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

GB/T 3452.2-2007

**Fluid power systems -- O-rings -- Part 2: Quality acceptance
criteria**

(English Translation)

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Foreword

GB/T 3452 "Fluid power systems - O-rings" is divided into 3 parts.

- Part 1. Inside diameters, cross-sections, tolerances and size-identification code;
- Part 2. Quality acceptance criteria;
- Part 3. Housing dimensions.

This Part is part 2 of GB 3452.

This Part is equivalent to ISO 3601-3:2005 "Fluid power systems - O-rings - Part 3. Quality acceptance criteria" (English).

This Part is identical to ISO 3601-3:2005 in terms of technical content; it only makes the following editorial modifications.

- The "quality acceptance criteria" in the standard title is modified as "appearance quality acceptance criteria" [Translator. The English title is actually the same];
- "this Part of ISO 3601" is modified as "this Part of GB/T 3452";
- Use decimal point "." to replace the ", " which is used as decimal point;
- The foreword of International Standard is deleted;
- The "limiting dimensions" in 3rd column of Table 1, Table 2 and Table 3 is modified as "symbols of imperfections size".

This Part replaces GB/T 3452.2-1987.

Compared with GB/T 3452.2-1987, the main changes of this Part are as follows.

- The standard title is modified as the present one;
- Chapter "terms, definitions and symbols" is added;
- In the grade classification, "grade CS" is used to replace "grade NZ" and "grade SZ" in previous edition;
- Surface imperfections limits of O-rings for different grades are listed in Table 1, Table

2 and Table 3 respectively;

- Illustration figures of finished products for some imperfections are provided.

This Part was proposed by China Machinery Industry Federation.

This Part shall be under the jurisdiction of China Hydropneumatic Standardization Technical Committee (SAC/TC 3).

Responsible drafting organizations of this Part. Northwest Rubber & Plastics Research And Design Institute.

Participating drafting organizations of this Part. Zhongding Sealing Co., Ltd., Guangzhou Mechanical Engineering Research Institute AND Wenzhou Sanhuan Rubber & Plastic Products Co., Ltd.

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Previous versions replaced by this Part is as follows.

- GB/T 3452.2-1987.

Fluid power systems - O-rings -

Part 2. Quality acceptance criteria

1 Scope

This Part of GB/T 3452 lays down the quality acceptance criteria of O-rings used in fluid systems, the dimensions of which are standardized in GB/T 3452.1, ISO 16031-1 and ISO 16031-2.

This Part of GB/T 3452 also defines and classifies surface imperfections on O-rings and specifies maximum acceptable limits for these imperfections.

This Part of GB/T 3452 is also applicable to O-rings to be used in aerospace construction.

2 Normative references

The articles contained in the following documents have become this Part of GB/T 3452 when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Part. For the undated documents so quoted, the latest editions shall be applicable to this Part.

GB/T 3452.1 Fluid power systems - O-rings - Part 1. Inside diameters, cross-sections, tolerances and size-identification code (GB/T 3452.1-2005, ISO 3601-1:2002, MOD)

GB/T 17446 Fluid power systems and components - Vocabulary (GB/T 17446-1998, idt ISO 5598:1985)

ISO 16031-1 Aerospace fluid systems - O-rings, inch series. Inside diameters and cross sections, tolerances and size-identification codes - Part 1. Close tolerances for hydraulic systems

ISO 16031-2 Aerospace fluid systems - O-rings, inch series. Inside diameters and cross sections, tolerances and size-identification codes - Part 2. Standard tolerances for non-hydraulic systems

3 Terms, definitions and symbols

For the purposes of this document, the terms and definitions given in GB/T 17446 and the following apply.

3.1

backrind

longitudinal imperfection in which the rubber adjacent to the flash line shrinks below the level of the moulding and has a "U"-like or "W"-like cross section with the flash frequently being ragged or torn. See Figure 1.

3.2

combined flash

combination of offset, flash and parting line projection

3.3

inside diameter

d1

O-ring inside diameter

3.4

cross-section diameter

O-ring cross-section diameter, d2

3.5

excessive trimming

flattened and often roughened area around the inner and/or outer diameters of an O-ring caused by the trimming process. [See Figures 2a and 2b]

3.6

flash

film-like material that extends from the parting line projection or inner and/or outer diameters, caused by mould separation or present due to inadequate trimming. See Figure 3.

3.7

flow mark

thread-like recess, usually curved, of very slight depth in the unflexed state, with normal surface texture and round edge, caused by incomplete flow and knit of the material. See Figure 4.

3.8

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