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**Vitreous and porcelain enamels —  
Enamelled articles for service under highly  
corrosive conditions — High voltage test**

*Émaux vitrifiés — Articles émaillés pour usage dans des conditions  
hautement corrosives — Essai sous haute tension*



## Foreword

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International Standard ISO 2746 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 6, *Vitreous and porcelain enamels*.

This second edition cancels and replaces the first edition (ISO 2746:1973), which has been technically revised.

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International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet central@iso.ch  
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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# Vitreous and porcelain enamels — Enamelled articles for service under highly corrosive conditions — High voltage test

## 1 Scope

This International Standard specifies a test method for vitreous and porcelain enamelled articles using high voltage.

This high voltage test is used to detect defects in enamel coatings that extend down to the metal base, and to locate weak spots in enamel coatings.

This test method applies to voltages not less than 2 kV and a coating thickness not less than 660  $\mu\text{m}$ .

## 2 Definition

For the purposes of this International Standard, the following definition applies.

**2.1 weak spot:** Area of an enamel coating where the coating thickness as determined by the application of high voltage falls below the required value due to the presence of blisters, foreign body inclusions, spalling or cracks.

## 3 Principle

The high voltage test is carried out at a direct current (d.c.) voltage of greater than 2 kV by passing a positive electrode over the enamel surface; the high voltage generator locates defects and weak spots as a spark discharge and a simultaneous optical and/or acoustic signal.

## 4 Apparatus

**4.1 High voltage generator,** capable of delivering a d.c. voltage of greater than 2 kV corresponding to the test voltage (see 6.1). It shall be capable of providing adjustable and measurable voltages to within  $\pm 5\%$ .

The total internal resistance shall be high enough to give the short circuit current of the generator an arithmetical mean from 2 mA to 3 mA maximum. The peak value of the current during a spark discharge shall be between 10 mA and 50 mA maximum and the amount of charge per impulse shall be 25  $\mu\text{C}$  maximum.