
**Vitreous and porcelain enamels —
Glass-lined apparatus for process
plants —**

Part 4:
**Quality requirements for glass-lined
flanged steel pipes and flanged steel
fittings**

*Émaux vitrifiés — Appareils émaillés pour les installations
industrielles —*

*Partie 4: Exigences de qualité pour les tubes et raccords à brides en
acier émaillé*



Sample Document

get full document from standards.iteh.ai



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Materials for steel parts	2
5 Information to be supplied by the purchaser	2
6 Requirements	2
6.1 Requirements for the steel parts	2
6.1.1 Welding	2
6.1.2 Material properties	2
6.1.3 Surface characteristics	3
6.1.4 Exterior protection	3
6.2 Requirements for the glass-lined components	3
6.2.1 Surfaces	3
6.2.2 Enamel defects	3
6.2.3 Foreign matter in the enamel	3
6.2.4 Enamel coating thickness	4
6.2.5 Dimensions and tolerances	4
6.2.6 Other requirements	4
7 Tests and certificates	4
7.1 General	4
7.2 Place of testing	4
7.3 Testing of the substrate	4
7.4 Testing of the glass-lined components	4
8 Marking	5

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 107, *Metallic and other inorganic coatings*.

This second edition cancels and replaces the first edition (ISO 28721-4:2010), which has been technically revised.

ISO 28721 consists of the following parts, under the general title *Vitreous and porcelain enamels — Glass-lined apparatus for process plants*:

- *Part 1: Quality requirements for apparatus, components, appliances and accessories*
- *Part 2: Designation and specification of resistance to chemical attack and thermal shock*
- *Part 3: Thermal shock resistance*
- *Part 4: Quality requirements for glass-lined flanged steel pipes and flanged steel fittings*
- *Part 5: Presentation and characterization of defects*

Vitreous and porcelain enamels — Glass-lined apparatus for process plants —

Part 4: Quality requirements for glass-lined flanged steel pipes and flanged steel fittings

WARNING — This part of ISO 28721 calls for the use of substances and/or procedures that may be injurious to health if adequate safety measures are not taken. This part of ISO 28721 does not address any health hazards, safety or environmental matters associated with its use. It is the responsibility of the user of this part of ISO 28721 to establish appropriate health, safety and environmentally acceptable practices and take suitable actions for any national and international regulations. Compliance with this part of ISO 28721 does not in itself confer immunity from legal obligations.

1 Scope

This part of ISO 28721 specifies the quality requirements for glass-lined flanged steel pipes and flanged steel fittings used for process plants.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2746, *Vitreous and porcelain enamels — High voltage test*

ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 12944-5, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 5: Protective paint systems*

ISO 28706-2, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 2: Determination of resistance to chemical corrosion by boiling acids, boiling neutral liquids and/or their vapours*

ISO 28706-4, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 4: Determination of resistance to chemical corrosion by alkaline liquids using a cylindrical vessel*

ISO 28706-5, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 5: Determination of resistance to chemical corrosion in closed systems*

EN 1708-1, *Welding — Basic welded joint details in steel — Part 1: Pressurized components*

EN 10204, *Metallic products — Types of inspection documents*

EN 13480-2, *Metallic industrial piping — Part 2: Materials*