BS EN 12453 2017 - NEW EUROPEAN STANDARDS FOR POWER OPERATED GATES AND DOORS

THE NEW STANDARD BS EN12453:2017

The 21st of September has been officially implemented the new standard BS EN 12453:2017 *"Industrial, commercial and garage doors and gates – Safety in use of power operated doors – Requirements and test methods".* Let us say straight away that it is not a revolution in the galaxy of UE standards, but rather a reorganisation of the previous standard material, with the aim of eliminating potentially ambiguous concepts and to integrate some fundamentals aspects related to safety.
Formally, the most important news of this document is the definitely obsolescence of the BS EN12445:2000, which, properly revised and corrected, leads inevitably to the new BS EN12453:2017 together with the old BS EN12453:2000. Moreover, there is to say that in 2015 the European Commission has officially declared that the BS EN12453:2000 does not satisfy the EHSRs of the 2006/42/CE, consequently the harmonization of the Machinery Directive has been suspended.
The BS EN12453:2017 has been therefore developed to solve some specific lacks of the previous standard that prevented the harmonisation, concerning the hazards points of the doors, the safety of the engine, the extra run of the leaf, as well as the actions of prevention/elimination of hazards and the minimum level of protection.
It is useful to underline that all the new installations, as well as the pre-existing in case of maintenance, are included in the BS EN12453:2017.

THE NEWS ABOUT THE FORCE MEASUREMENT DEVICE

Given the above, let us see what does the new standard imply and in particular, what are the news regarding Microtronics' sector: the measurement of operating forces.
On this theme focuses all the annex C of the BS EN12453:2017, precisely named *"Force measuring method."* Firstly, the standard emphasises the using of the force measurement device and clarifies finally the minimum technical characteristics of the specific measurement device, better defined at the point C.2.2 *"Reference Measuring Equipment",* that basically corresponds to the old paragraph 5.1.1.
On the other hand, disappears completely the point 5.1.2 *"Measurement equipment for in situ tests",* this implies that all the measurement devices that before had been declared to be conformed to the BS EN12445:2000, but did not have the requirements of the so-called equipment *"of reference",* are now off-standard. Consequently they can be used only for an indicative evaluation, without pretences of certification.
In this regard, Microtronics' customers do not have to worry, because all our instruments that have been produced from 2002 onwards, in all their declinations, complied and complies with the following technical specifications already present in the BS EN12445:2000, now resumed exactly in the new standard:

- Two contact areas with a diameter of 80mm+/-1mm;
- Elastic constant of 500N/mm;
- Measurement range from 25 to 2000N;
- Ability to save the force/time graph of the test;
- Ascent/descent time of the amplifier of the load cell not >5ms;
- Needing of periodically calibration;

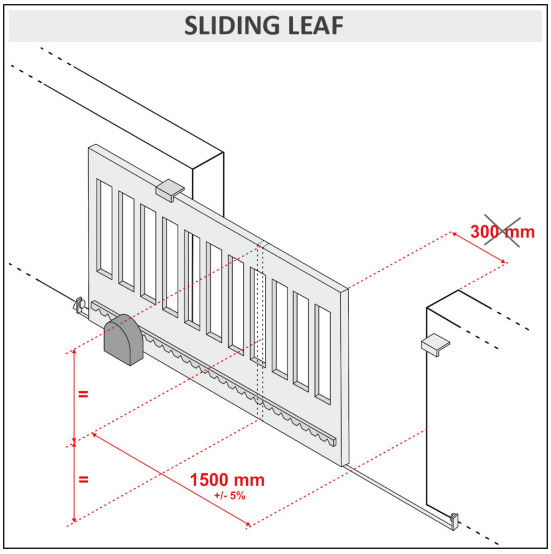
Therefore, in this case, to guarantee the complete conformity to the BS EN12453:2017, it is only requested to calibrate the instrument to ascertain that the accuracy of the measurement is within the provided limits, that is +/- 5% or 10N (whatever is the greater deviation).

NEWS ABOUT THE PROCEDURE OF FORCE MEASUREMENT

Regarding the procedure of force measurement, we can find, instead, some little simplifications in the number of measurement points and in their position, depending on the kind of door.
Firstly, **disappears (ref. point 5.2 of the 12445:2000) the indication of the so-called "additional measurement point defined randomly…"**, consequently, the technician who undertakes the test will have to follow solely the measurement points explicitly described in the new standard: in this way, nothing is left to chance, and this is very important to guarantee the reproducibility of the tests..

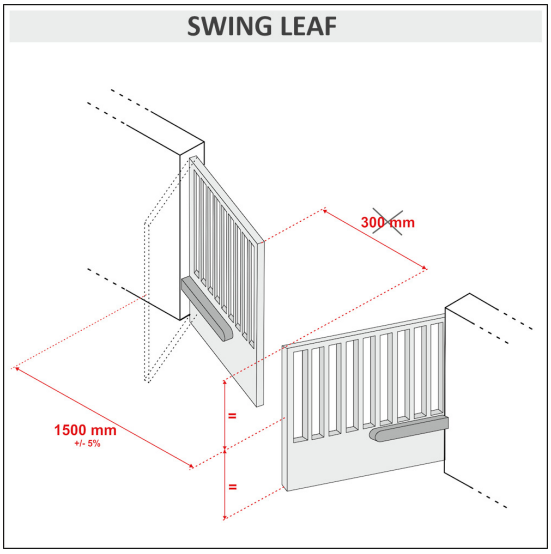
Basically, in the most common case, the number of measurement points is generally reduced than before, because, **for the sliding are no longer required the measurements at 300mm of opening**, neither on the principal edge of closures, nor in the secondary/opposite (in opening), instead it is added a one, single measurement that there was not before, this is at middle height from the principal edge, with 1500mm opening.

SLIDING LEAF [picture of measurements points on sliding leaf with the new point at 1500mm highlighted]



On the other hand, in the swing leaf the number of measurements is almost unchanged, because although the are no more the points at 300mm of opening, it is added the new gap of 1500mm, to be verified for each planned height.

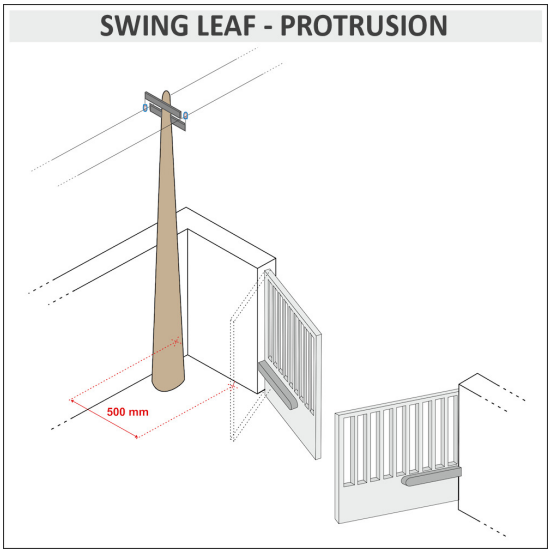
SWING LEAF [picture of measurements points in the swing leaf with the new points at 1500mm highlighted]



Pay attention to the measurements on the swing leaf (and on the folding leaf) during the opening: the new standards distinguish between the classical case of opening in a vertical flat surface (e.g. a wall), where the (single)

measurement remains essentially the same as before, **and (news) the case in which the leaf opens against a protrusion (e.g. a stick or a tree trunk)**. In this latter case, it is required to carry out a measurements in any heights (up to max 2000mm) in the most dangerous point, that corresponds to the maximum protrusion (always with a 500mm gap).

[picture of the measurements points
with the leaf opening in the presence of a protrusion]



Only in specific cases, that is when the leaf (sliding or swing) is very big (higher than 2800mm), it is required to carry out measurements at 1500mm from the ground, instead of the 2500mm required from the BS EN 12445:2000 (objectively less meaningful from the point of view of safety).

The measurements points on vertical sliding doors, tilting doors and barriers (bar closures) **remain the same.**

SOFTWARE UPDATE

Microtronics will make available for free an update of the BlueForce software and App with all the news required from the standard BS EN12453:2017. We ask our customers to check periodically the presence of new software releases in our website www.microtronics.it.