

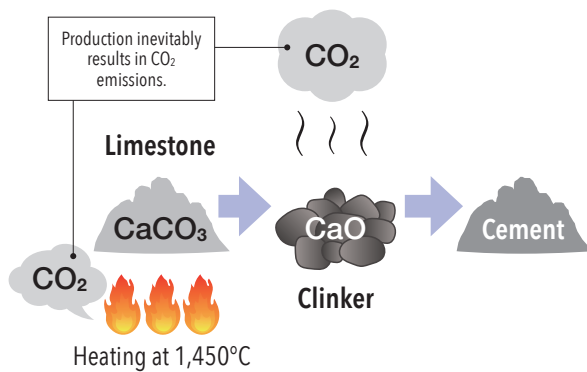
Why does blended cement have a CO₂ reducing effect?

The most widely used cement in Japan is Portland cement, but in recent years, "**blended cement**" has been attracting attention as an initiative toward decarbonization in the cement industry.



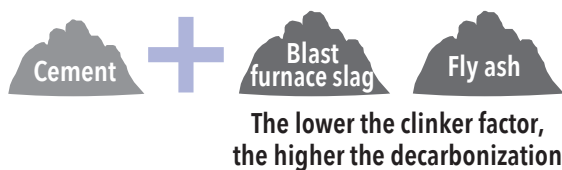
The production of Portland cement clinker emits a considerable amount of CO₂, but blended cement, with say 50% of this replaced with supplementary cementitious materials, halves the CO₂ emissions.

Portland cement



Portland cement is an inorganic material whose main component is a sintered material called clinker, and the main raw material of this clinker is limestone (CaCO₃). By heating the raw materials of clinker to a high temperature (1,450°C) and allowing the raw material components to react with each other, clinker is produced. Fossil fuels, such as coal, are used for heating, and limestone undergoes thermal decomposition ($\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$) at high temperatures, resulting in the emission of a considerable amount of carbon dioxide during the production of (Portland) cement clinker.

Blended cement



Blended cement is manufactured by mixing Portland cement with secondary cementitious materials such as granulated blast furnace slag, a by-product of the steel industry, and fly ash, a fine powder of coal ash recovered from the combustion exhaust gas treatment process of coal-fired thermal power plants. Blended cement is expected to contribute to decarbonization because it is commercialized in a form that replaces part of the Portland cement by supplementary cementitious materials.

Blended cement is currently rapidly becoming more widespread not only in Europe and North America, but also in Southeast Asia.

We also position the diffusion of this blended cement as one of our important strategies for decarbonization and are working on a wide range of measures to promote its use, including the development of technologies and securing sources of its raw materials.

