



# TAIHEIYO CEMENT NEWS LETTER

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## 3D Printable New Material Developed for Structural Members

**Taiheiyo Cement Corporation (hereinafter “the Company,” Headquarters: Minato-ku, Tokyo; President: Masafumi Fushihara) is pleased to announce that it has developed a new cementitious premix material that satisfies the performance needs for construction materials and enables the 3D printing of construction structures in complicated shapes in a stable, quick, and accurate manner at a wide range of ambient temperatures, jointly with Taisei Corporation (Headquarters: Shinjuku-ku, Tokyo; President: Yoshiyuki Murata).**

Utilizing its expertise in inorganic material technologies that control the performances required for 3D printing in the ME (Material Extrusion) method, Taiheiyo Cement developed the first cement-based premixed material for 3D printers in Japan, デジミックス® (read as “Digimix”)\*<sup>1</sup>, and has been working to promote its penetration into the market.

Now the Company has developed a technology that enables stable printing at various environmental temperatures by optimizing rapidly hardening elements, additives, and other constituents to satisfy the strength development and other performance features required for construction materials. Based on this technology, the company has developed a new cementitious premix material jointly with Taisei Corporation.

The newly developed material is a further development of デジミックス®. Using this new material for T-3DP®\*<sup>2</sup>, it has become possible to automatically produce structures designed for construction quickly and accurately without being affected by outside air temperatures (Photo 1). Furthermore, by combining it with the prestressed concrete technology generally used for concrete structures, complicated structures for construction with unique shapes can be completed (Photo 2).

The Company will report on the developed material in detail at the 42nd annual conference of the Japan Concreate Institute in Hiroshima in July this year.

\*1 デジミックス® (read as “Digimix”) : A registered trademark of Taiheiyo Cement Corporation

\*2 T-3DP® (Taisei-3D Printing): A 3D printer developed by Taisei Corporation jointly with AKTIO Corporation (President: Naohito Konuma), the National Institute of Technology, Ariake College (President: Naokazu Ezaki), and Taiheiyo Cement Corporation



(Photo 1) Printing using T-3DP®<sup>2</sup>



(Photo 2) A “bridge” strong enough to support people (length: 6m)