INTRODUCTION

Nine test methods are proposed to determine the properties of continuous fiber sheets for upgrading concrete structures.

(1) Test method for tensile properties of continuous fiber sheets
(JSCE-E 541-2000)
(2) Test method for overlap splice strength of continuous fiber sheets
(JSCE-E 542-2000)
(3) Test method for bond properties of continuous fiber sheets to concrete
(JSCE-E 543-2000)
(4) Test method for bond strength of continuous fiber sheets to steel plate
(JSCE-E 544-2000)
(5) Test method for direct pull-off strength of continuous fiber sheets with concrete
(JSCE-E 545-2000)
(6) Test method for tensile fatigue strength of continuous fiber sheets
(JSCE-E 546-2000)
(7) Test method for accelerated artificial exposure of continuous fiber sheets
(JSCE-E 547-2000)
(8) Test method for freeze-thaw resistance of continuous fiber sheets
(JSCE-E 548-2000)
(9) Test method for water, acid and alkali resistance of continuous fiber sheets
(JSCE-E 549-2000)

These test methods are finalized by referring to the Japan Industrial Standards (JIS), the codes and specifications of the Japan Society of Civil Engineers, the test methods proposed by the research committee of the Japan Concrete Institute, the test methods used in the recommendations road and railway structures, as well as research reports research both at home and abroad. For each test method, an effort was made for it to be implemented as easily and rationally as possible for the objectives of the test. As the continuous fiber sheets used in each of the test methods shown here are generally of the same shape regardless of the materials, the methods of fabricating the test specimens have also been noted in as much detail as possible. In the review process, the preparation of other test methods was also considered, but

it was decided to adopt the ones listed above after consideration of the present state of testing machines and equipment. However, test methods noted in existing research reports, etc. that should be referred to are listed separately under "Reference Test Methods."

To maintain compatibility with existing codes and specifications of the Japan Society of Civil Engineers, the same format is used: Introduction, Scope, Normative Reference, Definitions, Test specimens, Testing Machine, Test Method, Calculation and Expression of Test Results, and Report. In addition, the nature of and applicable methods, etc. for each test method can be generally categorized as follows:

a) Test methods for continuous fiber sheets as a material: (1), (2), (6), (7), (8), and (9)
b) Test methods for continuous fiber sheets as a composite material with concrete or steel: (3), (4), and (5)
c) Items directly referenced in the Recommendations for Upgrading of Concrete Structures with Use of Continuous Fiber Sheets: (1), (2), (3), (5), and (6)

In this document, two or more test methods are introduced as references:

"Test Method for Flexural Tensile Strength of Continuous Fiber Sheet (Draft)"

"Test Method for Surface Incombustibility of Protective Materials for Continuous Fiber Sheets (Draft)"

These two are not yet authorized, but may be useful for practical evaluation of the sheets.