

HARDNESS SPECIFICATIONS FOR ROLLER COVERING

All elements referenced in this documentation, relate to the International Standard ISO 6123/1-1982 in which the requirements in regard to the hardness of covered rolls is defined.



At Hannecard, hardness measurements are always executed based upon the international standard ISO 6123/1 – 1982.

IN THIS DOCUMENT

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THE COMMON HARDNESS SCALES

Hardness Shore A	Hardness Pusey-Jones P&J	Hardness Shore D
100	0-3	85-90
99	4-5	80-85
97	6-10	70-80
95	11-15	55-70
93	16-20	
91	21-25	
89	26-30	
87	31-35	
85	36-40	
83	41-45	
81	46-50	
79	51-55	
77	56-60	
75	61-65	
73	66-70	
71	71-75	
69	76-80	
65	81-90	
61	91-100	
57	101-110	
53	111-120	
50	121-130	
47	131-140	
44	141-150	
42	151-160	
40	161-170	
38	171-180	
35	181-200	
32	201-220	
29	220-240	

Authorized standard deviation (ISO 6123 / 1) in relation the nominal hardness Pusey-Jones (PJ)

Hardness PJ	Tolerance
3-15	+/-3
16-49	+/-4
50-60	+/-5
61-70	+/-6
71-80	+/-7
81-90	+/-8
91-100	+/-9
101-150	+/-10
151-200	+/-25

CONDITIONS FOR MEASUREMENT

Thickness of the covering

The hardness of the elastomers is measured by means of a specially designed instrument, the "durometer". The thickness of the coating may, however, affect the values obtained. The rule therefore provides the following thicknesses:

- Up to 50 Shore A or between 40 and 100 P&J: not less than 9 mm
- Above 50 Shore A or upto 40 P&J: not less than 6 mm

Number of measurements

The hardness of rollers with a table length up to 2500 mm is measured at 5 points:

- 3 points, each time at a distance of 120° around the circumference in the middle of the roll;
- 1 point at each end and at a distance equal to 10% of the covered length, calculated from the end.

Bij rollen met een tafellengte die hoger is dan 2500 mm wordt de hardheid gemeten op 9 punten:

- 3 punten, telkens op een afstand van 120° rond de omtrek in het midden van de rol;
- aan het uiteinde op 3 punten, telkens op een afstand van 120° rond de omtrek van de rol;

Tolerances on nominal hardness

Hardness values need to be expressed as follows:

- Shore A:
 - below 90 Shore A : in multiples of 5
 - above 90 Shore A : in whole numbers
- P&J:
 - in multiples of 3 for values between 0 and 15 P&J
 - in multiples of 5 for values between 15 and 100 P&J
 - in multiples of 10 for values between 100 and 200 P&J
 - in multiples of 25 for values above 200 P&J

For hardnesses expressed in Shore A or Shore D the ISO 6123/1 standard foresees a deviation of ± 5 hardness degrees in relation to the nominal value.

RELATED DOCUMENTS

- Technical info - 'Geometrical & Dimensional tolerances'
- Technical info - 'Mechanical services'
- Technical info 'Roll covering process'
- Technical info 'Roll finishing'
- Technical info 'Selection guide'
- Technical info 'Surface characteristics'
- Technical info 'Transport & Packaging'

Temperature

When testing, the temperature should preferably be the same as that in a laboratory at a normal ambient temperature, namely, 23 ± 2 ° C. The cylinder must first be brought to test temperature in order to ensure an optimum temperature balance.

Since the hardness can be influenced by the temperature, it is necessary to define the value- prior to the measurement - so results can be compared.

MORE INFORMATION?

For more information, please contact your local Hannecard partner or visit our website at : www.hannecard.com