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Stance on Copper Clad Aluminium (CCA) and Copper Clad Steel (CCS) as alternative power cable conductors

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Compulsory standards are aimed at ensuring consumers safety. AECMSA supports development of new products provided they do not place the consumer at risk.

CCA and CCS have not had much experience in power cable applications. Many design aspects need to be considered. These include but are not limited to: voltage range; class of conductor; compaction; shape; size; installation constraints (creep, bending, terminating) and manufacturing constraints. Adding these new materials to SANS 1411-1 could have unintended consequences of inappropriate application.

One critical risk to be considered is that CCA and CCS both look like copper. Some cables are purchased and/or installed based on size (eg wiring of premises). In the interest of consumer safety, it is critical that these products have a resistance equal to that of the same nominal copper area. This will ensure the same current rating for similar looking products. CCA and CCS will thus be physically larger than the equivalent copper conductor. Where cables are purchased and/or installed based on current rating, the above requirement may not be necessary.

Where specific designs are being considered for alternative conductors, these should be done within the relevant cable specification and per TSC TB 09 - Guideline for new product development. Once successful, an appropriate specification will be written or amended .

The performance details of CCA and CCS should be developed in a SANS or AECMSA Technical Report.