



Expert commentary

BS EN IEC 62115:2020+A11:2020 – *Electric toys – Safety*

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1 Overview

BS EN IEC 62115: 2020+A11:2020 replaces the current BS EN 62115:2005+A12:2015 and is the European version of the International Standard IEC 62115:2017 which was first published in 2017. The revised standard is a 'common modification' document which means that it is based on an international standard but has modifications to make it acceptable within the EU. It specifies safety requirements for all types of electrical toys – from a simple toy with a battery powered light function, to a complex toy with its own charging function or one powered by mains voltage via a transformer specially constructed for toys. The revision includes new or amended requirements for general conditions of testing, warnings, accessibility of batteries and a new test methodology for toys with optical radiation sources such as light emitting diodes. BS EN IEC 62115: 2020+A11:2020 is an essential document for manufacturers, test houses, enforcement authorities or other professionals concerned with the safety of electrical toys and provides a fundamental cornerstone for safety and compliance of electrical toys.

1.1 Reasons for change

BS EN IEC 62115: 2020+A11:2020 incorporates changes made within IEC 62115:2017 which introduced new or amended technical requirements for electrical toys.

BS EN IEC 62115: 2020+A11:2020 aligns British, European and international standards for electrical toy safety and harmonizes compliance within the framework of Directive 2009/48/EC on the safety of toys.

1.2 Summary

- Amended general conditions of testing
- Amended criteria for reduced testing
- New and amended requirements for markings and warnings – especially for toys using small 'coin' and 'button' type battery cells as well as toys incorporating flashing lights between 4Hz and 60Hz
- Amended requirements for accessibility of batteries
- New requirements for toys connected to other equipment including USB connections
- New requirements for safety of remote controls for electric ride-on toys
- Introduction of new requirements and methodology for measuring optical radiation from toys

2 Main commentary

The toy industry has a huge appetite for product innovation, particularly in the area of electrical toys. As new technologies emerge or become more widely available, the toy industry adopts these and finds ways to bring them into the realms of child's play with ever more ingenuity.

Standards have continuously been amended within the industry, both in response to these innovations as well as experience from industry, laboratories and enforcement authorities regarding the application of the existing requirements.

BS EN IEC 62115: 2020 +A11: 2020 captures this experience. In addition to improvements to existing test methods and clarification of terminology, the standard includes some important new requirements. The general requirements clause now includes a tip-over test for large and bulky electrical toys during preconditioning. This test is taken from the EN71-1 (Mechanical and physical properties of toys) standard, as an alternative to the drop test for these types of toys to assess the mechanical strength of electrical enclosures. This is a pragmatic approach to the mechanical preconditioning tests of large and bulky toys which are unlikely to be handled and dropped.

For electrical toys with non-replaceable batteries or with more specialized power supplies such as specially designed batteries or alternative power supplies such as solar cells or wind-up generators, the general requirements clarify how to approach testing in these cases. The standard also permits toys with unusual power sources to be evaluated and included in the scope without conducting additional assessments.

Toys with USB power supplies are now also incorporated within the standard with temperature rises of such toys being measured with both a normal supply voltage of 5V as well as a supply voltage of 42V to account for any abnormal supply from the USB supply (42V being the maximum allowable safe voltage in computers). Toys with USB power supplies are also required to meet the requirements of fault condition testing (e.g. short-circuit testing).

The previous standard (BS EN 62115:2005+A12:2015) allowed a reduced level of testing under fault condition for toys with lower power circuits (those operating at less than 15W). The new standard additionally exempts circuits powered by three or less button/coin type cells without need to measure the actual power within the toys circuit.