> Standard solutions are rarely good enough for us. ”

Marco-Robert Talamona
Development technician at ABB

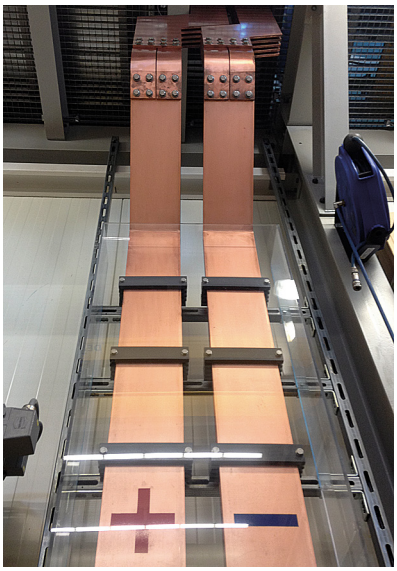
A powerful solution for strong currents

Power transmission

in motion | under load | between materials | in tight spaces

Lots of amps, tight spaces and little time – the developers from Sefag Components AG were confronted with several challenges in the high-current laboratory at ABB Schweiz. Solving the problem required both precision and creativity.

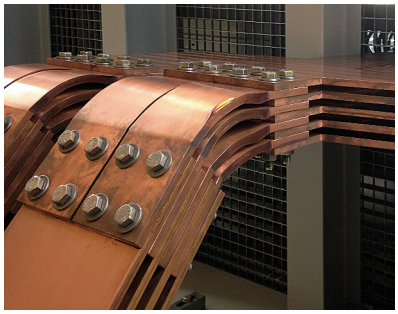
The people at the test laboratory at ABB Schweiz in Zurich are well aware that the future belongs to direct current. This is why a rectifier was purchased some years ago – a box weighing several tonnes that can supply the test objects with direct current of up to 10,000 amps. «For instance, we test gas-insulated switchgears to see how much they heat up during operation,» explains development technician Marco-Robert Talamona. «In future, systems operating with direct current will increasingly be used, which is why such an investment was an obvious step.»



However, there was a problem when commissioning the rectifier: There was no space in the basement where the test objects are connected. An intermediate floor was then constructed, with the direct current source positioned three and a half metres above the laboratory. While this solved the problem with the available space, it created the next

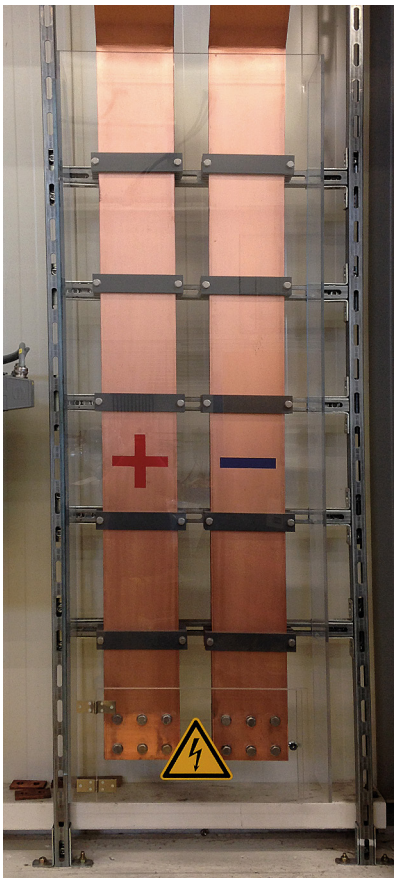
problem – namely the connection itself. Talamona looks back on this moment with a smile: «To start with, we had to work with thick cables that hung down over the railings on the intermediate floor. Of course, this was not an acceptable long-term solution.»

This is where Sefag came in. «I had the idea of possibly establishing the connection using flexible copper connectors,» explains Talamona. «However, I had no idea exactly how and where this could be implemented.» For Sefag project manager Peter Unternährer, the difficulty of the task quickly became clear. «Due to the strong currents, we had to work with a correspondingly large cross-section. Feeding these conductors through the intermediate floor, which was supported by two solid steel beams, was a major challenge.»



The solution came in the form of an assembly comprised of several parts. Complex copper brackets were fed through the floor past the steel beams and connected to the expansion connectors, which then fed the electricity on rails that were mounted on the rear wall. «A fantastic solution!» comments Talamona. He particularly remembers the suggestion made by the Sefag team to first check the precise fit of the brackets with steel templates in order to save time and expensive raw materials. «It was a matter of centimetres!» as Talamona remembers.

Talamona also looks back fondly on the cooperation with the specialists from Sefag. «We are a test laboratory,» he says with pride. «We always demand something a little bit special – standard solutions are rarely good enough for us.» In Sefag Components AG, he has found a partner who can meet such special requests.



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