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World's 1st! Commence Manufacturing of CO2-absorbing Concrete that Uses Exhaust Gas Emitted During the Use of Cit Gas Devices

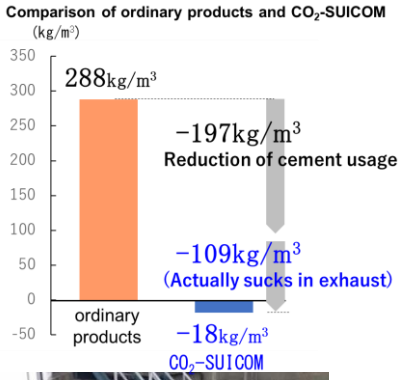
Tokyo Gas Co., Ltd.
KAJIMA CORPORATION

Tokyo Gas Co., Ltd. (President: UCHIDA Takashi; "Tokyo Gas") and KAJIMA CORPORATION (President: AMANO Hiromasa; "KAJIMA") have agreed to jointly undertake technology to manufacture CO2-SUICOM® , a CO2-absorbing concrete developed by KAJIMA,etc., by absorbing and solidifying CO2 contained in exhaust gas released when using city gas equipment. Both companies conducted test manufacturing of concrete curb blocks at the Tokyo Gas Senju Techno Station to confirm that it is possible to absorb and solidify CO2 contained in exhaust gas released when using city gas equipment. The blocks were introduced in the exterior construction at Tokyo Gas Hitachi LNG Terminal.

This is the world's first endeavor to manufacture CO2-absorbing concrete that uses exhaust gas emitted from city gas equipment.

Tokyo Gas and KAJIMA aim to contribute to the reduction of total CO2 emissions in Japan and to the realization of a decarbonized society by pushing forward with technological development to further increase the volume of CO2 that is solidified, and by using the CO_2-SUICOM technology in unreinforced precast concrete block products (including foundation blocks for solar power plant facilities and boundary blocks).

■Why undertake this? The goal of both companies.
Carbon cycle technologies that absorb and effectively use CO2 are gaining attention as one measure for addressing climate change. Of these technologies, the solidification of CO2 inside concrete is a promising technology. The technological development this time around will realize a CO2 reduction of around 300kg (0.3 tons) for each $1m^3$ concrete block. The two companies aim to supply a plant-like concrete block will result in negative CO2 levels in the atmosphere while carrying out production activities.



Exterior of manufacturing test equipment
(Tokyo Gas Senju Techno Station)

Test manufactured CO2-absorbing Concrete Products
(Ground boundary blocks)

Status of introduction
(Tokyo Gas Hitachi LNG Terminal)

<Reference: CO_2-SUICOM properties https://www.kajima.co.jp/tech/c_eco/co2/index.html#!body_02>

- Ordinary concrete hardens owing to a reaction between cement and water. CO_2-SUICOM hardens with absorbing CO2 by replacing more than half of its cement with special admixture, γ-C_2S, etc., (made from industrial by-product from chemical plants).
- This will realize below-zero CO2 emissions by effectively using industrial waste and solidifying mass amounts of CO2 in concrete.

*Tokyo Gas/KAJIMA survey