

Improved Effect of Carbody Side Strength by Ring Structure Composed of Inner Sub-Frames

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When a railway vehicle overturns in accidents, the shape of cross section of the carbody is likely to be transformed to the parallelogram by the side impact. In the case, the survival space for passengers and crews will be reducible by the deformation. To secure the survival space, the “ring structure” is as composed by uniting sub-frames attached inside the carbody as non-structural members together. The authors performed empirical tests and FE analyses to verify the possibility of improving the carbody strength against the load from the body side.