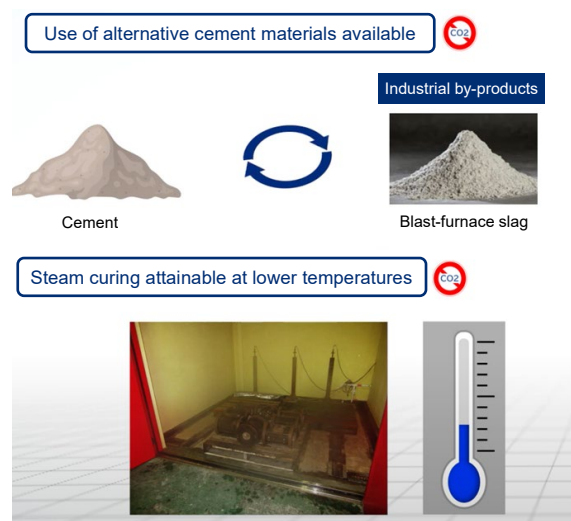


DENKA FASTRONG, a High-early-strength Admixture with Reduced Environmental Impact for Precast Concrete, Goes on Sale **- Improved Initial Strength of Concrete Made with Blast-furnace Slag or Other By-products, as well as Reduced Steam Curing Period -**

This is to announce that DENKA Company Limited (Head Office: Chuo-ku, Tokyo; Representative Director, President: Toshio Imai) has developed and launched DENKA FASTRONG ^{(*)1}, a high-early-strength admixture with reduced environmental impact for precast concrete products.



Expected contributions to facilitating the use of industrial by-products in precast concrete products and reducing CO₂ emissions during steam curing of concrete

In the construction industry these days, R&D efforts in every company are being conducted with the keywords “labor-saving” to respond to Japan’s work force getting older and declining in number and “reducing CO₂ emissions and environment impact” with the aim of carbon neutrality (CN).

The efforts for labor-saving include a shift to the application of precast concrete products involving the manufacture of concrete members in factories from concrete casting at construction sites. The efforts for reducing CO₂ emissions and environment impact include the promotion of the use of blast-furnace slag ^{(*)2} and other industrial by-products and sludge-incinerated ash (SIA) ^{(*)3} and other industrial wastes for concrete manufacture. Alternative use of the blast-furnace slag, in particular, is expected to contribute to reducing CO₂ emissions, increasing the long-term strength of concrete, and improving water tightness and durability against chemical substances compared to cement, and thus it is actively recommended.

Manufacturing of precast concrete products from blast-furnace slag, where realized, would make available environmentally conscious concrete that enables labor saving and reductions of CO₂ emissions and environmental impact.

We at Denka Company Limited have developed DENKA FASTRONG as a solution for the high-early-strength development of blast-furnace slag in the manufacturing of precast concrete products and for suppression of possible strength loss during demolding.

DENKA FASTRONG is capable of reducing CO₂ emissions also in the manufacturing of precast concrete products by controlling the temperature for the steam curing of concrete (*4), which can become higher owing to high-early-strength development.

We at Denka Company Limited will continue making efforts for minimizing environmental impact in the special admixture technologies, including LEAF (*5), a carbonating admixture for carbon-negative concrete.

Under Mission 2030, our management plan for the eight (8)-year period from FY 2023 to FY 2030, in the focus area of Sustainable Living, Denka Company Limited is to continually contribute to offering appropriate solutions for mitigating the effects of natural disasters, if any, and minimizing environmental impact through technology development and overseas expansion to meet the sophisticated demand for infrastructure.

Denka Company Limited will continue contributing to people's daily lives and society by applying its world-class chemistry know-how based on the Purpose of Mission 2030: "Make the world a better place as specialists in chemistry."

- *1 DENKA FASTRONG: Strength developed through formation of Ettringite ($3\text{CaO}\cdot\text{Al}_2\text{O}_3\cdot 3\text{CaSO}_4\cdot 32\text{H}_2\text{O}$) and accelerated hydration of Portland cement.
- *2 Blast-furnace slag: A by-product generated in blast furnaces producing molten pig iron at steel mills.
- *3 Sludge-incinerated ash: Industrial waste generated from wastewater treatment plants.
- *4 Steam curing: A type of concrete curing, or accelerated curing method for concrete where the concrete is placed in a high temperature steam chamber and its strength is increased earlier with the steam generated by a boiler.
- *5 LEAF: Carbonating admixture with the characteristics of reacting with CO₂ and fixating CO₂ in concrete.

End of Press Release

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