

# Committee Report: JCI-TC142A

## Technical Committee on Establishment of Evaluation Method for Durability and Advanced Design of Post-installed Anchor in Concrete

委員会報告：JCI-TC142A

あと施工アンカーの耐久性の評価方法の確立と設計の高度化研究委員会

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### Abstract

Adhesive and mechanical post-installed anchors are used for fastening incidental equipment in civil engineering / construction projects and for seismic rehabilitation of concrete structures in large numbers. There is an urgent need to evaluate the durability of these post-installed anchors, regardless of the type. While European and American standards already cover the evaluation of the durability including the effects of cracking of substrate concrete, creep and fatigue, and of the chemical resistance of adhesive, in Japan, almost no studies have been done on these matters. The purpose of this technical committee is to establish methods for evaluating the durability of post-installed anchors, and to reflect them in the design.

### 1. Introduction

Adhesive and mechanical post-installed anchors are used for fastening incidental equipment in civil engineering/construction projects and for seismic rehabilitation of concrete structures in large numbers. Construction projects for adding new functions required for increased longevity of concrete structures and for joining parts required for repair and reinforcement will continue to increase. In line with this, the use of post-installed anchors is anticipated to increase. The Japan Concrete Institute set up the Technical Committee on

Fastening Technology for Concrete (1992 to 1993), and carried out a research study on the situation of post-installed anchor technology at that time.

Regarding the ceiling collapse that occurred in the Sasago Tunnel in December 2012, the accident is believed to have been caused by combined effects of multiple lacks of consideration with regard to adhesive post-installed anchors in each stage of design, execution of work, and maintenance<sup>1)</sup>. After this accident, efforts have been moving ahead to revise standards for designing post-installed.....