
**Plastics pipes and fittings — Preparation
of polyethylene (PE) pipe/pipe or
pipe/fitting test piece assemblies by butt
fusion**

*Tubes et raccords en matières plastiques — Préparation d'éprouvettes
par assemblage tube/tube ou tube/raccord en polyéthylène (PE) par
soudage bout à bout*



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Foreword

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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.

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 11414 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basic specifications*.

This second edition cancels and replaces the first edition (ISO 11414:1996), which has been technically revised.

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Plastics pipes and fittings — Preparation of polyethylene (PE) pipe/pipe or pipe/fitting test piece assemblies by butt fusion

1 Scope

This International Standard specifies a method for preparing butt-fusion-jointed test piece assemblies between polyethylene (PE) pipes and spigot-ended fittings.

This International Standard specifies the assembly parameters involved, such as the ambient temperature, joint geometry and fusion parameters, taking into account the service condition limits specified in the relevant product standards, as well as the type of pipe to be used.

This International Standard is intended to enable the effect of site assembly variables on joint performance to be determined. The fusion-jointing procedures and parameters used in the field can differ from those in this International Standard, depending on the manufacturer's written procedures and/or local standards.

NOTE The assembly and fusion-jointing technique specified in this International Standard is applicable whatever the polyethylene resin employed, provided it is used in accordance with ISO/TR 11647^[1]. Deviations from the fusion cycle specified, in order to demonstrate joint performance, can be considered in accordance with the notes in Annexes A and B.

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 4427-2, *Plastics piping systems — Polyethylene (PE) pipes and fittings for water supply — Part 2: Pipes*

ISO 4427-3, *Plastics piping systems — Polyethylene (PE) pipes and fittings for water supply — Part 3: Fittings*

ISO 4437, *Buried polyethylene (PE) pipes for the supply of gaseous fuels — Metric series — Specifications*

ISO 8085-2, *Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels — Metric series — Specifications — Part 2: Spigot fittings for butt fusion, for socket fusion using heated tools and for use with electrofusion fittings*

ISO 12176-1, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 1: Butt fusion*

3 Symbols

3.1 Symbols used in more than one phase of the fusion-jointing cycle

e_n nominal pipe wall thickness

d_n nominal external diameter of the pipe

p pressure applied to the butt-fusion joint interface