

US bus bar test result

1. Objective

In the development of the Lambda Plug-in project, sample busbar with the US local standard is tested. Based on the test result of the combination of Lambda Plug-in product and the busbar, we would verify and recommend the busbar specification to customer.

2. Sample and specification

FCS2022-A (long) : Plating standard B689 Electroplated Engineering Nickel Coating
FCS2022-B (short) : Plating standard B689 Electroplated Engineering Nickel Coating

3. Conclusion

The temperature rise of the contact at rated 100% current is less than the required standard value. (Test result: Pass)

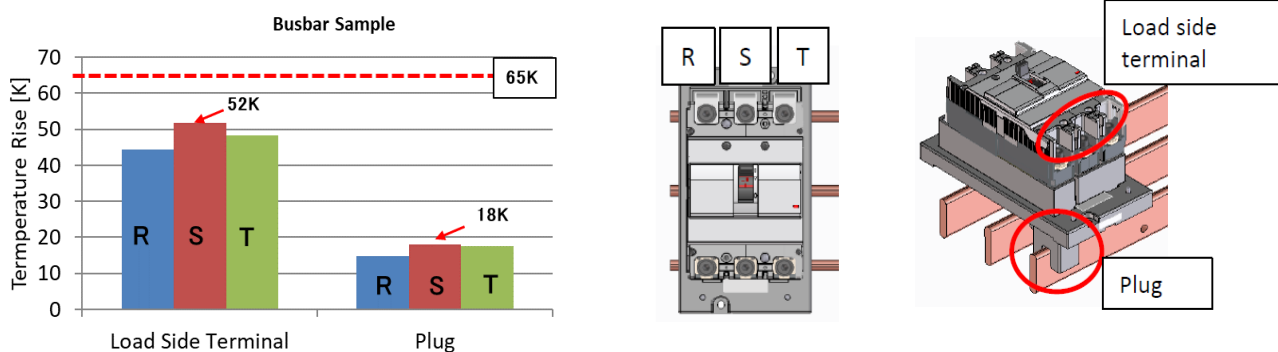
There is processing marks and nodule marks on the surface, which may be a cause of plating peeling during insertion and removal. Lower level of busbar surface roughness is recommended during busbar processing.

4. Details test result

○Figure 1 shows the results of the temperature rise test (BW50RBGU) during energization.
Test condition: 50A R-S-T energized, temperature rise value measured at load side terminal and plug contact part.

The temperature rise of the plug in at 100% rated current in load side terminal and the plug-in adapter is 52K and 12 K which can fulfill the required standard.

Figure 1 Temperature rise test result



○Sample busbar plating investigation result.

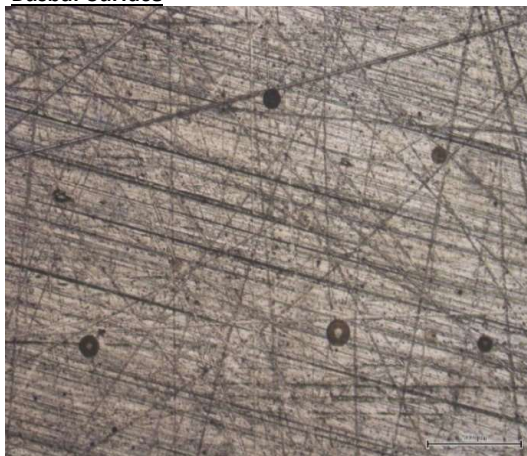
In the busbar sample, many traces of processing and nodules during rolling are observed on the surface. It is believed that these are the causes of the increase in the unevenness of the surface.

Bright electro-nickel is recommended after reducing the surface roughness of the busbar base material (copper) and taking measures to suppress nodules.

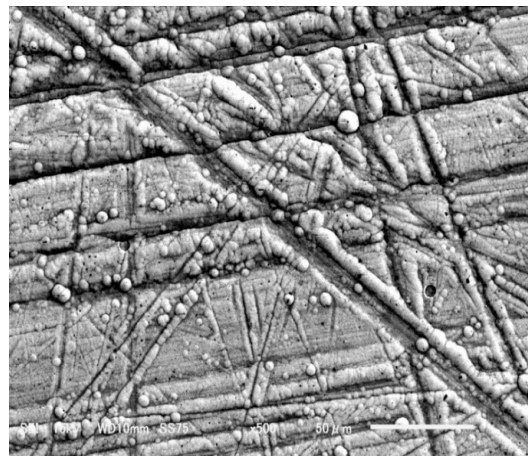
Sample bus bar plating investigation

Origin	Plating Type	Plating Thickness [μm]	Plating Hardness (Hv:0.05)	Busbar round(mm)	Busbar Thickness (mm)	Busbar surface condition	Busbar surface Roughness [μm]
US	Electroplated Engineering Nickel Coating	6.4	633	R0.2 C0.5	4	Hairline finish Machining marks, Nodule	Ra0.65 Rz2.64

Busbar Surface



Microscope



SEM photo