ICS 23.040.45; 75.200 SLOVENSKÁ TECHNICKÁ NORMA August 2022

STN	**Potrubné systémy z plastov Mechanické tvarovky pre tlakové potrubné systémy Špecifikácie**	**STN ISO 17885** 64 3084

Plastics piping systems
Mechanical fittings for pressure piping systems
Specifications

Systèmes de canalisations en plastiques
Raccords mécaniques pour les canalisations sous pression
Spécifications

Táto slovenská technická norma obsahuje anglickú verziu medzinárodnej normy ISO 17885: 2021 a má postavenie oficiálnej verzie.

This Slovak standard includes the English version of the International standard ISO 17885: 2021 and has the status of the official version.

Nahradenie predchádzajúcich slovenských technických noriem

Táto slovenská technická norma nahrádza STN ISO 14236 z apríla 2010 v celom rozsahu.

135349

Anotácia

Táto medzinárodná norma špecifikuje požiadavky a skúšobné metódy pre mechanické tvarovky na spájanie tlakových potrubných systémov z plastov, vrátane prechodových tvaroviek (prechodiek) s kovovými rúrami na nasledujúce účely:

– zásobovanie plynnými palivami (GAS);

– zásobovanie vodou určenou na ľudskú spotrebu (W), vrátane rozvodov vody pred jej úpravou a na zásobovanie vodou na všeobecné použitie, ako aj na podzemné drenáže a tlakové kanalizácie (P);

– zásobovanie vodou na zavlažovanie (I);

– priemyselné aplikácie (IS).

Táto medzinárodná norma platí len pre mechanické tvarovky s prevádzkovou teplotou a prevádzkové tlaky uvedené v príslušných systémových normách.

POZNÁMKA. – Zoznam medzinárodných noriem pre plastové rúry, pre ktoré možno použiť mechanické tvarovky, je uvedený v prílohe A.

Na príruby sa táto medzinárodná norma nevzťahuje.

Na mechanické tvarovky pre systémy teplej a studenej vody vo vnútri budov, ako aj pre aplikácie diaľkového vykurovania, sa táto medzinárodná norma nevzťahuje.

Národný predhovor

Normatívne referenčné dokumenty

Nasledujúce dokumenty, celé alebo ich časti, sú v tomto dokumente normatívnymi odkazmi a sú nevyhnutné pri jeho používaní. Pri datovaných odkazoch sa použije len citované vydanie. Pri nedatovaných odkazoch sa použije najnovšie vydanie citovaného dokumentu (vrátane všetkých zmien).

POZNÁMKA 1. – Ak bola medzinárodná publikácia zmenená spoločnými modifikáciami, čo je indikované označením (mod), použije sa príslušná EN/HD.

POZNÁMKA 2. – Aktuálne informácie o platných a zrušených STN možno získať na webovom sídle www.unms.sk.

ISO 7-1 prijatá ako STN ISO 7-1 Rúrkové závity na spoje tesniace v závitoch. Časť 1: Rozmery, tolerancie a označovanie (01 4034), nahradená STN EN 10226-1 Rúrkové závity na spoje tesniace v závitoch. Časť 1: Kužeľové vonkajšie závity a rovnobežné vnútorné závity. Rozmery, tolerancie a označovanie (01 4034)

ISO 75-2 prijatá ako STN EN ISO 75-2 Plasty. Stanovenie teploty priehybu pri zaťažení. Časť 2: Plasty a ebonit (ISO 75-2) (64 0753)

ISO 228-1 prijatá ako STN EN ISO 228-1 Rúrkové závity na spoje netesniace v závitoch. Časť 1: Rozmery, tolerancie a označovanie (ISO 228-1) (01 4033)

ISO 306 prijatá ako STN EN ISO 306 Plasty. Materiály z termoplastov. Stanovenie teploty mäknutia podľa Vicata (VST) (ISO 306) (64 0521)

ISO 307 prijatá ako STN EN ISO 307 Plasty. Polyamidy. Stanovenie viskozitného čísla (ISO 307) (64 0363)

ISO 472 prijatá ako STN EN ISO 472 Plasty. Slovník (ISO 472) (64 0000)

ISO 580: 2005 prijatá ako STN EN ISO 580: 2005 Potrubné a ochranné rúrové systémy z plastov. Vstrekované tvarovky z termoplastov. Metódy vizuálneho posúdenia vplyvov ohrevu (ISO 580: 2005) (64 0816)

ISO 1043-1 prijatá ako STN EN ISO 1043-1 Plasty. Symboly a skratky. Časť 1: Základné polyméry a ich špeciálne vlastnosti (ISO 1043-1) (64 0003)

ISO 1133-1 prijatá ako STN EN ISO 1133-1 Plasty. Stanovenie hmotnostného indexu toku taveniny (MFR) a objemového indexu toku taveniny (MVR) termoplastov. Časť 1: Normalizovaná metóda (ISO 1133-1) (64 0861)

ISO 1167-1 prijatá ako STN EN ISO 1167-1 Rúry, tvarovky a zostavy z termoplastov na dopravu tekutín. Stanovenie odolnosti proti vnútornému tlaku. Časť 1: Metóda všeobecne (ISO 1167-1) (64 0625)

ISO 1167-2 prijatá ako STN EN ISO 1167-2 Rúry, tvarovky a zostavy z termoplastov na dopravu tekutín. Stanovenie odolnosti proti vnútornému tlaku. Časť 2: Príprava rúrových skúšobných telies (ISO 1167-2) (64 0625)

ISO 1167-4 prijatá ako STN EN ISO 1167-4 Rúry, tvarovky a zostavy z termoplastov na dopravu tekutín. Stanovenie odolnosti proti vnútornému tlaku. Časť 4: Príprava zostáv (ISO 1167-4) (64 0625)

ISO 2507-1 prijatá ako STN EN ISO 2507-1 Rúry a tvarovky z termoplastov. Teplota mäknutia podľa Vicata. Časť 1: Všeobecná metóda skúšania (ISO 2507-1) (64 0522)

ISO 2507-2 prijatá ako STN EN ISO 2507-2 Rúry a tvarovky z termoplastov.Teplota mäknutia podľa Vicata. Časť 2: Skúšobné podmienky pre rúry a tvarovky z nemäkčeného polyvinylchloridu (PVC-U) alebo chlórovaného polyvinylchloridu (PVC-C) a pre rúry z polyvinylchloridu vysoko odolné proti nárazu (PVC-HI) (ISO 2507-2) (64 0522)

ISO 3451-4 prijatá ako STN EN ISO 3451-4 Plasty. Stanovenie popola. Časť 4: Polyamidy (ISO 3451-4) (64 0218)

ISO 3458 prijatá ako STN EN ISO 3458 Potrubné systémy z plastov. Mechanické spoje medzi tvarovkami a tlakovými rúrami. Skúšobná metóda na tesnosť pri vnútornom tlaku (ISO 3458) (64 0821)

ISO 3459 prijatá ako STN EN ISO 3459 Potrubné systémy z plastov. Mechanické spoje medzi tvarovkami a tlakovými rúrami. Skúšobná metóda tesnosti pri podtlaku (ISO 3459) (64 0820)

ISO 3501 prijatá ako STN EN ISO 3501 Potrubné systémy z plastov. Mechanické spoje tvaroviek a tlakových rúr. Skúšobná metóda odolnosti proti vytiahnutiu pôsobením konštantnej sily v pozdĺžnom smere (ISO 3501) (64 3063)

ISO 3503 prijatá ako STN EN ISO 3503 Potrubné systémy z plastov. Mechanické spoje medzi tvarovkami a tlakovými rúrami. Skúšobná metóda na tesnosť zostavy vnútorným tlakom pri ohybe (ISO 3503) (64 3062)

ISO 4633 dosiaľ neprijatá

ISO 6509-1 prijatá ako STN EN ISO 6509-1 Korózia kovov a zliatin. Stanovenie odolnosti zliatin medi a zinku proti odzinkovaniu. Časť 1: Skúšobná metóda (ISO 6509-1) (03 8167)

ISO 6957 dosiaľ neprijatá

ISO 6993-1 dosiaľ neprijatá

ISO 6993-2 dosiaľ neprijatá

ISO 6993-3 dosiaľ neprijatá

ISO 7686 prijatá ako STN EN ISO 7686 Rúry a tvarovky z termoplastov. Stanovenie opacity (ISO 7686) (64 3215)

ISO 9080 prijatá ako STN EN ISO 9080 Potrubné a ochranné rúrové systémy z plastov. Stanovenie dlhodobej hydrostatickej pevnosti materiálov z termoplastov vo forme rúry extrapoláciou (ISO 9080) (64 0857)

ISO 10147 prijatá ako STN EN ISO 10147 Rúry a tvarovky zo sieťovaného polyetylénu (PE-X). Výpočet stupňa zosietenia stanovením obsahu gélu (ISO 10147) (64 3216)

ISO 12162 prijatá ako STN EN ISO 12162 Termoplastové materiály na rúry a tvarovky na tlakové aplikácie. Klasifikácia, návrhový koeficient a označovanie (ISO 12162) (64 0641)

ISO 13783 prijatá ako STN EN ISO 13783 Potrubné systémy z plastov. Dvojhrdlové osovo namáhané spojky z nemäkčeného polyvinylchloridu (PVC-U). Stanovenie tesnosti a pevnosti pôsobením ohybu a vnútorného tlaku (ISO 13783) (64 3170)

ISO 13844 prijatá ako STN EN ISO 13844 Potrubné systémy z plastov. Hrdlové spoje s elastomérovými tesniacimi krúžkami tlakových rúr z plastov. Skúšobná metóda na stanovenie tesnosti pri podtlaku, uhlovom vychýlení a deformácii (ISO 13844) (64 0673)

ISO 13845 prijatá ako STN EN ISO 13845 Potrubné systémy z plastov. Hrdlové spoje s elastomérovými tesniacimi krúžkami na použitie s rúrami z termoplastov. Skúšobná metóda na stanovenie tesnosti pri vnútornom pretlaku a pri uhlovom vychýlení (ISO 13845) (64 0671)

ISO 13951 dosiaľ neprijatá

ISO 16010 dosiaľ neprijatá

ISO 16486-1: 2020 prijatá ako STN EN ISO 16486-1: 2021 Potrubné systémy z plastov na zásobovanie plynnými palivami. Potrubné systémy z nemäkčeného polyamidu (PA-U) s tavným spojom a mechanickým spájaním. Časť 1: Všeobecne (ISO 16486-1: 2020) (64 3064)

ISO 17778 prijatá ako STN EN ISO 17778 Potrubné systémy z plastov. Tvarovky, armatúry a príslušenstvo. Stanovenie závislosti medzi prietokovou rýchlosťou (prúdenia) plynu a poklesom tlaku (ISO 17778) (64 3082)

ISO 19899 dosiaľ neprijatá

ISO 23711 dosiaľ neprijatá

Vypracovanie slovenskej technickej normy

Spracovateľ: Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, Bratislava

Technická komisia: TK 1 Vodovody a kanalizácie

Contents

Page

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*.

This second edition cancels and replaces the first edition (ISO 17885:2015), which has been technically revised. It also incorporates the Amendment ISO 17885:2015/Amd 1:2016.

The main changes compared to the previous edition are as follows:

— a clarification for the relation between the nominal pressure and the MOP declared by the manufacturer is given;

— the term ‘weathering’ is used instead of ‘ultraviolet radiation’, to be in line with PE pipe standards;

— a clarification that the own reprocessable material of glass reinforced materials with a fibre length up to 3 mm may be used;

— the diameter for various pipe materials for the ‘Resistance of plastic pipe/pipe or pipe/fitting assemblies to tensile loading at 23 °C has been increased from 63 mm to 250 mm;

— unplasticized polyamide (PA-U) is included in Table 7;

— errors in Table D.1 regarding the viscosity number of unplasticized polyamide (PA-U) are resolved;

— the requirement for the melt mass flow rate for PB in Table D.1 is aligned with ISO 15494;

— the requirement for the depth of dezincification for Cu in Table D.1 is aligned with EN 1254-3, -6 and -8;

— Formulae (1) and (2) and Annex C are corrected;

— the test pressures for unplasticized polyamide (PA-U) in Table F.1 are increased;

— the test procedure in Annex G is clarified.

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

This document specifies the requirements for mechanical fittings for joining plastic piping systems for the supply of gaseous fuels, the supply of water for human consumption and other purposes, as well as for industrial application.

It provides a unified set of test methods to check the performance of the fittings, depending on their intended use.

It is the responsibility of the purchaser or specifier to select the appropriate fitting, taking into account their particular requirements and any relevant national guidance or regulations and installation practices or codes.

INTERNATIONAL STANDARD ISO 17885:2021(E)

Plastics piping systems — Mechanical fittings for pressure piping systems — Specifications

1 Scope

This document specifies the requirements and test methods for mechanical fittings intended to join plastic pressure piping systems including transition fittings to metal pipes for the following:

— supply of gaseous fuels (GAS);

— supply of water for human consumption (W), including raw water prior to treatment and for the supply of water for general purposes, as well as underground drainage and sewerage under pressure (P);

— supply of water for irrigation (I);

— industrial applications (IS).

This document is applicable only to mechanical fittings with operating-temperature and pressure limits as indicated in the relevant systems standards.

NOTE A list of International Standards for plastic pipes for which mechanical fittings can be used can be found in Annex A.

Flanges are not covered by this document.

Mechanical fittings for hot and cold water systems inside buildings, as well as for district heating applications, are not covered by this document.

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 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 75-2, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 306, *Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)*

ISO 307, *Plastics — Polyamides — Determination of viscosity number*

ISO 472, *Plastics — Vocabulary*

ISO 580:2005, *Plastics piping and ducting systems — Injection-moulded thermoplastics fittings — Methods for visually assessing the effects of heating*

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics — Part 1: Standard method*

ISO 1167-1, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method*

ISO 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces*

ISO 1167-4, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 4: Preparation of assemblies*

ISO 2507-1, *Thermoplastics pipes and fittings — Vicat softening temperature — Part 1: General test method*

ISO 2507-2, *Thermoplastics pipes and fittings — Vicat softening temperature — Part 2: Test conditions for unplasticized poly(vinyl chloride) (PVC-U) or chlorinated poly(vinyl chloride) (PVC-C) pipes and fittings and for high impact resistance poly (vinyl chloride) (PVC-HI) pipes*

ISO 3451-4, *Plastics — Determination of ash — Part 4: Polyamides*

ISO 3458, *Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under internal pressure*

ISO 3459, *Plastic piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under negative pressure*

ISO 3501, *Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for resistance to pull-out under constant longitudinal force*

ISO 3503, *Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under internal pressure of assemblies subjected to bending*

ISO 4633, *Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials*

ISO 6509-1, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

ISO 6993-1, *Buried, high-impact poly(vinyl chloride) (PVC-HI) piping systems for the supply of gaseous fuels — Part 1: Pipes for a maximum operating pressure of 1 bar (100 kPa)*

ISO 6993-2, *Buried, high-impact poly(vinyl chloride) (PVC-HI) piping systems for the supply of gaseous fuels — Part 2: Fittings for a maximum operating pressure of 200 mbar (20 kPa)*

ISO 6993-3, *Buried, high-impact poly(vinyl chloride) (PVC-HI) piping systems for the supply of gaseous fuels — Part 3: Fittings and saddles for a maximum operating pressure of 1 bar (100 kPa)*

ISO 7686, *Plastics pipes and fittings — Determination of opacity*

ISO 9080, *Plastics piping and ducting systems — Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation*

ISO 10147, *Pipes and fittings made of crosslinked polyethylene (PE-X) — Estimation of the degree of crosslinking by determination of the gel content*

ISO 12162, *Thermoplastics materials for pipes and fittings for pressure applications — Classification, designation and design coefficient*

ISO 13783, *Plastics piping systems — Unplasticized poly(vinyl chloride) (PVC-U) end-load-bearing double-socket joints — Test method for leaktightness and strength while subjected to bending and internal pressure*

ISO 13844, *Plastics piping systems — Elastomeric-sealing-ring-type socket joints for use with plastic pressure pipes — Test method for leaktightness under negative pressure, angular deflection and deformation*

ISO 13845, *Plastics piping systems — Elastomeric-sealing-ring-type socket joints for use with thermoplastic pressure pipes — Test method for leaktightness under internal pressure and with angular deflection*

ISO 13951, *Plastics piping systems — Test method for the resistance of plastic pipe/pipe or pipe/fitting assemblies to tensile loading*

ISO 16010, *Elastomeric seals — Material requirements for seals used in pipes and fittings carrying gaseous fuels and hydrocarbon fluids*

ISO 16486-1:2020, *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 17778, *Plastics piping systems — Fittings, valves and ancillaries — Determination of gaseous flow rate/pressure drop relationships*

ISO 19899, *Plastics piping systems — Polyolefin pipes and mechanical fitting assemblies — Test method for the resistance to end load (AREL test)*

ISO 23711, *Elastomeric seals — Requirements for materials for pipe joint seals used in water and drainage applications — Thermoplastic elastomers*