

Allowable Strain Value for Contact Wires Taking into Account the Probability of Failure

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The allowable strain value for all types of contact wire, including the high strength contact wires, has been set to 500×10^{-6} based on the fatigue characteristics of a basic hard-drawn copper. However, as train speeds increase, the strain value of contact wires may increase to more than 500×10^{-6} in the future. Therefore, in this paper, the authors propose a method for setting allowable strain values for each contact wire taking into account the probability of failure. This probability is consistent with the margins of the conventional allowable strain value of 500×10^{-6} . In addition, using this method, we propose allowable strain values for four types of high strength contact wires.