April 14, 2025

U.S. Technical Certification Acquired for SQRIM (Precast Concrete) Method

－ Facilitating overseas application by acquisition of international technical certification －

Sumitomo Mitsui Construction Co., Ltd., (SMCC) (Head Office: 2-1-6 Tsukuda, Chuo-koi, Tokyo; President & CEO: Toshio Shibata) is pleased to announce that the ***SQRIM method***(1) , a full precast (PC) construction technology widely used for high-rise reinforced concrete buildings has obtained international technical certifications(2) from the United States. These technical certifications verify compliance with the seismic design provisions of the American Concrete Institute (ACI 318) through structural testing (ACI 374).

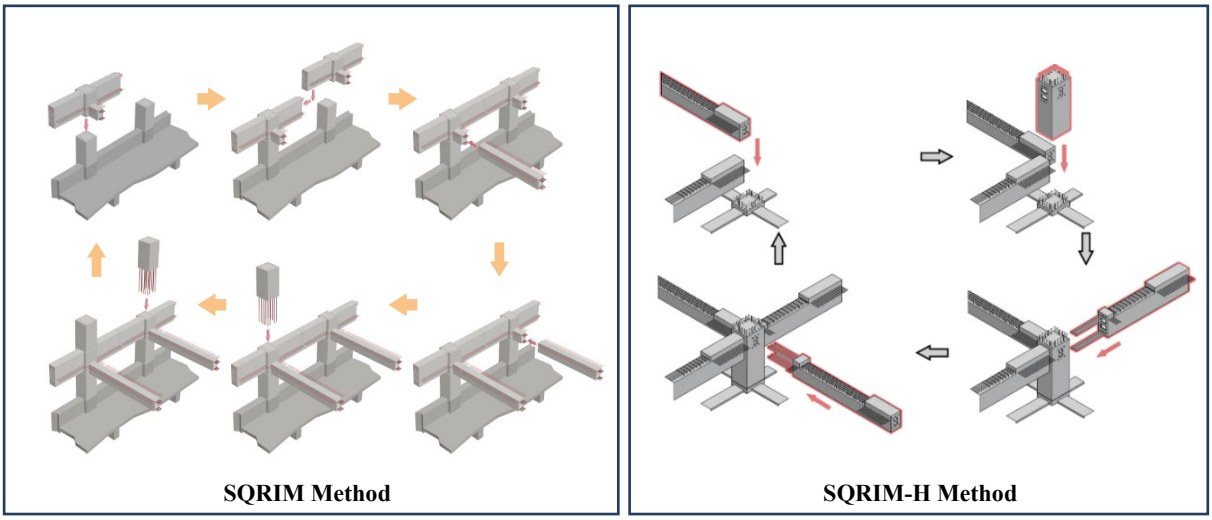
As a result, SQRIM's seismic performance is officially recognized in countries based on or conforming to U.S. standard codes, paving the way for smoother implementation of SQRIM to overseas projects.

(1) SQRIM and SQRIM-H are full PC construction methods in which the columns and beams of a reinforced concrete building are all precast, eliminating the need for cast-in-place concrete, ensuring high quality and extremely rapid construction times.

(2) Certificates have been acquired concurrently from two U.S. agencies: ICC-ES (International Code Council Evaluation Service) and IAPMO-UES (International Association of Plumbing and Mechanical Officials Uniform Evaluation Service).

■Acquired Technical Certifications and Evaluation Reports

1. ICC-ES: ESR-4915
2. IAPMO UES: ER-827



SQRIM and SQRIM-H General Installation Sequence

■Background of the Technical Certification

SQRIM has been applied to over 40 high-rise buildings in Japan and was also introduced overseas in 2016 (Malaysia)(3). For overseas applications, test results from Japan were used to explain to owners, designers, and evaluation agencies. However, considerable effort was required to align them with the standards or regulations of each country.

Since many Southeast Asian countries follow U.S. standards for seismic design, SMCC acquired U.S. standard technical certification (IAPMO-UES) for mechanical rebar joint performance in 2021 to ensure the smooth overseas application of SQRIM.[4].

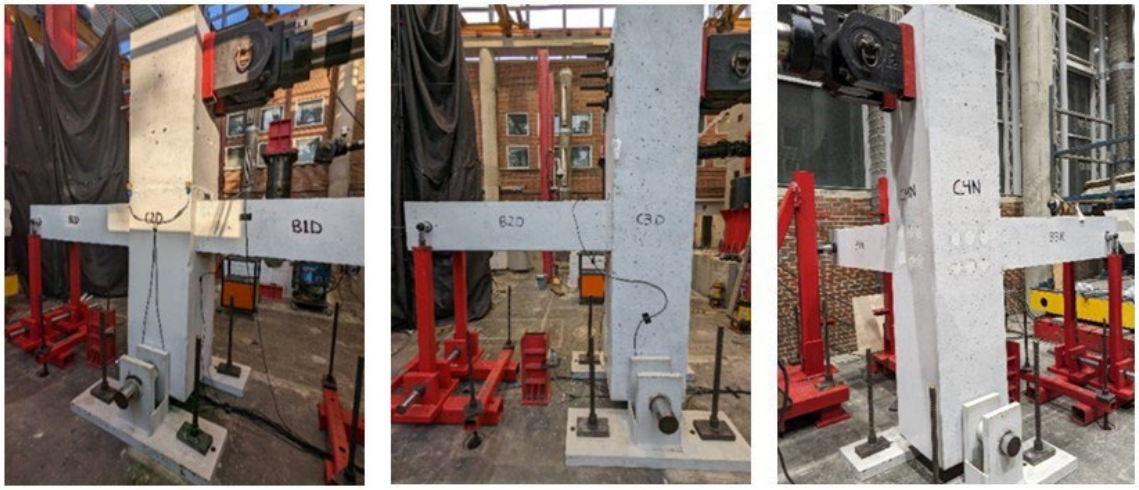
Furthermore, seismic performance certifications from two U.S. certification agencies: ICC-ES and IAPMO-UES have been acquired**.** This demonstrates that SQRIM complies with internationally recognized standards, enabling smoother application in overseas markets.

The fabrication of test specimens (manufacturing, assembly, and grout injection of PC components) was carried out at a PC factory in the U.S.. Structural tests were conducted at North Carolina State University under the supervision of the certified testing institution, the University of Miami[5].

(3) Overseas expansion of precast concrete (SQRIM) was launched (September 6, 2017) *(Japanese)*

(4) Acquired international certification of mechanical joints for connecting PC elements (October 13, 2021)

(5) Private university in Florida, USA



Interior one-way joint **Exterior one-way joint** **Corner joint**

Structural Specimen Configurations

■Future Developments

In the 2016 application in Malaysia, our construction method achieved high productivity despite being implemented in an area lacking essential infrastructure other than the transportation network, such as electricity, gas, water, and housing. This experience has demonstrated that our full PC technology, SQRIM, can offer various technical solutions for pipe rack plant construction projects, even in overseas environments with significant external constraints. With the acquisition of a highly recognized certification, SQRIM is now more accessible for constructing reinforced concrete (RC) structures in regions requiring seismic-resistant designs.

In recent years, labor shortages of construction projects have been occurring in metropolitan areas across Southeast Asian countries. In response, we aim to introduce our productivity improvement technology, particularly in the countries where we operate.

■For More Information and Inquiries:

For inquiries regarding SQRIM, please contact the following.

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