INTERNATIONAL STANDARD ISO 12301:1992
TECHNICAL CORRIGENDUM 1

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Plain bearings — Quality control techniques and inspection of geometrical and material quality characteristics

TECHNICAL CORRIGENDUM 1

Paliers lisses — Techniques de contrôle de la qualité et vérifications des caractéristiques de qualité géométriques et des matériaux

RECTIFICATIF TECHNIQUE 1

Technical corrigendum 1 to International Standard ISO 12301:1992 was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 5, *Quality analysis and assurance.*

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Table 1 (*concluded*)

ε_{max} is now: Maximum diametral deformation in compression

ε_{min} is now: Minimum diametral deformation in compression

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A.1.5

Should read as follows:

A.1.5 Crush height, a

According to the drawing specification, a = 0,040 mm to 0,070 mm (a_{min} = 0,040 mm; a_{max} = 0,070 mm).

Tolerance on crush height, T_a = 0,030 mm.

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Descriptors: bearings, plain bearings, tests, dimensional measurements.

A.1.6

Should read as follows:

A.1.6 Diametral deformation in compression, ε

NOTE — If the diameter of the checking block bore is larger than the upper limit of the housing diameter, ε is increased by that difference.

The minimum diametral deformation in compression, ε_{min}, is calculated using the following formula:

$$\varepsilon_{min} = \frac{2}{\pi}(E_{red} + a_{min}) = \frac{2}{\pi}(0{,}039 + 0{,}040) = 0{,}050 \text{ mm}$$

The maximum diametral deformation in compression, ε_{max}, is calculated using the following formula:

$$\varepsilon_{max} = \frac{2}{\pi} \times T_a + (T_{d_H} + \varepsilon_{min}) = \frac{2}{\pi} \times 0{,}030 + (0{,}019 + 0{,}050) = 0{,}088 \text{ mm}$$

where T_{d_H} is the tolerance on the housing diameter d_H.

A.1.7

Should read as follows:

A.1.7 Tangential load, F_{tan}

$$\frac{s_{tot,\ eff}}{d_H} = \frac{1{,}75}{64} = 0{,}027$$

(See figure A.1.)

The stress, Φ, is derived from figure A.1.

$$\Phi = 1{,}93 \times 10^5 \text{ N/mm}^2$$

Using this value derived for Φ, the minimum and maximum tangential strengths can be calculated as follows:

$$\sigma_{tan,\ min} = \frac{\Phi}{d_H} \times \varepsilon_{min} = \frac{1{,}93 \times 10^5}{64} \times 0{,}050 = 151 \text{ N/mm}^2$$

$$\sigma_{tan,\ max} = \frac{\Phi}{d_H} \times \varepsilon_{max} = \frac{1{,}93 \times 10^5}{64} \times 0{,}088 = 265 \text{ N/mm}^2$$

Thus the median tangential load, $\overline{F}_{tan}$, to be applied in this example can be calculated as follows:

$$\overline{F}_{tan} = \frac{\sigma_{tan,\ min} + \sigma_{tan,\ max}}{2} \times A_{eff} = \frac{151 + 265}{2} \times 43{,}75 = 9\,100 \text{ N}$$

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A.2.5

Should read as follows:

A.2.5 Crush height, a

According to the drawing specification, a = 0,050 mm to 0,080 mm (a_{min} = 0,050 mm; a_{max} = 0,080 mm).

Tolerance on crush height, T_a = 0,030 mm.

A.2.6

Should read as follows:

A.2.6 Diametral deformation in compression, ε

NOTE — If the diameter of the checking block bore is larger than the upper limit of the housing diameter, ε is increased by that difference.

The minimum diametral deformation in compression, ε_{min}, is calculated using the following formula:

$$\varepsilon_{min} = \frac{2}{\pi}(E_{red} + a_{min}) = \frac{2}{\pi}(0{,}065 + 0{,}050) = 0{,}073 \text{ mm}$$

The maximum diametral deformation in compression, ε_{max}, is calculated using the following formula:

$$\varepsilon_{max} = \frac{2}{\pi} \times T_a + (T_{d_H} + \varepsilon_{min}) = \frac{2}{\pi} \times 0{,}030 + (0{,}022 + 0{,}073) = 0{,}114 \text{ mm}$$

where T_{d_H} is the tolerance on the housing diameter d_H.

A.2.7

Should read as follows:

A.2.7 Tangential load, F_{tan}

$$\frac{s_{tot,\ eff}}{d_H} = \frac{5{,}56}{110} = 0{,}05$$

(See figure A.1.)

The stress, Φ, is derived from figure A.1.

$$\Phi = 1{,}75 \times 10^5 \text{ N/mm}^2$$

Using this derived value for Φ, the minimum and maximum tangential strengths can be calculated as follows:

$$\sigma_{tan,\ min} = \frac{\Phi}{d_H} \times \varepsilon_{min} = \frac{1{,}75 \times 10^5}{110} \times 0{,}073 = 116 \text{ N/mm}^2$$

$$\sigma_{tan,\ max} = \frac{\Phi}{d_H} \times \varepsilon_{max} = \frac{1{,}75 \times 10^5}{110} \times 0{,}114 = 181 \text{ N/mm}^2$$

Thus the median tangential load, $\overline{F}_{tan}$, to be applied in this example can be calculated as follows:

$$\overline{F}_{tan} = \frac{\sigma_{tan,\ min} + \sigma_{tan,\ max}}{2} \times A_{eff} = \frac{116 + 181}{2} \times 183{,}4 = 27\,235 \text{ N}$$