



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

**GB/T 7377-2017**

---

**Series of cycle tyres**

**Issued on: September 7, 2017**

**Implemented on: August 1, 2018**

---

**Issued by: AQSIQ; SAC**

## Table of Contents

|                                                                                                                      |    |
|----------------------------------------------------------------------------------------------------------------------|----|
| Foreword .....                                                                                                       | 3  |
| 1 Scope .....                                                                                                        | 5  |
| 2 Normative references .....                                                                                         | 5  |
| 3 Terms and definitions .....                                                                                        | 5  |
| 4 Classification .....                                                                                               | 5  |
| 4.1 Bead structure form .....                                                                                        | 5  |
| 4.2 Tread profile .....                                                                                              | 6  |
| 5 Specification marks, basic parameters and main dimensions .....                                                    | 7  |
| 5.1 Straight side (SS) tyres and croctchet type (CT) tyres .....                                                     | 7  |
| 5.2 Off-road croctchet type (CT) tyres .....                                                                         | 10 |
| 5.3 Hooked bead (HB) tyres .....                                                                                     | 13 |
| 5.4 Beaded edge (BE) tyres .....                                                                                     | 15 |
| 5.5 Tyres suitable for hooked bead (HB) rims and straight side (SS) rims .....                                       | 16 |
| 6 Maximum and minimum sizes of new tyres .....                                                                       | 16 |
| 7 Correction value for section width of new tyres mounted on permitted rims .....                                    | 17 |
| 8 Measurement methods for tyre size .....                                                                            | 17 |
| 9 Tyres other than those listed in this Standard .....                                                               | 18 |
| Annex A (informative) Structural changes of this Standard compared with ISO 5775-1:2014 .....                        | 19 |
| Annex B (informative) Technical differences between this Standard and ISO 5775-1:2014 and their reasons .....        | 20 |
| Annex C (normative) Calculation of tyre sizes .....                                                                  | 23 |
| Annex D (informative) Calculation of tyre load .....                                                                 | 30 |
| Annex E (normative) Comparison between straight side and croctchet type tyre specification marks and old marks ..... | 31 |

## 1 Scope

This Standard specifies the terms and definitions, classification, specification marks, basic parameters, main dimensions and measurement methods of cycle tyres.

This Standard applies to pneumatic tyres for bicycles, tricycles and trolleys.

This Standard does not apply to tubular racing tyres and non-pneumatic tyres.

## 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 6326, Tyre terms and definitions (GB/T 6326-2014, ISO 4223-1:2002, NEQ)

GB/T 8170, Rules of rounding off for numerical values and expression and judgement of limiting values

GB/T 23657, Series of cycle rims (GB/T 23657-2009, ISO 5775-2:1996, MOD)

HG/T 2906, Static loaded performance testing method for cycle tyres

## 3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 6326 apply.

### 4.1 Bead structure form

Cycle tyres are divided into four categories according to the structural form of the bead and rim fit: straight side (SS) tyres (see Figure 1a); hooked bead (HB) tyres (see Figure 1b); beaded edge (BE) tyres (see Figure 1c); crocheted type (CT) tyre (see Figure 1d).

Where,  $S_{max}$  - The maximum cross-sectional width of new tyres, in millimeters (mm);

$S$  - The section width of new tyres, in millimeters (mm);

$a$  - Tolerance coefficient of tyre section width. When  $S \leq 34$  mm,  $a = 0.06$ ; when  $S > 34$  mm,  $a = 0.05$ ;

$S_{min}$  - The minimum section width of new tyres, in millimeters (mm).

6.2 Maximum outer diameter ( $D_{max}$ ) and minimum outer diameter ( $D_{min}$ ) of new tyres The maximum outer diameter and minimum outer diameter of the new tyre are calculated according to formula (3) and formula (4) respectively:

Where,  $D_{max}$  - The maximum outer diameter of the new tyre, in millimeters (mm);

$H$  - Height of new tyre section, in millimeters (mm);

$D_N$  - Nominal diameter of rim, in millimeter (mm);

$b$  - Tyre outer diameter tolerance coefficient. When  $S \leq 34$  mm,  $b = 0.06$ ; when  $S > 34$  mm,  $b = 0.05$ ;

$D_{min}$  - The minimum outer diameter of new tyres, in millimeters (mm).

7 Correction value for section width of new tyres mounted on permitted rims The correction

value for the cross-section width of a new tyre mounted on a permissible rim is 0.4 times the difference between the measured rim and the nominal inner width of the permissible rim.

8 Measurement methods for tyre size The measurement of tyre size shall be carried out in accordance with the provisions of  
HG/T 2906.

## **Annex C (normative) Calculation of tyre sizes**

C.1 Calculation for sizes of straight side and croctchet type tyres C.1.1 Calculation for sizes of new tyres C.1.1.1 Section width of new tyres (S)

For tyres with a nominal section width SN of less than 28, the section width of the new tyre is calculated according to formula (C.1):

Where, S - New tyre section width, in millimeters (mm);

SN - Nominal section width of the tyre, in millimeters (mm).

SN is 28 (inclusive) to 57 (inclusive) tyres. The section width of the new tyre is calculated according to formula (C.2):

SN is 62 (including 62) or above tyres. The section width of the new tyre is calculated according to formula (C.3):

C.1.1.2 Section height of new tyre (H)

The section height of the new tyre is calculated according to formula (C.4):

Where, H - Height of new tyre section, in millimeters (mm);

H - Height of new tyre section, in millimeters (mm).

C.1.2.3 General rules of calculation The calculation of the maximum tyre size is used by vehicle manufacturers to design tyre clearances.

C.2 Calculation for size of off-road croctchet type tyres C.2.1 Calculation of new tyre size

C.2.1.1 Section width of new tyre (S)

The section width of the new tyre is calculated according to formula (C.8):

Where, S - The cross-sectional width of the new tyre, in millimeters (mm);

SN - The nominal section width of the tyre, in millimeters (mm).

NOTE: See Figure C.1 for illustration.

C.2.1.2 Section height of new tyres (H)

The section height of the new tyre is calculated according to formula (C.9):

Where, H - The cross-section height of the new tyre, in millimeters (mm);

I - Increased height, in millimeters (mm). When  $SN < 28$ ,  $I = 4$  mm; when  $SN \geq 28$ ,  $I = 5.5$  mm; for off-road (D-type) tyres (when  $SN \geq 35$ ),  $I = 6.5$  mm.

NOTE: See Figure C.1 for illustration.

SN - Tyre section width code.

The calculation results are rounded into integers according to GB/T 8170.

### C.3.2 Section height of new tyre (H)

The section width of the new tyre is calculated according to formula (C.14):

Where, H - Height of new tyre section, in millimeters (mm).

The calculation results are rounded into integers according to GB/T 8170.

### C.3.3 Outer diameter of new tyre (D0)

The outer diameter of the new tyre is calculated according to formula (C.15):

Where, D0 - Outer diameter of new tyre, in millimeters (mm);

D2 - Nominal outer diameter of the rim, in millimeters (mm), see GB/T 23657.

### C.3.4 Maximum tyre size used C.3.4.1 Maximum total tyre width used (Wmax)

The maximum total width used of the tyre is calculated according to formula (C.16):

Where, Wmax - including anti-scuff lines, logos, decorative patterns, manufacturing deviations and usage expansion.

### C.3.4.2 Maximum outer diameter used of tyre (D0,max)

The maximum outer diameter used of the tyre is calculated according to formula (C.17):

## Annex D (informative) Calculation of tyre load

The tyre load is calculated as shown in formula (D.1):

Where, W - The theoretical load capacity of the tyre, in kilograms (kg).

A - Speed coefficient. On good road conditions:

When the trolley speed is 10 km/h, the soft side trolley tyre is 1.45;

When the bicycle speed is 20 km/h, the bicycle tyre is 1.20; the tyre for heavy-duty bicycle is 1.30;

When the speed of the dual-purpose vehicle is below 30 km/h, the tyre size of the dual-purpose vehicle is 1.10;