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## Truck and bus tyres and rims (metric series) —

### Part 1 : Tyres

*Pneumatiques et jantes pour véhicules utilitaires (séries millimétriques) —*

*Partie 1 : Pneumatiques*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4209-1 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*.

This fourth edition cancels and replaces the third edition (ISO 4209-1 : 1986): clauses 2.2.3, 2.2.4 and 3.4 [referring to tables 2b), 3 and 4] are basically new; table A.1 has been extended to higher nominal section widths of tyres and the nominal aspect ratio of 65.

ISO 4209 consists of the following parts under the general title *Truck and bus tyres and rims (metric series)*:

- Part 1 : Tyres
- Part 2 : Rims

Annexes A, B and C of this part of ISO 4209 are given for information only.

# Truck and bus tyres and rims (metric series) —

## Part 1 : Tyres

### Section 1 : General

#### 1.1 Scope

This part of ISO 4209 specifies the designation, dimensions and load ratings of the metric series of tyres primarily intended for trucks and buses.

It applies to bias-belted, diagonal and radial tyres for trucks and buses, mounted on 5° tapered rims and on 15° tapered (drop-centre) rims.

It is also applicable to different concepts and types of tyres and rims; in these cases, however, appropriate rim/section ratios  $K_1$ , coefficients  $K_2$ ,  $K_3$ ,  $C_R$  and construction codes have been added to tables 2 and 3.

ISO 4209-2 deals with requirements for rims.

#### 1.2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4209. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4209 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4223-1 : 1978, *Definitions of some terms used in the tyre industry — Part 1 : Pneumatic tyres.*

#### 1.3 Definitions

For definitions of terms relating to tyres, see ISO 4223-1.

## Section 2 : Tyre designation and dimensions

### 2.1 Tyre designation

The designation of the tyre shall be shown on its sidewall and shall include the following markings, to be shown close to each other :

- size and construction (see 2.1.1);
- service condition characteristics (see 2.1.2).

#### 2.1.1 Size and construction

The characteristics shall be indicated as follows :

| Nominal section width | Nominal aspect ratio | Tyre construction code | Nominal rim diameter |
|-----------------------|----------------------|------------------------|----------------------|
|-----------------------|----------------------|------------------------|----------------------|

##### 2.1.1.1 Nominal section width

The nominal section width shall be expressed in millimetres. For tyres fitted to 5° taper rims and 15° taper rims (code-designated), the nominal tyre section width shall end in 5.

##### 2.1.1.2 Nominal aspect ratio

The nominal aspect ratio shall be expressed as a percentage and shall be a multiple of 5.

##### 2.1.1.3 Tyre construction code

The tyre construction code shall be as follows:

- B for bias-belted construction;
- D for diagonal/bias construction;
- R for radial construction.

NOTE — Other codes will be established for new concepts (constructions) of tyres.

##### 2.1.1.4 Nominal rim diameter

The nominal rim diameter shall be expressed by a code for 5° tapered bead seat rims and 15° tapered bead seat (drop-centre) rims (see table 1 for code correlations).

However, it shall be expressed in millimetres for new and future concepts where the use of existing tyres on new concept rims or of new concept tyres on existing rims would be incompatible.

#### 2.1.2 Service condition characteristics

The characteristics shall be indicated as follows :

| Load Index single | Load Index dual | Speed symbol |
|-------------------|-----------------|--------------|
|-------------------|-----------------|--------------|

##### 2.1.2.1 Load Index

The Load Index is a numerical code associated with the maximum load a tyre can carry in the single or dual application at the speed indicated by its speed symbol under the specified service conditions. See table 5.

##### 2.1.2.2 Speed symbol

The speed symbol represents the speed category, which is the reference speed defined as the speed at which the tyre can carry the load corresponding to its Load Index under the specified service conditions. See table 6.

#### 2.1.3 Other service characteristics

2.1.3.1 In the case of tubeless tyres, the marking "TUBELESS" shall be shown on the tyre.

2.1.3.2 In the case of a preferred direction of rotation of the tyre, an arrow shall be used to indicate that direction.

2.1.3.3 In the case of special tread tyres (see table 2), the symbol "ET" shall be shown on the tyre.

#### 2.1.4 Example

A tyre having

- a) a size and construction of :
  - nominal section width 275 mm,
  - nominal aspect ratio 70 %,
  - radial construction,
  - nominal rim diameter code 22.5;
- b) service condition characteristics of :
  - single load 2 500 kg,
  - dual load 2 300 kg,
  - reference speed 130 km/h;
- c) other service characteristics :
  - tubeless,
  - special tread;

shall be marked :

275/70 R 22.5

140/137 M

TUBELESS ET

## 2.2 Tyre dimensions

### 2.2.1 Calculation of "design new tyre" dimensions

For the choice of coefficients  $K_1$  (rim section ratio) and  $K_2$ , see table 2.

#### 2.2.1.1 Theoretical rim width, $R_{th}$

The theoretical rim width,  $R_{th}$ , is equal to the product of the nominal section width,  $S_N$ , and the rim/section ratio,  $K_1$  :

$$R_{th} = K_1 S_N$$

#### 2.2.1.2 Measuring rim width, $R_m$

The measuring rim width,  $R_m$ , is the width of the existing rim nearest to the theoretical rim width,  $R_{th}$ . See table 1 for rim widths of 5° tapered and 15° tapered (drop-centre) rims.

#### 2.2.1.3 Design new tyre section width, $S$

The design new tyre section width,  $S$ , is the nominal section width,  $S_N$ , transferred from the theoretical rim,  $R_{th}$ , to the measuring rim,  $R_m$  :

$$S = S_N + K_2 (R_m - R_{th})$$

rounded to the nearest whole number.

For factor  $K_2$ , see table 2.

#### 2.2.1.4 Design new tyre section height, $H$

The design new tyre section height,  $H$ , is equal to the product of the nominal section width,  $S_N$ , and the nominal aspect ratio,  $H/S$  ( $H/S$  expressed as a percentage) :

$$H = S_N \frac{H/S}{100}$$

rounded to the nearest whole number.

#### 2.2.1.5 Design new tyre overall diameter, $D_o$

The design new tyre overall diameter,  $D_o$ , is the sum of the nominal rim diameter,  $D_r$ , plus twice the design new tyre section height,  $H$  :

$$D_o = D_r + 2 H$$

For those tyres using a nominal rim diameter code, see table 1 for the value of  $D_r$  to be used.

#### 2.2.1.6 Values

The relevant dimensions for the metric series of truck and bus tyre measuring rim width, design section width and design section height are shown in annexes A and B; for tyres of a given series, with a nominal tyre section over 205, it is recommended that they be in increments larger than 10.

### 2.2.2 Calculation of "maximum overall tyre dimensions in service"

These calculations are for use by vehicle manufacturers in designing for tyre clearances.

#### 2.2.2.1 Maximum overall width in service, $W_{max}$

The maximum overall width in service,  $W_{max}$ , is equal to the product of the design new tyre section width,  $S$ , and the appropriate coefficient  $a$  (see table 2) :

$$W_{max} = S a$$

It includes protective ribs, lettering, embellishments, manufacturing tolerances and growth due to service.

#### 2.2.2.2 Maximum overall diameter in service, $D_{o,max}$

The maximum overall diameter in service,  $D_{o,max}$ , is equal to the nominal rim diameter,  $D_r$ , plus twice the product of the design new tyre section height,  $H$ , and the appropriate coefficient  $b$  (see table 2) :

$$D_{o,max} = D_r + 2 H b$$

It includes manufacturing tolerances, the different types of tread patterns and growth due to service.

### 2.2.3 Minimum dual spacing, MDS

2.2.3.1 The minimum dual spacing is a guideline value equal to the product of the design new tyre section width,  $S$ , and the appropriate coefficient,  $K_3$  (see table 2b) :

$$MDS = S K_3$$

It is referred to a tyre load according to the Load Index, in dual application shown in the service characteristics on the tyre at an inflation pressure applicable for normal highway service.

2.2.3.2 The design new tyre section width,  $S$ , will change 2,5 mm for each 0.25 change in rim width code. The minimum dual spacing shall be adjusted accordingly.

Table 1 — Nominal rim diameter code and rim width code

a) Nominal rim diameter code

| Code            |                                | Nominal rim diameter, $D_r$<br>mm |
|-----------------|--------------------------------|-----------------------------------|
| 5° tapered rims | 15° tapered (drop-centre) rims |                                   |
| 10              | —                              | 254                               |
| 12              | —                              | 305                               |
| 13              | —                              | 330                               |
| 14              | —                              | 356                               |
| —               | 14.5                           | 368                               |
| 15              | —                              | 381                               |
| 16              | —                              | 406                               |
| 17              | —                              | 432                               |
| —               | 17.5                           | 445                               |
| 18              | —                              | 457                               |
| —               | 19.5                           | 495                               |
| 20              | —                              | 508                               |
| —               | 20.5                           | 521                               |
| 22              | —                              | 559                               |
| —               | 22.5                           | 572                               |
| 24              | —                              | 610                               |
| —               | 24.5                           | 622                               |

b) Rim width code

| Code            |                                | Measuring rim width, $R_m$<br>mm |
|-----------------|--------------------------------|----------------------------------|
| 5° tapered rims | 15° tapered (drop-centre) rims |                                  |
| 3.50            | —                              | 88,9                             |
| 4.00            | —                              | 101,6                            |
| 4.50            | —                              | 114,3                            |
| 5.00            | —                              | 127,0                            |
| —               | 5.25                           | 133,5                            |
| 5.50            | —                              | 139,7                            |
| 6.00            | 6.00                           | 152,5                            |
| 6.50            | —                              | 165,1                            |
| —               | 6.75                           | 171,5                            |
| 7.00            | —                              | 177,8                            |
| 7.50            | 7.50                           | 190,5                            |
| 8.00            | —                              | 203,2                            |
| —               | 8.25                           | 209,5                            |
| 8.50            | —                              | 215,9                            |
| 9.00            | 9.00                           | 228,5                            |
| 9.50            | —                              | 241,3                            |
| —               | 9.75                           | 247,5                            |
| 10.00           | —                              | 254,0                            |
| 10.50           | 10.50                          | 266,5                            |
| 11.25           | —                              | 285,8                            |
| —               | 11.75                          | 298,5                            |
| —               | 12.25                          | 311,0                            |
| 13.00           | 13.00                          | 330,0                            |
| 14.00           | 14.00                          | 355,5                            |
| 15.00           | 15.00                          | 381,0                            |
| —               | 16.00                          | 406,5                            |
| —               | 18,00                          | 457,0                            |

Table 2 — Coefficients for calculation of tyre dimensions

a) Coefficients  $K_2, b, a$

| Structure   | Tyre construction code | Coefficients |      |      |
|-------------|------------------------|--------------|------|------|
|             |                        | $K_2$        | $b$  | $a$  |
| Bias-belted | B                      | 0,4          | 1,07 | 1,08 |
| Diagonal    | D                      | 0,4          | 1,07 | 1,08 |
| Radial      | R                      | 0,4          | 1,04 | 1,05 |
| ...         | ...                    | ...          | ...  | ...  |
| ...         | ...                    | ...          | ...  | ...  |

NOTE — For special tread tyres (see 2.1.3.3) :

|             |            |
|-------------|------------|
| Bias-belted | $b = 1,09$ |
| Diagonal    | $b = 1,09$ |
| Radial      | $b = 1,06$ |

b) Coefficients  $K_1, K_3$

| Tyre construction code | Tyre of rim               | Nominal aspect ratio $H/S$ | Rim/section ratio $K_1$ | Minimum dual spacing <sup>1)</sup> $K_3$ |
|------------------------|---------------------------|----------------------------|-------------------------|--|
| B, D, R                | 5° tapered                | 100 to 65 <sup>2)</sup>    | 0,70                    | 1,15                                     |
|                        | 15° tapered (drop-centre) | 90 to 65 <sup>2)</sup>     | 0,75                    | 1,125                                    |
|                        | ...                       |                            |                         |  |

1) Other factors may be established for new concepts (constructions) of tyres.  
2) For  $H/S$  lower than 65, further annexes will be established.

### 2.2.4 Permitted rim widths

The range of permitted rim widths, in millimetres, is determined for each nominal section width by multiplying the nominal section width,  $S_N$ , by the coefficients,  $C_R$ , presented in table 3, i.e.

$$\text{minimum rim width} = C_{R,\min} \times S_N$$

$$\text{maximum rim width} = C_{R,\max} \times S_N$$

**Table 3 – Coefficients for calculation of rim widths for truck and bus tyres related to nominal aspect ratio  $H/S$**

| Type of rim <sup>1)</sup> | Nominal aspect ratio $H/S$ | Nominal section width $S_N$<br>mm | Coefficients for calculation of recommended rim width <sup>2)</sup> |               |
|---------------------------|----------------------------|-----------------------------------|---|---------------|
|                           |                            |                                   | $C_R$<br>min.   | $C_R$<br>max. |
| 5° tapered                | $100 < H/S < 70$           | all                               | 0,65  | 0,80          |
| 15° tapered               | $90 < H/S < 75$            | < 215                             | 0,65  | 0,80          |
|                           |                            | > 225                             | 0,675   | 0,80          |
|                           | $70 < H/S < 65$            | all                               | 0,675   | 0,85          |

1) Other rims may be specified in relation to special services by agreement among tyre, rim, wheel and motor vehicle manufacturers.

2) The coefficients shown in this table apply to the nominal section width of the tyre.

### 2.3 Tyre dimensions tables

Examples of a few sizes in a tyre dimension table are shown in annex C. The figures shown in the column headed "Rim" are codes related to measuring rim width,  $R_m$  (see table 1 for code correlations).

### 2.4 Method of measurement of tyre dimensions

Before measuring, tyres shall be mounted on the measuring rim, inflated to the recommended pressure, and allowed to stand for a minimum of 24 h at normal room temperature, after which the inflation pressure shall be readjusted to the original value.

## Section 3 : Load ratings

### 3.1 Tyre load-carrying capacity

Load Indexes are shown in table 5.

### 3.2 Speed symbol

Speed symbols are shown in table 6.

### 3.4 Load-carrying capacity at various speeds

When the tyre is fitted on a vehicle with a maximum speed capability different from the tyre reference speed, variations of load are granted in relation to the load corresponding to the Load Index (see table 4). To obtain improved operating performance under these conditions, inflation pressures higher than the basic pressure may be required.

Table 4 — Load-carrying capacity at various speeds

NOTES

- 1 The inflation pressure shall be increased for load adjustments above 125%, in consultation with the tyre manufacturer.
- 2 For 70 km/h and above, "speed" means the speed capability of the vehicle (maximum speed under fully laden conditions). For 65 km/h and below, "speed" means the operating speed of the vehicle.
- 3 Load adjustments are valid for use on improved surface only.
- 4 Consult rim and wheel manufacturers for confirmation of the strength of the rim/wheel for the intended service.

a) Tyres with Load Index (single) < 121, speed symbols L, M and N

| Speed<br>km/h     | Load<br>%        |
|-------------------|------------------|
| static            | 210              |
| 10                | 175              |
| 15                | 160              |
| 30                | 135              |
| 50                | 120              |
| 70                | 112,5            |
| 85                | 108,5            |
| 100               | 105              |
| 120               | 100              |
| 140 <sup>1)</sup> | 90 <sup>1)</sup> |

1) Applicable to tyres with speed symbol L.

b) Tyres with Load Index (single) > 122 speed symbols J to M

| Speed<br>km/h     | Load<br>%        |
|-------------------|------------------|
| static            | —                |
| 10                | —                |
| 15                | —                |
| 30                | 125              |
| 50                | 112              |
| 65                | 108,5            |
| 80                | 104              |
| 100               | 100              |
| 120 <sup>1)</sup> | 88 <sup>1)</sup> |

1) Applicable to tyres with speed symbol J.

Table 5 – Correlation between Load Index and tyre load-carrying capacity (TLCC)

| Load Index (LI) | TLCC kg |
|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|
| 0               | 45      | 40              | 140     | 80              | 450     | 120             | 1 400   | 160             | 4 500   | 200             | 14 000  | 240             | 45 000  |
| 1               | 46,2    | 41              | 145     | 81              | 462     | 121             | 1 450   | 161             | 4 625   | 201             | 14 500  | 241             | 46 250  |
| 2               | 47,5    | 42              | 150     | 82              | 475     | 122             | 1 500   | 162             | 4 750   | 202             | 15 000  | 242             | 47 500  |
| 3               | 48,7    | 43              | 155     | 83              | 487     | 123             | 1 550   | 163             | 4 875   | 203             | 15 500  | 243             | 48 750  |
| 4               | 50      | 44              | 160     | 84              | 500     | 124             | 1 600   | 164             | 5 000   | 204             | 16 000  | 244             | 50 000  |
| 5               | 51,5    | 45              | 165     | 85              | 515     | 125             | 1 650   | 165             | 5 150   | 205             | 16 500  | 245             | 51 500  |
| 6               | 53      | 46              | 170     | 86              | 530     | 126             | 1 700   | 166             | 5 300   | 206             | 17 000  | 246             | 53 000  |
| 7               | 54,5    | 47              | 175     | 87              | 545     | 127             | 1 750   | 167             | 5 450   | 207             | 17 500  | 247             | 54 500  |
| 8               | 56      | 48              | 180     | 88              | 560     | 128             | 1 800   | 168             | 5 600   | 208             | 18 000  | 248             | 56 000  |
| 9               | 58      | 49              | 185     | 89              | 580     | 129             | 1 850   | 169             | 5 800   | 209             | 18 500  | 249             | 58 000  |
| 10              | 60      | 50              | 190     | 90              | 600     | 130             | 1 900   | 170             | 6 000   | 210             | 19 000  | 250             | 60 000  |
| 11              | 61,5    | 51              | 195     | 91              | 615     | 131             | 1 950   | 171             | 6 150   | 211             | 19 500  | 251             | 61 500  |
| 12              | 63      | 52              | 200     | 92              | 630     | 132             | 2 000   | 172             | 6 300   | 212             | 20 000  | 252             | 63 000  |
| 13              | 65      | 53              | 206     | 93              | 650     | 133             | 2 060   | 173             | 6 500   | 213             | 20 600  | 253             | 65 000  |
| 14              | 67      | 54              | 212     | 94              | 670     | 134             | 2 120   | 174             | 6 700   | 214             | 21 200  | 254             | 67 000  |
| 15              | 69      | 55              | 218     | 95              | 690     | 135             | 2 180   | 175             | 6 900   | 215             | 21 800  | 255             | 69 000  |
| 16              | 71      | 56              | 224     | 96              | 710     | 136             | 2 240   | 176             | 7 100   | 216             | 22 400  | 256             | 71 000  |
| 17              | 73      | 57              | 230     | 97              | 730     | 137             | 2 300   | 177             | 7 300   | 217             | 23 000  | 257             | 73 000  |
| 18              | 75      | 58              | 236     | 98              | 750     | 138             | 2 360   | 178             | 7 500   | 218             | 23 600  | 258             | 75 000  |
| 19              | 77,5    | 59              | 243     | 99              | 775     | 139             | 2 430   | 179             | 7 750   | 219             | 24 300  | 259             | 77 500  |
| 20              | 80      | 60              | 250     | 100             | 800     | 140             | 2 500   | 180             | 8 000   | 220             | 25 000  | 260             | 80 000  |
| 21              | 82,5    | 61              | 257     | 101             | 825     | 141             | 2 575   | 181             | 8 250   | 221             | 25 750  | 261             | 82 500  |
| 22              | 85      | 62              | 265     | 102             | 850     | 142             | 2 650   | 182             | 8 500   | 222             | 26 500  | 262             | 85 000  |
| 23              | 87,5    | 63              | 272     | 103             | 875     | 143             | 2 725   | 183             | 8 750   | 223             | 27 250  | 263             | 87 500  |
| 24              | 90      | 64              | 280     | 104             | 900     | 144             | 2 800   | 184             | 9 000   | 224             | 28 000  | 264             | 90 000  |
| 25              | 92,5    | 65              | 290     | 105             | 925     | 145             | 2 900   | 185             | 9 250   | 225             | 29 000  | 265             | 92 500  |
| 26              | 95      | 66              | 300     | 106             | 950     | 146             | 3 000   | 186             | 9 500   | 226             | 30 000  | 266             | 95 000  |
| 27              | 97,5    | 67              | 307     | 107             | 975     | 147             | 3 075   | 187             | 9 750   | 227             | 30 750  | 267             | 97 500  |
| 28              | 100     | 68              | 315     | 108             | 1 000   | 148             | 3 150   | 188             | 10 000  | 228             | 31 500  | 268             | 100 000 |
| 29              | 103     | 69              | 325     | 109             | 1 030   | 149             | 3 250   | 189             | 10 300  | 229             | 32 500  | 269             | 103 000 |
| 30              | 106     | 70              | 335     | 110             | 1 060   | 150             | 3 350   | 190             | 10 600  | 230             | 33 500  | 270             | 106 000 |
| 31              | 109     | 71              | 345     | 111             | 1 090   | 151             | 3 450   | 191             | 10 900  | 231             | 34 500  | 271             | 109 000 |
| 32              | 112     | 72              | 355     | 112             | 1 120   | 152             | 3 550   | 192             | 11 200  | 232             | 35 500  | 272             | 112 000 |
| 33              | 115     | 73              | 365     | 113             | 1 150   | 153             | 3 650   | 193             | 11 500  | 233             | 36 500  | 273             | 115 000 |
| 34              | 118     | 74              | 375     | 114             | 1 180   | 154             | 3 750   | 194             | 11 800  | 234             | 37 500  | 274             | 118 000 |
| 35              | 121     | 75              | 387     | 115             | 1 215   | 155             | 3 875   | 195             | 12 150  | 235             | 38 750  | 275             | 121 000 |
| 36              | 125     | 76              | 400     | 116             | 1 250   | 156             | 4 000   | 196             | 12 500  | 236             | 40 000  | 276             | 125 000 |
| 37              | 128     | 77              | 412     | 117             | 1 285   | 157             | 4 125   | 197             | 12 850  | 237             | 41 250  | 277             | 128 500 |
| 38              | 132     | 78              | 425     | 118             | 1 320   | 158             | 4 250   | 198             | 13 200  | 238             | 42 500  | 278             | 132 000 |
| 39              | 136     | 79              | 437     | 119             | 1 360   | 159             | 4 375   | 199             | 13 600  | 239             | 43 750  | 279             | 136 000 |

Table 6 – Correlation between speed symbol and speed category

| Speed symbol | Speed category km/h |
|--------------|---------------------|
| B            | 50                  |
| C            | 60                  |
| D            | 65                  |
| E            | 70                  |
| F            | 80                  |
| G            | 90                  |
| J            | 100                 |
| K            | 110                 |
| L            | 120                 |
| M            | 130                 |
| N            | 140                 |

**Annex A**  
(informative)

**Guideline values for metric series, 5° rims**

**A.1** The values given in table A.1 are for information; see 2.2.1.6.

**A.2** These values will serve as a guideline for design of new tyre dimensions, metric series, mounted on 5° tapered drop-centre rims (code-designated) with nominal rim diameters up to code 16 inclusive. For tyres mounted on 15° tapered drop-centre rims (code-designated), see annex B. For tyres mounted on different types of rims (millimetre-designated), other annexes will be established.

**Table A.1 — Guideline values for metric series, 5° rims**

| Nominal section width $S_N$<br>mm | Measuring rim width code $R_m$ | New tyre design dimensions, mm |  |     |     |     |     |     |     |                  |
|-----------------------------------|--------------------------------|--------------------------------|--|-----|-----|-----|-----|-----|-----|------------------|
|                                   |                                | Section width $S$              | Section height, $H$ , <sup>1)</sup> at nominal aspect ratios $H/S$ : |     |     |     |     |     |     |                  |
|                                   |                                |                                | 100  | 95  | 90  | 85  | 80  | 75  | 70  | 65 <sup>2)</sup> |
| 125                               | 3.50                           | 126                            | 125  | 119 | 113 | 106 | 100 | 94  | 88  | 81               |
| 135                               | 3.50                           | 133                            | 135  | 128 | 122 | 115 | 108 | 101 | 95  | 88               |
| 145                               | 4.00                           | 145                            | 145  | 138 | 131 | 123 | 116 | 109 | 102 | 94               |
| 155                               | 4.50                           | 157                            | 155  | 147 | 140 | 132 | 124 | 116 | 109 | 101              |
| 165                               | 4.50                           | 165                            | 165  | 157 | 149 | 140 | 132 | 124 | 116 | 107              |
| 175                               | 5.00                           | 177                            | 175  | 166 | 158 | 149 | 140 | 131 | 123 | 114              |
| 185                               | 5.00                           | 184                            | 185  | 176 | 167 | 157 | 148 | 139 | 130 | 120              |
| 195                               | 5.50                           | 196                            | 195  | 185 | 176 | 166 | 156 | 146 | 137 | 127              |
| 205                               | 5.50                           | 203                            | 205  | 195 | 185 | 174 | 164 | 154 | 144 | 133              |
| 215                               | 6.00                           | 216                            | 215  | 204 | 194 | 183 | 172 | 161 | 151 | 140              |
| 225                               | 6.00                           | 223                            | 225  | 214 | 203 | 191 | 180 | 169 | 158 | 146              |
| 235                               | 6.50                           | 235                            | 235  | 223 | 212 | 200 | 188 | 176 | 165 | 153              |
| 245                               | 7.00                           | 248                            | 245  | 233 | 221 | 208 | 196 | 184 | 172 | 159              |
| 255                               | 7.00                           | 255                            | 255  | 242 | 230 | 217 | 204 | 191 | 179 | 166              |
| 265                               | 7.50                           | 267                            | 265  | 252 | 239 | 225 | 212 | 199 | 186 | 172              |
| 275                               | 7.50                           | 274                            | 275  | 261 | 248 | 234 | 220 | 206 | 193 | 179              |
| 285                               | 8.00                           | 286                            | 285  | 271 | 257 | 242 | 228 | 214 | 200 | 185              |
| 295                               | 8.00                           | 294                            | 295  | 280 | 266 | 251 | 236 | 221 | 207 | 192              |
| 305                               | 8.50                           | 306                            | 305  | 290 | 275 | 259 | 244 | 229 | 214 | 198              |
| 315                               | 8.50                           | 313                            | 315  | 299 | 284 | 268 | 252 | 236 | 221 | 205              |
| 325                               | 9.00                           | 325                            | 325  | 309 | 293 | 276 | 260 | 244 | 228 | 211              |
| 335                               | 9.00                           | 333                            | 335  | 318 | 302 | 285 | 268 | 251 | 235 | 218              |
| 345                               | 9.50                           | 345                            | 345  | 328 | 311 | 293 | 276 | 259 | 242 | 224              |
| 355                               | 10.00                          | 357                            | 355  | 337 | 320 | 302 | 284 | 266 | 249 | 231              |
| 365                               | 10.00                          | 365                            | 365  | 347 | 329 | 310 | 292 | 274 | 256 | 237              |

1) The figures are based on normal tread pattern tyres.

2) For  $H/S$  lower than 65, other annexes will be established.

## Annex B (informative)

### Guideline values for metric series, 15° rims

**B.1** The values given in table B.1 are for information; see 2.2.1.6.

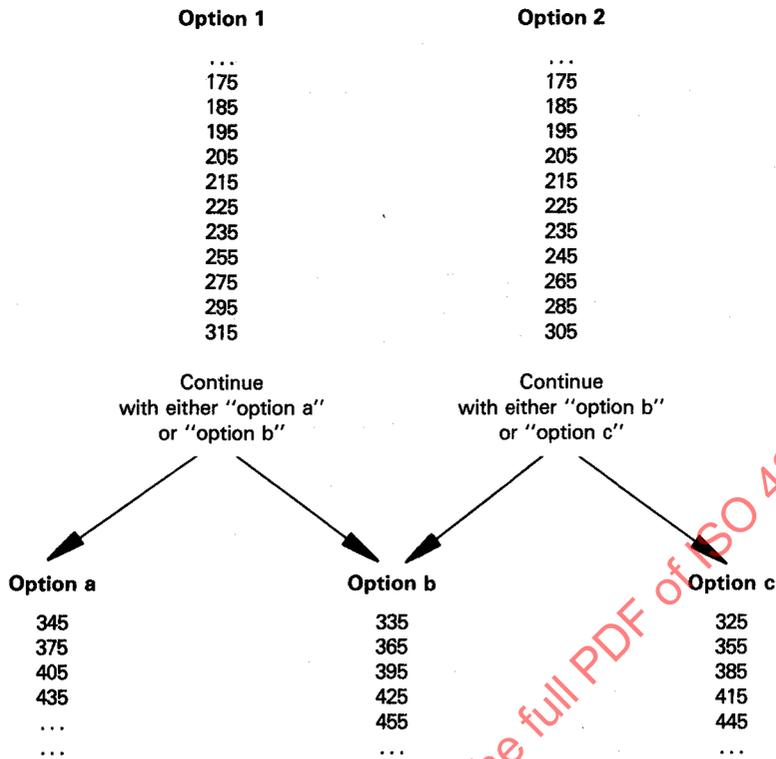
**B.2** These values will serve as a guideline for design of new tyre dimensions, metric series, mounted on 15° tapered drop-centre rims (code-designated). For tyres mounted on 5° tapered drop-centre (code-designated) rims, see annex A. For tyres mounted on different types of rims (millimetre-designated), other annexes will be established.

Table B.1 — Guideline values for metric series, 15° rims

| Nominal section width <sup>1), 2)</sup><br>$S_N$<br>mm | Measuring rim width code<br>$R_m$ | New tyre design dimensions, mm |  |     |     |     |     |                  | Recommended rims <sup>5)</sup> |
|--|-----------------------------------|--------------------------------|--|-----|-----|-----|-----|------------------|--------------------------------|
|  |                                   | Section width<br>$S$           | Section height, $H$ , <sup>3)</sup> at nominal aspect ratios $H/S$ : |     |     |     |     |                  |                                |
|  |                                   |                                | 90   | 85  | 80  | 75  | 70  | 65 <sup>4)</sup> |                                |
| 175  | 5.25                              | 176                            | 158  | 149 | 140 | 131 | 123 | 114              | 5.25; ...                      |
| 185  | 5.25                              | 183                            | 167  | 157 | 148 | 139 | 130 | 120              | 5.25; 6.00                     |
| 195  | 6.00                              | 197                            | 176  | 166 | 156 | 146 | 137 | 127              | 5.25; 6.00                     |
| 205  | 6.00                              | 204                            | 185  | 174 | 164 | 154 | 144 | 133              | 6.00; 6.75                     |
| 215  | 6.00                              | 211                            | 194  | 183 | 172 | 161 | 151 | 140              | 6.00; 6.75                     |
| 225  | 6.75                              | 226                            | 203  | 191 | 180 | 169 | 158 | 146              | 6.00; 6.75                     |
| 235  | 6.75                              | 233                            | 212  | 200 | 188 | 176 | 165 | 153              | 6.75; 7.50                     |
| 245  | 7.50                              | 248                            | 221  | 208 | 196 | 184 | 172 | 159              | 6.75; 7.50                     |
| 255  | 7.50                              | 255                            | 230  | 217 | 204 | 191 | 179 | 166              | 7.50; 8.25                     |
| 265  | 7.50                              | 262                            | 239  | 225 | 212 | 199 | 186 | 172              | 7.50; 8.25                     |
| 275  | 8.25                              | 276                            | 248  | 234 | 220 | 206 | 193 | 179              | 7.50; 8.25                     |
| 285  | 8.25                              | 283                            | 257  | 242 | 228 | 214 | 200 | 185              | 8.25; 9.00                     |
| 295  | 9.00                              | 298                            | 266  | 251 | 236 | 221 | 207 | 192              | 8.25; 9.00                     |
| 305  | 9.00                              | 305                            | 275  | 259 | 244 | 229 | 214 | 198              | 9.00; 9.75                     |
| 315  | 9.00                              | 312                            | 284  | 268 | 252 | 236 | 221 | 205              | 9.00; 9.75                     |
| 325  | 9.75                              | 327                            | 293  | 276 | 260 | 244 | 228 | 211              | 9.00; 9.75                     |
| 335  | 9.75                              | 334                            | 302  | 285 | 268 | 251 | 235 | 218              | 9.75; 10.50                    |
| 345  | 10.50                             | 348                            | 311  | 293 | 276 | 259 | 242 | 224              | 9.75; 10.50                    |
| 355  | 10.50                             | 355                            | 320  | 302 | 284 | 266 | 249 | 231              | 9.75; 10.50                    |
| 365  | 10.50                             | 362                            | 329  | 310 | 292 | 274 | 256 | 237              | 10.50; 11.75                   |
| 375  | 10.50                             | 369                            | 338  | 319 | 300 | 281 | 263 | 244              | 10.50; 11.75                   |
| 385  | 11.75                             | 389                            | 347  | 327 | 308 | 289 | 270 | 250              | 10.50; 11.75                   |
| 395  | 11.75                             | 396                            | 356  | 336 | 316 | 296 | 277 | 257              | 11.75; 12.25                   |
| 405  | 11.75                             | 403                            | 365  | 344 | 324 | 304 | 284 | 263              | 11.75; 12.25                   |
| 415  | 12.25                             | 415                            | 374  | 353 | 332 | 311 | 291 | 270              | 12.25; 13.00                   |
| 425  | 12.25                             | 422                            | 383  | 361 | 340 | 319 | 298 | 276              | 12.25; 13.00                   |
| 435  | 13.00                             | 437                            | 392  | 370 | 348 | 326 | 305 | 283              | 12.25; 13.00                   |
| 445  | 13.00                             | 446                            | 401  | 378 | 356 | 334 | 312 | 289              | 13.00; 14.00                   |
| 455  | 13.00                             | 451                            | 410  | 387 | 364 | 341 | 319 | 296              | 13.00; 14.00                   |

Footnotes 1) to 5): see next page.

1) For a given series, follow either "option 1" or "option 2" as a guideline for the nominal tyre section,  $S_N$  :



These lists are open-ended.

- 2) For nominal tyre section widths,  $S_N$ , lower than 175 or higher than 455, other annexes will be established as necessary.
- 3) The figures are based on normal tread pattern tyres.
- 4) For  $H/S$  lower than 65, other annexes will be established.
- 5) Other rims may be specified in relation to special services by agreement among tyre, rim, wheel and motor vehicle manufacturers.