

BUSBARS USED FOR SERVICE GROUND SPLICE BARS

Question:

This question relates to the practice of fabricating a grounding buss out of copper bar and attaching lugs to it for the purpose of connecting transformer mid points as well as system bonding conductors to the system grounding conductor. They are usually mounted on stand off isolators to a concrete wall in electrical rooms or vaults.

The previous decision that these locally manufactured bars could be accepted for bonding but not grounding purposes as long as the grounding conductor passed through a lug mounted to the bar without splice. I believe the theory was that they were not considered as busbars as referred to in rule 10-806(1).

An electrical contractor stated that he uses an expensive connector (\$40 ea.) on these copper bars and that they are specifically approved for the purpose. I got the following info from EECOL: BURNDY Mechanical Grounding; Type GBM Ground Connector for Copper Cable to Bar. "A high conductivity copper alloy ground connector for joining a range of cable to 1/4" thick bar. Type GBM clamps cable directly on bar surface. One-wrench installation. The high conductivity copper alloy cast body and Durium bolts, nuts and lockwashers make the GB and GBM suitable for direct burial. CSA certified". And finally the question:

Are locally manufactured copper bars considered as busbars and therefore, suitable for grounding purposes?

Answer:

These bars are ok for bonding but **not grounding**. The only way to use one of these "Copper bars" was for the system ground conductor to pass through the bar and continue to the ground electrode.

I believe this question relates to equipment approval and "approved for the use".

If somebody has a certified ground bus that is approved to be mounted on a wall as part of the system grounding conductor then he is free to put it to its intended use. The bus in Rule 10-806(1) refers to approved bus or bus that is part of approved equipment.

The appeal of the wall-mounted grounding bar is that conductors can be disconnected for testing. This is what makes them dangerous and unacceptable without permanent connections; the risk of losing the system ground.

On the positive side at least the fix is relatively simple. (Pressing the grounding conductors together at the bus bar). It is our understanding the only approved equipment on the market for splicing ground conductors is the thermite welding process and the approved compression lug.