

# Overheating of Flexible Tinned Copper Connectors

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## **Abstract**

Overheating of flexible tinned copper connectors has been observed at a number of power stations. These connectors are used to connect the generator to outgoing busbars and transformers thus serving to counter the effects of vibration and thermal expansion forces. It is shown that the main cause for the observed overheating is a result of a combined action of the high initial contact resistance, fretting, stress relaxation, differential thermal expansion and the formation of intermetallics at the copper-tin interfaces.

*Key words: Flexible connectors, intermetallics, stress relaxation, fretting, tin-plating, differential thermal expansion, overheating.*