

Committee Report: JCI-TC183A

Technical Committee on Design Concept for Precast and Prestressed Concrete Structural Components including Connections

委員会報告：JCI-TC183A

接合部を有するプレキャスト・プレストレストコンクリート構造の設計法研究委員会

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Abstract

In structures utilizing the precast (PCa) concrete components, behavior of the connections which consequently exist between PCa members or between a PCa member and cast-in-place concrete is needed to consider adequately in the structural design. This committee has investigated domestic and international design codes and standards and summarized their design concepts. In addition, the evaluation equations and the application for the connections in PCa and nonprestressed reinforced concrete (PCaRC) members, PCa-prestressed concrete (PCaPC) members, and connected PCa members as seismic reinforcements were surveyed. Development of the structural components and new materials which are expected to be applied in the future practice were also discussed. Furthermore, examples of the application of PCa members in the buildings and bridges were investigated and conducted several case studies for a process of the application of PCa components and a trend in the practice of design and construction in Japan.

1. Introduction

1.1 Background and Objectives

An application of precast (PCa) concrete components in the construction of the concrete structure is particularly focused on as an effective countermeasure for productivity improvement. In the design, when a

structure using PCa components provides performance equivalent to that of a cast-in-place concrete structure, and the construction is realized, the designer can assume that the structure using PCa components is designed similarly to.....