

BS EN 12453:2017 + A1:2021

Amendment of BS EN 12453

BS EN 12453:2017+A1:2021 is now published in the [UK by BSI](#); this follows the publication of EN 12453:2017+A1:2021 (the original European version) by CEN in Europe. The only difference between the UK version and the original version is the UK national explanatory foreword; in all other respects, the requirements and scope are identical.

This is an amendment of BS EN 12453:2017, which was itself a revision of BS EN 12453:2001; both of these are withdrawn. The standard specifies the requirements and test methods for the safety in use of power operated industrial doors, commercial doors, garage doors, gates & traffic barriers intended for installation in areas in the reach of persons, and for which the main intended use is giving safe access for goods and vehicles, accompanied or driven by persons in industrial, commercial or residential premises. Its scope also covers power operated, vertically moving commercial doors such as rolling shutters & rolling grilles used in retail premises where they are mainly provided for goods protection.

The standard does not cover the following: lock or dock gates, doors on lifts, doors on vehicles, armoured doors, theatre textile curtains, doors & gates mainly for the retention of animals (unless they are at the site perimeter), doors & gates outside the reach of people (such as crane gantry fences), railway barriers, barriers used solely for vehicles on motorways, horizontally moving, power operated doors & gates mainly intended for pedestrian use or barriers intended solely for use by pedestrians (eg turnstiles).

Horizontally moving pedestrian doors & gates are covered by BS EN 16005.

This A1 amendment brings the somewhat chequered recent history of BS EN 12453 to a conclusion. The standard was first published in 2001 and, at that time, set the “state-of-the-art” (minimum acceptable level of safety in machinery legislation) for the products within its scope. The UK Supply of Machinery (Safety) Regulations, which implement the EU Machinery Directive, had been in force since 1995 but, until publication of BS EN 12453, it was not clear what compliance looked like in detail. In 2003, EN 12453 achieved effective harmonised status by reference from EN 13241, which was harmonised with both the EU Machinery Directive and the EU Construction Products Directive. Harmonisation is the European Commission system by which a standard can officially confer a presumption of legal compliance with a particular regulation or directive. Compliance with EN 12453, via reference from EN 13241, allowed manufacturers to claim compliance with UK SMSR or EU MD, CE mark and issue a Declaration of Conformity. Manufacturers were not compelled to use the standard, but they did have to achieve an equal or better level of safety.

In 2011, UK HSE issued the European Commission with a formal objection to EN 12453 (via its references from EN 13241) following a series of powered gate related child deaths between 2006 and 2010. In their opinion, the standard did not provide sufficient safety to confer a presumption of compliance with the Machinery Directive. In 2014, they revised their formal objection following another UK sliding gate child injury. In 2015, the European Commission responded by issuing a formal warning against reliance on EN 12453 (via reference from EN 13241) for compliance with the Machinery Directive. Manufacturers would need to conduct additional risk assessment and take appropriate measures to achieve legal compliance.

This did not affect the harmonisation of EN 13241 (or EN 12453 by reference) in regard to the Construction Products Regulation. This element has never been in question; the problems only affected Machinery Directive compliance. In 2017, CEN published a revision of the standard, EN 12453:2017. Sadly, the European Commission declined to give the standard harmonisation with the Machinery Directive; in their view, the revision did not sufficiently address the previously declared compliance shortfalls and, hence, their 2015 warning remained in place. Additional risk assessment was still required to achieve compliance.

When the revised standard was published by BSI in the UK as BS EN 12453:2017, the national foreword contained a warning not to rely completely on the standard for Machinery Directive compliance in the following areas:

- a) Hazards from other surfaces such as the ground and by reverse movement, which may be initiated by the door control mechanism in response to safety activation, are not explicitly recognised.

DHF note: this related primarily to the lower edge of hinged gates across the entire swept arc during opening and closing where the gap is large enough or changes sufficiently to create a crush hazard to body parts - eg feet of a standing person or the limbs of a fallen person.

- b) Clause 5.5.4 does not, for vertically moving doors, require the drive to be switched off in the event of an anti-drop or other device like slack wire being activated.

DHF note: this related to some fall-back protection systems on vertically acting doors not preventing further use following a component failure.

- c) Clause 7, in the opinion of the UK committee, is inadequate in the absence of EN 12635, Industrial, commercial and garage doors & gates - Installation and use, and its predecessor EN 12635:2002+A1:2008, which now has a warning in the Official Journal of the European Union.

DHF note: this related to a lack of sufficient detail in the section on instruction manual (O&M) content.

- d) Annex C, which supports the requirements of clause 5.2.1.6 on limitation of forces, including the impact hazard of clause 5.2.3 (both via Annex A) requires ‘measurements between the main closing edge and the opposing closing edge, or between two main closing edges’, but does not seek to interpret the results in relation to other points protected by force limitation that are not, or cannot, be tested directly, eg the hinge area and under door/gate crush and impact hazards in the movement area.

DHF note: this related to force testing being explained for the main edges, but not verification of safe force along the lower edges of hinged doors & gates and at the supports of sliding doors & gates where hazards were reliant on force limitation for safety and compliance.

- e) Neither clause 5.5.4 or Annex E caters for failure of a gear in the suspension system of vertically operating doors unless the system includes dual drives. As many unbalanced rolling doors are suspended purely by a single drive unit transmission, any internal failure of the transmission could result in catastrophic uncontrolled movement unless it is protected by an anti-drop device.

DHF note: this related to an error in coverage that was covered by BS EN 12453:2001 (by reference to EN 12604) but had been lost when the scope of BS EN 12604:2017 was revised and limited to manual doors and gates in 2017.

The A1:2021 amendment of EN 12453 has addressed and resolved all of these areas.

Whilst EN 12453:2017+A1:2021 has not yet been ‘harmonised’ by the European Commission (by listing in their Official Journal) for Machinery Directive compliance and CE marking in the EU and NI, it is hoped and expected that this will happen in due course as all obstacles that prevented listing previously have now been resolved. Similarly, it is fully expected that the amended standard will be awarded ‘designated’ status by UK Government under the Supply of Machinery (Safety) Regulations for UKCA marking in GB.

This amendment of BS EN 12453 has no effect on CPR compliance or the related issue of a Declaration of Performance for industrial & garage doors; this remains reliant on EN 13241 and the dated references in its Annex ZA. It does however have an impact on Machinery Directive/Supply of Machinery (Safety) Regulations compliance, and the related issue of a Declaration of Conformity for powered gates, industrial doors, garage doors & traffic barriers.

DHF member installation and maintenance companies can be reassured that the advice contained within parts 1 and 2 of DHF TS 013:2021 already covers a) to e) above, together with the additional effects of the EN 12453 A1:2021 amendment.

Manufacturers who are involved in serial manufacture of new powered door and gate systems are advised to obtain a copy of the A1 revision and ensure that their EU/MD/CE and/or UK/SMSR/UKCA compliance processes and documentation are current.