



April 9, 2025

Ms. Pamela Gupta
Branch Chief, Sustainable Communities and Transportation Division
California Air Resources Board (CARB)

VIA: <https://ww2.arb.ca.gov/public-comments/comments-workshop-building-embodied-carbon-march-13-2025>

Re: Comments on CARB March 13th Workshop on Building Embodied Carbon

Dear Ms. Gupta:

The Asphalt Roofing Manufacturers Association (ARMA) appreciates the opportunity to provide feedback in response to the California Air Resources Board's (CARB's) March 13, 2025 workshop on Building Embodied Carbon. ARMA is a trade association representing North America's asphalt roofing manufacturing companies and their raw material suppliers. Our members account for approximately 90% of North American production of asphalt shingles and asphalt low-slope roof membrane systems.¹ ARMA is committed to the long-term sustainability of the asphalt roofing industry and supporting responsible sustainable building initiatives.

As part of this commitment to sustainability, ARMA undertook a multi-year effort to develop [industry-average environmental product declarations \(EPD's\) for asphalt roofing systems](#), including asphalt shingle roofing systems; SBS and APP modified bitumen systems; and built-up roofing systems. ARMA's industry-average EPD's were developed using facility-level production data collect from participating ARMA members for their respective facilities that manufacture these products. A weighted average was then calculated on each facility's production amount in mass. ARMA's industry-average asphalt shingle EPD uses primary data from 2019 and background data from 2014-2021, and has been certified as ISO 14025 compliant. Given ARMA's experience in developing industry-average EPD's, we are familiar with the considerable challenges noted in the CARB March 13th workshop regarding the comparability, consistency, and data quality of EPDs.

¹ Additional information about ARMA's mission and activities can be found on its website, <https://asphaltroofing.org/about-arma/about-us/>. See also ARMA, Bitumen Waterproofing Association, National Roofing Contractors Association, Roof Coatings Manufacturers Association, [The Bitumen Roofing Industry – A Global Perspective: Production, Use, Properties, Specifications and Occupational Exposure](#). 2nd ed., 2011 (referenced herein as the [Roofing Global Perspectives Paper](#)). Available at https://docs.google.com/viewerng/viewer?url=https://asphaltroofing.org/wp-content/uploads/2017/05/The_Bitumen_Roofing_Industry_-_A_Global_Perspective.pdf.



The proposed regulations would place an undue burden on California businesses by requiring them to develop and submit product- and facility-specific Environmental Product Declarations (EPDs) based on data that is less than two years old, a task that could be financially and logistically unfeasible. Additionally, the quarterly reporting requirement would create significant administrative challenges for smaller manufacturers, diverting resources away from core business operations. These regulations could disrupt the supply chain by overwhelming smaller suppliers who lack the capacity to comply with such stringent, frequent data submission demands, potentially leading to increased costs and delays in product availability.

For the reasons outlined below, ARMA has serious concerns regarding the feasibility of CARB's proposed requirements for reporting by building material manufacturers. ARMA also questions CARB's inclusion of asphalt shingles on the list of manufacturing sectors for priority reporting in 2026. ARMA has additional questions and concerns regarding a number of other aspects CARB is proposing to implement which may be inconsistent with asphalt roofing industry practices (e.g., the requirement for facility-specific EPD's); an onerous overreach of statutory requirements (e.g., quarterly submission of manufacturer data); and simply unnecessary (e.g., chain of custody requirements for asphalt roofing products).

1. CARB's Proposed Requirements for Reporting by Building Material Manufacturers are Infeasible with Respect to Data Currency

ARMA does not believe it is feasible for manufacturers in the asphalt roofing industry to comply with CARB's proposed requirements outlined in the March 13th workshop, for building material manufacturers to submit in 2026, product- and facility-specific EPD's which are based on primary and background data <2 years old. As previously discussed, ARMA has developed industry-average EPDs for asphalt roofing systems. The proposed requirement that EPDs be based on primary and background data that is less than two years old is impractical. As an example, the most recent update of the asphalt roofing industry average EPDs took more than two years to complete. Data currency expectations should align with the cadence established and accepted by the broader sustainability community.

2. CARB's Proposed Basis for Identifying Low Embodied Carbon Materials will be Challenging to Implement

The industry-average asphalt shingle roof system EPD represents a single asphalt shingle roof system which may not adequately represent the variety of, or be typical of, systems installed in California. As such, use of ARMA's industry-average EPD as a data source to establish an emissions baseline may not be appropriate. We are uncertain about the availability of product-specific EPD's from manufacturers, but it is likely that many manufacturers do not have this information readily available. Development of this type of data by 2026 is at best unreasonable, and perhaps



impossible, since the availability of EPD consultants qualified to undertake this type of work will likely be stretched thin.

3. CARB is Not Justified in Including Asphalt Shingles on the Priority Manufacturing Sectors List for Reporting in 2026

ARMA questions CARB's determination to include asphalt shingles on the list of Priority Manufacturing Sectors subject to reporting in 2026. CARB states that products included in the first phase of reporting include those "likely to account for a significant share of total embodied carbon emissions" from building materials used in California. Given that an average house in the U.S. weighs around 200,000 lbs. (by conservative estimate)², the total weight of asphalt shingles for an average roof (3,400 lbs.)³ represents **less than 2%** of the total building envelope. ARMA questions how a building material that makes up only 2% of an entire building by weight can be considered likely to account for a "**significant share**" of total embodied carbon emissions from building materials. ARMA requests that CARB reconsider this determination and include asphalt shingles on the list of manufacturing sectors eligible for phased-in reporting required starting in 2028.

4. CARB's Proposal for Quarterly Reporting of Manufacturer Data is Unreasonably Onerous and Exceeds Statutory Mandate

The manufacturer reporting requirement under HSC § 38561.3(c)(2) is limited to a "submission by the manufacturer of a building material of *an* Environmental Product Declaration" (emphasis added). HSC § 38561.3(b) does direct CARB to set the GHG baseline based on the manufacturer-reported 2026 EPDs "or the most relevant, up-to-date data that is available, as determined by the state board;" however, CARB's proposed requirement of quarterly submission of EPD data by manufacturers is overreaching, unproductive and wasteful.

As for reporting of attributable product revenues, there is no statutory requirement for manufacturers to report that data. It is unclear why building material manufacturer cost data is needed for this program.

5. CARB's Requirement for Facility-Specific EPDs Exceeds Statutory Mandate and May be Inconsistent with Asphalt Roofing Industry Practices

² See <https://www.homemindset.com/how-much-does-a-house-weigh/>, which estimates that a 1,000-square-foot house with one floor weighs about 200,000 lbs.

³ See <https://www.thisoldhouse.com/roofing/reviews/new-roof-cost#:~:text=Cost%20by%20Roof%20Size,wood%2C%20clay%2C%20and%20slate>, which notes that the average size of a roof in the U.S. is about 1,700 square feet, and <https://www.accessengineeringlibrary.com/content/book/9781260128673/back-matter/appendix2>, which reports that asphalt shingles (1/4 in. approx.) weigh 2 psf.



HSC §38561.3(c)(2) requires manufacturer submission of an EPD, but does not require an EPD to be facility-specific. However, CARB seems focused on requiring facility-specific EPDs. For asphalt shingle manufacturers, it may be more likely that EPDs are generated on a product-specific basis rather than on a facility-specific basis, since products may be manufactured at multiple facilities.

6. CARB Needs to Clarify the Scope of Its “Ask” for EPD’s from Asphalt Roofing Manufacturers

CARB should be aware that EPDs for asphalt roofing products can vary in scope. ARMA’s industry-average EPD for asphalt roofing shingles, for example, applies to a whole system of installation for asphalt roofing shingles, and not just the shingles alone. ARMA’s asphalt shingle industry-average EPD, does however, provide data by system element (shingles, hip and ridge, etc.) for stages A1-A3. CARB should be clear when issuing its request for EPD’s whether scope of the request applies just to asphalt shingles, rather than an entire roofing system. Depending on how manufacturer EPDs are developed, manufacturers may be able to report on data just for asphalt shingles, if CARB constrains its data collection in that fashion.

7. The Need for Chain of Custody Within the Asphalt Roofing Industry is Unclear

The need for chain of custody within the asphalt roofing industry (and most likely for all the covered products) is unclear. Asphalt shingles are identified by manufacturer, brand, and product name. This identification is necessary for compliance with building codes. What is the statutory basis for requiring chain of custody, and what is chain of custody meant to address?

Additional Questions Regarding CARB’s Embodied Carbon Building Proposal

CARB’s proposed approach for implementing the Embodied Carbon Building program raises several other issues, listed below:

- a. CARB’s proposed definition of “building material” (slide 15 of the March 13th presentation) indicates it is an “inseparable part” of the completed structure. That definition does not seem to encompass asphalt roofing (and many other building materials).
- b. Will minimum annual revenue thresholds be for California-specific revenue? Will the revenue thresholds be limited to the covered products?
- c. HSC §38561.3(i)(1) seems to exclude or limit incorporation of lower carbon materials if it has a cost impact or is unfeasible. How does CARB plan to address this provision without potentially undercutting the entire program?

ARMA appreciates CARB’s serious consideration of the many concerns raised in these comments. We would further welcome the opportunity to meet with CARB staff to discuss our concerns in



greater detail and assist CARB in developing a more feasible framework for asphalt roofing materials as part of the Building Embodied Carbon program.

Sincerely,

A handwritten signature in black ink, appearing to read "Reed Hitchcock". The signature is fluid and cursive, with a period at the end.

Reed B. Hitchcock
Executive Vice President
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