Translation from Hungarian

Date: 07 Sept 2012

Logo: ÉMI Non-profit Limited Liability Company for Quality Control and Innovation in Building

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Technical construction permit number (**TCP**): **A-62/2012**

TCP
TECHNICAL CONSTRUCTION PERMIT

Name of the product:	Polyethylene drain pipes DN/OD 32-315 mm, SDR 26 and SDR 33
Intended sphere of use the product:	Polyethylene drainage piping systems for soil and wastewater drainage
Applicant and TCP holder:	PIPELIFE Hungária Plastic industry Kft. 4031 Debrecen, Kishegyesi út 263.
Producer of the product:	PIPELIFE Hungária Plastic industry Kft. 4031 Debrecen, Kishegyesi út 263.
Serial number SZRJ) of the product at ÉMI Nonprofit Kft.:	1.13.2.
TCP start of validity:	June 27, 2012
TCP end of validity:	June 27, 2017

Budapest, June 27, 2017

Signed: Dr Károly Matolcsy
Scientific director

Stamp: ÉMI Non-profit Limited Liability Company for Quality Control and Innovation in Building

This Technical Construction Permit contains a stamped and pagenumbered annex of 9 pages and -- pieces.

*The expiry of TCP is conditional.
The validity of TCP can be checked on ÉMI Non-profit KFt. webpage (www.emi.hu)

I. LEGAL REGULATIONS AND GENERAL TERMS

1. This TCP was issued by the Nonprofit Company for Quality Control and Innovation in Construction Kft.

- Joint Regulation 3/2003 (I. 25.) by the Minister of Interior, Minister of Economy and Transport, and the Minister of Environment and Water Protection, on the technical requirements for construction products, the attestation of conformity and the detailed rules for the latters' placing on the market and use;
- Designated in Statement 16/1998. (IKK.8.) of the Ministry of Industry, Trade and Tourism;
- Based on the evaluation of the test results detailed in the Aptitude Test Report of the same number and date as the TCP.

2. The TCP owner - the natural or legal person who requested it directly or through his representative, and to whom the TCP was issued by ÉMI Nonprofit Kft. - is responsible for ensuring that the product complies with the requirements of the TCP, and that the user receives all information necessary for the intended use.
3. ÉMI Nonprofit Kft. - as an approval body - is entitled to check whether the product and TCP requirements are in compliance with the technical specifications. Post-inspection can be performed by EMI Nonprofit Kft. at applicant's expense in a laboratory, at the production site, at the applicant's site, or at the reference site of installation of the product
4. An TCP may only be used by its holder as a technical specification for the purpose of issuing a certificate of conformity. The holder of the TCP may not transfer it to another person. The TCP only applies to the product produced at the indicated manufacturing sites.
5. If a harmonized European standard with respect to the product is issued within the period of validity of the TCP, in line with Joint Regulation 3/2003. (I. 25.) by the Minister of Interior, Minister of Economy and Transport, and the Minister of Environment and Water Protection, , ÉMI Nonprofit Kft. shall withdraw the TCP within one year after publication of the new standard, unless the product differs significantly from the prescriptions of the standard.
6. ÉMI Nonprofít Kft. may revoke the TCP for the product if the post-inspection cannot be performed, or the inspection result is unsatisfactory, or the product turns out to be unsuitable for the intended purpose. The TCP holder must notify if the characteristics of the product or the manufacturing conditions change. Following that, ÉMI Nonprofit Kft. will decide whether the TCP can remain valid or whether a new procedure must be initiated in addition to the revocation of the TCP. If further investigations are required to ascertain the above, ÉMI Nonprofit Kft. may suspend the validity of TCP for this period.
7. The TCP is published by ÉMI Nonprofit Kft. in Hungarian and, at the request of the applicant, in English, German or French, possibly in other languages too. The Hungarian edition of TCP shall serve as legal basis.
8. The TCP may only be copied or published on other data carrying media in its entirety. The written consent of ÉMI Nonprofit Kft. shall be required for its partial quotation. In the case of partial quotation, this fact must be explicitly stated. The text and illustrations

in the advertising brochures must not contradict the content of the Technical Construction Permit and must not give rise to any misunderstandings.

9. TCP, as a technical specification, does not replace other permits (i.e. by health or construction authorities) and certificates (i.e. of fire safety or product conformity) required for the distribution, installation and use of the product.
10. The certificate of conformity issued on the basis of the TCP does not entitle either the manufacturer or the distributor to attach the CE *(Conformité Européenne)* conformity marking on the product or its packaging.

II. SPECIAL REQUIREMENTS TOWARDS THE TECHNICAL CONSTRUCTION PERMITS

1. DATA

1.1. **Manufacturing facility:**

PIPELIFE Hungária Műanyagipari Kft., 4031 Debrecen, Kishegyesi út 263.)

1.2. Product description and scope of application.

The product is smooth-ended pipes according to the MSZ EN 1519-1: 2000 standard: "*Plastic piping systems (low and high temperature) for drainage of soil and sewage water within the building structures. Polyethylene (PE) Part 1: Requirements for pipes, fittings and the system*". The standard pipes are manufactured in DN/OD 32-315 mm diameter in SDR 26 and SDR 33 standard scales. Smooth-ended pipes can be assembled with pipes and/or standard fittings by dull or electrofitting welding.

The main material of the product. The raw material of the pipes and fittings is a new or recyclable polyethylene from the manufacturer's own production, whose MFR (190/5), according to standard MSZ EN ISO 1133: 2005 *"Plastics. Determination of melt flow rate (MFR) and melt volume rate (MVR) of thermoplastics"*, is between 0.2 and 1.1 (g/10 minutes), further, based on MSZ EN 728: 1998 "*Plastic piping and sewerage systems. Polyolefin pipes and fittings. Oxidation induction time measurement*" standard, OIT (200) is at least 20 minutes.

Intended use of the product: Polyethylene drainage systems for gravity and vacuum drainage of rainwater, groundwater and wastewater according to areas of use, as indicated by the following codes:

- "B" for indoor and outdoor, wall-mounted,
- "D" under buildings and within 1 m of buildings, buried in the ground,
- "BD" for both areas of use: "B" and "D".

2. CHARACTERISTICS AND METHODS OF TESTING / JUDGEMENT

The technical characteristics of the product, their approved values and test / evaluation methods are given in Table 1 below.

Table 1

Product features (Unit)	**Required**	**Test parameters**	**Test method**
Material Flow rate (g/ l0min) Oxidation induction (min)	MSZ EN 1519-1 point 4. 0,2 ≤ MFR ≤ 1,1 OIT (at 200 °C) ≥ 20	190 °C /5,0 kg at 200 °C	MSZ EN ISO 1133:2005 MSZ EN 728:1998
Export (-)	MSZ EN 1519-1 point 5.		MSZ EN 1519-1 point 5.
Colour (-)	MSZ EN 1519-1 point 5.		MSZ EN 1519-1 point 5.
Sizes (mm)	MSZ EN 1519-1 point 6.	Temperature: 23± 2 °C	MSZ EN ISO 3126:2005
Behaviour during heat exposure (%)	MSZ EN 1519-1 point 7. Change of length ≤ 3 %	Temperature: 110±2 °C; warm-up time: 30 min	MSZ EN 1519-1 point 5.
Flow rate change Pipe (%)	MSZ EN 1519-1 point 7. max deviation during processing 0.2 g/10 min	Temperature: 230 °C Period: 10 min Weight: 2,16 kg	MSZ EN ISO 1133:2005
Elevated temperature cyclic heat load (-)	MSZ EN 1519-1 point 8. No leakage	1500 cycle between 15 ± 5 °C and 93 ± 2 °C, in line with MSZ EN 1055 point 7	MSZ EN 1055:1998
Internal pressure resistance (-)	MSZ EN 1519-1 point 9. No leakage	Water temp. 80 ± 1 °C Period min. 165 hour σ = 4,0 MPa	MSZ EN ISO 1167:2006
Ring stiffness (kN/m^2) area of use „B” area of use „BD”	MSZ EN 1519-1 9. SN2 average ≥2 kN/m2 SN4 average ≥4 kN/m2	Temperature: 23 ± 2 °C	MSZ EN ISO 9969:1998
Marking (-)	MSZ EN 1519-1 point 11.	-	MSZ EN 1519-1 point 11.

3. REQUIREMENTS FOR PROOF OF CONFORMITY

3.1. **Method(s) of confirmation of conformity**

Pursuant to European Commission Decision 94/464/EC and Council Directive 89/106 / EEC Annex III. And Joint Regulation No. 3/2003 (I. 25.) by the Minister of Interior, Minister of Economy and Transport, and the Minister of Environment and Water Protection, number 4.

(3) system

3.2. Responsibilities of the manufacturer

3.2.1. Factory production control (FPC)

The manufacturer shall establish, document and operate an FPC system that ensures that the products placed on the market continue to meet the requirements of this TCP in a verifiable manner.

A manufacturer whose quality management system complies with EN ISO 9001 and supplements it with the requirements for factory production control set out in this TCP shall be deemed to comply with the requirements for factory production control.

Regarding the products, the manufacturer is responsible for the design, operation and control of a factory production control system that ensures the continuous conformity of the products.

The factory production control system must include:
- the activities required under the procedure for attesting conformity, and the persons responsible for those,
- regulations on the training and education of personnel, production and testing equipment, raw materials, products supplied, the production process, the handling of non-conformities and complaints and the review of the factory production control system by the manufacturer,
- the tests carried out as part of the factory production control, and the frequency and requirements for their performance are set out in the table below:

Table 2

Feature	Test/assessment method	Frequency of examination
Export Colour Unit Denotation	MSZ EN 1519-1 point 5. MSZ EN 1519-1 point 5. MSZ EN 1519-1 point 6. MSZ EN 1519-1 point 11.	per 8 hours/per machine
Behaviour during heat exposure	MSZ EN 1519-1 point 7.	weekly/per machine

- an assessment of the results of the factory production control tests by comparing the results of the first examination.

3.2.2. Specification of the product characteristics that accompany the product.
The values of the product characteristics specified in the relevant product standards shall be indicated on the product packaging or accompanying documents.

3.2.3. Issuance of Supplier's Declaration of Conformity

The declaration issued by the manufacturer must contain the following:

- Name, identification mark (trade mark) and address of the supplier (manufacturer, distributor, redistributor) of the construction product.
- The purpose (area of use) of the construction product and the data necessary for its identification, the date of manufacture, the type of product.
- The name and identification of the notified body which has issued the declaration of conformity.
- Present and identify the TCP the construction product has been tested to meet.
- The period of validity of the declaration of conformity.
- Name (legible) and position of the representative of the supplier, manufacturer or distributor authorized to sign the declaration of conformity.
- Identification number of the declaration of conformity, date of issue, legal signature of the issuer.

Additional information

Instructions for use of the product (provided/available on the manufacturer's website, etc.).

Formal requirements for the declaration of conformity:

The form of the declaration is not set. It is usually a separate document that should be attached to the shipment or delivery note during delivery. It can be adapted in size and shape to the other documents of the manufacturer, or to their installation, operating and use instructions, which are attached to the product.

4. ELIGIBILITY CRITERIA

4.1. Product

The technical characteristics of the product must comply with the requirements of point 2. In case of changes in the raw materials, design and assembly technology of the product, it is necessary to perform another assessment of suitability.

4.2. Production

Production can only take place in accordance with the production technology data documents set up by the control tests and using the prescribed raw material.
The manufacturer is obliged to record, log and keep the supplier's declaration of conformity, as well as the test results and calculations of the batch release tests (including the raw materials used in production) for 10 years.

4.3. **Planning**

During the design of polyethylene drainage systems the MSZ EN 12056: 2001 standard *"Gravity drainage systems inside a building"* must be taken into account, more specifically the following standards:

Part 1: General and performance requirements
Part 2: Sewage pipelines, design and calculation
Part 3: Rainwater drainage, design and calculation
Part 4: Sewage lifting equipment. Design and calculation.
Part 5: Construction and testing, operating, maintenance and operating instructions.

The standard prEN 1519-6 named *Plastic piping system for soil and waste discharge (low and high temperature) within the building structure. Polyethylene (PE). Part 6.' Recommended practice for installation* should also be taken into account.

Polyethylene drains and fittings can be designed for the gravity and / or vacuum drainage of rainwater, groundwater and wastewater with a permanent temperature of up to 60 ° C, which does not attack the drain pipes the fittings and the material of their welded joints.

4.4. **Installation, assembly**

While installing the drainage system the installation instructions must be observed. Pipes and fittings are assembled by blunt or electrofitting welding. Welding may only be carried out with functionally controlled tools and personnel experienced in plastic welding.
A watertightness pressure test must be carried out before covering the built-in piping system.

4.5. **Operation, use**

The MSZ EN 12056-5: 2001 standard "*Gravity drainage systems inside buildings. Construction and testing, operating, maintenance and operating instructions*" must be taken into account when operating the polyethylene drainage piping system.
Polyethylene drains and fittings may be designed for the permanent gravity and/or vacuum drainage of rainwater, groundwater and waste water up to a temperature of up to 60 ° C, which does not damage the drain pipes, fittings and their welded joints.

4.6. **Transport and storage**

The pipes must be protected from harmful ultraviolet (UV) radiation from sunlight during storage. The tubes can be stored under UV exposure for up to 180 days without UV protection! Pipes must be fitted with pipe seals during storage and transport.

5. FOLLOW-UP

Follow-up inspections during the validity of the TCP

Follow-up performances during the period of validity of the TCP: twice.
The deadline for the first order to be sent to ÉMI Nonprofit Kft. For the performance of post-tanning is 01.03.2014. In case of non-compliance with the post-inspection obligation, TCP

becomes invalid and ÉMI Nonprofit Kft. Deletes it from the database of valid Construction Technical Permits.

Budapest, 27.06.2012.

Attila Szántay, research associate

Péter Tóth, head of scientific department

Péter Solyomi, head of responsible department