
International Standard



4067/6

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Technical drawings — Installations — Part 6 : Graphical symbols for supply water and drainage systems in the ground

Dessins techniques — Installations — Partie 6 : Symboles graphiques pour systèmes d'alimentation en eau et de drainage dans le sol

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4067/6 was prepared by Technical Committee ISO/TC 10, *Technical drawings*.

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Technical drawings — Installations — Part 6 : Graphical symbols for supply water and drainage systems in the ground

0 Introduction

During the preparation of this part of ISO 4067, due consideration was given to ensuring that it was in line with the coordinated system of existing standards and standardization work within closely related technical fields.

A thoroughgoing review to coordinate symbols for use on drawings in all technical areas is, however, urgently needed. A start on this work has already been made by ISO/TC 10, *Technical drawings*.

This part of ISO 4067 will be modified as soon as results are forthcoming from this coordination work.

1 Scope and field of application

This part of ISO 4067 establishes conventional basic graphical symbols for conduits, pipes and ditches including fabricated parts and equipment, for use on drawings and diagrams for supply water and drainage systems in the ground.

For more detailed representation, these basic symbols may be combined with designations, specified in a system of more detailed symbols, on the drawing, or described separately.

The symbols are shown and used primarily on plans, but they can in applicable cases also be used on sections, cuts and elevations.

2 References

ISO 128, *Technical drawings — General principles of presentation*.

ISO 3461/2, *Rules for presentation of graphical symbols — Part 2 : Symbols for use in technical product documentation*.¹⁾

ISO 4067/1, *Technical drawings — Installations — Part 1 : Symbols for plumbing, heating, ventilation and ducting*.

ISO 4069, *Building and civil engineering drawings — Representation of areas on sections and views — General principles*.

ISO 5455, *Technical drawings — Scales*.

ISO 6428, *Technical drawings — Requirements for micro-copying*.

3 General rules

Conduits and pipes are generally represented symbolically by one continuous line showing the conduits and pipes in an "open conduit pit". Conduits and pipes are given designation codes.

Parts other than conduits and pipes are represented in a simplified manner and are characterized in the text or given designation codes. They are also normally drawn with continuous lines.

On plans, the single symbolic line represents the centre line. On sections and cuts, the single symbolic line represents the lower point of the inner pipe surface in conduits.²⁾

When necessary the designation code of the conduit and pipe is completed by an arrow which shows the direction of flow (see ISO 4607/1).

If necessary, for example in narrow passages to show their dimensions and space needs, conduits and pipes are drawn with double lines. These lines then normally represent the outer contours of the conduits and pipes.

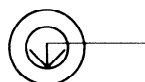
Conduits and pipes, when represented by double lines, shall be drawn with the same types of lines and designation codes which are used when representing them by a single line. The surface between the lines shall be shaded (toning or a taped pattern of dots). If the drawings are to be reduced in size, no shading may be used.

The size and design of the symbols shall be related to the scale or size of the drawing and to reproduction and legibility (see ISO 5455 and ISO 6428).

Symbols are, if necessary, shown in conjunction with their corresponding functional connection lines.

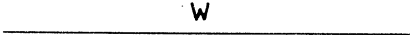
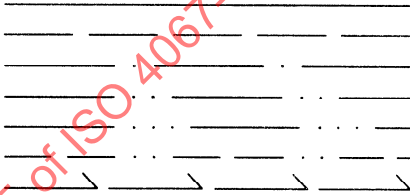
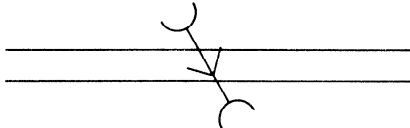
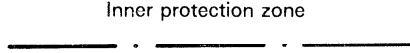
1) At present at the stage of draft. (Revision, in part, of ISO 3461-1976.)

2)

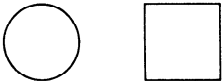
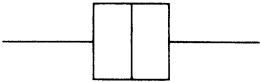
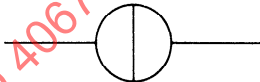
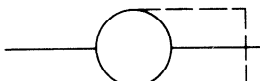
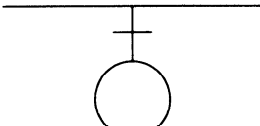
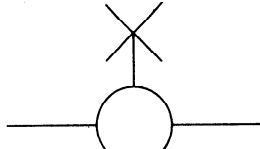
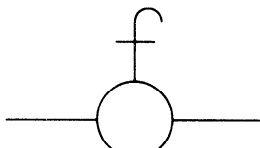
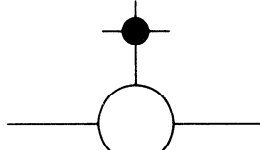


4 Symbols

4.1 Conduits and pipes

No.	Description	Symbol
4.1.1	Conduit, ditch and pipe — General symbol	
4.1.2	Method A : All kinds of conduits and pipes (Continuous line in combination with designation code)	
4.1.3	Method B : (Symbolic lines, indication of the nature of fluids)	
4.1.4	Proposed conduit and pipe — General symbol (Methods A and B) [Continuous thick line (type A of ISO 128)]	
4.1.5	Existing conduit and pipe — General symbol (Methods A and B) [Continuous thin line (type B of ISO 128)]	
4.1.6	Pressure sewage pipe (Arrow is the symbol)	
4.1.7	Culvert	
4.1.8	Marking line : Setting out line [Thin chain line (type G of ISO 128)]	
4.1.9	Marking line : Contract boundary, stage boundary, connection, boundary for inner and outer protection zone, well area, high and low pressure zones, drainage and subsidence boundaries [Extra thick chain line (twice type J of ISO 128), explanatory text is necessary]	

4.2 Wells and devices

No.	Description	Symbol
4.2.1	Wells, fittings and other components for supply water and drainage systems in the ground — General symbol	
4.2.2	Rain water well (street inlet)	
4.2.3	Inspection well (cleaning well) a) manhole b) cleaning well	
4.2.4	Draining well	
4.2.5	Manhole and protection pipe	
4.2.6	Well for drainage of pressure conduits	
4.2.7	Well with de-aeration device	
4.2.8	Flushing post	
4.2.9	Fire cock	

4.3 Plants

No.	Description	Symbol
4.3.1	Water reservoir	
4.3.2	Water pumping station	
4.3.3	Water treatment plant	
4.3.4	Waste water reservoir	
4.3.5	Waste water pumping station	
4.3.6	Waste water treatment plant	

4.4 Tunnels and ditches

No.	Description	Symbol
4.4.1	Tunnel (different purposes), proposed	
4.4.2	Tunnel, existing	Existing 
4.4.3	Tunnel, future	Future 
4.4.4	Ditch, permanently open	