

FAST-TRACKING CEMENT DECARBONISATION

From underperforming to performance-based standards

EXECUTIVE SUMMARY

The cement industry represents one of the most carbon-intensive sectors in Europe, and beyond, being responsible for a staggering 7-8% of global emissions. The main culprit of these emissions is the production of clinker, the key ingredient from which cement and concrete derive their binding properties.

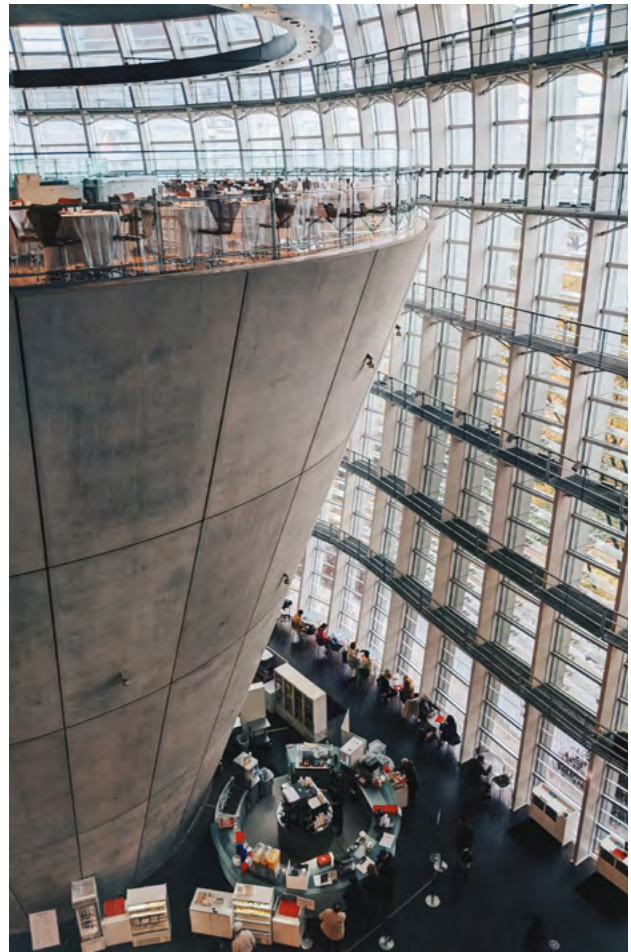
Not surprisingly, clinker substitution is generally seen as the most promising lever for decarbonisation. It allows for considerable reductions to the industry's footprint in the short term at near-zero costs, followed by other levers such as carbon capture, usage, and storage. Safe and low-carbon solutions already exist but need market access through environmentally ambitious standards and policies.

Today, cement and concrete standards prevent this from happening. They follow a prescriptive logic that does not allow new materials and innovations to enter the market at a large scale. Shifting to performance-based cement and concrete standards would remove this barrier and create a level-playing field for low-carbon cement and concrete solutions. This could potentially slice the industry's emissions by half.

Europe is particularly well placed to lead on clinker-substitution, building upon a strong cement industry, leading research institutes on cement and concrete, and a large availability of clinker substitutes. As such, the EU has the potential to follow the example set by other regions and countries, successfully moving from recipe-based to a performance-based standards approach. Embarking on this journey would put the cement industry on a fast track to meeting the EU's ambitious climate goals.

How do we get there:

- The European Commission should urgently adopt a standardisation request for the development a performance-based standard for common cements, replacing existing recipe-based standards.
- Upon acceptance, the European standardisation body CEN should fast-track the development of this performance-based standard, securing sufficient resources to the drafting process.
- CEN should revise and align cement testing standards with performance-based approaches.
- CEN and National Standards Bodies should revise concrete standards so that they allow and promote the use of all low-carbon constituents.



THE TIME IS NOW: KEY RECOMMENDATIONS

Standards will play a key role in decarbonising the cement sector. Even though today they effectively lock in the consumption of high volumes of clinker, they can be turned into a vector that drives innovation and the rapid market uptake of already existing and scalable low-carbon solutions.

Performance-based standards should become the new normal, replacing the existing prescriptive approach.

This requires:



CEN should fast-track the development of this new standard, upon acceptance of the standardisation request. The Technical Committee in charge, CEN TC 51, should prioritise the drafting of this new standard. Amongst others, this can be achieved by shifting resources from ongoing work on the incremental improvement of recipe-based standards.

CEN should revise and align cement testing standards with performance-based approaches. Priority should be given by CEN TC 51 to the development of sound and workable testing methods which do not discriminate against low-carbon cement types.



The European Commission to urgently adopt a standardisation request for the development of a performance-based standard for common cements, replacing the existing (harmonised) cement standards EN 197-1, EN 197-5 and prEN 197-6. This must be done in close consultation with all relevant stakeholders, building upon scientific evidence and experiences from other regions and countries in the world.



CEN and National Standards Bodies should revise concrete standards so that they allow for the use of all low-carbon constituents. The Technical Committee CEN TC 104 should prioritise the revision of the EN 206 standard. Particular attention should be paid to the prescriptive parts of the standard, including the provisions on minimum cement content. Also at the national level, National Standards Bodies should revise their annexes to EN 206, finally creating a level-playing field for low-carbon concrete solutions.



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