



Above-ground drainage — Recommended practice and techniques for the installation of unplasticized polyvinyl chloride (PVC-U) sanitary pipework for above-ground systems inside buildings

Évacuation au-dessus du sol — Techniques et mise en œuvre recommandées pour l'installation des canalisations d'évacuation en polychlorure de vinyle non plastifié (PVC-U) dans les systèmes placés au-dessus du sol à l'intérieur des bâtiments

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ISO/TR 7024 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*.

The reasons which led to the decision to publish this document in the form of a technical report type 3 are explained in the Introduction.

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0 Introduction

This Technical Report deals with the installation of, and requirements for above-ground drainage systems manufactured primarily in unplasticized polyvinyl chloride (PVC-U). The term "above-ground drainage" includes all non-pressure pipework within a building, including the cellar but excluding any pipework that passes through the outer wall of a building (see clause 3).

The existing requirements that apply to the calculation of plumbing installations are also valid for unplasticized polyvinyl chloride (PVC-U) systems.

National codes of practice may vary, because of national functional requirements for comfort, safety, health, etc. The use of the standard terminology contained within this Technical Report is encouraged by national and CEN Committees dealing with similar subject matter.

This Technical Report does not contain drainage design data.

1 Scope and field of application

This Technical Report gives installation practices which have been shown to fulfil the normal requirements of function and use of unplasticized polyvinyl chloride (PVC-U) sanitary pipework for above-ground systems inside buildings.

The pipes and fittings specified in this Technical Report shall comply with ISO 3633. The field of application is primarily for domestic waste discharges, including discharges from domestic washing and dishwashing machines, but excluding discharges from public laundries, launderettes or other installations where long periods of high temperature discharges occur.

Restricted use in industrial installations is permissible for chemically-incursive waste with a range of pH values 2 (acid) to 12 (alkali), subject to the limiting values of time and temperature equivalent to those of domestic washing machines.

References are made to pipes and fittings manufactured in other materials which may be connected to the unplasticized polyvinyl chloride (PVC-U) products in this document and to the techniques of jointing to these dissimilar materials.

This Technical Report provides for good design and installation techniques but it is essential that the manufacturer's fixing instructions and material handling advice are taken into account to ensure good, sound and trouble-free drainage systems.

The contents of clause 3 in this Technical Report do not represent the full range of designs or variations of pipes and fittings for above-ground drainage systems.

2 References

ISO 265/1, *Pipes and fittings of plastics materials — Fittings for domestic and industrial waste pipes — Basic dimensions — Metric series — Part 1: Unplasticized polyvinyl chloride (PVC-U)*.¹⁾

ISO 1043/1, *Plastics — Symbols and codes — Part 1: Symbols for basic polymers and their modifications, and for plasticizers*.²⁾

ISO 3633, *Unplasticized polyvinyl chloride (PVC-U) pipes and fittings for soil and waste discharge (low and high temperature) systems inside buildings — Specifications*.³⁾

ISO 7073, *Recommended techniques for the installation of unplasticized polyvinyl chloride (PVC-U) buried drains and sewers*.³⁾

ISO/TR 7473, *Unplasticized polyvinyl chloride pipes and fittings — Chemical resistance with respect to fluids*.

ISO 8283, *Unplasticized polyvinyl chloride (PVC-U) discharge systems inside buildings — Design of sockets of pipes and fittings*.³⁾

1) At present at the stage of draft. (Revision in part of ISO/R 265-1962.)

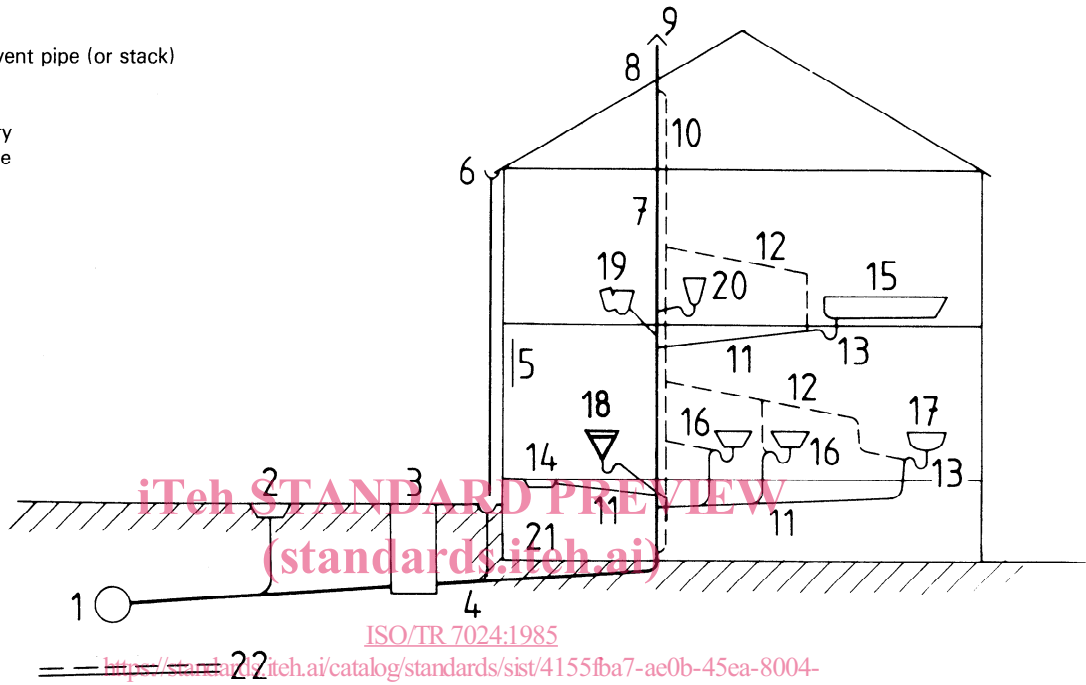
2) At present at the stage of draft. (Revision of ISO 1043-1978.)

3) At present at the stage of draft.

3 Terminology for sanitary pipework above-ground, sanitary appliances and building drainage

3.1 General

- 1 Public sewer
- 2 Street (or road) gully
- 3 Manhole (or inspection chamber)
- 4 Drain (combined foul and rainwater)
- 5 Rainwater pipe
- 6 Gutter
- 7 Main discharge and vent pipe (or stack)
- 8 Stack vent, primary
- 9 Vent terminal
- 10 Stack vent, secondary
- 11 Branch discharge pipe
- 12 Branch vent pipe
- 13 Trap
- 14 Floor gully/trap
- 15 Bath
- 16 Wash basin (WB)
- 17 Sink
- 18 Bidet
- 19 Water closet (WC)
- 20 Urinal
- 21 Gully trap
- 22 Subsoil water drain

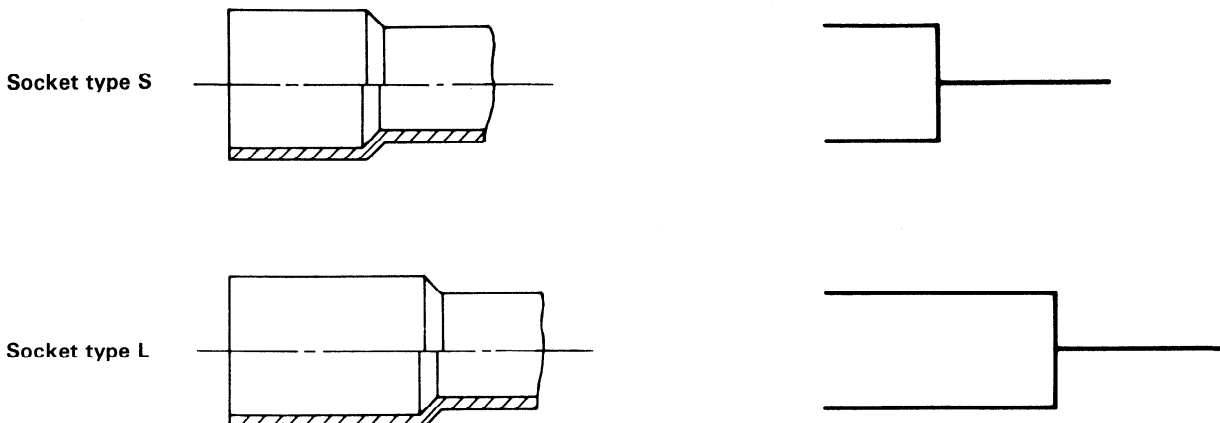


3.2 Definitions, symbols and glossary of terms

3.2.1 General

These fittings may be socket/socket or socket/spigot design but shall comply with the requirements of ISO 265/1.

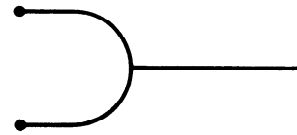
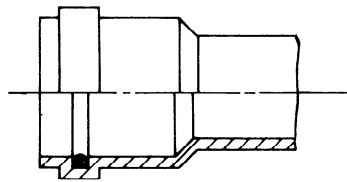
3.2.2 Sockets for solvent adhesive jointing



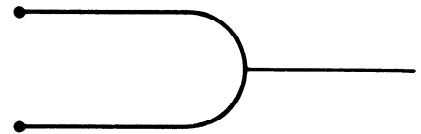
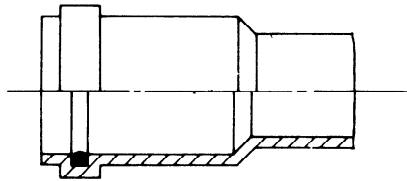
Type S sockets are only used under workshop conditions and are individually tested prior to use. Type L is the socket for on-site assembly.

3.2.3 Sockets for seal ring jointing

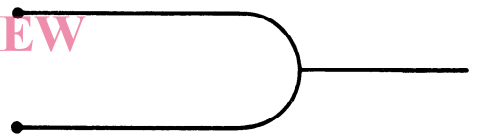
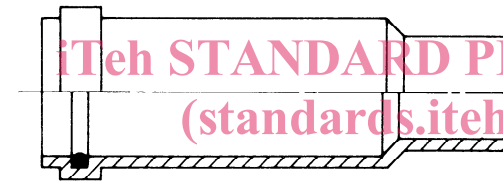
Socket type S
(ring seal)



Socket type M
(ring seal)

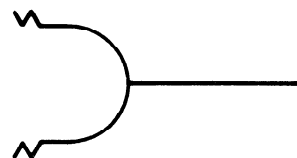
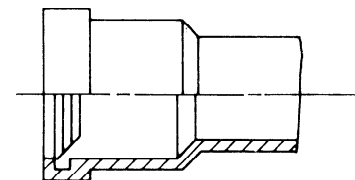


Socket type L
(ring seal)

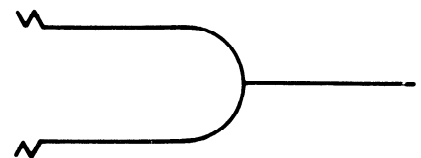
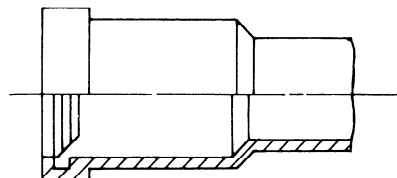


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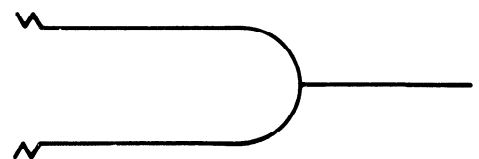
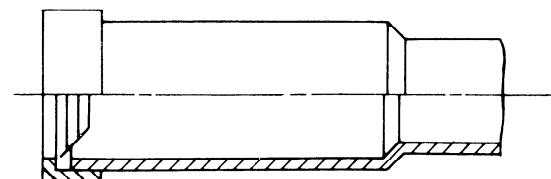
Socket type S
(lip seal, captive or non-captive)



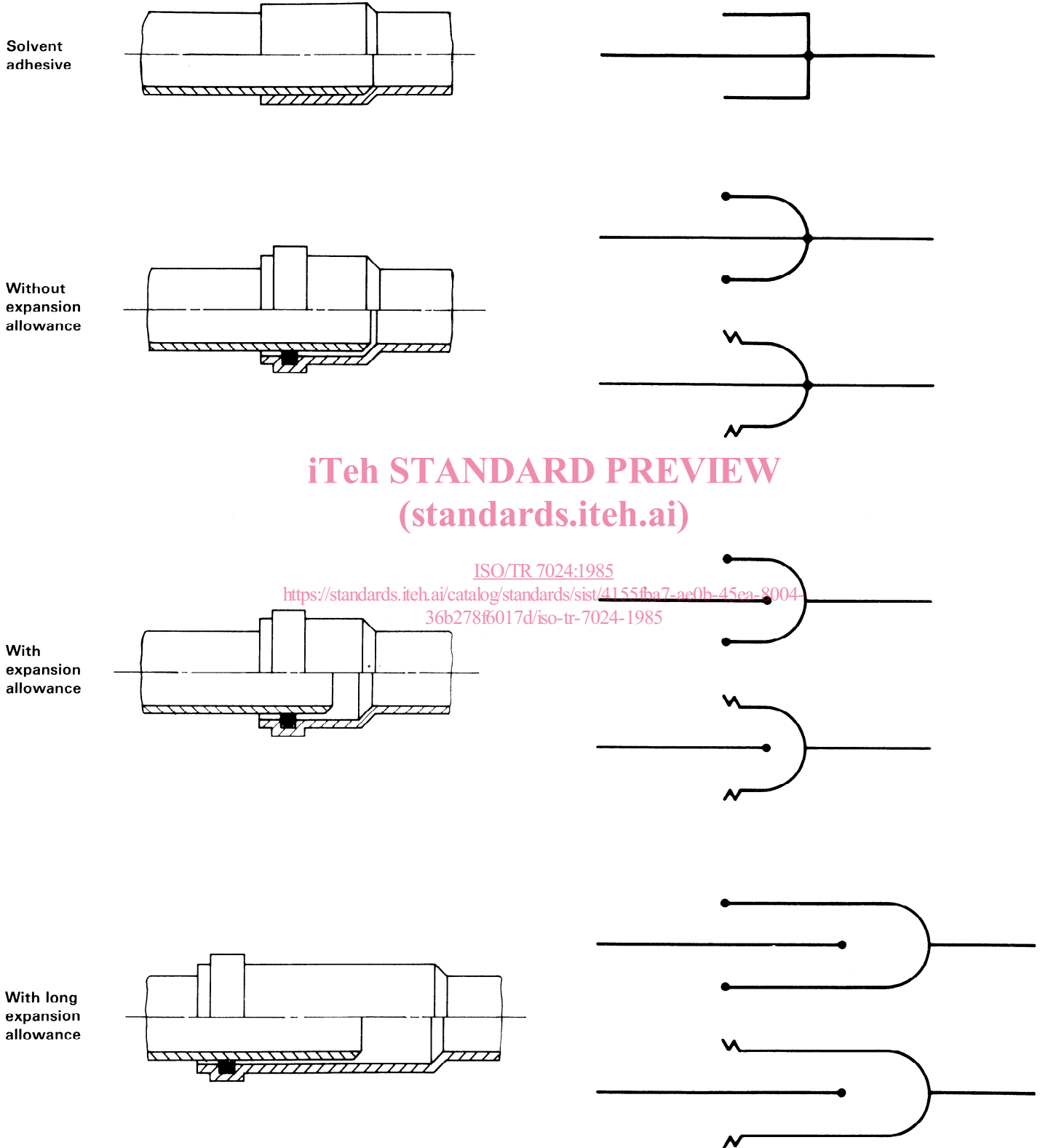
Socket type M
(lip seal, captive or non-captive)



Socket type L
(lip seal, captive or non-captive)



3.2.4 Joint types

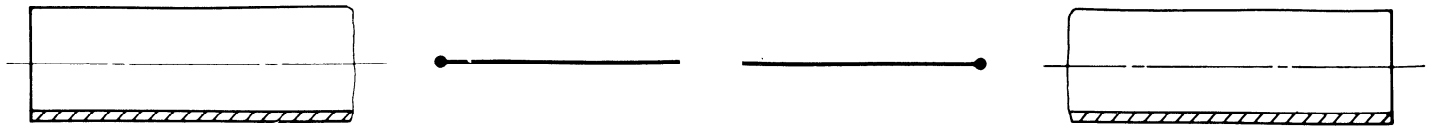


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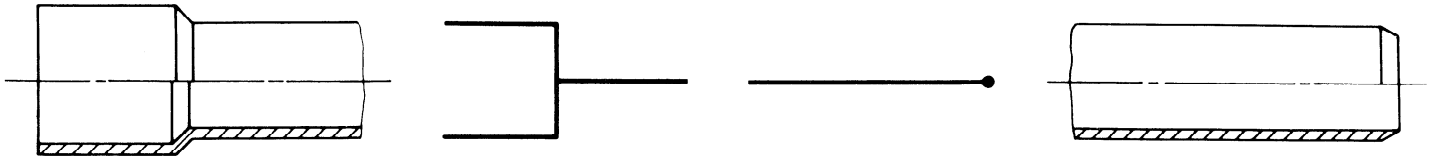
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3.2.5 Pipe ends

Plain ends



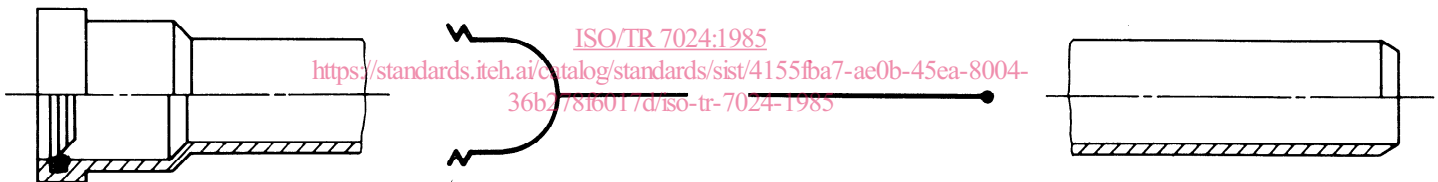
Single socket solvent adhesive



Single socket seal ring



Single socket lip seal

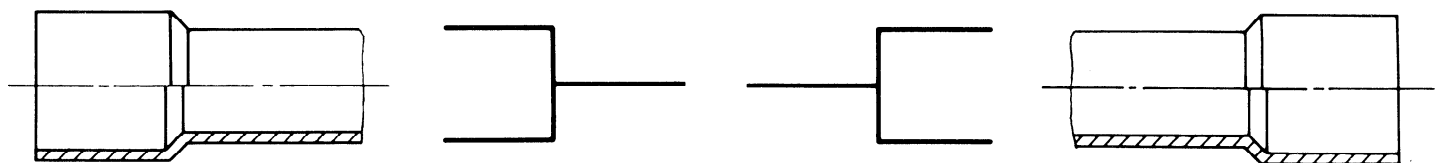


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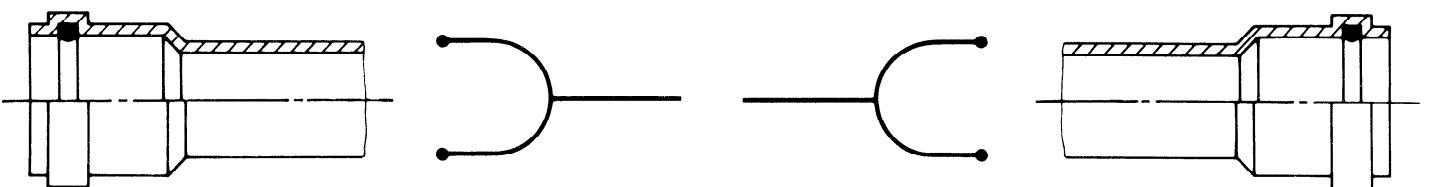
ISO/TR 7024:1985

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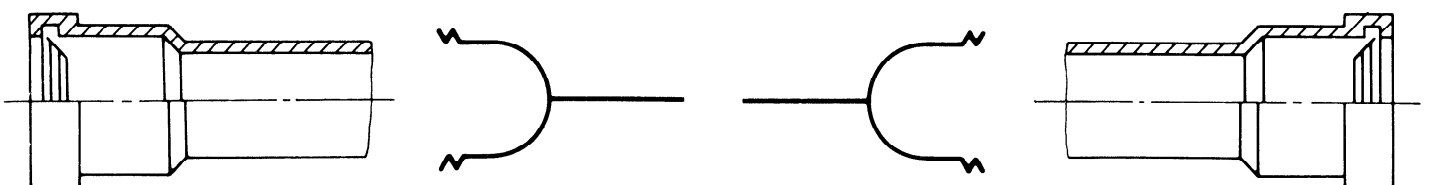
Double socket solvent adhesive



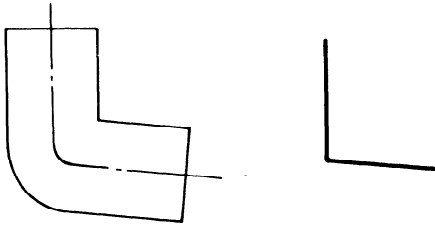
Double socket seal ring



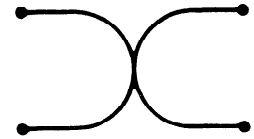
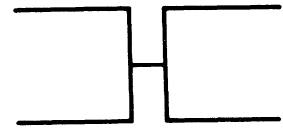
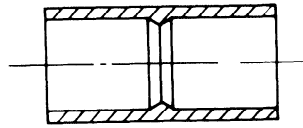
Double socket lip seal



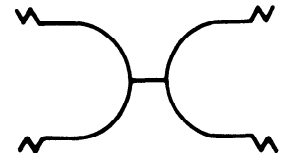
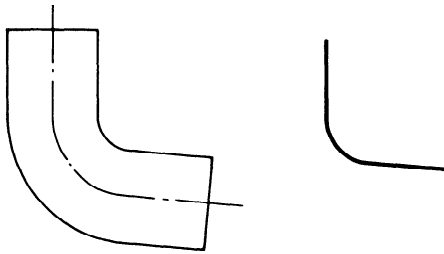
Direct bend



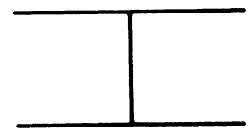
Coupling



Swept bend



Slip/repair coupling

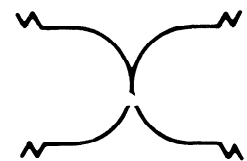
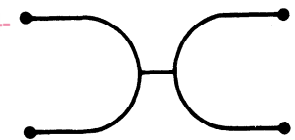
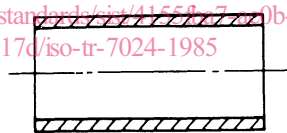
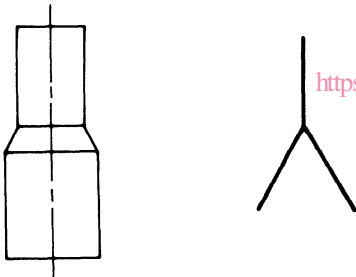


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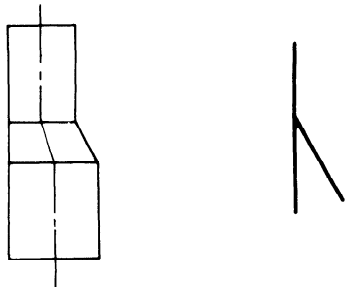
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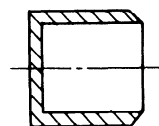
Concentric reducer



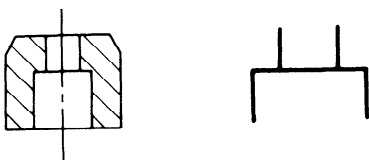
Excentric reducer



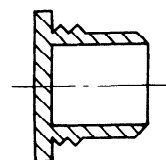
Plug



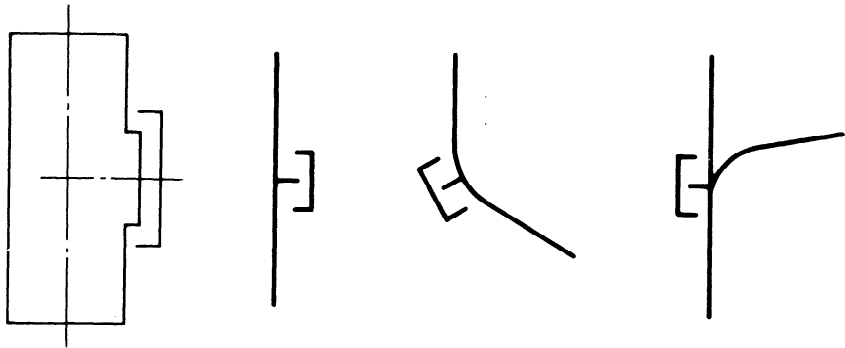
Socket reducer



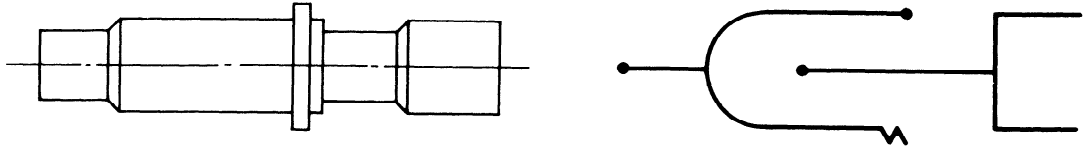
Access plug



Access fitting

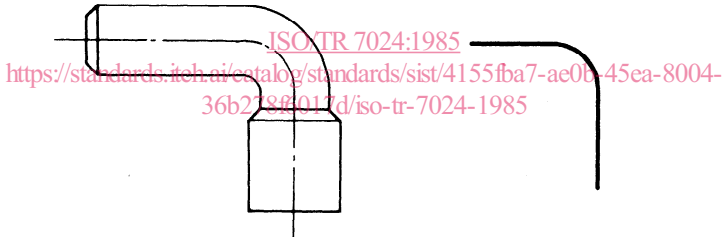


Expansion unit

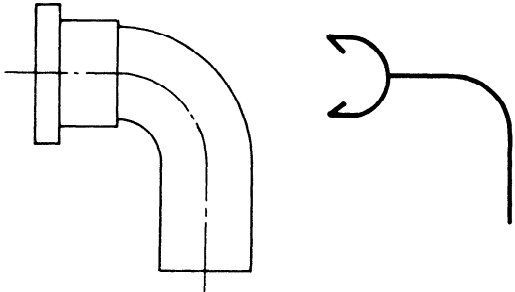


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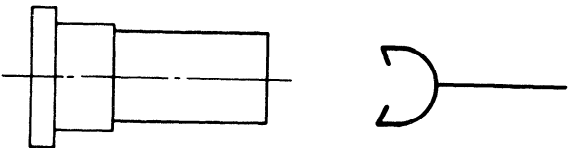
90° bend for connection to a trap



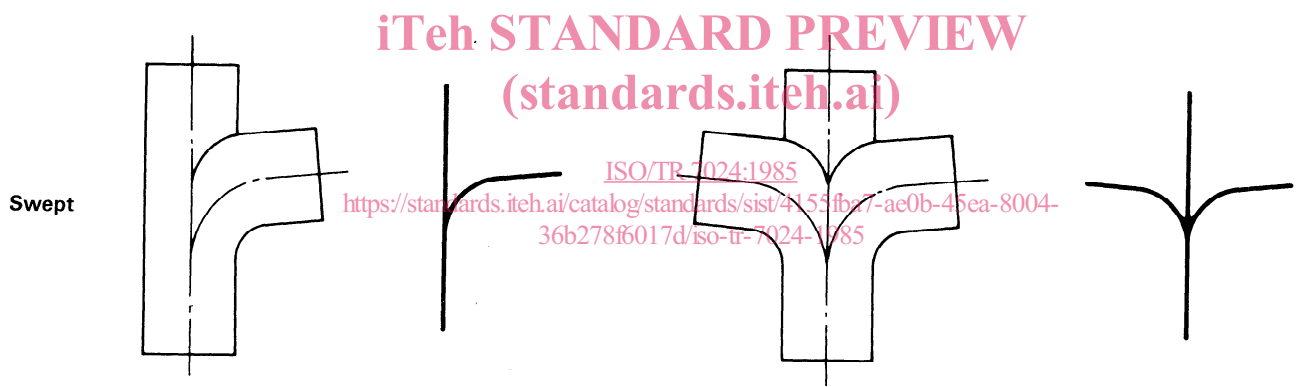
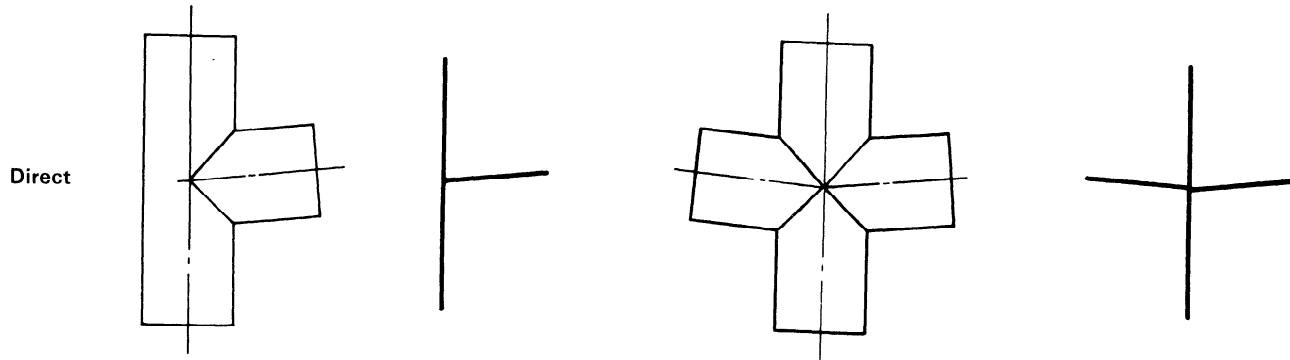
WC bend



Straight WC connector



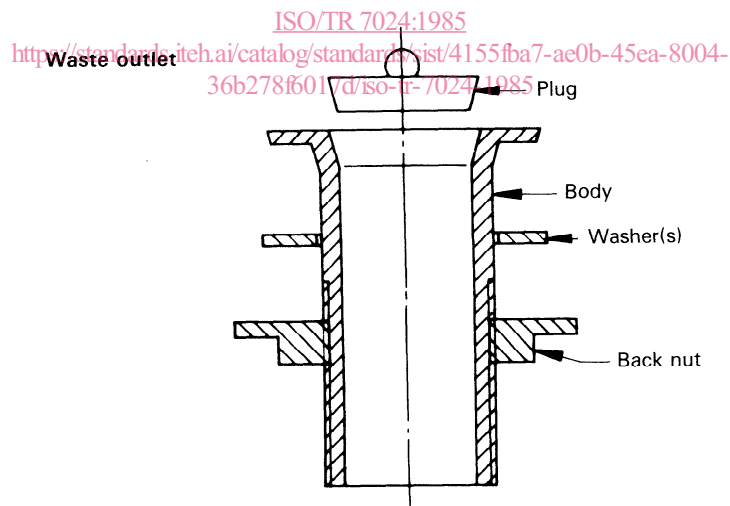
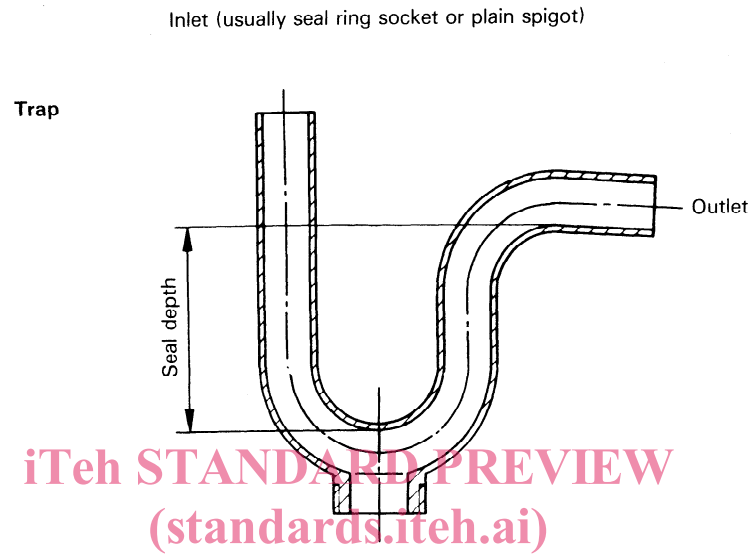
3.2.6 Single and double, equal or unequal branches



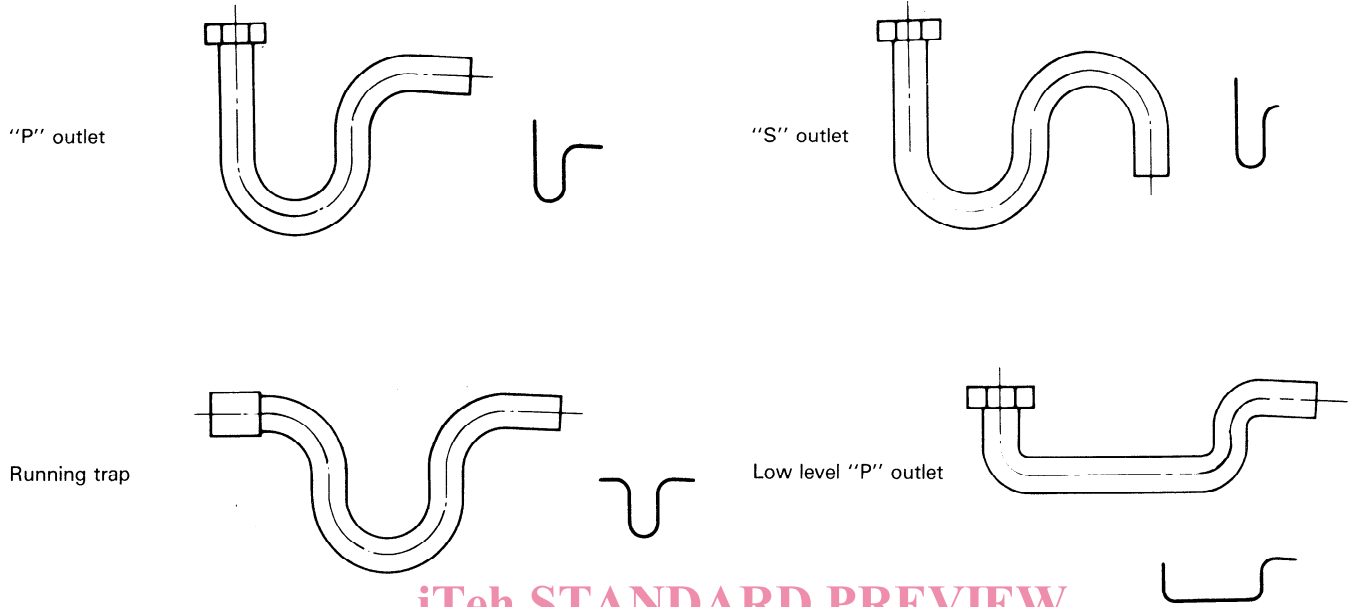
3.3 Traps, gullies and brackets

3.3.1 Traps

Fittings which retain a water seal so as to prevent the passage of foul air. Traps shall be readily removed or dismantled.



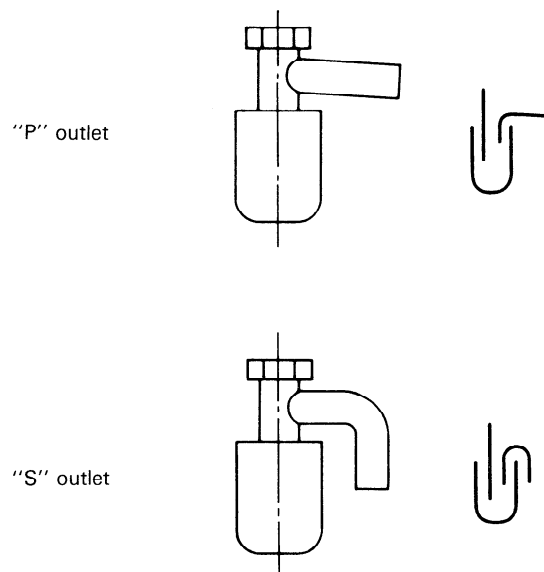
Types of waste traps



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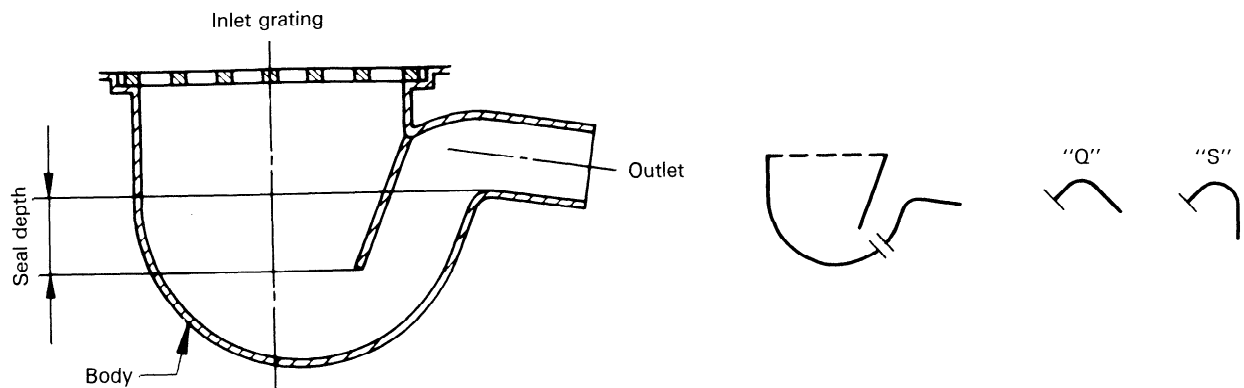
Bottle waste traps



3.3.2 Gullies

A fitting to remove surface water and/or discharges from waste pipes. They incorporate integral or close-coupled traps and usually have gratings at the top; sealed covers, however, may be used.

Floor gully, integral trap



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Gully: hopper and trap

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