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Methods of Test for Paints

Part E5: Pendulum damping test

It is recommended that this Part be read in conjunction with the general information in the Introduction to BS 3900 issued separately (revised edition published March 1969).

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Foreword

This Part, based on ISO Recommendation R 1522, “*Paints and varnishes. Pendulum damping test*”, permits the use of two types of pendulum, namely those of König and Persoz, which are defined respectively by German standard DIN 53 157 and French standard NF T 30-016. This approach was adopted by Sub-committee 9 — General Test Methods for Paints and Varnishes, of ISO/TC 35 — Paints and Varnishes.

The instruments embody the same principle — that the amplitude of oscillation of a pendulum touching a surface decreases more rapidly the softer the surface — but differ in respect of dimensions, period and amplitude of oscillation. The interaction between the pendulum and the paint film is complex, depending as it does on both elastic and viscoelastic properties, and it is not possible to establish a general relationship between results obtained by the two tests. Only one type of pendulum should, therefore, be used in a given series of measurements of damping time.

Extensive experimental work in several countries led to the conclusion that one apparatus had little technical advantage over the other.

The following considerations may serve as a guide in considering which pendulum may offer an advantage for a particular purpose:

- 1) In general, the damping time of the König pendulum is approximately half that of the Persoz pendulum.
- 2) On surfaces of low coefficient of friction, the Persoz pendulum may skid, which would invalidate the results; however, this occurs only rarely in the field of paints and varnishes.
- 3) It should be noted that both instruments reflect the sensitivity of the physical properties of a paint to its environment, and the test should therefore be conducted under controlled conditions of temperature and humidity and in the absence of draughts. The thickness of the paint film and the nature of the substrate may also affect the damping times.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 4 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Foreword	Inside front cover
1 Scope	1
2 Supplementary information	1
3 Apparatus	1
4 Sampling	1
5 Test panel	1
6 Procedure	2
7 Test report	2
Figure 1 — König pendulum	3
Figure 2 — Persoz pendulum	4