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Cables – Standards – Machinery

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March 7, 2005

To:

Alan Flatman  
John Siemon

Subject: Heating of conductors due to higher power application

Reference: Action resulting out of the assigned task in Ixtapa

Hi,

I agree partially with John's previous comment. The most critical seems to me to be the plugging and unplugging procedure. I must relate here to John's previous work, due to lack of own experience.

But for cables I think we have to clearly differentiate between new installations and any potential backwards compatibility.

As far as it concerns the installed base, we have to consider that the conductor diameter was generally for class D cabling 0.5 mm (in fact, it was always slightly higher, i.e. in the order of 0.511 mm), whereas today the cross sectional area of the conductors increased substantially, i.e. in the order of more than 20 % for the high end cables used for class E channels.

As the current was specified for class D channels already to 0.175 A per conductor, it seems to be reasonable to increase the current rating slightly to match the increased potential of the horizontal cables. However, this refers only to the horizontal cable.

The flexible cords, especially if up to 20 m are used in the work area, will have to be investigated separately. It should be noted that their resistance increases substantially, especially under the constraint of using flexible cords with 50% attenuation de-rating.

Jo Walling