


thirsty THURSDAY
Quench your thirst for knowledge!

Understanding CA AB262



Urmilla Sowell
Director, Technical and Advocacy
National Glass Association

MARK YOUR CALENDAR FOR THESE
OTHER **UPCOMING EVENTS**

NGA Glass Conference: July 2021
July 20, 2021, 3:00-5:00 pm ET | Zoom

Thirsty Thursday
August 26, 2021, 1:00 pm ET

GlassBuild America
Sept 13-15, 2021 | Atlanta, GA

- Glazing Executives Forum: Sept 13
- NGA Glass Conference: Sept 13-15

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NGA GLASS CONFERENCE™

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July + September 2021 | glass.org/event/nga-glass-conference-july-2021

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NGA Glass Conference: July + September 2021

Online via Zoom

July 20, 2021 | 3:00 – 5:00 pm ET

- Committee Chair Updates
- Hot Topics Wish List development
- Networking + Happy Hour



In person at the Omni Hotel, *with GlassBuild America*

Sept 13, 2021 | 2:30 – 3:30 pm ET

Economic Outlook session at Glazing Executives Forum

Sept 14, 2021 | 4:00 – 5:00 pm ET

Tour + Reception at Mercedes Benz Stadium

Sept 15, 2021 | 8:00 am – 2:00 pm ET

Breakfast + Glass Magazine Top Trends Report

Opportunities + Challenges Discussion:

engage our partners outside the industry to promote, educate and advocate for glazing and glass building products

Lunch + Technical Codes & Standards Update

Glazing Industry Contributor Discussion:

focus on promoting, educating and advocating for our industry

[glass.org / event / nga-glass-conference-july-2021](https://glass.org/event/nga-glass-conference-july-2021)

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Hurricane (+ Tornado) Preparedness

- [Laminated Glazing Reference Manual](#)
- [Glazing Manual](#)
- [Protective Glazing Manual](#)
- [Glass and Metals 401: Protective Glazing](#)
- [Hurricane Product Substitution](#)
- [Design Consideration for Laminated Glazing Applications](#)
- [Tornado Resistant Glazing: Standards and Performance Requirements](#)



[glass.org / store](https://glass.org/store)

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NGA is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request to sara@glass.org.

This course is registered with AIA CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions will be addressed at the conclusion of the presentation.

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thirsty
THURSDAY
Quench your thirst for knowledge!

Understanding CA AB262 Buy Clean California Act



Urmilla Sowell
NGA Advocacy and Technical Director

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Outline

- **PCR, LCA and EPD - defined**
- Glass PCRs and EPDs
- CA AB262 – Buy Clean California Act
- Differences of Flat Glass and Processed Glass
- Reference materials



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Decoding the Acronyms - PCR, LCA, and EPD



Product Category Rules (PCR)

The Guidelines



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Decoding the Acronyms - PCR, LCA, and EPD



Product Category Rules (PCR)

The Guidelines



Life Cycle Assessment (LCA)

The Analysis



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Decoding the Acronyms - PCR, LCA, and EPD



Product Category Rules (PCR)

The Guidelines



Life Cycle Assessment (LCA)

The Analysis



Environmental Product Declaration (EPD)

The Communication



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Product Category Rules

Method for developing an Environmental Product Declaration

Establishes the system boundary

- cradle to gate or cradle to grave

PCRs are typically valid for 5 years

- Can be extended



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PCR for Flat Glass

Product Category Rule for Environmental Product Declarations

NGA PCR for Flat Glass: UN CPC 3711



Program Operator
NSF International
National Center for Sustainability Standards
Valid through September 30, 2025
ncss@nsf.org

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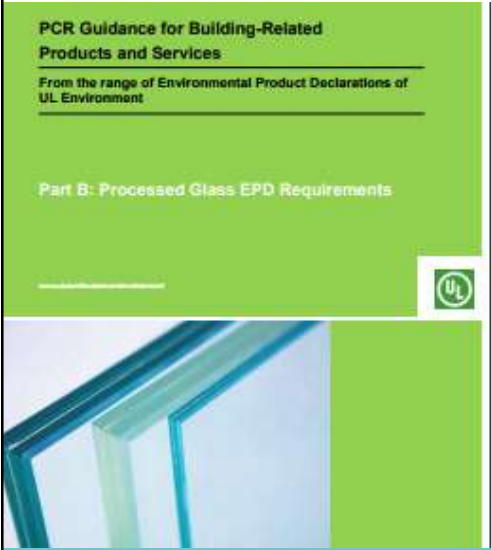
PCR	System Boundary	Declared Unit	Glass Products Included	Validity
NSF Flat Glass	Cradle-to-gate	1t	<ul style="list-style-type: none"> • UN CPC 3711 Flat, Float, Rolled • Subclassess: UN CPC 37112, 37113, 37114, • Tinted 	Thru 2025

https://d2evkimvhatqav.cloudfront.net/documents/pcr_flat_glass_2020.pdf




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PCR for Processed Glass



PCR	System Boundary	Declared Unit	Glass Products Included	Validity
ULE Processed Glass	Cradle-to-gate	1m ²	Processed/coated glass: <ul style="list-style-type: none"> • Heat-treated • Insulating • Laminated glass • Building envelope and installed interior 	Thru 2020

<https://www.shopulstandards.com/ProductDetail.aspx?UniqueKey=35842>



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EPD (Industry Wide) for Flat Glass

www.glass.org



FOR IMMEDIATE RELEASE

FOR MORE INFORMATION CONTACT:
Michele Nosko
mnosko@glass.org

NGA Announces Publication of Flat Glass EPD

Vienna, VA (December 20, 2019) – The National Glass Association (NGA) has announced the publication of an Environmental Product Declaration (EPD) for flat glass products sold in the U.S.

The declaration is valid for five years for clear, low-iron, and tinted glass products that have been manufactured in an unprocessed annealed state. Glass that has been coated, heat-treated, or undergone any secondary processing are not within the scope of this declaration.

The content of the declaration includes:

- Product definition and physical building-related data
- Description of how the product is manufactured
- Details of raw materials and material origin
- Life Cycle Assessment results

Commissioned by the NGA, the EPD covers flat glass produced by the four member companies of the NGA's Forming Committee. The member companies that participated in the study are AGC Glass North America, Guardian Industries, NSG Pilkington, and Vitro Architectural Glass.

NGA fully supports the development of sustainable manufacturing and design.



Environmental Product Declaration

According to ISO 14025

Flat Glass



This EPD was not written to support comparative assertions. Even for similar products, differences in declared unit, use and end-of-life stage assumptions, and data quality may produce incomparable results. It is not recommended to compare EPDs with another organization, as there may be differences in methodology, assumptions, allocation methods, data quality such as variability in data sets, and results of variability in assessment software tools used.

Issue Date: December 20, 2019

Valid Until: December 20, 2024

https://www.glass.org/sites/default/files/2019-12/NGA_EP_D_2019_12_16_signed.pdf



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What is California AB262?

- October 16, 2017- California enacted [Buy Clean California Act \(AB 262\)](#) to address carbon emissions.
 - The new law is in response to [Executive Order B- 30-151](#).
- CA State agencies must consider the Global Warming Potential (GWP) of “eligible materials” in their sourcing. Materials include:
 - Carbon steel rebar
 - Structural steel
 - Mineral wool board insulation
 - Flat glass

[Download the FAQs PDF](#)



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Buy Clean California Act – CA AB262

Public Works Project

Bid + EPD

GWP



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Buy Clean California Act – CA AB262

Key Legislation Dates – Updated by AB1817

- *January 1, 2019* – EPDs will be **requested** by the state
- *January 1, 2020* – EPDs will be **required** by the state
- *January 1, 2021* – DGS publishes the maximum acceptable GWP for eligible materials
- *July 1, 2021* – EPDs will be required and used to gauge GWP compliance of eligible materials

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Buy Clean California Act – CA AB262

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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.

The issue:

Stakeholders and sustainability programs want to better understand the environmental performance of glass products manufactured for buildings.

IANA 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.

NGA flat glass* member companies published an industry-average EPD for flat glass sold in the US in December 2019 (ref. ASTM-EPD121).

The EPD scope includes raw material production, transport of materials, manufacturing processes, product packaging, onsite storage and manufacturing waste (cradle to gate).

*members of the Farming Committee

Relative contribution of manufacturing inputs and outputs to Global Warming Potential



The strategy:

Results of the Flat Glass Industry-Average EPD:

- 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.

The declared unit evaluated is one metric tonne (1000 kg) of flat glass, maintained for 30 years.

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:

Key Legislation Dates – Updated by AB1817

- January 1, 2021 – DGS publishes the maximum acceptable GWP for eligible materials

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Buy Clean California Act – CA AB262

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Buy Clean California Act – CA AB262

NEWS

January 1, 2021: DGS established the BCCA Maximum Acceptable GWP Limits for the following materials. These figures represent mill (or manufacturer) limits.

April 23, 2021: Update to GWP limit for structural steel hot-rolled sections, eligible material descriptions, and awarding agency contacts.

Eligible Material	Subcategory	Limit	Declared Unit	Functional Unit
Flat Glass	N/A	1.72 metric tons CO ₂ -eq	1 metric ton	N/A



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Outline

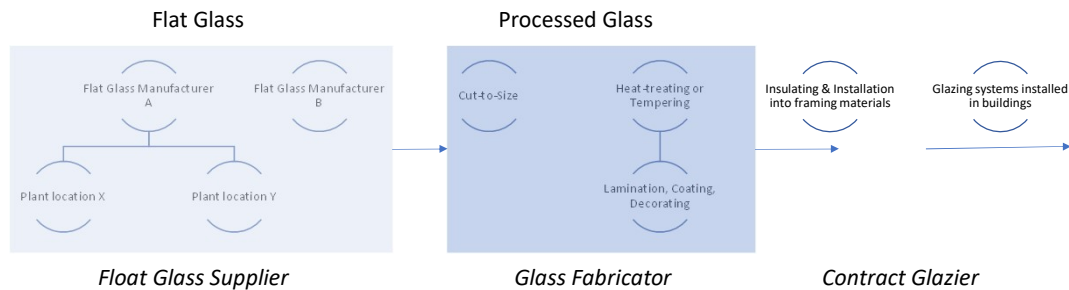
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Buy Clean California Act – CA AB262

What is Flat Glass? What is Processed Glass?



California DGS defines flat glass in the AB262 FAQ's as "float or rolled glass that is clear or tinted"



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Why does AB262 reference flat glass when buildings are glazed with processed glass?

? AB262 states flat glass and references the flat glass Product Category Rule (PCR).

⊘ Flat glass is not installed into completed commercial buildings.

☑ Processed glass is utilized in construction and installed in buildings.

? Processed glass is not included in AB262.

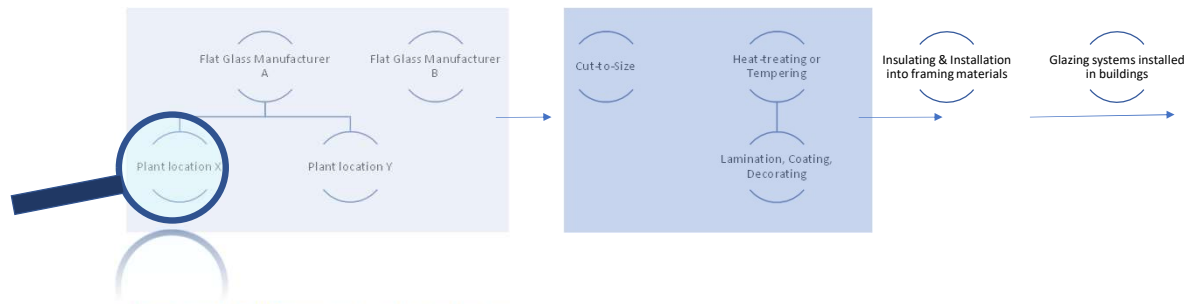
📧 NGA submitted a letter to DGS further clarifying this topic.

🔨 However, AB262 has already been passed into law with language limited to flat glass.



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Is a facility-specific EPD required by AB262?



<https://www.glass.org/sites/default/files/2020-04/NGA.EPD%20FAQs%2004.2020.pdf>



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Buy Clean California Act – CA AB262

Fabricators, glazing contractors

What do I need to do if I am a fabricator or glazing contractor and am asked for flat glass facility specific data by a customer in order to comply with AB262 in a public works building?



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Buy Clean California Act – CA AB262

Explain California DGS defines **Flat Glass** in the AB262 Frequently Asked Questions as **float or rolled glass that is clear or tinted**.

1. Flat Glass, as defined by AB262, is not supplied to public works buildings.
2. Flat glass manufacturers are several steps removed from the final product that is installed in public works buildings.
3. As legally written, AB262 does not apply to processed glass that is typically supplied to California public works buildings.




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Outline

- PCR, LCA and EPD - defined
- Glass PCRs and EPDs
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- **Reference materials**



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ADVOCACY & TECHNICAL SERVICES

AN UPDATE ON IMPORTANT TECHNICAL AND CODES WORK BY NGA'S ADVOCACY AND TECHNICAL SERVICES TEAM

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LEGISLATION

<https://www.glass.org/about-nga/advocacy>

> DOE BUILDING EFFICIENCY

▼ [CALIFORNIA AB262](#)


NGA's Forming Committee issued [public comments](#) on California AB262, voicing concerns about the bill's technical flaws which will affect the flat glass manufacturers and the industry. NGA also responded [regarding facility specific data](#) for the implementation of CA AB262.

On January 1, 2021 the California Department of General Services (DGS) established maximum acceptable Global Warming Potential (GWP) limits for flat glass and other materials covered under CA AB262.

- The CA DGS GWP limit for flat glass is 1.72E+03 kg CO2-eq.
- This limit matches the request made by NGA's Advocacy and Forming Committees for 20% above the industry wide flat glass GWP.
- The established limit ensures that all North American flat glass manufacturers have the opportunity to supply glass products to government works projects in California.


[See our GWP one-pager on this topic.](#)

Known as the Buy Clean California Act, AB262 asks bidders on public works projects in California to submit an EPD, or Environmental Product Declaration, for specified flat glass products. NGA continues to work with supporters of the bill to clarify the language, ensure they understand the effects, and educate them about the glass and glazing industry.



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<https://www.glass.org/sites/default/files/2020-04/NGA.EPD%20FAQs%2004.2020.pdf>




We envision a future in which glass is the material of choice to enhance spaces where people live, play, learn, work and heal.

FAQs for Glass in Buildings in Compliance with California AB262

Q: What is California AB262?

A: Known as the Buy Clean California Act, AB262 asks bidders on **public works projects** in California to submit an EPD, or Environmental Product Declaration, for specified building materials, including flat glass products.

The **public works project** authorities included in AB262 are: Department of Transportation, Department of Water Resources, Department of Parks and Recreation, Department of Corrections and Rehabilitation, Military Department, Department of General Services, Regents of the University of California, Trustees of the California State University and state agencies granted authority to work on public works projects under Management Memo 18-01.



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Procurement Division

For example, how to sell to the state?

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HOME > PROCUREMENT DIVISION > RESOURCES > BUY CLEAN CALIFORNIA ACT

<https://www.dgs.ca.gov/PD/Resources/Page-Content/Procurement-Division-Resources-List-Folder/Buy-Clean-California-Act>

Buy Clean California Act

State agencies, the University of California and California State University Systems, construction materials industries, and other interested parties can learn more about the embodied carbon emissions of construction materials used in public works projects.

CONTACT
Engineering Branch
Department of General Services
Procurement Division
707 Third Street, Second Floor
West Sacramento, California 95605
BuyCleanCalifornia@dgs.ca.gov
To ensure that your questions receive accurate and timely responses, please provide your name, phone number, and agency/organization


The **Buy Clean California Act (BCCA)**, ([Public Contract Code Sections 3500-3505](#)), states the Department of General Services (DGS) is required to establish and publish the maximum acceptable Global Warming Potential (GWP) limit for select construction materials. The BCCA targets carbon emissions associated with the production of structural steel (hot-rolled sections, hollow structural sections, and plate), concrete reinforcing steel, flat glass, and mineral wool board insulation. These materials must have a GWP that does not exceed the limit set by DGS.

Find key legislation dates below.

On July 1, 2021: Awarding authorities will gauge GWP compliance of eligible materials with the required Environmental Product Declaration (EPD).

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<https://www.glass.org/sites/default/files/2020-04/NGA.EPD%20FAQs%2004.2020.pdf>



Glass Technical Paper **FM06-20**


General EPD Education

Introduction

This document is intended for the architectural, engineering and construction (AEC) community involved in the selection, specification and review of lifecycle environmental impacts of building components. It has been observed in the marketplace that professionals are trying to compare Environmental Product Declaration (EPD) values, and the purpose of this document is to highlight challenges in comparison. The practice of comparing EPDs is not encouraged, nor always appropriate, and could lead to misleading conclusions.

Flat Glass EPD

It is important to understand how to properly read, interpret and utilize the data that is published in the NGA industry-average [Flat Glass EPD](#) (EPD). This is especially critical when attempting to compare this data to manufacturer-specific



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INSIGHTS | GLAZIER BULLETIN

EPD+HPD

PRODUCT TRANSPARENCY FAQS

Leverage EPDs and HPDs for
glazing specification
BY STEPHANE MILLER



As green building becomes the expectation rather than the exception, building owners are asking for evidence that their facilities are as friendly to occupants and to the environment as planned. While building product manufacturers have responded with more sustainable products, many are also taking steps to increase transparency around how those products are made and perform. In the last few years, glazing industry manufacturers have taken a lead in sharing information on sustainability of their products and processes. Now it's up to glazing contractors to apply the right tools to help architects specify products that can maximize a building's overall sustainable performance.

What are the key terms to know?

LCA - Life Cycle Assessment: An LCA is a comprehensive method for assessing the potential environmental impacts of a building product or material, from the first step of extracting raw materials through the manufacturing process, installation until final disposal. The completed assessment forms the basis of an Environmental Product Declaration or Health Product Declaration.

EPD - Environmental Product Declaration: An EPD discloses the life cycle environmental performance of a product, based on the LCA. It verifies that all the information gathered during the LCA is transparent and accurate, and presents product information in a set format that allows for easy comparison across products.

HPD - Health Product Declaration: An HPD is a voluntary document that provides a consistent reporting format for disclosing the human health impact of a building product. It discloses the human health impact of a building product by looking at product content and associated health information for building products and materials.

PCR - Product Category Rules: The PCR assesses and sets rules for conducting the LCA. The PCR ensures every company measures the impacts of a product in the same way. The PCR identifies the methodologies and required calculations for conducting an LCA. Having an industry body set agreed-upon rules ensures that data collection and reporting are consistent across manufacturers. This consistency is critical in ensuring designers, glazing contractors and building owners can make comparisons across products.

A group of industry organizations—the National Glass Association, glass.org, Insulating Glass Manufacturers Alliance, igmaonline.org, the American Architectural Manufacturers Association, aaamanet.org, and the Window and Door Manufacturers Association, wdma.com—have together developed PCRs that respectively outline the rules for assessing the environmental performance of flat glass products, processed glass and windows in order to create EPDs for specific glazing products.

Who is asking for an EPD and HPD?

Green standards increasingly call for product transparency declarations. LEED v4 incentivizes the use of EPDs or HPDs by offering points for these disclosure documents under the Material and Resources credit. Additionally, the WELL Building

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<https://www.glassmagazine.com/article/product-transparency-faqs>



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QUESTIONS?

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