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Decorative physical vapor deposition (PVD) coatings on kitchen and sanitary ware fittings- — Specification and test methods

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ISO copyright office
CP 401 • Ch. de ~~Blandon net~~Blandonnet 8
CH-1214 Vernier, Geneva
Phone: + 41 22 749 01 11
~~Email~~E-mail: copyright@iso.org
Website: ~~www.iso.org~~www.iso.org

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This document was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 9, *Physical vapor deposition coatings*.

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Introduction

Physical vapor deposition (PVD) is a group of dry coating technologies used for decorative coating, tool coating and other substrate coatings under a vacuum environment. During the PVD process, the target material is transferred atom by atom from solid phase to vapor phase and back to solid phase as a thin film coating on the substrate. Thus, PVD is an eco-friendly technique which can produce coatings with a variety of colour, textures, and functions over traditional methods.

The PVD process is capable of producing bright and hard coatings on many metals and plastic substrates. A luxurious metallic finish and a wide range of colours can be obtained using various metal sputtering targets, such as chromium, zirconium, titanium, titanium—aluminium alloys and niobium. Therefore, PVD coatings have become a popular choice for decorative finishes for many products where durability, aesthetics and functionality are important considerations. In particular, PVD coatings are well established as decorative coatings on kitchen and sanitary wares.

Decorative PVD coatings are applied to the surface of objects in order to get better appearance and longer durability. Common kitchen and sanitary substrate including copper alloy, zinc alloy, stainless steel, aluminium alloy and ABS. The colour of PVD coating can include gold, bronze, rose gold, silver, black, smoke grey, copper, brown, purple, blue, wine red and others.

This document specifies and recommends test methods for discoloration resistance, corrosion, abrasion, and adhesion of the decorative PVD coatings applied on kitchen and sanitary wares.

