

Seismic Reinforcement Method for Suspended Ceilings with Shorter Hanging-Distance

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In stations built beneath low viaducts, since the cavity between the viaduct bottom and the suspended ceiling over the station is small, it is difficult to install the usual anti-seismic braces used for reinforcement. In addition, anti-vibration rubber that is usually used as a noise abatement in a conventional method, weakens this type of structure's anti-seismic reinforcement performance. As such, we developed a less costly, more practical seismic reinforcement method, where the ceiling cavity is not obstructed. Structural cyclic loading tests were carried out to evaluate the anti-seismic performance of this method. This method demonstrated a strong anti-seismic performance. In addition, acoustic tests were conducted for a new construction method that replaces the conventional one. It demonstrated the same noise reduction effect as the conventional method.