

What is sustainability and why is it important?

Everything we do affects the world around us. Sustainability aims to protect society, the environment, and the economy so that we can “meet the needs of the present without compromising the ability of future generations to meet their own needs”.

Why is sustainability important to Lafarge?

As the global leader in the construction materials industry, LafargeHolcim has both the opportunity and responsibility to make a positive difference. We want to lead in sustainability and set new standards. We want to transform the way our industry works and encourage the whole construction sector to play its part in addressing our planet's biggest issues.

To accelerate LafargeHolcims' leadership in sustainability, [Chief Sustainability Officer Magali Anderson was appointed in 2019](#) as part of the Executive Committee to lead our company's sustainability efforts. In November 2020, LafargeHolcim further confirmed our sustainability leadership in the sector by pricing a [EUR 850 million sustainability-linked bond](#) and was the first global building materials company to sign the [Business Ambition for 1.5oC pledge](#) aligned with a net zero pathway.

Why is CO₂ reduction important to sustainability?

Carbon dioxide, or CO₂, is a gas generated by a number of chemical reactions, including the combustion of fossil fuels that occurs in the manufacturing of cement, and is contained in flue gases emitted from the facility.

CO₂ is one of several greenhouse gases that can cause global warming by trapping the sun's energy in our atmosphere. This is also known as “the greenhouse effect”. As a result of this effect, global warming increases the temperature of the Earth's atmosphere and oceans, which many scientists believe will cause a rise in sea levels, and an increase in

the intensity of extreme weather conditions such as storms and natural disasters. This could also lead to changes in crops and food scarcity, shrinking of the ice caps, species extinction, and an increase in diseases.

What is our NetZero Pledge, and what is SBTi?

Understanding the carbon footprint of our mining, manufacturing and distribution processes, LafargeHolcim is committed to reducing our carbon footprint. To demonstrate this commitment, LafargeHolcim has publicly committed to achieving NetZero greenhouse gas emissions for our cement manufacturing operations by 2050 with an intermediate goal of achieving 475 kg CO₂/t cement by 2030.

These goals have been reviewed and supported by the Science Based Targets initiative (SBTi) which is an independent body that verifies that plans put forward are sufficient to keep global temperature rise below 1.5°C.

For more information on the pledge, please visit [Net Zero Pledge](#).

What is “green” concrete?

Green concrete is defined as a **concrete** that uses waste material or lower carbon alternatives as at least one of its components, its production process does not lead to environmental destruction, or it has high performance and life cycle sustainability.

What is ECOPact?

A new product brand family that helps us communicate our reduced environmental impact compared to a baseline.



Use of recycled materials is indicated by a + symbol added to the ECOPact logo.

“ECO” + “Pact”

The ECOPact brand name was selected to demonstrate not only our commitment as a company to sustainability, it also highlights our collaborative approach to achieving meaningful sustainability outcomes with our customers by understanding our customers, their sustainability commitments, and the priorities, drivers and constraints for each of their projects.

The initial ECOPact product bundle is shown in the following table for the most commonly used applications in residential, commercial and municipal projects. For large, strategic projects, or projects requiring specialty products, contact your market QC Manager.

Why should I consider using ECOPact on my project?

With an increased awareness of the urgency of action to combat climate change, the building industry is moving towards a stronger focus on sustainability. As building operations are refined to reduce carbon emissions, embodied carbon becomes a larger factor to consider in improving overall lifecycle CO₂. There is an increased need to understand and reduce the carbon footprint of buildings and structures throughout its full lifecycle. Green building certifications such as LEED V 4.1 have also made recent updates to include credits for sustainable raw materials, as some regions are beginning to include policies around embodied carbons as well.

Using ECOPact on your projects works to achieve your sustainability goals around lifecycle CO₂ reduction, and demonstrates your commitment to sustainability and improving overall climate outcomes.

What is the baseline that we're comparing our products against?

The baseline product design uses portland cement only, i.e.

all cementitious material used in the concrete is considered cement. Cement typically accounts for more than 80% of the CO₂ associated with concrete, so the key driver to improve the environmental impact of concrete is to reduce cement content. The cement baseline intensity for Canada is currently 745 kg CO₂/t.

How is the CO₂ reduction calculated and validated?

LafargeHolcim has developed a carbon calculation tool that is used to calculate the CO₂ of all ECOPact products in Canada. These calculations include our emissions associated with material extraction and production, i.e. aggregates, cement production, transportation of those materials to the batch plant, and the operation of the batch plant to produce concrete. The results of the calculations are validated by Group prior to using the ECOPact brand name. To ensure comparability between baseline and supplied concrete, the same calculation tool is used for both.

How do we achieve our CO₂ reductions?

ECOPact reduction strategies are achieved through the optimization of our products, use of supplementary cementitious materials (SCMs) to reduce cement content, leveraging recycled materials, and targeted admixtures used to deliver the required performance as needed.

Specific details of reduction strategies are proprietary information and not to be shared.

Does ECOPact meet building codes and specifications?

All ECOPact concretes meet the requirements of applicable building codes and standards in Canada.

Where there may be specifications that impose limitations on cement types or SCM content, some ECOPact concretes may not be available for use. However, please connect with your local ECOPact team, to discuss opportunities to optimize our products for your specific application or project.

How does ECOPact affect how a project is built?

Many of our ECOPact concretes achieve CO₂ reduction while maintaining the same great durability, strength and finishing without changes to your process, schedule or constructability. For some ECOPact Prime and ECOPact Max concretes, admixtures may be used to achieve required performance, or modifications may need to be made. Our concrete experts can work with you to custom select products that optimize CO₂ reduction within the targets and boundaries of your project.

How much CO₂ reduction will an ECOPact solution bring to my project?

Use our carbon calculator to estimate the CO₂ reduction potential of using an ECOPact product on your project. For more information, contact your local ECOPact team.

How do I learn more about ECOPact solutions for my project?

Contact your local ECOPact representative to discuss using ECOPact for your next project.

What is a Standard Concrete?

Lafarge considers a standard or conventional concrete as the minimum basic performance requirements for applications in a given market area. This common aspect is an 80mm slump for workability, no added air-entrainment or 4-7% added air entrainment, and 20mm-25mm coarse aggregate size. In addition, these concretes are normally 20% - 30% SCM from historical cost efficiency efforts.

When we begin to add performance features to our products, such as Flow improvements, or smaller aggregate sizing, the overall price and performance differences are compared to the very minimum that could be physically used in the same application.

Our customers demand less and less “Standard” concretes each year as the performance additions are designed to add value for our customers.

Does ECOPact include any 3rd party carbon capture or reduction technology?

ECOPact does not currently include any 3rd party carbon capture or reduction technologies. While we have investigated and tested a number of 3rd party technologies, we are focusing on our in-house developed technologies from both our leading local and global research centres.

How are we pricing ECOPact?

Improved emissions performance in our concretes has been achieved, over time, with greater replacements of portland cements with SCM's. In particular, flyash and slag and these products, historically, have been a lower cost than portland cement. As such, pricing for concretes, referenced to the levels of SCM's noted in the Standard Concrete have reflected historical contents and pricing of inputs.

SCM's availability and costs have come under pressure in the last two years and this is accelerating as we shift away from coal fired power plants to natural gas in much of Western Canada. In addition, the quality of these materials has become increasingly variable and has been impacting design efficiency.

We fully expect this to continue into the future and potentially become more challenging.

As we develop concretes to reflect the demands for reduced embodied CO₂, and grow this aspect of performance, we are also increasing our R&D activity and efforts and seeking as many improvements in our supply chain as possible.

Overall, we expect that ECOPact concretes will be priced higher than their traditional standard comparisons, with equivalent performance attributes. To achieve an equivalent price, your local Sales Representative or QA Manager may be able to find an offsetting performance requirement, such as strength gain, to allow you to find an ECOPact solution, with improved emissions performance, that fits into your project and construction timelines.

As we evolve around an entirely new framework for understanding concrete performance, Lafarge looks forward to using the most creative approaches possible to achieve positive results for all stakeholders.

What are all of the abbreviations and other technical terms?

GHG - Greenhouse Gas, for LH this is predominantly CO₂, but we have low-level emissions of other GHGs such as nitrous oxide (N₂O) and methane (CH₄).

GWP - Global Warming Potential, all of the GHGs calculated as CO₂ equivalent (CO₂e). Normally calculated as the warming potential over 100 years, so is shown as GWP 100.

SBTi - Science Based Targets initiative.

LCA - Life Cycle Assessment, a methodology where environmental impacts of products, services, structures, etc are determined. There are minimum impacts that must be calculated and several optional impacts. The most common impact of interest is GWP 100. LCAs are undertaken following a variety of ISO standards.

EPD - An Environmental Product Declaration (EPD) is a published document that shows the outcome of an LCA. EPDs follow a relevant PCR. If an EPD is third party verified, it is considered a Type III EPD.

PCR - Product Category Rule, a document detailing the rules to be followed when developing an EPD for a specific product.

SCM - Supplementary cementitious material

Scope 1 - All direct emissions from the activities of an organization or under their control. Process emissions from cement manufacturing, fuel combustion emissions, and on-site vehicle fuel use are our main Scope 1 emissions.

Scope 2 - Indirect emissions from electricity purchased and used by an organization. Emissions from the generation of electricity vary by province depending on relative levels of hydro vs coal/gas generation.

Scope 3 - All other indirect emissions from activities of the organization, occurring from sources that they do not own or control. Delivery of our products to customers are our largest contributor here, but this also includes items such as business travel, material procurement, water use, and wastewater treatment.

Embodied Carbon - CO₂ associated with the production of our building materials.