



NGA GLASS CONFERENCE™

CHICAGO — JULY 18-20, 2022

FORMING COMMITTEE



Jon Griggs
Committee Chair
Guardian Glass, LLC



David Duly
Vice Chair
NSG

BUY CLEAN CALIFORNIA ACT

Implementation Dates:

- New GWP limit for flat glass set January 1, 2022
 - 1430 kg CO2 eq
 - Equal to the industry average
- Awarding authorities began to gauge GWP compliance of eligible materials with the required Environmental Product Declaration (EPD) on July 1, 2022.



BUY CLEAN CALIFORNIA ACT

NGA Resources:

- GWP One-Pager
- NGA’s June 2021 Thirsty Thursday webinar “Understanding California AB262”
- Building Compliance FAQs - updated

NGA NATIONAL GLASS ASSOCIATION with GANA
 ADVOCACY

Flat Glass Global Warming Potential

The request:

When states or jurisdictions compile global warming potential for flat glass, we request setting the Global Warming Potential (GWP) limit for flat glass to:

1716 kg CO₂ eq.

The request of 20% above the industry-average referenced in Declaration Number ASTM-EPD121 is due to the inherent uncertainty of the life cycle assessment process and the inclusion of estimated variables and assumptions including, but not limited to, weighted averages, upstream/ downstream transportation and building/service life.

<p>The issue:</p> <p>Stakeholders and sustainability programs want to better understand the environmental performance of glass products manufactured for buildings.</p> <p>GANA Product Category Rule (PCR) for Flat Glass was published by NSF in 2014 describing the requirements for life cycle assessments (LCAs) and environmental product declaration (EPD) of flat glass.</p> <p>NGA flat glass* member companies published an industry-average EPD for flat glass sold in the US in December 2019 (ref: ASTM-EPD121).</p> <p>The EPD scope includes raw material production, transport of materials, manufacturing processes, product packaging, onsite storage and manufacturing waste (cradle to gate).</p> <p><small>*members of the Forming Committee</small></p> <p>Relative contribution of manufacturing inputs and outputs to Global Warming Potential</p> <ul style="list-style-type: none"> • Natural Gas (38%) • Batch Materials (27%) • Direct Emissions (27%) • Electricity (9%) • Process materials (2%) • Inbound transport (2%) • Miscellaneous (7%) 	<p>The strategy:</p> <p>Results of the Flat Glass Industry-Average EPD:</p> <ul style="list-style-type: none"> • The industry-average Global Warming Potential for flat glass is 1430 kg CO₂ eq. • Raw materials and direct emissions are the largest drivers of potential environmental impact of flat glass products. • Many North American flat glass plants have taken measures to more efficiently control emissions using environmental emission control systems. <p>The declared unit evaluated is one metric tonne (1000 kg) of flat glass, maintained for 30 years.</p>
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National Glass Association (NGA) combined with the Glass Association of North America (GANA) in 2018 to create the largest trade association serving our industry. We develop standards, create technical resources, and promote and advocate for glass in the built environment. Learn more at glass.org/about-nga/advocacy. For further information on glass industry sustainability efforts and CO₂ eq. please feel free to contact NGA Technical Staff at <mailto:technicalsvcs@glass.org>.

BUY CLEAN CALIFORNIA ACT

Updated Building Compliance FAQs

- Replaced CA AB262 with “Buy Clean California Act” throughout
- Q: What is the Buy Clean California Act?
 - Updated Key legislation dates
- Q: Can GWP data found in different EPD documents be compared?
 - Added reference to NGA Glass Technical Paper EPD Education



HEALTH PRODUCT DECLARATIONS

HPD Collaborative understands clarification is needed and would like to develop better way to determine how glass should be reported on HPD

- Standardized set of ingredients?
- Standardized finished product constituent analysis?

Discussions between NGA/HPD Collaborative?



Section 1: Summary
Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format

Nested Materials Method

Basic Method

Threshold Disclosed Per

Material

Product

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

All Substances Above the Threshold Indicated Are:

Characterized Yes Ex/SC Yes No

% weight and role provided for all substances.

Screened Yes Ex/SC Yes No

All substances screened using Priority Hazard Lists with results disclosed.

Identified Yes Ex/SC Yes No

All substances disclosed by Name (Specific or Generic) and Identifier.

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.

[MATERIAL](#) | [SUBSTANCE](#) | [RESIDUAL OR IMPURITY](#)

[GREENSCREEN SCORE](#) | [HAZARD TYPE](#)

[PILKINGTON FLAT GLASS](#) | [GLASS / MINERAL FIBER \(POST-CONSUMER RECYCLED\) \(GLASS\)](#) | [LT-UNK](#)

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... LT-UNK

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Glass is a single substance, with CAS number 65997-17-3. The CAS number covers various types of glass. This Pilkington Glass product contains only the single substance soda lime silicate flat glass. The molecular structure of the glass may contain different elements to give it various colors. The glass may be coated during production, either on-line or off-line, to provide extra functionality such as low emissivity or solar control. The coatings are extremely thin and below the 100ppm threshold.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

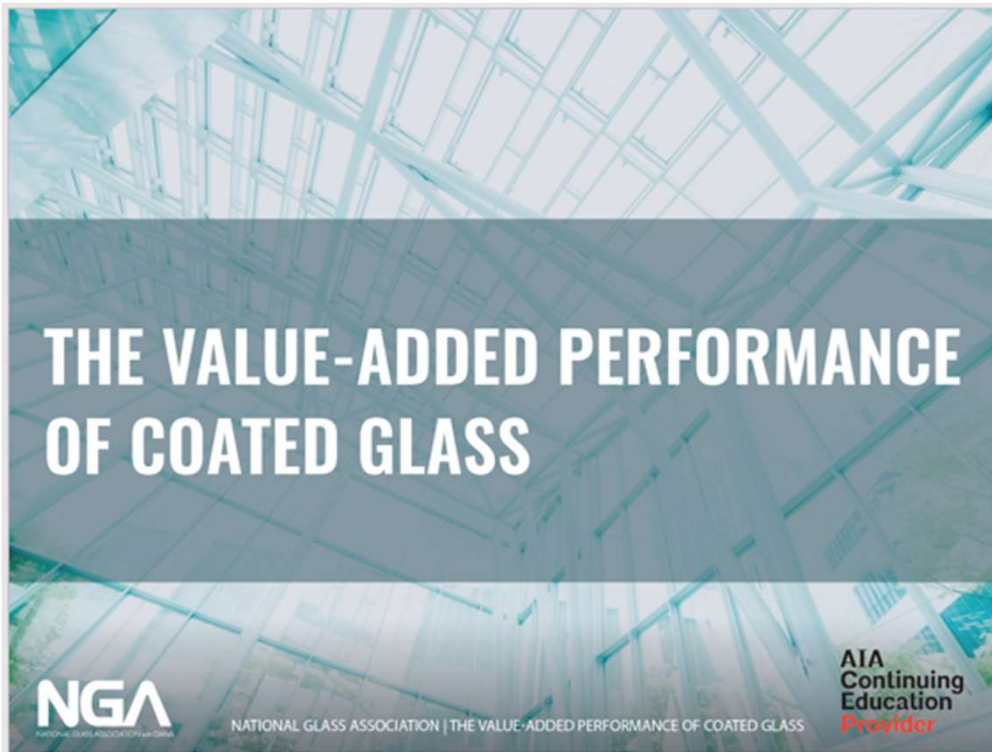
CERTIFICATIONS AND COMPLIANCE See Section 3 for additional findings.

VOC emissions: Inherently non-emitting source; LEED

CONSISTENCY WITH OTHER PROGRAMS



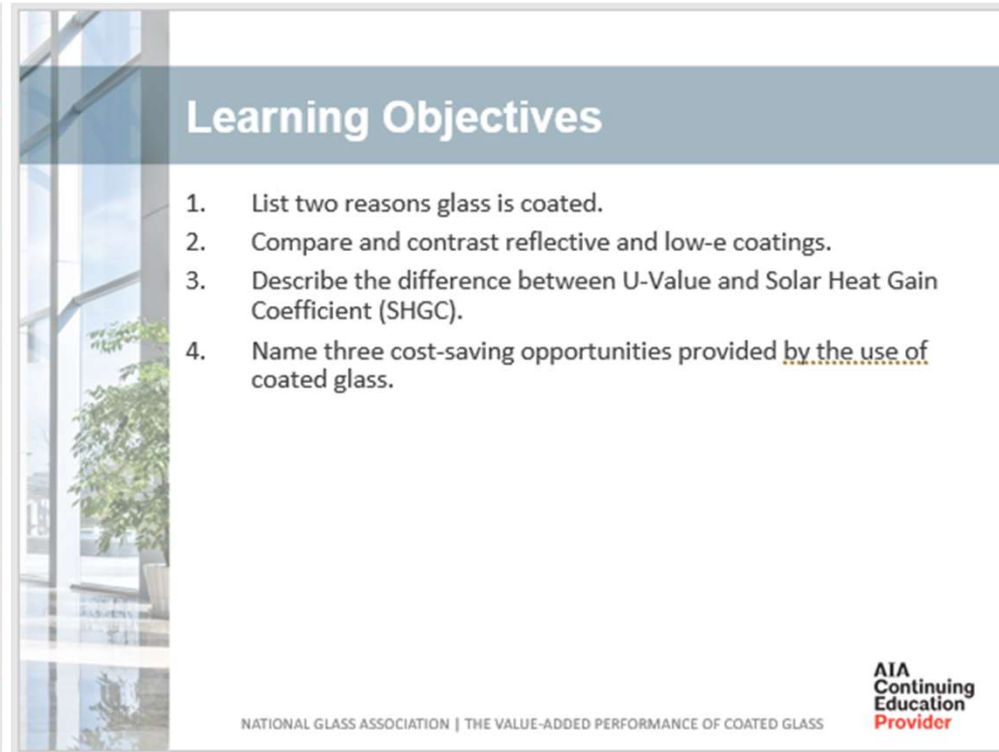
COATED GLASS AIA PRESENTATION UPDATE



**THE VALUE-ADDED PERFORMANCE
OF COATED GLASS**

NGA
NATIONAL GLASS ASSOCIATION | THE VALUE-ADDED PERFORMANCE OF COATED GLASS

AIA
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Education
Provider



Learning Objectives

1. List two reasons glass is coated.
2. Compare and contrast reflective and low-e coatings.
3. Describe the difference between U-Value and Solar Heat Gain Coefficient (SHGC).
4. Name three cost-saving opportunities provided by the use of coated glass.

NATIONAL GLASS ASSOCIATION | THE VALUE-ADDED PERFORMANCE OF COATED GLASS

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EC3 Tool: Driving Low-Carbon Supply Chain Innovation with Open Access Tools & Data

1. Intro to Building Transparency and the EC3 Tool
2. EC3 background, scope, workflows
3. Overview of glazing/fenestration category development project for the EC3 tool
4. Project status, upcoming webinar



Building Transparency

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ABOUT BUILDING TRANSPARENCY

Washington State 501c(3) nonprofit dedicated to sustainability in construction.

Building Transparency's core mission is to provide open access data and tools necessary to enable **broad and swift action** across the building industry in addressing embodied carbon's role in **climate change**.



Embodied Carbon in Construction Calculator

Free to use | Open access



Find & Compare Materials

Simple sorting and visualization of supply chain specific EPD data, with the ability to see material category baselines and set material category targets.



Plan & Compare Buildings

Simple visualization of a project's potential and realized upfront embodied carbon emissions, with the ability to see conservative baselines and set achievable reduction targets.

EC3 PARTNERS



Lead Sponsors



Pilot Sponsors



Association Partners



Material Sponsors



Early Adopter Sponsors



Technology & Data



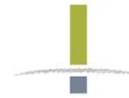
Methodology Partners



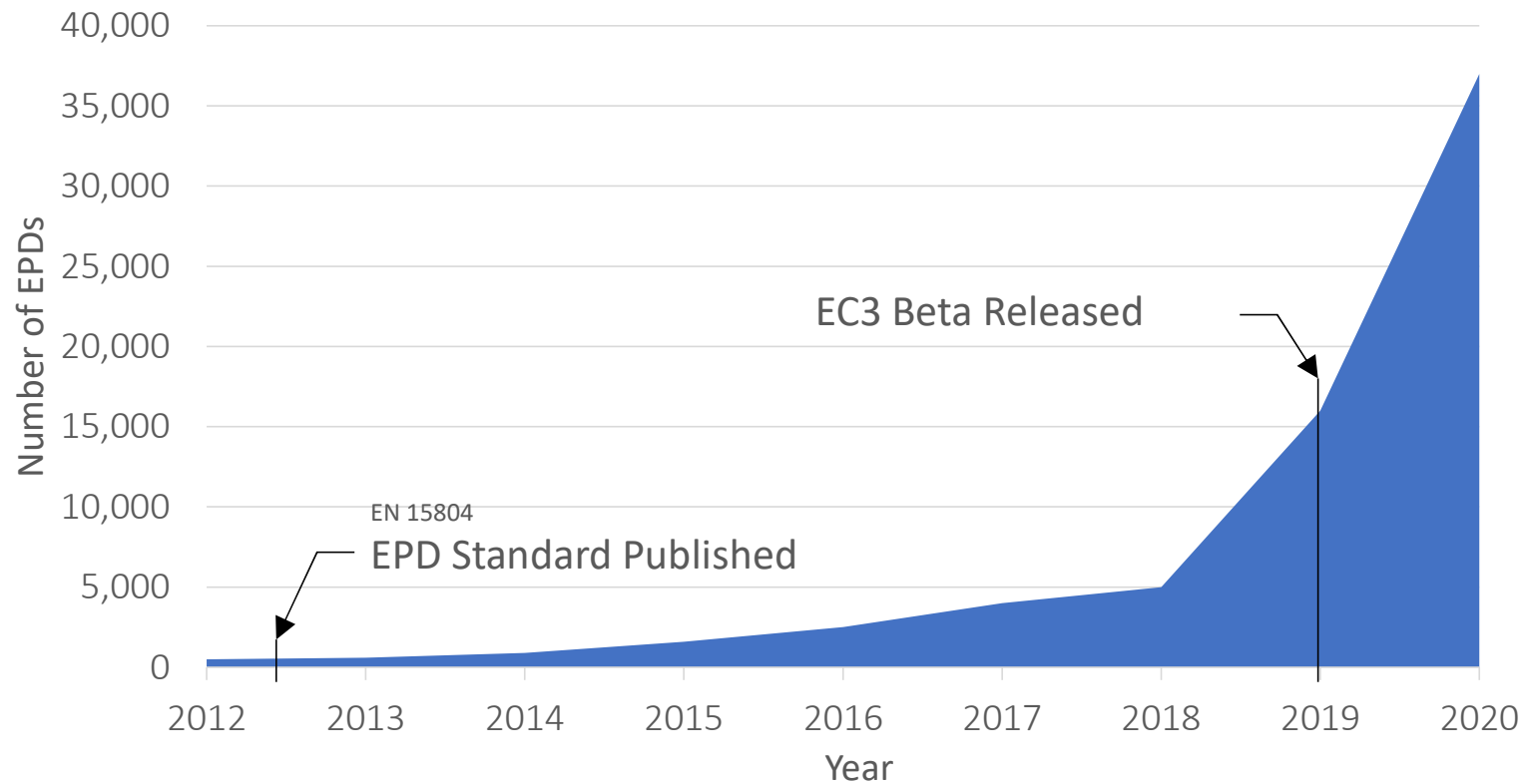
Project Leadership



EC3 PARTNERS FOR 2020-2021



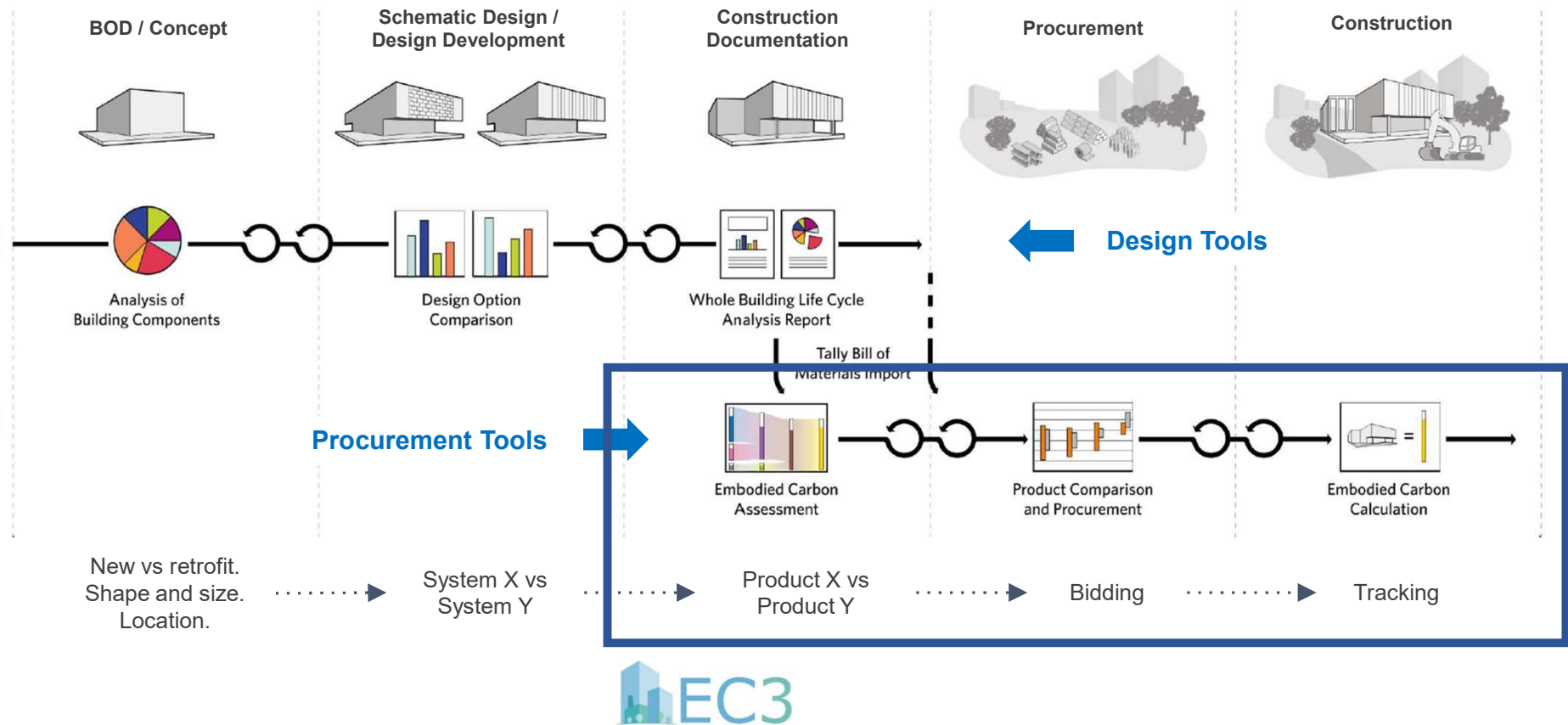
Growth of EPD Availability Over Time



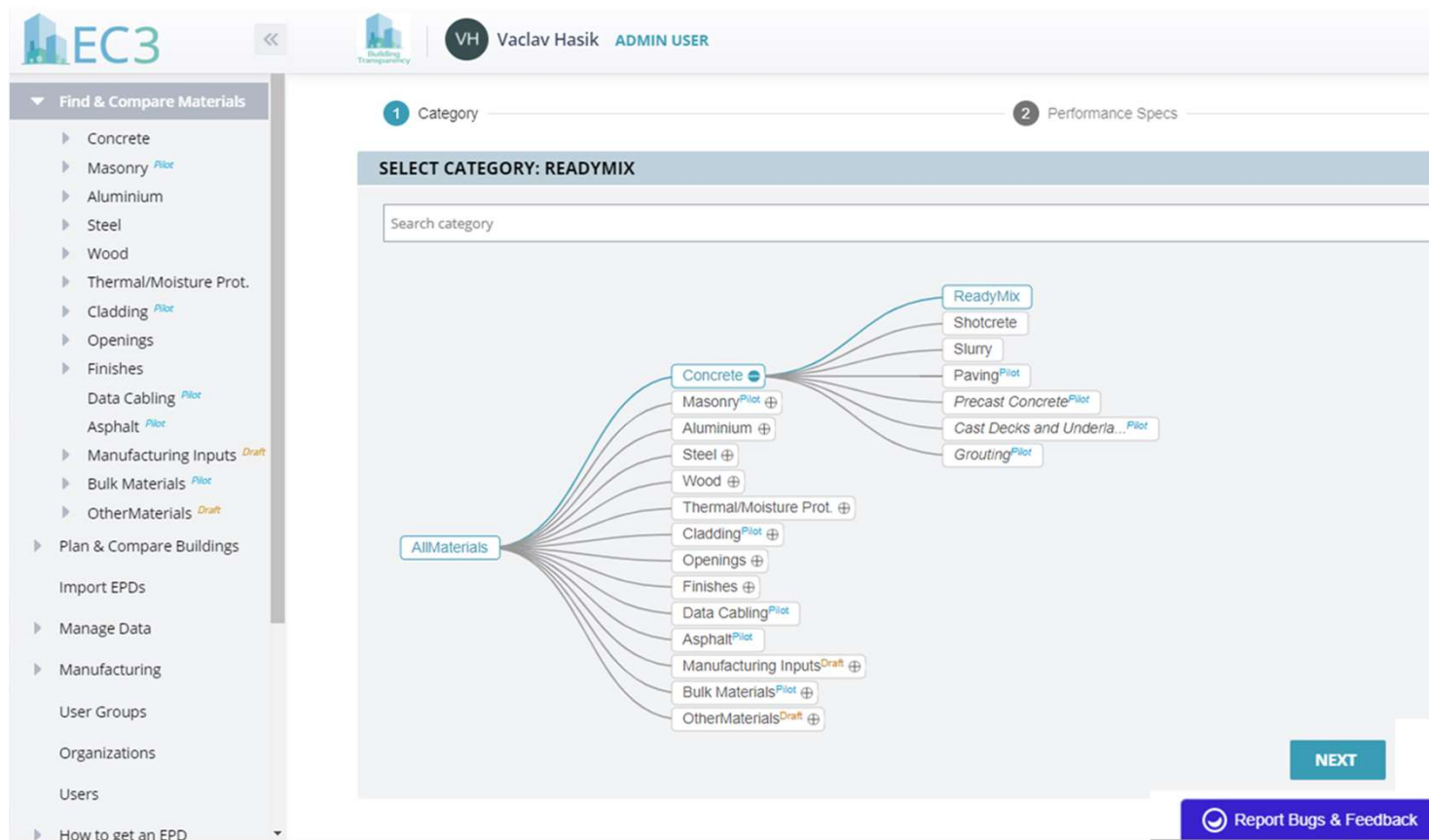
Data from 2012 – 2018 was adapted from Andersen et al. (2019). Data for 2020 represents number of EPDs in EC3.

WHERE IS EC3 USEFUL?... PROCUREMENT

Tools and workflows



EC3 – EXAMPLE OF SEARCHING FOR PRODUCT EPDS



The screenshot shows the EC3 software interface. On the left is a navigation menu with categories like 'Find & Compare Materials', 'Plan & Compare Buildings', 'Import EPDs', 'Manage Data', 'Manufacturing', 'User Groups', 'Organizations', 'Users', and 'How to get an EPD'. The main area is titled 'SELECT CATEGORY: READYMIX' and contains a search bar. A tree diagram shows 'AllMaterials' branching into various material categories. The 'Concrete' category is expanded, showing sub-categories: ReadyMx, Shotcrete, Slurry, Paving, Precast Concrete, Cast Decks and Underlayment, and Grouting. The interface includes a 'NEXT' button and a 'Report Bugs & Feedback' link.

EC3 – SEARCHING FOR PRODUCT EPDS



Search for products fitting your criteria

SEARCH BY PROPERTIES: 03 30 00 CAST-IN-PLACE CONCRETE

PERFORMANCE SPECIFICATIONS

- Compressive Strength
- @ Curing Time: 28d
- Compressive Strength Other
- Curing Time
- Slump (min)
- Options
- ≤ W/C Ratio
- ≥ SCM
- ≤ EC3 / Declared unit
- Standardweight Lightweight

GEOGRAPHIC

- Filter by Region
- Filter by Country/State/Province
- Max Distance from Project Site

ADVANCED

Valid after : 2020-10-09 X

Search

GLAZING/FENESTRATION CATEGORY DEVELOPMENT PROJECT

- Iterative process to decide category layout, correct nomenclature, critical specifications that affect embodied carbon
- ‘Calculators’ for quantifying embodied carbon of assembly products (IGU, curtain walls, windows)
- Participants from NGA, FGIA, company representatives
- 20 working group meetings from July 2021 to present

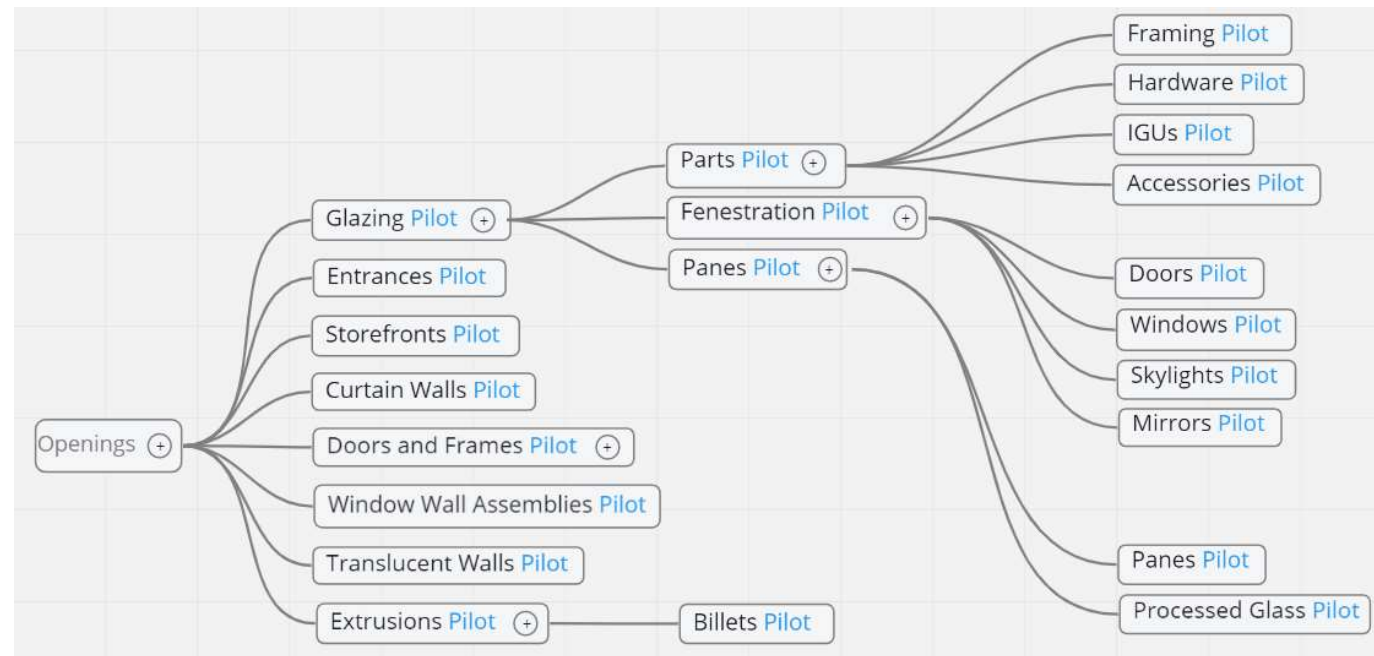
Previous EC3 Categorization (Simple)



GLAZING/FENESTRATION CATEGORY DEVELOPMENT PROJECT

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New EC3 Categories and Calculators



*Does not show all child categories

PROJECT STATUS

- Currently in the software implementation phase
- Building Transparency will hold a live webinar + demo of the developed categories and builders in August 2022.
- Sign up for the webinar using [this form](#)



BuildingTransparency.org

- [Video tutorials](#)
- [Sign up for EC3](#)

NEW BUSINESS



FORMING COMMITTEE



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