

BCA statement on improved marking requirements

There has been increased recognition in recent years of the crucial importance of full and accurate marking of cables. Individual cable manufacturers have run campaigns, and the Approved Cables Initiative (ACI) has identified the absence of marking, or the inadequacies of incomplete or erroneous marking, as a major safety hazard.

In conjunction with BSI, and major stakeholder such as BASEC, BCA has promoted improvements to British Standards that should ensure in future that any cable that has a conformity claim against a particular standard has complete safety marking plus certain additional information as required.

Four important standards for sheathed fixed wiring cables have now been published. These are:

BS 6004: *Electric cables – PVC insulated and PVC sheathed cables for voltages up to and including 300/500 V, for electric power and lighting*

BS 7211: *Thermosetting insulated and thermoplastic sheathed cables for voltages up to and including 450/750 V for electric power and lighting and having low emission of smoke and corrosive gases when affected by fire*

BS 7889 *Electric cables – Thermosetting insulated, non-armoured cables with a voltage of 600/1 000 V, for fixed installations*

BS 8573 *Electric cables – Thermosetting insulated, non-armoured cables with a voltage of 600/1 000 V, for fixed installations, and having low emission of smoke and corrosive gases when affected by fire*

BS 8573 is a new standard; the others are fully revised editions. All four feature the following mandatory elements of marking:

Element	Explanation
a) Cable manufacturer	This should be the original manufacturer's name and their unique factory identifier. Where the manufacturer has a recognised trademark or equivalent, this may be added, but may not replace the requirement for name and factory identifier.
b) Electric cable	The marking "ELECTRIC CABLE" is a well established safety item, and is retained.
c) Voltage designation	Some standards have cables of only a single voltage rating, say 300/500 V. Others may contain cables of more than one voltage rating. The marked rating must correspond to that of the actual cable in question.
d) British Standard number	By marking the standard number, for instance "BS 6004", the manufacturer is making a declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is solely the claimant's responsibility. Such a declaration is not to be confused with third-party certification of conformity.

Element	Explanation
e) UK cable code	The various codes, such as 6242Y, are easily recognised by installers and other professionals, providing an invaluable instant recognition of the cable type. The concept is now widely used in European cable standards
f) Number of cores and nominal area of conductor	This augments the code by showing precisely the make-up of the cable and especially conductor cross-sectional area in millimetres. This is crucial to safety calculations relating to current ratings and voltage drops. A typical marking may be “3 x 1.5” Where a cable has an uninsulated circuit protective conductor (CPC) it is required also to add for instance “+ 1.0” indicating in such a case that the CPC has a 1 mm ² conductor size.
g) Year of manufacture	The year of manufacture may take the form of the actual year (e.g. 2013) or a coded year identifier assigned by the manufacturer. This acts as a significant aid to traceability in the case of a problem
h) Standard core colour identifier	Following European harmonisation of core colours, and to allow the British Standards to continue to be used in non-European countries that use UK wiring practices, it became essential to provide an external marking to indicate use of the harmonised colours. That marking is the letter “H

Because all of the above elements of marking constitute safety aspects of the correct installation and use of the cable, it is essential that the markings be permanent and durable to recognise that the useful lifetime of the cable may be measured in decades. In these four standards such markings are to be applied by embossing or indenting. Certain additional information, such as for instance metre or length marks, may be applied alternatively by printing techniques.

Whilst it is not mandatory to have these cables approved by a 3rd party body (in the UK such as BASEC) many manufacturers recognise the benefits of doing so. Where the manufacturer wishes to declare such approval, it shall be in accordance with the marking requirements of the Approval Body. These standards specify the method of such marking.

BCA and other stakeholders will continue to work with BSI to revise and improve other important standards.