
**Plastics piping systems for the supply
of gaseous fuels — Unplasticized
polyamide (PA-U) piping systems
with fusion jointing and mechanical
jointing —**

**Part 8:
Training and assessment of fusion
operators**

*Systèmes de canalisations en matières plastiques pour la distribution
de combustibles gazeux — Systèmes de canalisations en polyamide
non plastifié (PA-U) avec assemblages par soudage et assemblages
mécaniques —*

Partie 8: Formation et évaluation des opérateurs de soudage



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 138 *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 4, *Plastics pipes and fittings for the supply of gaseous fuels*.

A list of all parts in the ISO 16486 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The quality of a piping system for the supply of gaseous fuels is to a large extent determined by the skills of the operators involved in installing the network. When installing unplasticized polyamide (PA-U) pipes, the quality of the fusion joints is essential for the integrity of the piping system.

Since fusion joints in PA-U piping systems can be made using various technologies, it is important that the fusion operators are trained and competent in the fusion technology employed in constructing PA-U networks.

Continued competence of the fusion operator is covered by periodic re-training and re-assessment.

For the training and assessment or re-training and re-assessment of fusion operators in accordance with this document, a valid operator certificate in accordance with ISO/TR 19480 is required.

Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing —

Part 8: Training and assessment of fusion operators

1 Scope

This document specifies the training, assessment and approval of fusion operators, with the aim of establishing and maintaining their competency in the construction of unplasticized polyamide (PA-U) piping systems for the supply of gaseous fuels in accordance with ISO 16486-6. It covers the butt fusion and electrofusion fusion jointing techniques and considers both the theoretical and practical knowledge necessary for making high-quality fusion joints.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 12176-1, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 1: Butt fusion*

ISO 12176-2, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 2: Electrofusion*

ISO 16486-1, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 1: General*

ISO 16486-2, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 2: Pipes*

ISO 16486-3, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 3: Fittings*

ISO 16486-4, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 4: Valves*

ISO 16486-5, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 5: Fitness for purpose of the system*

ISO 16486-6, *Plastics piping systems for the supply of gaseous fuels - Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 6: Code of practice for design, handling and installation*

ISO/TR 19480, *Polyethylene pipes and fittings for the supply of gaseous fuels or water — Training and assessment of fusion operators*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.