
**Plastics piping systems for industrial
applications — Poly(vinylidene fluoride)
(PVDF) —**

**Part 4:
Valves**

*Systèmes de canalisation en matières plastiques pour les applications
industrielles — Poly(fluorure de vinylidène) (PVDF) —*

Partie 4: Robinetterie



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.

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.

International Standard ISO 10931-4 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 7, *Valves and auxiliary equipment of plastics materials*.

ISO 10931 consists of the following parts, under the general title *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF)*:

- *Part 1: General*
- *Part 2: Pipes*
- *Part 3: Fittings*
- *Part 4: Valves*
- *Part 5: Fitness for purpose of the system*
- *Part 6: Recommended practice for installation*

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Introduction

ISO 10931, which is divided into six parts (see Foreword), specifies the properties of pipes and piping system components made of poly(vinylidene fluoride) (PVDF) for industrial applications. It includes recommendations for installation (see ISO 10931-6) and is intended to be used by authorities, design engineers, testing and certification institutes and manufacturers. This part of ISO 10931 covers characteristics of valves.

Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) —

Part 4: Valves

1 Scope

This part of ISO 10931 specifies the characteristics of valves made from poly(vinylidene fluoride) (PVDF) for industrial applications, i.e. the conveyance of water and chemicals in the liquid or gaseous state. It also specifies the test parameters for the test methods referred to in this part of ISO 10931.

It is applicable to PVDF valves for the conveyance of fluids under pressure at temperatures up to 150 °C. However, applications above 120 °C, which depend on the crystalline melting point of the PVDF material, need to be verified with the valve supplier.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10931. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10931 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5752:1982, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions*.

ISO 6708:1995, *Pipework components — Definition and selection of DN (nominal size)*.

ISO 7005-1:1992, *Metallic flanges — Part 1: Steel flanges*.

ISO 7005-2:1988, *Metallic flanges — Part 2: Cast iron flanges*.

ISO 7005-3:1988, *Metallic flanges — Part 3: Copper alloy and composite flanges*.

ISO 7349:1983, *Thermoplastics valves — Connection references*.

ISO 7508:1985, *Unplasticized polyvinyl chloride (PVC-U) valves for pipes under pressure — Basic dimensions — Metric series*.

ISO 8233:1988, *Thermoplastics valves — Torque — Test method*.

ISO 8659:1989, *Thermoplastics valves — Fatigue strength — Test method*.

ISO 9393-1:1994, *Thermoplastics valves — Pressure test methods and requirements — Part 1: General*.

ISO 9393-2:1997, *Thermoplastics valves — Pressure test methods and requirements — Part 2: Test conditions and basic requirements for PE, PP, PVC-U and PVDF valves.*

ISO 10931-1:1997, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Part 1: General.*

ISO 10931-2:1997, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Part 2: Pipes.*

ISO 10931-3:1996, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Part 3: Fittings.*

3 Definitions, symbols and abbreviations

For the purposes of this part of ISO 10931, the definitions, symbols and abbreviations given in ISO 10931-1 apply.

4 Valve body material specification

4.1 Material

The material from which the valve and the main ancillary components which are in contact with the conveyed fluid are made shall be a PVDF homopolymer of category 1, conforming to ISO 10931-1.

4.2 Use of reworked material

Clean reworked material produced during the manufacture and works testing of products conforming to this part of ISO 10931 may be used in limited amounts, provided it is derived from the same compound as used for the relevant production, and the final products conform to the applicable requirements of this part of ISO 10931.

4.3 Additional components

Additional components made from other plastics or non-plastics materials and necessary for the construction of PVDF valves shall have properties suitable for their specific functions and shall not prevent conformity with the performance requirements of this part of ISO 10931.

5 Appearance

When viewed without magnification, the internal and external surfaces of the PVDF valves and ancillaries shall appear smooth, clean and free from scoring, cavities, and other surface defects which would effect the function of the valve or prevent its conformity to this part of ISO 10931.

6 Geometrical characteristics

6.1 Design of valves and ancillaries

6.1.1 Nominal size

The nominal sizes of valves and ancillaries shall correspond to and be designated by the DN values specified in ISO 7349.