

ICS 13.110
CCS J 09



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

GB/T 17454.2-2017

Replacing GB/T 17454.2-2008

**Safety of machinery -- Pressure-sensitive protective devices --
Part 2: General principles for design and testing of
pressure-sensitive edges and pressure-sensitive bars
(English Translation)**

Issued on: May 12, 2017

Implemented on: December 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

Table of Contents

Preface

Introduction

1 Scope

2 Normative reference document

3 Terms and definitions

4 Design and test requirements

4.1 Effective sensitive area

4.2 Driving force

4.3 Pre-trip

4.4 Working trip

4.5 Super travel

4.6 Force - the relationship between the trip

4.7 Minimum operating speed

4.8 Number of actions

4.9 Output of sensor

4.10 Response of the output signal switching device to the driving force

4.11 Reset function

4.12 Environmental conditions

4.13 Power source changes

4.14 Electrical equipment

Foreword

GB/T 17454 "mechanical safety pressure-sensitive protection device" is divided into three parts.

- Part 1. Design and test of pressure sensitive and pressure sensitive flooring;

- Part 2. Design and test of pressure - sensitive and pressure - sensitive rods;

Part 3. General principles for the design and testing of pressure sensitive buffers, pressure sensitive boards, pressure sensitive lines and similar devices.

This part is part 2 of GB/T 17454.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part of the replacement GB/T 17454.2-2008 "Mechanical safety pressure-sensitive protection device Part 2. Design of pressure-sensitive and pressure-sensitive rods and test general ". Compared with GB/T 17454.2-2008, in addition to editorial changes, the main technical changes are as follows.

- a requirement to increase the performance level (PL) of the control system (see 4.20, 2008 edition 4.20);
- a test of the performance level (PL) added to the control system (see 7.17, 7.17 of the 2008 edition).

This part uses the translation method equivalent to ISO 13856-2.:2013 "Mechanical safety pressure sensitive protection device Part 2. Pressure-sensitive side and pressure Mineral Design and Test.

In this part of the normative reference to the international documents have a consistent correspondence between the following documents.

GB/T 2423.3-2006 Environmental testing for electric and electronic products - Part 2. Test methods - Test Cab. constant damp heat test (IEC 60068-2-78.:2001, IDT);

Environmental testing for electric and electronic products - Part 2. Test methods - Test Ea and guidance. shocks - GB/T 2423.5-1995 (IEC 60068-2-27. 1987, IDT);

GB/T 2423.10-2008 Environmental testing for electric and electronic products - Part 2. Test methods - Test Fc. Vibration (sinusoidal) (IEC 60068-2-6.:1995, IDT);

- GB/T 2423.22-2012 Environmental tests - Part 2. Test methods - Test N. Temperature change (IEC 60068-2-14.

2009, IDT);

GB/T 3766-2015 General rules and safety requirements for hydraulic drive systems and their components (ISO 4413.:2010, MOD);

Protection class (IP code) (IEC 60529.:2001, IDT); GB/T 4208-2008;

General technical requirements for pneumatic systems (ISO 4414.:1998, IDT) GB/T 7932-2003;

Low - voltage switchgear and controlgear - Part 5-1. Control circuit electrical and switching elements - GB/T 14048.5-2008.

Electromechanical control circuit appliances (IEC 60947-5-1.:2003, MOD);

Safety parts for safety control systems - Part 2. Confirmation (ISO 13849-2. 2012, IDT);

Electromagnetic compatibility (EMC) - Test and measurement techniques - Electrostatic

discharge immunity test (IEC 61000-4-2.

2001, IDT);

GB/T 17626.3-2006 Electromagnetic compatibility test and measurement technology Radio frequency electromagnetic field radiation immunity test (IEC 61000-4-3.:2002, IDT);

GB/T 17626.4-2008 Electromagnetic compatibility test and measurement technology Electrical fast transient burst immunity test (IEC 61000-4-4.:2004, IDT);

GB/T 17626.5-2008 Electromagnetic compatibility test and measurement technology Surge (impact) immunity test (IEC 61000-4-5.:2005, IDT);

GB/T 17626.6-2008 Electromagnetic compatibility test and measurement techniques Radio frequency field sensing conducted disturbance immunity (IEC 61000-4-6.:2006, IDT);

GB/T 17799.2-2003 Electromagnetic compatibility - General standards - Immunity test in industrial environments (IEC 61000-6-2.

1999, IDT).

This part of the National Machinery Safety Standardization Technical Committee (SAC/TC208) proposed and centralized.

This part of the drafting unit. China Testing and Certification Group Co., Ltd., the State Machine Tool Quality Supervision and Inspection Center, in the machine to promote productivity Center, Nanjing Forestry University Institute of optical and electrical engineering, Nanjing Light Machine Packaging Machinery Co., Ltd., Omron Automation (China) Co., Ltd., Fujian Minling Technology Co., Ltd., Siemens (China) Co., Ltd., China Standardization Research Institute.

This part of the main drafters. Xu Jiang, Liu Zhiyong, Li Liyan, Zhao Qinzhi, Wang Xuezhi, Ju Ronghua, Chen Nengyu, Zhang Xiaofei, Luo Guang, Chu Weizhong, Zhu Bin, Fu Huiqing, Liu Xia, Luo Youqin, Huang Qing.

This part of the previous version of the standard to replace the release of the situation.

--- GB/T 17454.2-2008.

Introduction

The mechanical safety standards are structured as follows.

- Class A standard (basic safety standard), given the basic concepts, design principles and general characteristics applicable to all machinery;
- Class B standard (general safety standard), a safety feature involving a mechanical or a wider range of safety devices.
- Class B1, specific safety features (eg safety distance, surface temperature, noise)

standard;

- B2 class, safety devices (such as two-hand control device, interlock device, pressure-sensitive devices, protective devices) standard.
- Class C standards (mechanical product safety standards) that specify a detailed safety requirement for a particular machine or group of machines.

According to GB/T 15706, this part belongs to class B2 standard.

This section relates in particular to the following trade safety-related stakeholders.

- machine manufacturer;
- health and safety institutions.

Other stakeholders affected by the level of mechanical safety are.

- machine use personnel;
- machine owner;
- service provider;
- consumers (for machines intended for use by consumers).

All of these stakeholders are likely to participate in the drafting of this section.

In addition, this part is intended for the standardization of institutions for the drafting of Class C standards.

The requirements specified in this section may be supplemented or modified by Category C standards.

For machines that are designed and manufactured in accordance with Category C standards within the scope of Class C standards, the requirements in Class C standards are preferred.

Many different methods can achieve mechanical safety protection (see GB/T 15076-2012, 3.21). These methods include by setting Physical barrier Prevents access to hazardous areas (eg GB/T 18831 interlocking guards, or GB/T 8196 Fixed protective devices), protective devices (for example. GB/T 19436.1 in line with the protection of electrical equipment, or in line with this part of the pressure-sensitive protective equipment Set).

Designers of Class C standards and designers of machinery/equipment are considered to be considered when considering the required level of safety through the best route Use and risk assessment (see GB/T 15076).

The solution required is probably to consider several of these methods, so before deciding which security guards are to be selected, it is advisable for the suppliers and users of the