

Denka ACF Admixture, A Special Cement Additive Accelerating the Speed at Which
Concrete Sets was Adopted on a Construction Site for The First Time
— Contributing to the Reduction of Labor and The Improvement of Quality by Shortening
Construction Times in Cold Weather —



Denka ACF Admixture, A Special Cement Additive

Denka Company Limited (headquarters: Tokyo, Japan; President: Toshio Imai; hereinafter "Denka") announces that Denka ACF Admixture, a concrete set accelerator, was used for the first time in construction work conducted by the Shimizu Corporation in Nakadomari-machi, Aomori Prefecture.

In cold weather construction work, the time it takes for concrete to set becomes longer due to the low ambient temperature, which results in problems such as prolonged construction work time and greater burdens being placed on workers. Denka ACF Admixture is a set accelerator developed jointly with Shimizu Corporation and applying the inorganic material design technology that Denka has acquired through its development of the cement/special cement additives. A simple process consisting of the addition of the cement additive in a fresh concrete mixer and mixing on a construction site enables workers to shorten the time it takes for concrete to set, assuring the same set times as in normal conditions. Moreover, the set time can be adjusted¹ by adjusting the amount of cement additive mixed into the concrete depending on the ambient temperature and the environment of the construction site.

This construction project leveraged the Advanced Concrete Finish (ACF) method,² a technology that controls concrete set time jointly developed with Shimizu Corporation, to conduct work in a low-temperature, 5 °C environment. It was confirmed that construction was shortened by at least four hours and the risk of sedimentation cracks, which are likely to occur on a slope, was reduced through a reduction of bleeding.³ Moving forward, Denka will further expand the sales of Denka ACF Admixture for use in a wide range of construction projects.

Denka Value-Up, the new management plan adopted by the Group, identifies the high-value added infrastructure business as a priority field, alongside healthcare, the environment and energy. With the SDGs as its compass, Denka endeavors to be a company that is genuinely needed by society through the development of proprietary specialty products that leverage Denka's characteristics with the goal of resolving labor shortages in the construction of infrastructure and other social issues.

¹ When added to 1 m³ of concrete in a test environment of 10 °C, 2 kg, 4 kg and 6 kg of Denka ACF Admixture reduced start times to 6 hours, 4 hours and 2 hours, respectively. Without the additive it would take 8 hours to start setting.

² For the details, please see *Controlling concrete settling time at construction sites* on the website of the Shimizu Corporation (July 3, 2018). *Japanese <https://www.shimz.co.jp/company/about/news-release/2018/2018015.html>

³ A phenomenon where free water in the concrete mix is pushed upward to the surface. It may cause cracks.

About Denka

Denka is a chemical manufacturer headquartered in Chuo-ku, Tokyo. The company specializes in developing business activities on a global scale across a wide range of fields, from inorganic and organic chemicals, to electronic materials and pharmaceuticals. Founded in 1915, Denka has steadily continued to develop and manufacture products that contribute to the development of society by fully utilizing its unique concepts and technological capabilities. Upholding its corporate slogan, “Possibility of chemistry” the company and its president, Toshio Imai, are committed to contributing to the sound development of the society while sincerely tackling the challenges that the society is now confronting.

For more information, please visit: <https://www.denka.co.jp/eng/>

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