

**Development of Wheel Frictional Block Integrating the Functions of
Wheel Flange Lubrication and Tread Adhesion Improvement**

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This paper describes the development of a wheel friction block that integrates the functions of wheel flange lubrication and tread adhesion improvement. We devised a configuration in which friction material with adhesion increasing material on the tread and material containing solid lubricant with MoS₂ at the flange are applied vertically by a tread cleaning device. The developed blocks were tested for an express train in operation and traveled about 200,000 km. As a result, the wear rate of the wheel flanges was reduced by an average of about 40% compared to the one of the wheel flanges of the vehicles without the developed blocks.