

**Improvement of the Low-temperature Characteristics of Resilient Rail
Pads by Foam Structuring**

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Because resilient rail pads are made from synthetic organic material, their physical properties such as spring constant are dependent on temperature and loading speed. Such properties would lead to low vibration-isolating performance under unfavorable conditions. Thus, the authors have improved the low-temperature characteristics of such pads by foam structuring of newly compounded ethylene propylene diene monomer (EPDM) rubber and styrene butadiene rubber (SBR). These foamed rubber compound consists of independent cells with size of several ten μm \sim 100 μm . From the results of impact loading test, we confirmed that resilient rail pads made from foamed EPDM and SBR could evidently decrease the response load compared with the conventional ones of grooved solid SBR.