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JIS

JAPANESE INDUSTRIAL STANDARD

Method of Test for Dynamic Modulus of Elasticity, Rigidity and Dynamic Poisson's Ratio of Concrete Specimens by Resonance Vibration

JIS A 1127—1976

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In the event of any doubt arising, the original
standard in Japanese is to be evidence

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Method of Test for Dynamic Modulus of Elasticity, Rigidity and Dynamic Poisson's Ratio of Concrete Specimens by Resonance Vibration.

A 1127-1976
(Reaffirmed: 1979)

1. Scope

This Japanese Industrial Standard specifies the method of obtaining the dynamic modulus of elasticity, dynamic modulus of rigidity, and dynamic Poisson's ratio of concrete by measuring the primary resonance frequencies of longitudinal vibration, flexural vibration, and tortional vibration of columner and prismatic concrete specimens.

Remark: The units and numerical values given in { } in this standard are in accordance with the International System of Units (SI), and are appended for reference.

2. Test Apparatus

The test apparatus shall consist of the following (refer to Fig. 1).

2.1 Driving Circuit The driving circuit shall consist of an oscillator of variable frequency, amplifier, and driving terminal. The oscillator shall have a frequency range of 500 to 10000 Hz as standard and be capable of adjusting the frequency with an error of within ±2 %. The frequency verification in this adjustment shall be performed by using a cathode-ray oscilloscope and a reference oscillator ([1]).

Where an oscillator and an amplifier are combined, the driving circuit shall be capable of producing the required output and controlling it properly.

The driving terminal for producing vibration in the specimen shall work satisfactorily even when the outputs of the oscillator and amplifier are made the maximum. The mass of the vibrating part of the driving terminal shall be sufficiently small to prevent any influence on the test results.

The output voltage where an oscillator and amplifier are combined shall not vary by ±20 % or more in the whole frequency range of the oscillator. In addition, countermeans shall be provided so that no false resonance ([2]) occurs when the driving terminal is contacted with the specimen.

Applicable Standards:

JIS A 1107-Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

JIS A 1132-Method of Making and Curing Concrete Specimens