

## **Improving Rigidity of Railway Vehicle Carbody by Utilizing Non-Structural Members**

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For this study, "Rigidity Test Car," have been designed and manufactured to investigate how non-structural members in the carbody influence on the rigidity and the vibration characteristics of a commuter type railway vehicle. Reinforcing beams and pillars, which are so designed as to be easily attached or removed, are attached to the ceiling, the side panels and the floor. Static load and excitation tests have been performed, and the results have shown that the non-structural members, as well as the main (outer) body structures, have affected the equivalent rigidity, natural frequencies, vibration shapes and response accelerations of the carbody.