

ASO Interpretation & Recommendation for Action

Possibility of travelling on horizontally moving gates

New requirements from draft EN 12453:2017 prA1:2020

- Proof of detection of the test specimen 120x120x500 mm

DIN EN 12453 must be applied when it comes to the safety in use of power-operated doors.

As early as 2017, a revised standard DIN EN 12453:2017 was published by DIN as „state of the art“. Now, three years later, there is going to be another amendment to the standard with the date 2020, in which further details will be specified. This DIN EN 12453:2017 prA1:2020 is currently in the European survey and it can be assumed that this revision will also be published as „state of the art“.

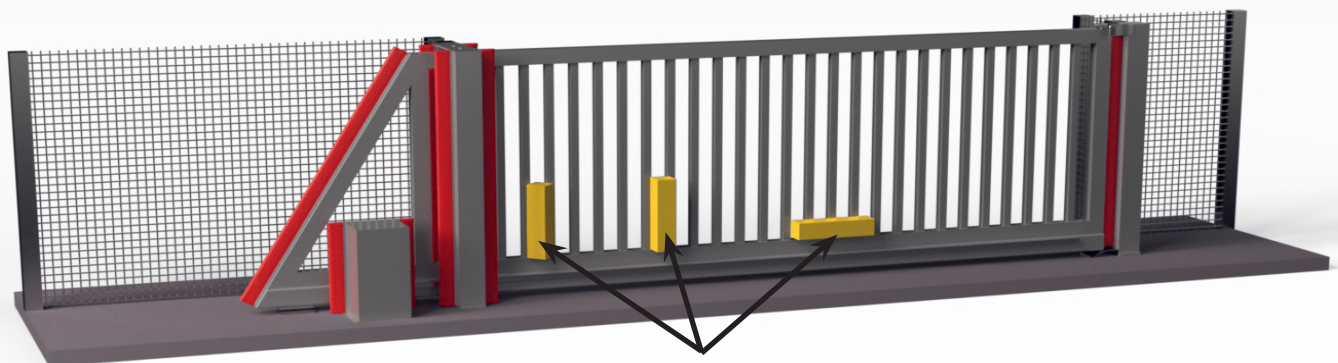
As in the 2017 version of the standard, the current revision also draws attention to the problem of retraction when travelling on horizontally moving gates. Whereas in the past a risk analysis was used to assess whether there is danger when travelling, the latest version of the standard now defines a test procedure by the stipulated test specimen 120x120x500 mm under Paragraph 5.2.2 and 6.2.2.

We at ASO have looked specifically at this topic and are presenting the essential requirements as well as a recommendation for action in this document.

Sliding gate (seen from the inside)



Classic protection of the main and secondary closing edges at the squeezing and shearing points by SENTIR edge safety contact edges

NEW: Verification of squeezing and shearing points with the test specimen 120x120x500 mm

Test specimen – Example of most unfavourable position. Deviations possible.

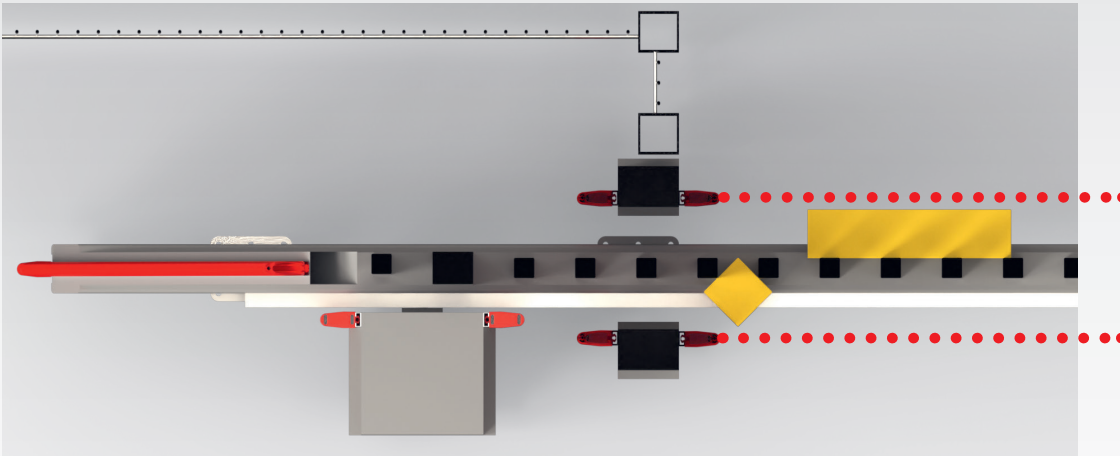
Since 2019, according to EN 12453:2017, the possibility of travelling on **horizontally moving gates** and the possible squeezing and shearing at the fixed parts of the gate must be checked with a test specimen 120x120x500 mm.

If there are any possibilities of **travelling on a gate** - whether through protruding surfaces for standing on or through openings for pulling oneself up - the test specimen must be detected by safety devices such as SENTIR edge safety contact edges before it reaches the danger zone. In order to test this, the specimen is attached to the moving gate wing in its most unfavourable position and the safety devices must then detect this specimen while observing the permissible forces according to Annex A in accordance with EN 12453:2017 (Sections 5.2.2 and 6.2.2).

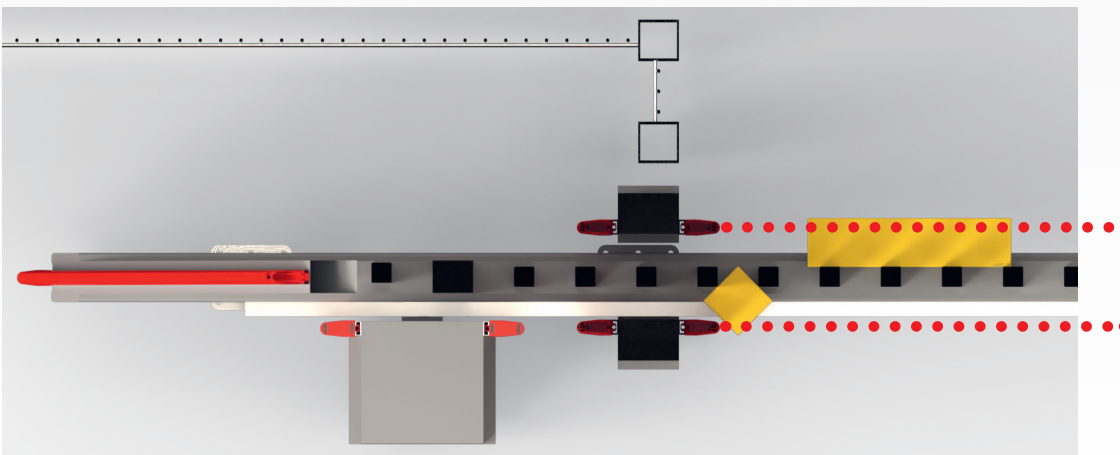
Although the test piece with its dimensions of 120x120x500 mm is probably intended to simulate small children, according to our interpretation of the standard, the test piece must also be recognised if only adult persons have access to the gate.

Case 1

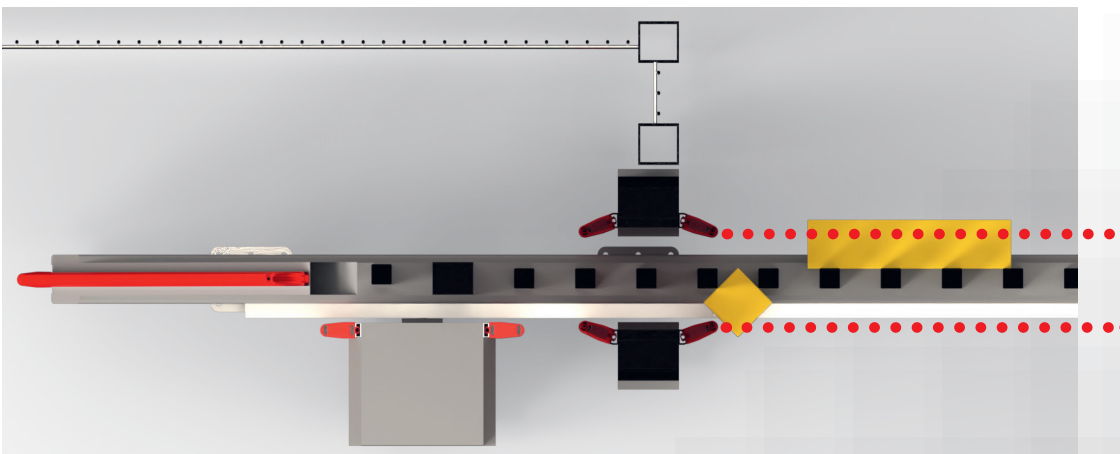
The **distance between the guide portal and the attached safety contact edges is too large** for detection of the test specimen 120x120x500 mm. The test specimen is not detected!



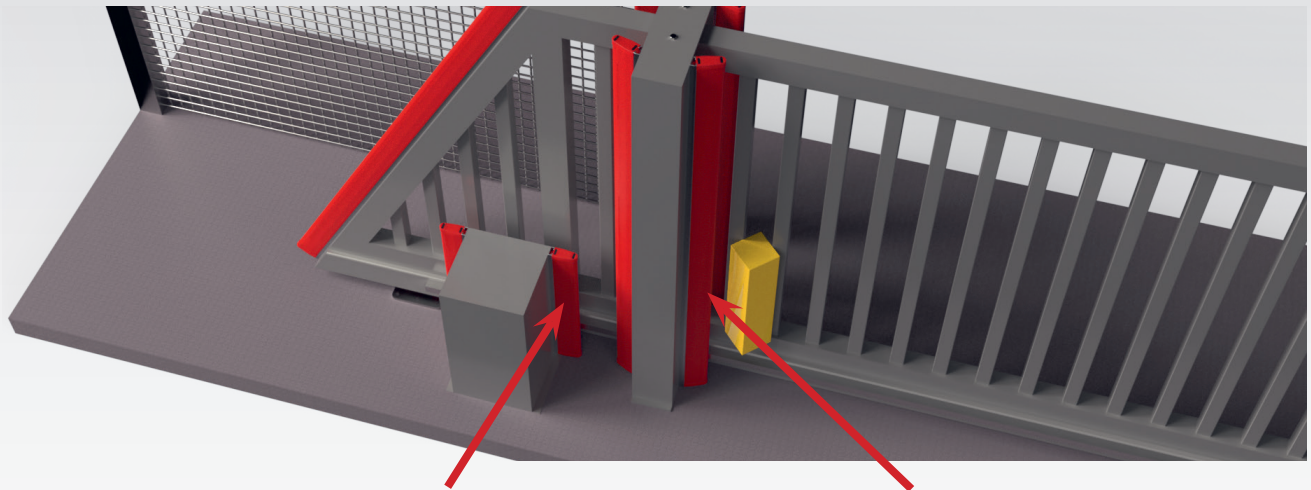
Solution 1: Reducing the distance between guiding portal and the safety contact edges to allow detection of the specimen.



Solution 2: The safety contact edges are positioned closer to the gate. This can be done using bevelled aluminium profiles that are placed in the original mounting position. In addition, the distance can be further reduced by the construction height of the safety contact edges. If both measures are not sufficient, new mounting positions for the safety contact edges must be defined.



ASO Recommendation for Case 1

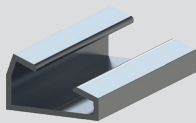


The safety contact edges must be attached very closely to the drive cover.
If necessary, the safety contact edges must be inclined slightly.

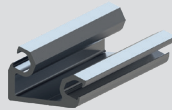
The safety contact edges on the guide portal must also be mounted tightly and possibly at a slight angle!

ASO PRODUCTS FOR SOLUTION 2

Aluminium profiles for inclination of the SENTIR edge safety contact edges:



AL 35-14 W
Art.-No. 2003-0060
for SENTIR edge 35.55 and 35.85



AL 30-10 W
Art.-No. 2004-0070
for SENTIR edge 45ST, 65ST and 85ST

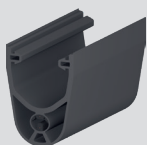
SENTIR edge (KS4 versions):



SENTIR edge 35.55 TT/CT
Art.-No. 1502-0730/1502-0710



SENTIR edge 35.85 TT/CT
Art.-No. 1502-1691/1502-2020)



SENTIR edge 45 ST
Art.-No. 1502-2445



SENTIR edge 65 ST
Art.-No. 1502-2490

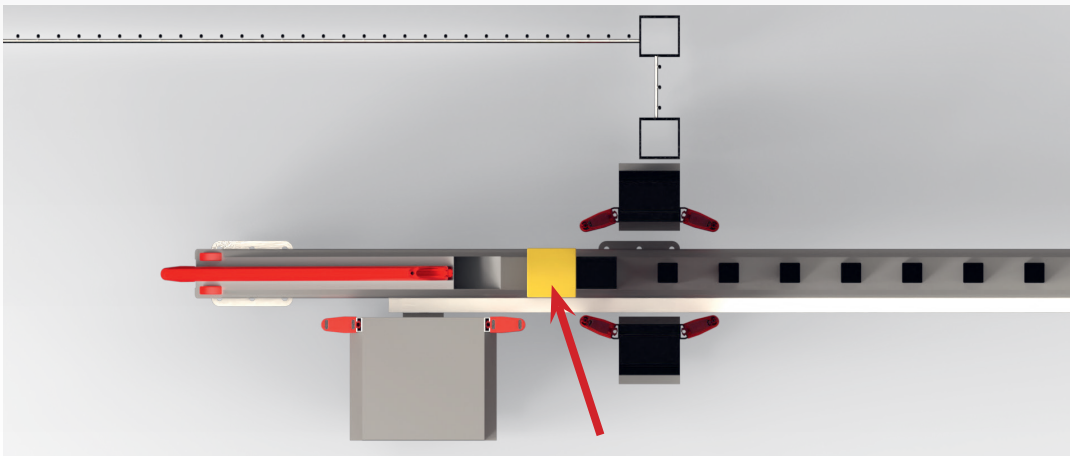
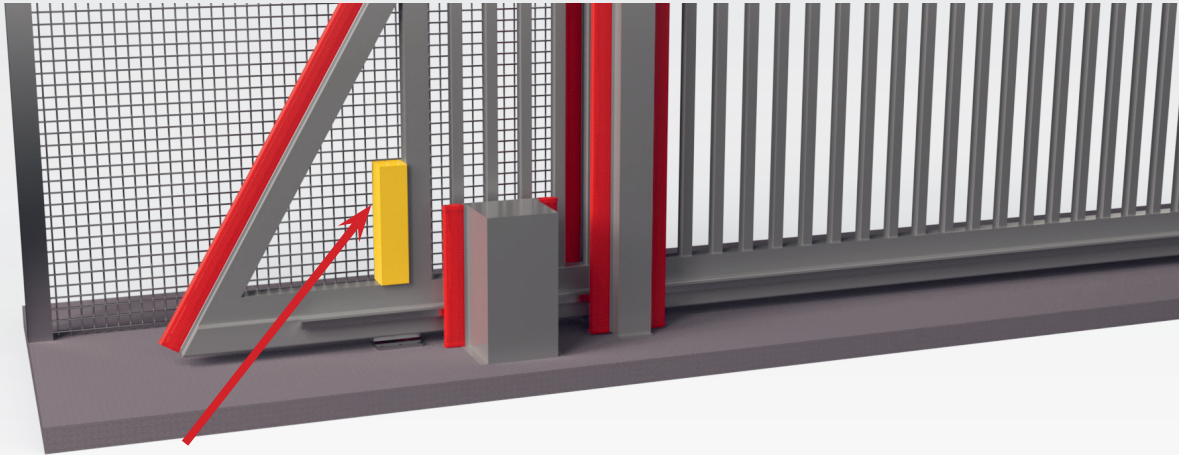


SENTIR edge 85 ST
Art.-No. 1502-2540

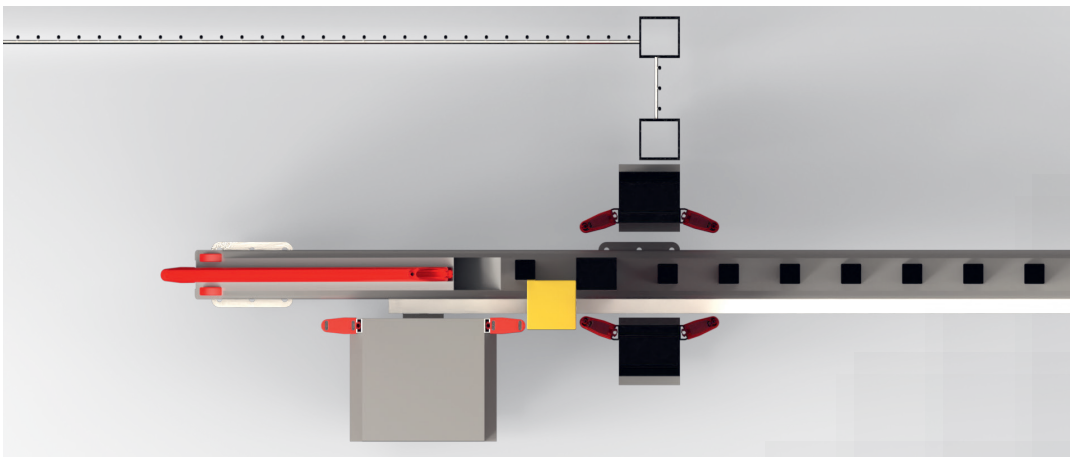
You need a custom solution? Talk to us!

Case 2

If the **distances between the bars are greater than 120 mm** or if the test specimen can also be positioned inside the gate, there is virtually no possibility of recognising the test specimen - it would therefore be possible to travel on the gate and thus the design of the gate leaf would not be permissible!



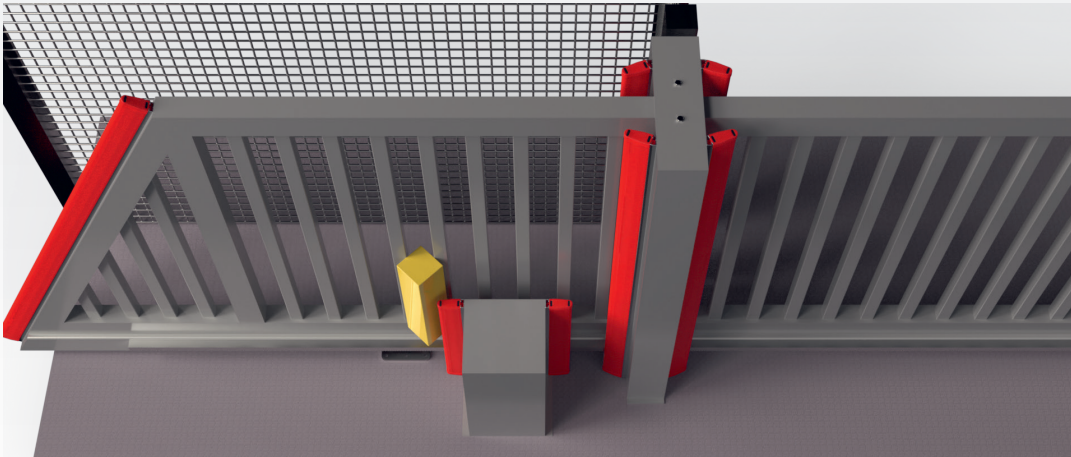
The geometry of the bars or the filling of the gate must prevent the test piece from slipping inside the gate!



ASO Recommendation for Case 2

The 120x120x500 mm test specimen can also be placed at an angle between the bars to simulate people travelling on the gate. Even if the test specimen can be pushed completely between the bars at a distance of more than 120 mm between the bars, it must be detected.

In our opinion, it is almost impossible to recognize the test specimen in such a case. The solution here is to place the bars closer together or, for example, to attach safety contact edges to the possible stepping points in order to detect a person travelling on the gate and prevent a dangerous situation. Please do not hesitate to contact us!



Conclusion

With the amendment to EN 12453, gate manufacturers are obliged to carry out tests using the test specimen 120x120x500 mm on newly installed gates and – if necessary – to take appropriate measures.

These measures can be of a constructive nature as well as in the form of adaptation of the safety devices.

In order to guarantee a maximum level of safety, ASO recommends a fundamental inspection of gate systems with regard to the requirements and is happy to advise on possible questions and solutions.