock

| Manufacturer | Product | Compliance |
|-------------------------------------|--|------------|
| Arrow Lock and Door Hardware | 5016N Series Door Closer | EPD |
| | 7700 Series Swinging Door Operator | EPD |
| | 7800 Series Swinging Door Operator | EPD |
| | 7900 Series Swinging Door Operator | EPD |
| | 900N Series Door Closer | EPD |
| Assa Abloy | Attack Resistant Opening Wood Doors | EPD |
| | Pemko Mortise Aluminum Heavy Duty Geared Hinge | EPD |
| | Sketch Door | EPD |
| | Markar FM300 Stainless Steel Edge Mount Continuous Pin and Barrel Hinges | EPD |
| | HES 1600 Series | EPD |
| | Earth Door Wood Door | EPD |
| | Attack Resistant Hollow Metal Steel Door | EPD |
| | Pemko PDB411E Acoustic Automatic Door Bottom | EPD |
| | High Pressure Laminate Wood Door | EPD |
| Corbin Russwin | IN120 Wifi Electronic Access Control Mortise Lock | EPD |
| | CL3300 Series Cylindrical Lock | EPD |
| | ED5400 SVR Exit | EPD |
| | IN100 Aperio Mortise Lock | EPD |
| | ED5000 Series Mechanical Exit Device | EPD |
| | CL3100 Series Vandal Resistant Lock | EPD |
| | ML2000 Series Mortise Lock | EPD |
| | ML20900 ECL Electromechanical Mortise Lock | EPD |
| | Access 600 RNE1 | EPD |

6. Doors & Hardware

| Manufacturer | Product | Compliance |
|---------------------------------------|--|---------------|
| DORMA Deutschland GmbH | BTS 80 BTS 80 EMB and RTS 80 EMB Series concealed door closers | EPD |
| | BTS 75 V and RTS 87 Series concealed door closers | EPD |
| | 8600 and 8900 Series surface applied door closers | EPD |
| | 8000 and 9000 Series exits | EPD |
| | RTS 85 RTS 88 and BTS 84 Series concealed door closers | EPD |
| Norton | Norton 7500 Series Door Closer | EPD, SRM |
| | 5800 Series ADAEZ Door Opener | EPD |
| | Norton 1600 Series | EPD |
| | 6300 Series ADAEZ Door Opener | EPD |
| | 8000 Series Door Closer | EPD |
| | 9300 Series Door Closer | EPD |
| | Norton 7700PT Series Door Closer | EPD |
| | Norton DC 5600 Operator | EPD |
| | Norton 9500 Series Door Closer | EPD |
| | Norton 7200 Series Door Closer | EPD |
| Sargent | 80 Series Mechanical Exit Device | EPD |
| | 8200 Series Electromechanical Mortise Lock | EPD |
| | 7900 Series Mortise Lock | EPD |
| | Sargent Exit 80 Series 56- Electromechanical | EPD |
| | 281 Series Door Closer | EPD |
| | 1131 Ruen Series Door Closer | EPD |
| | 10 Line Cylindrical Lock | EPD |
| | 8200 Series Mortise Lock with EcoFlex | EPD |
| | 8200 SERIES MORTISE LOCK | EPD |
| | Harmony Mortise Lock | EPD |
| Schlage | Schlage L9000 Series Lock | EPD, SRM, MIR |
| | L9010 Mortise Lock | EPD, MIR |
| | Schlage AL Series Lock | EPD |
| | Schlage ND Series Lock | EPD |
| | Schlage B5000 Series Lock | EPD |
| Yale | 3000 Series Door Closer | EPD |
| | 6000 SCR Exit | EPD |
| | Yale 4400 Series Door Closer | EPD |
| | 51 Series Door Closer | EPD |
| | 6000 Rim Exit | EPD |

MORE BEST PRACTICES

For Material Ingredient Reporting



1. Utilize Green Badger!

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



2. 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 a LEED materials cover sheet for your subcontractors.

Making them fill this out solves a number of problems - it helps you nail down material cost 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. Always double-check your Material Ingredient Reporting

Double check the MIR to make sure they detail what you need as you learned earlier. For HPDs make sure the whole declaration is provided, not just the first page, and that either 100ppm or 1000ppm are checked.



5. Create a LEED MIR folder

If you're not using Green Badger, go ahead and create a LEED MIR 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.

Recapping the Strategy Roadmap

So there you go – hit up these submittals and I'm confident you'll have completed your requirements for EPDs and Ingredient reporting for Options 1 without having to get in fistfights with the architect, subcontractors or anyone else.

- Start your efforts with insulation, flooring, gypsum board, ceiling tiles, paint and doors/hardware
- Check the finish schedule early and often, and if possible, review with the architect to roadmap product selection
- Get to 20 products quickly, and you can change the acronym MIR from material ingredient reporting to Mostly Ingesting Rum.

Summary for MRc4 Option 1

How to earn 1 point:

- Make sure you are using LEED v4.1!
- Roadmap early with the design team
- Focus on insulation, flooring, gypsum board, ceiling tile, paints and doors/hardware
- Verify and log your MIRs into a folder for easy submission to USGBC

Summary of Strategies



Insulation, flooring, gypsum board, ceiling tiles, paint, and doors/hardware



Roadmap the finish schedule with the architect



Get to 20 products quickly!

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Earning MRc4 Option 2 Material Ingredient Optimization in LEED v4.1

What is it about Option 2's that USGBC hates? If they make an Option 2 available, it is always the most complicated, cumbersome, and labor-intensive point available. In fact, if you want a good cheat-sheet, if there's an Option 2 available just run the other way. Option 2 of this credit in LEED v4 wasn't achievable, so they added an Option 3!

Thankfully, all of that is DOA for v4.1. Option 2 remains the same structurally, but the compliance thresholds have dropped significantly, and it puts this credit in the realm of possibly achievable.



BY TOMMY LINSTROTH,
GREEN BADGER FOUNDER & CEO
LEED FELLOW

REQUIREMENTS



1 Point

Requirements for MRc4 Option 2 for LEED v4.1

1 Point: To get it, you need to use products that comply with one of the criteria I'll discuss for at least 5 permanently installed products sourced from at least three different manufacturers.

- Material Ingredient Screening and Optimization Action Plan (value at 50% by cost or ½ product)
- Advanced Inventory & Assessment (value at 100% by cost or 1 product)
- Material Ingredient Optimization (value at 150% by cost or 1.5 products)

Similar to EPD Option 2, this is the cliff-notes version so buckle up, pour a stiff one, and get ready for your crash course into green chemistry.

Alright, You need 5 products from 3 different manufacturers. These products need to either have a plan in place to reduce ingredient impacts OR show some actual reductions. Here's what this entails (if you don't care, just skip to the Strategies for achieving MRc4 Option 2 below).

What qualifies as a Material Ingredient Screening and Optimization Action Plan?

The manufacturer has screened the product to at least 1,000 ppm and has provided a publicly available inventory meeting the requirements of Option 1 - that's the easy part. If you have an HPD already, the first step in the right direction!

Next, the manufacturer must create a detailed action plan to mitigate or reduce known hazards using the principles of green chemistry. This action plan needs to describe the screening platform and then identify the specific green chemistry principles targeted for implementation, specific steps anticipated for implementation, proposed changes in formulation or manufacturing processes that are planned and specific dates and a full timeline for completion of all the steps described in the action plan.

If they do all that, their product counts as a whopping 0.5 contribution to earning this point.



REQUIREMENTS

What qualifies as an Advanced Inventory & Assessment?

The product needs a third-party verified HPD that was inventoried to 100 ppm. From there, you better be an expert in the GreenScreen Benchmark Assessment because it can't have any LT-1 or GHS Category 1 Hazards (whatever those are) or at least 75% by weight of the product is assessed using the GreenScreen Benchmark.

Fortunately, there are easy to understand options available that don't require a chemistry degree.

Declare labels designated as Red List Free that are third-party verified, or Living Product Challenge certified products that include a Red List Free Declare label.

Cradle to Cradle: Product has Material Health Certificate or is Cradle to Cradle Certified™ under standard version 3 or later with a Material Health achievement level at the Bronze level or higher.

What qualifies as Material Ingredient Optimization?

The product needs a third-party verified HPD that was inventoried to 100 ppm with no Benchmark 1 or LT-1 hazards AND 95% by weight assessed using the GreenScreen Benchmark.

OR

Cradle to Cradle Certification: Product has Material Health Certificate or is Cradle to Cradle Certified™ under standard version 3 or later with a Material Health achievement level at the Silver level or higher.

Living Product Challenge Certification: Products certified to the Living Product Challenge which includes achievement of Imperative 09: Transparent Material Health.



Strategies for Achieving MRc4 Option 2 Material Ingredient Optimization in LEED v4.1

If you managed to make it this far without pounding your head into a wall, let's figure out what all of those compliance options really mean.

First and foremost, ditch the chemistry degree. Let's focus on how to most easily find products that qualify. We suggest using the 3rd party labels to avoid having to figure out GreenScreen assessments and hazards.

That means use either products with Declare Labels that are Red List Free and 3rd party verified, Living Product Challenge labeled products (that achieved Transparent Material Health), or those that are Cradle to Cradle certified (or have a Material Health Certificate).

Now, there are only 47 products that meet the Declare requirements, and literally half of those are different carpets from Milliken and Mohawk, but those could get you started. You do only need 5 products.

A better bet would be Cradle to Cradle, which shows 200 compliant products, flooring from Tarkett, Shaw, Milliken, Nora, and Bentley Mills, ceiling grid from Armstrong, curtainwall from Kawneer, and Construction Specialty Louvers and Entrance mat systems. Almost all of these are Silver or higher, so you'll get credit for 1.5 products.

Here's the Math:

For flooring, there are a lot of options, but for today we'll use 2 different Shaw Eco-worx tiles (or Mohawk or Milliken), with Shaw adhesive, and Tarkett Baseworks wall base, and another rubber flooring from either Tarkett or Nora. Don't forget the flooring adhesives! There are 35 flooring adhesives that are either Cradle to Cradle certified or have a Material Health Certificate from XL Brands, Tarkett, Forbo, Shaw, Armstrong, and more.

For ceilings, I'll stick with Armstrong Prelude system for suspension, and 2 different Armstrong ceiling products including the popular Ultima+ and Perla acoustical ceiling tiles (remember there's always the mechanical room if you need the 2nd!),

and then finish it off if you need something else between Kawneer curtainwall, some louvers and entrance systems from Construction Specialties, or rebar from Nucor. And heck, if I'm still in need, there's always more flooring options for that mechanical room.

There you have it! You can easily get 5 products with just your flooring and ceiling products. And don't forget, these also counted for Ingredient reporting Option 1, AND most if not all have EPDs too. So you can achieve all three credits with these handful products.

Recapping the Strategy Roadmap

As you can see, there is a bit more wiggle room in achieving MIR Option 2 than EPD Option 2, but still not a lot. These products need to be intentionally selected early in the process.

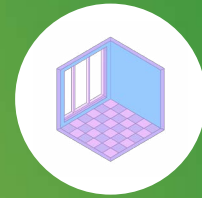
Even so, there are plenty of options with flooring and ceiling products if you're strategic about it, as most of them count for 1.5 products. This means that in the end, you really only need 4 individual products and you can spec those if you really want this point. Don't forget these products will all count under MRc4 Material Ingredient Reporting (Option 1), so you'll be halfway to earning that credit, or practically done if it is an interiors project.

Summary for MRc4 Option 2

How to earn 1 point:

- 1 point may be achievable, using a sum of 5 products across 3 manufacturers
- Take a scripted approach from Cradle to Cradle certified products and compliant Declare labels
- Spec/sole-sourcing these products will ensure compliance (and may not be an option on federally funded projects)
- This will also get you 50% of the way to earning MIR Option 1

Summary of Strategies



Insulation, flooring, gypsum board, ceiling tiles, paint, and doors/hardware



Roadmap the finish schedule with the architect



Get to 20 products quickly!



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