2010 FÉBR 24.

ÉMI ÉPÍTÉSÜGYI MINŐSÉGELLENŐRZŐ INNOVÁCIÓS NONPROFIT KORLÁTOLT FELELŐSSÉGŰ TÁRSASÁG
H-1113 Budapest, Diószegi út 37. Levélcím: H-1518 Budapest, Pf : 69.
Telefon: +36 (1) 372-6100 Fax: +36 (1) 386-8794
E-mail: info@emi.hu Honlap: http://www.emi.hu
Építésügyi Minőségellenőrző Innovációs Nonprofit Kft.

ÉMI NON-PROFIT LIMITED LIABILITY COMPANY FOR QUALITY CONTROL AND INNOVATION IN BUILDING
ÉMI SOCIÉTÉ Á BUT NON LUCRATIF POUR LE CONTRÔLE DE QUALITÉ ET L'INNOVATION DU BÂTIMENT, RESPONSABILITÉ LIMITÉE
ÉMI NON-PROFIT GESELLSCHAFT FÜR QUALITÄTSKONTROLLE UND INNOVATION IM BAUWESEN MIT BESCHRÄNKTER HAFTUNG

A-290/2002 **UE: A-2462/2009**

ÉME

TECHNICAL APPROVAL

for construction industry applications

Product description:	**1. POLIEXT compression fittings DN/ID 20-75 mm PN16** **2. PLASTICA ALFA compression fittings DN/ID 75-110 mm PN10**
Envisaged field of application:	**Providing mechanical pipe joints for buried polyethylene and metal water pipelines between standard polyethylene and polyethylene or polyethylene and metal pipes**
Applicant: as the holder of ÉME	**POLIEXT Csövek Kft.** **H-6000 Kecskemét-Matkó, II. ker. 232.**
Manufacturer of the product:	**POLIEXT Csövek Kft.** **H-6000 Kecskemét-Matkó, II. ker. 232.** **PLASTICA ALFA s.r.l.** **Zona Ind. le C. da Balchino,** **I-95041 CALTAGIRONE (CT)**
ÉMI code of the product:	5.5.4.
Valid:	**until 30 January 2015**

Budapest, 30 January 2010

(Sándor Horváth)
Deputy General Manager
Director for Quality Affairs and Marketing

Clause: "This document is issued by ÉMI Nonprofit Kft. to certify that this approval issued in the English language is identical in substance with the original document and may be used just like the original approval. In the case of a legal dispute, the contents of the original Hungarian document and its interpretation shall govern."

This Technical Approval comprises 9 pages and - numbered and sealed enclosure

Budapest, 30.01.2010

ÉME: A-290/2002
UE: A-2462/2009

I. LEGAL REGULATIONS AND GENERAL REQUIREMENTS

1. This ÉME has been executed by Buildings Quality Control Innovation Non-profit LLC (ÉMI), with reference to
- joint decree No. 3/2003 (I.25.) of BM-GKM-KvVM on detailed rules of technological requirements of building products, certification of conformity, marketing and utilization;
- designations in IKIM Bulletin 16/1998 (IKK.8.);
- ÉME of the same label, issued on 29.09.2007 and valid until 30.10.2002, and assessment of test results detailed in Follow-up Control Reports No. A-2462/2009 delivered to Applicant.

2. ÉME's eligible – the natural individual or legal entity who requested the ÉME directly or through an agent, and for whom it has been executed by ÉMI Nonprofit Kft. – shall be responsible for the product complying with ÉME requirements and for the User to receive all pieces of information necessary for use in the intended applications.

3. ÉMI Nonprofit Kft. as approving body shall be entitled to verify that the requirements of ÉME are complied with and the product is in compliance with the technical specifications. The follow-up control may be carried out, at Applicant's expense, by ÉMI Nonprofit Kft. at a laboratory, at the manufacturing facility, the Applicant's premises and at the reference site of incorporation of the product.

4. ÉME may only be used by its eligible as a technological specification for issuing the certification of compliance. ÉME's eligible may not transfer it to anyone. ÉME refers only to the product produced at the indicated manufacturing facilities.

5. If a harmonized European Standard naturalized within the efficiency period of ÉME is issued on the product, ÉMI Nonprofit Kft. must withdraw ÉME within one year from the publication of the standard, pursuant to joint decree 3/2003 (I.25.) of BM-GKM-KvVM – unless the product differs substantially from the standard.

6. ÉMI Nonprofit Kft. may withdraw ÉME on the product if the follow-up control cannot be carried out, or it produces an inadequate result or the product is found to be unfit for the intended application. ÉME's eligible must report any change in the characteristics of the product or in the circumstances of manufacture. Then ÉMI Nonprofit Kft. decides whether ÉME may remain in effect or another procedure has to

be initiated (with ÉME withdrawn). If such a decision requires tests, ÉMI Nonprofit Kft. may suspend ÉME's effect for the period of time concerned.

7. ÉME will be published by ÉMI Nonprofit Kft. in Hungarian language or, to comply with Applicant's request, in English, German or French translation (or in some other language). The basis of legal efficiency is the Hungarian issue of ÉME.

8. ÉME may only be reproduced or published on some other data medium in full scope. Abstracts must be issued with the written consent of ÉMI Nonprofit Kft. This fact has to be indicated. The text and graphics in advertisement brochures may not be in conflict with the contents of the Buildings Technological Permit (ÉME) and may not cause any misunderstanding.

9. ÉME as a technical specification shall not replace other permits (health, building authority) required for the distribution, utilization, incorporation, uses of the product and certifications (e.g. fire protection, certification of conformity).

10. The certification of conformity issued with reference to ÉME shall not entitle the manufacturer or the distributor to fix the CE mark on the product or the packaging thereof.

II. SPECIAL CRITERIA OF BUILDING TECHNOLOGICAL PERMITS

1. DETAILS

1.1 Facility of manufacture

DN/ID 20-75 mm PN16 profiles:
POLIEXT Csövek Kft., H-6000 Kecskemét-Matkó, II district 232
DN/ID 75-110 mm PN10 profiles:
PLASTICA ALFA s.r.l. Zona Ind. Le C. da Balchino, I-95041 CALTAGIRONE (CT)

1.2 Description of product and the intended applications

The product
Polypropylene quick-clamping profiles and saddle profiles in compliance with the Company Standard of POLIEXT Csövek Kft. and the Product Catalogue of PLASTICA ALFA s.r.l. (Annexes 2/a and 2/b of suitability test report).
The product is manufactured in compliance with the requirements of Table 1.

Basic material of product
The quick-clamping profiles are manufactured from the UV stabilized polypropylene blend declared by the manufacturers in the Company Standard and/or in the Product

Catalogue. The long-term hydrostatic strength of the basic material has to be tested and assessed in compliance with the standard MSZ EN ISO 9080:2003 ("Plastic pipelines and sewer systems. Determination of lasting hydrostatic strength of pipe-form thermoplastics by extrapolation."). The blend shall be classified in compliance with standard MSZ EN ISO 12162:1997 ("Thermoplastics for the pipes and pipe profiles of pressure lines. Classification and description. General operating (designing) factor.").
The requirements to be met by the basic materials of sealing rings for assemblage are specified in standard MSZ EN 681-1:2000 ("Flexible sealings. Material requirements of pipe-joint seals used in the fields of water supply and sewers. Part 1 – Rubber.").

Intended use of the product
Mechanical pipe joints made in polyethylene and metal underground water mains between standard polyethylene and polyethylene, or polyethylene and metal pipes.

2. CHARACTERISTICS OF PRODUCTS AND TEST PROCEDURE

Table 1 – requirements of suitability, certification of conformity and type testing

No.	Characteristics of products and units of measure	Requirement	Method of testing
1	Design, surface finish	2.1 Plain clean surface	ISO 14236:2000 6
2	Dimensions (mm)	2.2 In product catalogue	MSZ EN ISO 3126-2005
3	Resistance to withdrawal (only quick-clamping profile) (kN)	2.3 It may not be withdrawn	MSZ EN 712:1995
4	Internal pressure strength in bending (bar)	2.4 Water-tightness	MSZ EN 713:1995
5	Internal pressure strength (1 hour)	2.5 Water-tightness	MSZ EN 715:1995
	… in 1000 hour	2.6 Water-tightness	MSZ EN ISO 13846:2001 MSZ EN ISO 1167:2006
7	Resistance to external water pressure (bar)	2.7 Water-tightness	MSZ EN 911:1997
8	Designation	2.8 Visibility	ISO 14236:2000 10
9	Effect on the quality of water 1)	-	In compliance with national health regulations

[1] *Government Decree No. 201/2001 (X.25.) as amended by Government Decree No. 47/2005 (III.11.) on the quality requirements of drinking water and the procedures of control.*

The requirements have been determined with reference to the following standards:

- ISO 13460:1998
Agricultural irrigation equipment. Plastics saddles for polyethylene pressure pipes

- ISO 14236-2000
Plastic pipes and fittings. Mechanical-joint compression fittings for use with polyethylene pressure pipes in water supply systems

- EN 12201:2003
Plastics piping systems for water supply. Polyethylene (PE)

- DIN 8076-2008
Pressure pipelines made from thermoplastics materials. Metal and plastics compression fittings for polyethylene pipes. General quality requirements and testings

2.1 Design, surface finish
No reeves are tolerable on the component parts of quick-clamping profiles; their surfaces must be plain, clean, free from cracks and cavities.

2.2 Dimensions
The connecting dimensions of quick-clamping profiles are shown in the Catalogue of Products. The dimensions can be checked directly in compliance with Hungarian Standard MSZ EN ISO 3126:2005 ("Plastic pipeline systems. Plastic component parts. Determination of dimensions.")

2.3 Resistance to withdrawal
Test standard – MSZ EN 712:1995 ("Plastic pipeline systems. Mechanical joints resistant to withdrawal between the pipe profiles and the pressure pipes. Method of testing resistance to a permanent longitudinal force of withdrawal."). Conditions of test – at 20°C for 1 hour, with a pulling force calculated by the formula F=1.5 □□□e_m□□σ_t□□d_n-e_m□ where e_m is the average thickness of the pipe wall, σ_t is the annular tension of the pipe concerned, related to its 1000-hour lasting internal pressure proofness test, d_n is the nominal outside diameter of the pipe.
Requirement – The pipe may not be withdrawn from the profile and no cracks may be produced on the profile.

2.4 Internal pressure proofness in bending

Test standard – MSZ EN 713:1995 ("Plastic pipeline systems. Mechanical joints between the pipe profiles and the polyolefin pressure pipes. Testing the solidity of fittings subjected to bending with internal water pressure.")

Test conditions – with the test specimen filled with 20°C water, it has to be subjected to an internal overpressure of 18 bar at a working pressure of 1.8 PN, i.e. PN10 (with a bending radius of 15 DN) and 2.8 bar at a working pressure of PN 16 (with a bending radius of 20 DN), for 1 hour.

Requirement - No leaks shall be tolerable.

2.5 Internal pressure proofness (for 1 hour)

Test standard – MSZ 715:1995 ("Plastic pipeline systems. Withdrawal-proof joints between small-diameter pressure pipes and pipe profiles. Testing solidity with internal water pressure, including axial loads/stresses.")

Conditions of test – Held in the standard 20°C water bath, the quick-clamping profiles shall be subjected to an internal overpressure of 25 bar at a working pressure of 2.5 PN, i.e. PN 10, and 40 bar at a working pressure of PN 16, for 1 hour.

Requirements – No leaks are tolerable.

2.6 Internal pressure proofness (for 1000 hours)

Test standards – MSZ EN ISO 13846:2001 ("Plastic pipeline systems. Fittings resistant and non-resistant to withdrawal and joints for thermoplastic pressure pipelines. Testing permanent solidity with internal water pressure") and MSZ EN ISO 1167:2006 ("Thermoplastic pipes, profiles and fittings for carrying liquids. Determination of resistance to internal pressure.") Conditions of test – The test specimens have to be subjected to an internal overpressure of 8.0 bar at a working pressure of 0.8 PN, i.e. PN 10 and 12.8 bar at a working pressure of PN 16, in a 40°C water bath for 1000 hours.

Requirement – No leaks shall be tolerable.

2.7 Resistance to external water pressure

Test standard – MSZ EN 911:1997 ("Plastic pipeline systems. Flexible sealing-ring and mechanical joints for thermoplastic pressure pipelines. Testing solidity with external water pressure.")

Conditions of test – The test specimens shall be subjected to an external water pressure of 0.1 bar in a 20°C water bath for 1 hour, followed by 0.8 bar or vacuum for 1 hour.

Requirement – No leaks are tolerable.

2.8 Labelling

The details for identification of the profiles shall be stamped on the outside surfaces by stamps made by the injection-moulding tool; they are:

Name of logo of manufacturer, year and month of manufacture, type, nominal pressure and nominal dimensions of the profile.
The labelling will be acceptable when it remains legible throughout the use of profile after delivery, handling, assemblage.

3. ASSESSMENT OF CONFORMITY

3.1 Certification of conformity of product

For products used for forwarding water not for human consumption, ii) supplier's declaration of conformity, second alternatives (3) as described in Appendix 4 of joint decree 3/2003 (I.25.) of BM –GKM-KvVM.
For products used for forwarding water for human consumption, i) certificate of conformity (1+) of Appendix 4 of joint decree of BM-GKM-KvVM.
In this case the relevant health requirement in Hungary is:
Government Decree No. 201/2001 (X.25.) on the quality requirements of drinking water and procedures of control, as amended by Government Decree No. 47/2005 (III.11.)

3.2 Duties of manufacturer

1. Checking the manufacture in compliance with the requirements of quality management system.
2. Further analyses of plant-taken samples by the manufacturer in accordance with the required scheme of checks.

3.3 Duties of notified certification body

1. First type testing of the product.
2. Basic testing of the plant and the production control.
3. Continuous supervision, assessment and approval of production control.
4. Random testing of samples taken at the plant, in commercial outlets or at the site of building construction.

3.4 Testing of lots issued by the manufacturer

The manufacturer has to carry out lot issuance tests and certification thereof. The frequency of lot issuance tests by the manufacturer is specified in the relevant quality management system. The parameters indicated in Table 1 have to be tested, and the results of tests documented at the frequency specified there.
The documents of tests have to be kept for 10 years.
The supplier shall issue a declaration of conformity for each lot of product sold, with reference to the lot issuance tests performed and ÉME, in accordance with Clause 2, Appendix 5 of joint decree 3/2003 (I.25.) BM-GKM-KvVM.

4. CRITERIA OF CONFORMITY

4.1 Manufacture

Manufacture must be carried out only in accordance with production technological data sheets adjusted by control tests, using the specified basic material.
Manufacturer must put on record, log and keep for 10 years the documents - the declaration of conformity by the suppliers of basic materials, and the test results and calculations of lot issuance tests (including the basic materials used).

4.2 Designing

Standard MSZ EN 1295-1:2001 ("Static computations of underground pipelines for different loads. Part 1 – General requirements") may be used for the static dimensions of water mains systems.
The designer has to determine the actually permissible maximum working pressure (MOP) of the water supply system including quick-clamping profiles, too, the lasting working temperature may be max. 20°C.
If the working temperature is higher than 20°C and not higher than 40°C, Annex "A" of standard MSZ EN 12201-1:2003 ("Plastic pipelines systems for water supply. Polyethylne (PE). Part 1 – General requirements.") has to be taken into account. Standard ISO/TR 1038:1993 ("Plastics pipes and fittings. Combined chemical-resistance classification table") may be used for determining the resistance to liquid chemicals.

4.3 Incorporation, assemblage

Standard MSZ ENV 1046:2001 ("Plastic pipeline and sewer systems. Off-building systems for carrying water or waste water. Practice of incorporation over and under the ground and requirements of standard MSZ-10-310:1986 ("Hydrological structures. Off-building water supply pipelines under pressure") have to be taken into account.
The consumers' water connections have to be made in compliance with the requirements of standard MSZ 22115:2002 ("Consumers' water connections.")
Polyethylene pipes and quick-clamping profiles have to be assembled in compliance with the "Assemblage Guide". In assembling the lines, care should be paid to prevent the occurrence of detrimental internal material stresses due to thermal dilatation and angle differences. The quick-clamping profiles may not be covered by earth until the successful pressure trial. Earth may be re-loaded and compacted only manually within 50 cm neighbourhood of the profiles.

4.4 Uses

The water supply system employing polyethylene pipes and quick-clamping profiles, having the permissible max. working pressure (MOP) must have a working temperature of max. 20°C in the long run.

Should the working temperature exceed 20°C provisionally (but max. 40°C), the working pressure of the system must be reduced in compliance with Annex "A" of standard MSZ EN 12201-1:2003 ("Plastic pipeline systems for water supply. Polyethylene (PE). Part 1 – General requirement.")

5. FOLLOW-UP CONTROL

Follow-up controls have to be carried out

twice

during the 5-year validity period of ÉME.
The commission for the follow-up control has to be sent to ÉMI Nonprofit Kft. before October 30, 2011 for the first time, and before March 30, 2013 for the second time. In the event of a failure of discharging the follow-up control obligation ÉME will lose its validity, and ÉMI Nonprofit Kft. will strike it off from the database of Buildings Technological Permits in effect.

Budapest, January 30, 2010

(illegible signature)
Attila Szántay
Scientific assistant