

## JIS K7391 はり法試験と粘弾性測定装置による 粘弾性特性測定と比較・検討

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Study of viscoelastic property measurement  
using JIS K7391 beam test system and Dynamic Mechanical Analyzer

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粘弾性特性比較検討 WG での活動によって得られた, JIS K7391 はり法試験および粘弾性測定装置による粘弾性特性の比較検討結果から, 精度よい粘弾性特性を得るためのそれぞれの装置での測定条件に関する知見について報告する.

Key Words: 粘弾性材料, 複素弾性率, JIS K7391

### 1. INTRODUCTION

Today, dumping material is often used to suppress a vibration and a noise caused by the vibration, and it is increasingly important of an evaluation of viscoelastic material with temperature-frequency dependence which is used for damping material.

As a test method of viscoelastic property, beam test method (resonance curve method) based on JIS K7391 [1] and Dynamic Mechanical Analyzer (non-resonance method) based on ISO 6721 (or JIS K7244) are used in Japan. However, the consistency of both methods has not been verified yet, and only the measurement result by either method was often used.

For verification of the consistency, Society of Damping Technology Japan (SDT) launched Viscoelastic Property Comparative Study Working Group (VPCS WG) in May 2008, and the

WG has been tested in some materials by both methods (e.g. [2]).

This paper explains some knowledge provided through WG activity.

### 2. JIS K7391 BEAM TEST

As a beam test method, various standards such as ISO 4664, ASTM E756, and JIS G0602 are established. However, before establishing JIS K7391:2008, Japanese Standards for evaluating viscoelastic materials was not established, and many Japanese engineers referred standards of foreign countries such as ASTM E756. Therefore, SDT planned the standard concerning the measurement and evaluation method of the viscoelastic material by the beam test method, and JIS K7391 was established in August 2008.

In JIS K7391, a test specimen has been limited to damped composite beam of unconstrained type