

INTERNATIONAL  
STANDARD

**ISO**  
**22843**

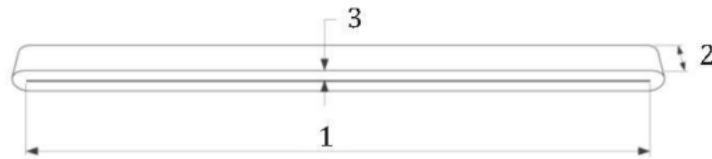
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**Rubber bands — General  
requirements and test methods**

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- Key**
- 1 lay flat length
  - 2 cut-width
  - 3 thickness

**Figure 1 — Lay flat length, cut-width and thickness of a rubber band**

#### 4 Classification

Rubber bands are classified into three types:

- Type 1, bands with low modulus;
- Type 2, bands with moderate to high modulus;
- Type 3, bands without modulus requirement.

#### 5 Requirements

##### 5.1 General

Rubber bands shall have a uniform finish and free from discoloration, thin spots, air bubbles, embedded particles, tackiness, and other blemishes likely to affect its serviceability (through a visual inspection).

##### 5.2 Dimensions

The dimensions (lay flat length, cut-width and thickness) of rubber bands shall be, unless agreed between the manufacturer and the buyer otherwise, designated as marking. The tolerances on dimensions are given in [Table 1](#).

**Table 1 — Tolerances for dimensions of rubber bands**

Dimensions	Tolerance
Lay flat length	
— less than 25 mm	±8,0 %
— between 25 mm and 100 mm	±5,0 %
— above 100 mm	±3,2 %
Thickness	
— less than 1 mm	±0,2 mm
— between 1 mm and 1,6 mm	±0,3 mm
— above 1,6 mm	±15 %
Cut-width	
— less than 3 mm	±10 %
— between 3 mm and 12 mm	±9 %
— above 12 mm	±7 %

### 5.3 Physical properties

Physical properties of rubber bands shall comply with the requirements given in [Table 2](#).

**Table 2 — Required physical properties**

Physical properties	Requirements			Test method
	Type 1	Type 2	Type 3	
Modulus at 300 % elongation, MPa	≤2,0	>2,0	Not required	<a href="#">6.3</a>
Tensile strength, MPa, min.				
— tube sample	17,0	15,5	10,0	<a href="#">6.3.1</a>
— ring sample	17,0	15,5	10,0	<a href="#">6.3.2</a>
Elongation at break, %, min.				
— tube sample	700	650	500	<a href="#">6.3.1</a>
— ring sample	600	550	450	<a href="#">6.3.2</a>
Tension set, %, max.	7	10	13	<a href="#">6.4</a>
Density, g/cm <sup>3</sup> , max.	1,0	1,1	1,3	<a href="#">6.5</a>
After accelerated-ageing test				<a href="#">6.6</a>
Change in tensile strength, %, max.	20	20	20	
Change in elongation at break, %, max.	20	20	20	

## 6 Test methods

### 6.1 General

All measurements shall be made at standard laboratory temperature after conditioning in accordance with ISO 23529 for at least 3 h.

### 6.2 Dimensions

Only perform the dimension measurement on the finish rubber band products, not on the uncut rubber tube.

**6.2.1** For each dimension, a minimum of three pieces of rubber bands shall be measured and the average value shall be reported.

**6.2.2** For lay flat length, cut a rubber band test piece to open its loop and place a strip on flat surface. The measurement shall be made on the inner side of the strip to the nearest 0,1 mm using appropriated measuring devices e.g. vernier caliper, calibrated tape and ruler. The lay flat length shall be reported as half the measured length of the strip.

Alternatively, an assisting tool may be employed to measure the lay flat length providing that its accuracy is appropriate. The example of the assisting tool is shown in [Figure 2](#).