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## Low-carbon Building Blocks (Splitton Blocks) Made of CARBOFIX<sup>®</sup> Cement Applied to Public Works for the First Time

Taiheiyo Cement Corporation (Headquarters: Bunkyo-ku, Tokyo; President: Yoshifumi Taura) has developed CARBOFIX<sup>®</sup>\*1 cement in 2022 as a new cementitious material that releases less carbon dioxide (CO<sub>2</sub>) during the cement manufacturing process and hardens through a chemical reaction with CO<sub>2</sub>.

Building blocks made of CARBOFIX<sup>®</sup> cement were adopted for the first time in a public works project by the village of Hakuba, Kita-azumi, Nagano, Japan. The use of low-carbon building blocks using CARBOFIX<sup>®</sup> cement reduced CO<sub>2</sub> emissions by about 70 kg/m<sup>3</sup> compared to ordinary cement blocks.

The low-carbon building blocks using CARBOFIX cement were manufactured by Taiheiyo Cement at Akashina Plant of Yamatomi Co., Ltd. (President: Wataru Koyama) in Nagano, through a process of forming and forced carbonation curing (a technology in which concrete absorbs CO<sub>2</sub> and hardens during reaction with CO<sub>2</sub>). The CO<sub>2</sub> used was those captured from the exhaust gas from our Kumagaya Plant.

The office of Hakuba Village adopted our low-carbon building blocks for part of their public works project (disaster recovery project of village roads and public works facilities for fiscal year 2023), and the construction was carried out in June 2024. This is the first time that carbonation-cured precast concrete products using CARBOFIX cement have been used in actual public works projects, and it has been demonstrated that the product satisfies the compressive strength and other requirements for concrete blocks.

Under the Carbon Neutral Strategy 2050, Taiheiyo Cement Group is working to realize carbon neutrality throughout the entire supply chain by 2050, with focus on development of CCU technologies for capturing CO<sub>2</sub> from cement kiln exhaust gas and utilizing the captured CO<sub>2</sub> as a new resource.

CARBOFIX cement used in this construction project is expected to be one of the innovative technologies that will contribute to the realization of carbon neutrality. Our efforts will continue for early implementation of CARBOFIX cement-based concrete in which CO<sub>2</sub> is absorbed, thereby promoting initiatives that will contribute to the realization of a carbon-neutral society.



Photo 1: A building block made of CARBOFIX cement



Photo 2: A slope restored with the low-carbon blocks

\*1: CARBOFIX is a registered trademark of Taiheiyo Cement Corporation.

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