

Calculation Method for Expansion and Contraction of the Spring Tension Balancer

Koki SATO Yoshitaka YAMASHITA

It has been reported that tension balancers, in some cases, may reach its movable limit. One of the causes is thought to be the creeping move of overhead contact lines. In addition, if expansion or contraction characteristics due to temperature at each of both ends of overhead contact lines are not identical, it may also cause the tension balancers to reach its movable limit. However, phenomena based on these causes have not been sufficiently investigated, so that it is required to clarify the phenomena. Therefore, we conducted numerical calculations and field tests to clarify the factors that cause the creeping move of overhead contact lines and the generation of differences in temperature expansion/contraction characteristics of tension balancers at each of both ends.