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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 15210-2018

Replacing GB 15210-2003

General specifications for walk-through metal detectors

通过式金属探测门通用技术规范

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1 Scope

China's mandatory specification for walk-through metal detector archways - the doorframes at airport and station security, at courthouses, stadiums and government buildings, through which every person passes and which have to decide, in the second it takes to walk through, whether someone is carrying metal that matters. It is the companion of GB 12899 on the hand-held wand: the archway makes the first, fast decision and the wand localises what it found. The standard specifies the technical requirements, the test methods, the inspection rules, the identifications, marks, labels and packaging and the accompanying technical documentation of walk-through metal detectors. The requirements are built around a problem that has no comfortable answer. Sensitivity must be high enough to find a small blade carried at any point of the body, including the positions people use precisely because detectors are weak there - the ankles, and the centre of the archway at head height. But an archway that alarms on belt buckles and keys stops a queue, and one that is turned down to keep the queue moving is not a detector any more. The standard therefore fixes the

detection sensitivity against defined test pieces at defined positions in the aperture, the uniformity of the detection field through the whole opening so that there is no weak zone, the discrimination and the ability to reject small personal items, the localisation of the alarm by zone, the walk-through speed at which the figures must still hold, and the immunity to a second archway or a scanner operating nearby - the arrangement in which these machines are almost always installed. To that are added the electrical safety, the environmental and electromagnetic programme, and the requirement that the equipment be safe for people with pacemakers and other implanted devices. Issued on 19 November 2018 and in force since 1 December 2019, it replaces GB 15210-2003.

This Standard specifies technical requirements, test methods, inspection rules, identifications, marks, labels and packaging, accompanying technical documents of walk-through metal detector. This Standard is applicable to the walk-through metal detector that detects metal weapons and metal prohibited goods. The walk-through metal detectors for other usages may refer to this Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 2423.1-2008, Environmental testing - Part

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 walk-through metal detector A metal detection device. Its structure is generally a door frame erected on the ground. When a person walks through it, the device can detect whether the passer carries metal that reaches or exceeds a limited amount.

3.2 detector region A space range in the pedestrian crossing of walk-through metal detector.

3.3 detector plane A virtual plane in the detector region. It is perpendicular to the pedestrian passing direction, as shown in plane ABCD in Figure 1.

3.4 positive alarm When a metal object that reaches or exceeds a limited amount passes through the detector plane, the walk-through metal detector emits an alarm signal with the specified display and sound.

3.5 alarm failure When a metal object that reaches or exceeds a limited amount passes through the detector plane, the walk-through metal detector has no alarm.

4 Classification

According to the detection class, the walk-through metal detector (hereinafter referred to as "metal detector") is divided into class I, class II, class III and mixed class.

5 Technical requirements

5.1 Appearance The appearance of metal detector shall meet the following technical requirements.

5.2 Mechanical structure and layout

5.2.1 Detector structure layout The metal detector layout shall meet the following requirements.

5.2.2 Pedestrian crossing The crossing space of metal detector shall meet the following requirements.

5.3 Operational control

5.3.1 Operational authorization Devices and parameters that affect detection performance shall be protected to prevent unauthorized changes.

5.3.2 Buttons and control devices Buttons and control devices shall be flexible, clear in touch, and reliable in function. For the metal detector equipped with remote control, the remote-control distance shall be greater than or equal to 2m.

5.5 Radiation magnetic induction intensity In the area of 150mm inward from the left and right boundaries of the detector region, the intensity of radiation magnetic induction at any point shall be less than or equal to 30 μ T. See Annex E for the preparation of indicators.

5.6 Basic detection function The metal detector shall be able to alarm the metal that reaches or exceeds the limited amount, and there shall be no alarm failure.

5.7 Detection performance

5.7.1 Detection sensitivity range The detection sensitivity of the metal detector shall be easily adjustable from low to high. The sensitivity adjustment shall be greater than or equal to 50 levels.

5.7.3 Walking-through speed Within the detector region, the metal detector shall be able to respond correctly and alarm to the test object that shall be alarmed with a walking-through speed of 0.2m/s~2.0m/s in the detection class to which it belongs. The total detection rate shall be greater than or equal to 90%.

5.10 Resistance to static metal objects

5.10.1 Resistance to surrounding static metal objects The detection performance of the metal detector shall not be affected by the large static metal objects beyond 1m around the detector body.

5.10.2 Resistance to influence of internal metal structure on the ground The detection performance of the metal detector shall not be affected by the metal structure below 0.1m above the ground.

5.11 Anti-interference of surrounding metal objects The metal detector shall not generate an alarm signal for moving metal objects beyond 1.5m around the detector.

5.12 Electrical safety The metal detector shall meet the following requirements.

6.1 General test conditions

6.1.1 Environmental conditions Except for tests that specifically declare environmental conditions, the rest tests shall be conducted under the following environmental conditions.

6.1.2 Default setting Except for tests that specifically declare working parameters, the rest tests shall be conducted under the following conditions.

6.2 Test objects and devices

6.3 Appearance inspection Visually inspect the appearance. In the rough position of the structure, use cotton yarn or silk cloth to repeatedly wipe to ensure that the position shall not hook the clothing.

6.4 Mechanical structure and layout test

6.4.1 Detector structure layout Visually inspect the layout.

6.4.2 Pedestrian crossing Visually inspect and measure the pedestrian crossing.

6.10 State indication inspection

6.10.1 System state indication Test according to the following methods.

6.10.2 Alarm state indication

6.10.2.1 Alarm sound When the environmental noise does not exceed 50dB, select the alarm test object T6-1 in Annex A to pass through the detector region of metal detector and activate the alarm. Use a sound level meter to measure the maximum alarm sound intensity around, 0.8m from the detector body and 1.5m of the height. Operate and identify the alarm sound.