

JSCE-E 704-2010

Test method for the resistance of plastic sheath for prestressed concrete under concentrated loading (draft)

1 Scope

This standard specifies the requirements for carrying out the test for the resistance under concentrated loading of a plastic sheath used to form a duct for placing inner cables of prestressed concrete structures. The plastic sheath considered in this standard should use high-density polyethylene or a material with performance not lower than that of high-density polyethylene.

2 References

By being cited herein, the following standards constitute part of the definition of this standard. This standard is based on the latest versions of these cited documents.

JIS G 3109 Steel bars for prestressed concrete

JIS G 3112 Steel bars for concrete reinforcement

JIS G 3536 Steel wires and strands for prestressed concrete

JSCE-E 707 Test method for leak tightness for plastic sheath of prestressed concrete (draft)

3 Definitions

The following terminology is used in this standard:

Sheath specimen: specimen made by cutting the sheath

4 Outline of test

4.1 Purpose of test

The resistance under concentrated loading of a plastic sheath used for PC steel bars specified by JIS G 3109 and PC steel wires and PC steel strands specified by JIS G 3536 is examined.

4.2 Conditions of testing room

The standard temperature of the testing room is 23 ± 5 °C unless otherwise specified. The relative humidity is not specified.

4.3 Specimens

The number of sheath specimens is three unless otherwise specified. The length of the sheath specimen is at least four times as large as the inner diameter (nominal diameter) of the sheath.

4.4 Test apparatus

The testing machine should be such that can measure loads with accuracy with a margin of error of no more than $\pm 5\%$.

5 Test method

a) Put on a plane a sheath specimen with a round rebar or a steel bar with a diameter of 0.8 times the inner diameter of the sheath inserted. Place a round rebar (JIS G 3112) of 9 mm on the sheath specimen in the perpendicular direction of the sheath specimen, and apply a load of 1 kN for 30 seconds (see Fig.1). The load does not include the mass of the round rebar.

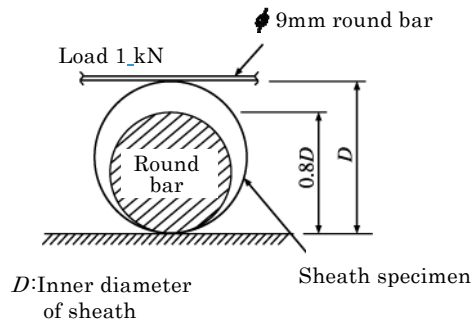


Fig.1 Outline of test

- b) After the test described in a), check the condition of damage to the sheath specimen.
c) After the check described in b), conduct the test of leak tightness in accordance with JSCE-E 707.

6 Report

6.1 Compulsory reporting

The report must provide the following information:

- Date of test
- Name, type and capacity of testing machine
- Material, inner diameter, outer diameter, shape and brand of sheath
- Number of sheath specimens
- Temperature of testing room
- Damage condition of sheath specimen

6.2 As-needed reporting

The report should provide the following information where relevant:

- Name of testing organization
- Relative humidity of testing room