



California Construction and Industrial Materials Association

May 12, 2023

CA Building Standards Commission
Attn: Public Comments
2525 Natomas Park Drive, #130
Sacramento, CA 95833

Dear Commissioners:

The California Construction and Industrial Materials Association (CALCIMA) offers these comments on the proposed changes to the CALGreen Building Code, particularly in regard to the CALGreen Carbon Reduction Collaboration.

CALCIMA members include producers of ready mixed and precast concrete, as well as aggregates, asphalt, and industrial minerals. These comments address concrete in the proposed code changes.

Mandatory

The proposal would make a significant change to add a mandatory element to the CALGreen Code, which has previously been exclusively a voluntary code.

As discussed in prior comments and hearings, there are many ongoing initiatives and adaptations by concrete producers to lower the carbon impact of the final product. Nationwide, the carbon footprint of concrete has been reduced over 20% since 2014. The initiatives and adaptations by concrete producers include use of lower-carbon cements; substituting fly ash, slag, and natural pozzolans and other supplementary cementitious materials (SCM) to reduce the amount of cement in a concrete mix; working with specifiers to develop performance-based specifications; using recycled aggregates and returned plastic concrete; incorporating and sequestering industrial carbon into the final product; making plants more efficient; and upgrading to cleaner truck engines.

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The challenge for concrete producers is that they are dependent on the materials, or ingredients, available to them. Thus, it is not always possible for every concrete producer, or in every part of the state, to achieve the same results on lowering carbon impacts. In particular, producers are greatly dependent on the types of cement available and, often, how that interacts with locally available aggregates. Producers are also limited in what they can do where specifications and codes are prescriptive and require more cement use than is necessary. Also, while many of the over 300 concrete plants in California have environmental product declarations (EPD) for certain plants and mixes, there is still a ways to go before these are commonplace for all companies, plants, and mixes.

We appreciate the CBSC recognizing these challenges and incorporating provisions to help provide attainable goals for concrete producers. Specifically, the proposal would allow three options:

- The first is the use of the whole building life cycle assessment, which allows a comprehensive and performance-based approach to all materials in a building. Importantly, it would be conducted upfront during the design phase.
- Second, we appreciate that in the prescriptive path the CBSC has chosen to use thresholds for global warming potential based on actual data from producers. Specifically, the CBSC has chosen to use values based on national collection of environmental product declarations (EPD), adjusted for the Southwest U.S., and then providing they meet 175% of the thresholds. These may still be ambitious in some areas and for some producers in California, since the data is based on producers who are early adopters and may have the most advanced sustainability programs. And, as we stated earlier, not all regions within California have the optimal range of materials to achieve lower carbon concrete. We would encourage the CBSC to consider updating the code with region-specific data in California as that becomes more available.
- Third, we greatly appreciate that there is another option for a weighted average global warming potential (GWP) threshold for all concrete used in a building. This, too, will allow for a more performance-oriented approach that will allow balancing of the various concrete needs in the building and recognition that lower carbon may be more achievable in some applications than others.

Voluntary – Materials Sources

The proposal also would update current voluntary provisions in the code regarding sustainability and material sources. We believe these are important changes to improve sustainability options for concrete producers, and help achieve the carbon reductions envisioned in the mandatory section. These are particularly important given the statewide application of the code. Specifically, the proposals would add these provisions:

- Expand the list of supplementary cementitious materials (SCM) to include ground-glass pozzolan and blended SCMs. Both these will help incorporate newly available materials that concrete producers can utilize to lower the carbon impact of the final product.
- Provide a code reference to help guide when high early strength should be specified. This will help with over-specifying use of cement-intensive high early strength concrete.
- Provide improved definitions for recycled aggregate. This will help with terminology used in other codes and settings and make clear that there are two sources for recycled aggregate from concrete.
- Allow for an increase in age of maturity from 28 to 42 or 56 days. This provides a significant opportunity to use less cement in concrete, in situations where it is appropriate and convenient to allow the concrete a longer time to reach strength.
- Add reference to Caltrans' specification for the use of up to 15% returned plastic concrete in a mix. This is a significant step as it allows the reuse of a concrete mix and all its ingredients. A Caltrans study found that for every yard of returned plastic concrete used, there is a 15.3% reduction in carbon footprint and a 16.2% reduction in embodied energy.

Conclusion

Again, we appreciate the consideration of operational practicalities for concrete producers in the mandatory section and the changes proposed in the voluntary section to expand sustainability options.

Sincerely,



Charles L. Rea

Director, Communications, Safety, & Technical Services