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**Plastics piping systems for hot and cold  
water installations — Chlorinated  
poly(vinyl chloride) (PVC-C) —**

**Part 7:  
Guidance for the assessment of  
conformity**

iTeh STANDARD PREVIEW

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 *Systèmes de canalisations en plastique pour les installations d'eau  
chaude et froide — Poly(chlorure de vinyle) chloré (PVC-C) —*

*Partie 7: Guide pour l'évaluation de la conformité*

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Published in Switzerland

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## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 15877-7 was prepared by European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in collaboration with ISO Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This Technical Specification is part of a System Standard for plastics piping systems of a particular material for a specified application. There are a number of such System Standards.

The System Standards are consistent with general standards on functional requirements and on recommended practice for installation.

They are supported by separate standards on test methods to which references are made throughout the System Standard.

This second edition cancels and replaces the first edition (ISO/TS 15877-7:2003), which has been technically revised.

ISO 15877 consists of the following parts<sup>1)</sup>, under the general title *Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C)*:

- *Part 1: General*
- *Part 2: Pipes*
- *Part 3: Fittings*
- *Part 5: Fitness for purpose of the system*
- *Part 7: Guidance for the assessment of conformity* [Technical Specification]

This Technical Specification can be used to support elaboration of national certification procedures for products conforming to the applicable part(s) of ISO 15877.

At the date of publication of this Technical Specification, System Standards for piping systems of other plastics materials used for hot and cold water installations are the following:

ISO 15874 (all parts), *Plastics piping systems for hot and cold water installations — Polypropylene (PP)*

ISO 15875 (all parts), *Plastics piping systems for hot and cold water installations — Crosslinked polyethylene (PE-X)*

ISO 15876 (all parts), *Plastics piping systems for hot and cold water installations — Polybutylene (PB)*

ISO 22391:—<sup>2)</sup> (all parts), *Plastics piping systems for hot and cold water installations — Polyethylene of raised temperature resistance (PE-RT)*

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1) This System Standard does not incorporate a part 4: *Ancillary equipment* or a part 6: *Guidance for installation*. For ancillary equipment, separate standards can apply. Guidance for installation of plastics piping systems made from different materials, intended to be used for hot and cold water installations, is covered by ENV 12108<sup>[6]</sup>.

2) To be published. (Revisions of ISO 22391-1:2007, ISO 22391-2:2007, ISO 22391-3:2007, ISO 22391-5:2007)

## Introduction

This Technical Specification is a part of the System Standard which specifies the requirements for a piping system when made from chlorinated poly(vinyl chloride) (PVC-C). The piping system is intended to be used for hot and cold water installations and heating system installations.

In respect of potential adverse effects on the quality of water intended for human consumption caused by the product covered by ISO 15877 (all parts).

- 1) This Technical Specification provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA.
- 2) It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

When using solvent cement, relevant national safety rules or regulations concerning their use (e.g. protection of workers) are to be observed.

Requirements and test methods for material and components are specified in ISO 15877-1, ISO 15877-2 and ISO 15877-3. Characteristics for fitness for purpose (mainly for joints) are covered in ISO 15877-5.

This Technical Specification gives guidance for the assessment of conformity of materials, components, joints and assemblies and it is intended to be used by certification bodies, inspection bodies, testing laboratories and manufacturers.

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# Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C) —

## Part 7: Guidance for the assessment of conformity

### 1 Scope

This Technical Specification gives guidance for the assessment of conformity included in the manufacturer's quality plan as part of his/her quality system.

This Technical Specification includes:

- a) provisions for materials, components, joints and assemblies given in the applicable part(s) of ISO 15877;
- b) provisions for the manufacturer's quality system, which can conform to ISO 9001<sup>[2]</sup>;
- c) definitions and procedures applied if certification is involved in which case, the certification body can be accredited to ISO/IEC Guide 65<sup>[5]</sup> or ISO/IEC 17021<sup>[3]</sup>, as applicable.

In conjunction with the other parts of ISO 15877, this Technical Specification is applicable to chlorinated poly(vinyl chloride) (PVC-C) piping systems intended to be used for hot and cold water installations within buildings for the conveyance of water, whether or not intended for human consumption (domestic systems), under design pressures and temperatures appropriate to the class of application (see Table 1 of ISO 15877-1:2009).

### 2 Normative references

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

ISO 15877-1:2009, *Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C) — Part 1: General*

ISO 15877-2:2009, *Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C) — Part 2: Pipes*

ISO 15877-3:2009, *Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C) — Part 3: Fittings*

ISO 15877-5:2009, *Plastics piping systems for hot and cold water installations — Chlorinated poly(vinyl chloride) (PVC-C) — Part 5: Fitness for purpose of the system*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptable quality limit (AQL) for lot-by-lot inspection*

ISO 3951-1, *Sampling procedures for inspection by variables — Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL*

ISO 3951-2, *Sampling procedures for inspection by variables — Part 2: General specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection of independent quality characteristics*

### 3 Terms, definitions and abbreviated terms

For the purposes of this Technical Specification, the definitions, symbols and abbreviations given in ISO 15877-1, ISO 15877-2 and ISO 15877-3 apply, together with the following.

#### 3.1 Terms and definitions

##### 3.1.1

###### **certification body**

impartial body, governmental or non-governmental, possessing the necessary competence and responsibility to carry out certification of conformity according to given rules of procedure and management

##### 3.1.2

###### **inspection body**

impartial organization or company, approved by a certification body as possessing the necessary competence to verify and/or to carry out initial type testing, audit testing and inspection of the manufacturer's factory production control in accordance with the relevant standard

##### 3.1.3

###### **testing laboratory**

laboratory which measures, tests, calibrates or otherwise determines the characteristics of the performance of materials and products

##### 3.1.4

###### **quality system**

organizational structure, responsibilities, procedures, processes and resources for implementing quality management

See ISO 9000<sup>[1]</sup>.

##### 3.1.5

###### **quality plan**

document setting out the specific quality practices, resources and sequence of activities relevant to a particular product or range of products

##### 3.1.6

###### **type testing**

**TT**  
testing performed to prove that the material, component, joint or assembly is capable of conforming to the requirements given in the relevant standard

##### 3.1.7

###### **preliminary type testing**

**PTT**  
type testing carried out by or on behalf of the manufacturer

##### 3.1.8

###### **initial type testing**

**ITT**  
type testing carried out by or on behalf of a certification body for certification purposes



**3.1.9****batch release test****BRT**

test performed by the manufacturer on a batch of components, which has to be satisfactorily completed before the batch can be released

**3.1.10****process verification test****PVT**

test performed by the manufacturer on materials, components, joints or assemblies at specific intervals to confirm that the process continues to be capable of producing components conforming to the requirements given in the relevant standard

NOTE Such tests are not required to release batches of components and are carried out as a measure of process control.

**3.1.11****audit test****AT**

test performed by or on behalf of a certification body to confirm that the material, component, joint or assembly continues to conform to the requirements given in the relevant standard and to provide information to assess the effectiveness of the quality system

**3.1.12****indirect test****IT**

test performed by the manufacturer, different from that specified for that particular characteristic, having verified its correlation with the specified test

**3.1.13****witness testing****WT**

testing accepted by a certification body for initial type testing and/or audit testing, which is carried out by or on behalf of the manufacturer and supervised by a representative of the certification body, qualified in testing

**3.1.14****material or compound batch**

clearly identifiable quantity of a particular material or compound

**3.1.15****production batch**

clearly identifiable collection of units, manufactured consecutively or continuously under the same conditions, using material or compound conforming to the same specification

**3.1.16****lot**

clearly identifiable sub-division of a batch for inspection purposes

**3.1.17****sample**

one or more units of product drawn from a batch or lot, selected at random without regard to their quality

NOTE The number of units of product in the sample is the sample size.

**3.1.18****acceptable quality level****AQL**

when a continuous series of lots or batches is considered, the quality level which for the purpose of sampling inspection is the limit of a satisfactory process average

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See ISO 2859-1, ISO 3951-1 and ISO 3951-2.

NOTE The designation of an AQL does not imply that a manufacturer has the right knowingly to supply any non-conforming unit of product.

### 3.1.19

#### inspection level

relationship between the lot or batch size and the sample size

See ISO 2859-1.

### 3.1.20

#### group

collection of similar components from which samples are selected for testing purposes

## 3.2 Abbreviated terms

NOTE The abbreviated terms are the same in the three languages (en: English, fr: French, de: German).

AQL en : acceptable quality level  
fr : niveau de qualité acceptable  
de : annehmbare Qualitätsgrenzlage

AT en : audit test  
fr : essai d'audit  
de : Überwachungsprüfung

BRT en : batch release test  
fr : essai de libération de campagne de fabrication  
de : Freigabeprüfung einer Charge

IT en : indirect test  
fr : essai indirect  
de : indirekte Prüfung

ITT en : initial type testing  
fr : essai de type initial  
de : Erst-Typprüfung

PTT en : preliminary type testing  
fr : essai de type préliminaire  
de : vorausgehende Typprüfung

PVT en : process verification test  
fr : essai de vérification du procédé de fabrication  
de : Prozeßüberprüfung

TT en : type test  
fr : essai de type  
de : Typprüfung

WT en : witness testing  
fr : essai témoin  
de : Prüfung unter Aufsicht

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## 4 Requirements

### 4.1 General

4.1.1 Materials, components, joints and assemblies shall conform to the requirements given in ISO 15877-1, ISO 15877-2, ISO 15877-3 and ISO 15877-5, as applicable.

4.1.2 Components and/or assemblies shall be produced by the manufacturer under a quality system which includes a quality plan.

### 4.2 Testing and inspection

#### 4.2.1 Grouping

For the purposes of this Technical Specification, the following groups apply.

##### 4.2.1.1 Pressure groups

The pressure group is a group of design pressures, from which one individual design pressure,  $p_D$ , shall be selected for testing purposes.

Two pressure groups shall be designated as given in Table 1.

**Table 1 — Pressure groups**

Pressure group	Design pressure, $p_D$ bar
1	4; 6
2	8; 10

##### 4.2.1.2 Size groups

The size group is a group of nominal diameters of pipes and fittings, from which one individual nominal diameter,  $d_n$ , shall be selected for testing purposes.

Two size groups shall be designated as given in Table 2.

**Table 2 — Size groups**

Size group	Nominal diameter, $d_n$ mm
1	$12 \leq d_n \leq 63$
2	$63 < d_n \leq 160$

##### 4.2.1.3 Fitting groups

The fittings group is a group of fittings having a similar design, from which one individual fitting shall be selected for testing purposes.