

실 구조물 진동제어를 위한 점탄성 댐퍼 설계 및 적용 실험

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Designs and Tests for the Vibration Control of Full-Scale Steel Frame Structure with Added Viscoelastic Dampers

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Key Words : VE damper, energy dissipation, sinusoidal, frequency, seismic, wind

Abstract : In order to verify the effectiveness of adding viscoelastic dampers to full-scale steel frame structure on the reduction of their seismic and wind response, a experimental work was carried out. First, The test was conducted on the VE dampers subjected to sinusoidal excitations under a variety of ambient temperatures, frequency, and the damper strain. Results from these tests showed that the viscoelastic dampers have high energy dissipation capacity. Second, The vibration tests was conducted of the full-scale steel frame structure with and without added VE dampers at different temperatures. Viscoelastically damped full-scale structure test result on the effect of ambient temperature show that viscoelastic dampers are very effective in reducing excessive vibration of the structure due to sinusoidal excitation over a wide range of ambient temperature.

플라즈마 디스플레이의 저소음 설계

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Noise Reduction Design of Plasma Display Panel

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Key Words : Plasma Display Panel(플라즈마 디스플레이 패널), Subfield Method(서브필드법), Flat Panel(평면패널), Operational Deflection Shape(ODS)

Abstract : For the evaluation of the plasma display panel (PDP)'s noise, vibration and sound characteristics of fanless PDP are measured and investigated. PDP is a type of two-electrode vacuum tube which operates on the same principle as a household fluorescent light. An inert gas such as argon or neon is injected between two glass plates on which transparent electrodes have been formed, and the glass is illuminated by generating discharge. For this discharge, both high voltage and currents are needed and cause a acoustic noise. We investigated the noise characteristics connected with both a electromagnetic elements from SMPS to panel through X, Y and logic board, and a mechanical elements form panel to case through transfer path which related with vibration and heat. To reduce the noise of PDP, a discharge pulse memory design related with both higher brightness and lower power consumption is important and mechanical characteristics connected with dissipation process of both heat and vibration generated by panel discharge must be investigated.