

Study on Frost Damage Area of Slab Track Filling Layer

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Some slab tracks have sustained frost damage due to repeated freezing and thawing in their filling layers. Previous studies have shown that frost damage extends further at the corners than at the sides; however, the underlying cause remains unclear. In this study, we conducted temperature variation tests and unsteady heat conduction analyses using the finite element method. The results showed that heat transfer from the side and end faces of the slab track expands the freezing area at the corners.