



**AVANZATE TECNOLOGIE PLASTICHE
ADVANCED PLASTIC TECHNOLOGIES**



**TUBI E RACCORDI IN PPR
PPR PIPES AND PIPE FITTINGS**

INTERNATIONAL CERTIFICATIONS

MARCH 2016

www.atpsrl.it



Index

TUV-TIC ISO 9001:2008	3
TUV-TIC ISO 14001:2004	4
ABS Product Design Assesment	5
DNV-GL	6
Bureau Veritas EN ISO 15874	10
PSB-Tuv Sud (Impact strength)	13
SKZ (Long term hydrostatic pressure test).....	15
SETSCO services Singapore (Chemicals migration in water)	19
TUV Thuringen Italia ISO 8795:2001	23
TUV Thuringen Italia DIN 8077-8078:2008 DIN 16962	24
TUV Thuringen Italia ISO 8795:2001	25
TUV Thuringen Italia UNI EN 11861 - 15:2003	27
China Health Institute	30
Halal Certificate	34
Politecnico di Milano (Chemicals migration in water)	35
Politecnico di Milano (Impact resistance test).....	37
Politecnico di Milano (Flame spread)	41
Global Migration in water - Toro 25 Fiber	43
Tensile properties - Toro 25 Fiber	44



CERTIFICATE



for the management system according to ISO 9001:2008

The proof of the conforming application with the regulation was
furnished and in accordance with certification procedure it is certified
for the company

A.T.P. S.r.l.

**Via dell'Industria, 3
I – 76121 Barletta (BT)**

Scope

**Design, manufacture and trading of plastic pipes,
fittings, dripping pipes and related accessories.**

Certificate Registration No.: TIC 15 100 63838

Valid until: 2018-06-21

Valid from: 2015-06-22

Audit Report No.: 3330 28D5 J0

Initial certification: 2006-06-22

This certification was conducted in accordance with the TIC auditing and certification procedures and
is subject to regular surveillance audits.

TÜV Thüringen e.V.
Certification body for
systems and personnel



Jena, 2015-05-28



Deutsche
Akreditierungsstelle
D-ZM-14006-05-01



Original certificates
are branded with a hologram

The current validity can be demanded at our homepage www.tuv-thueringen.de

Zertifizierungsstelle des TÜV Thüringen e.V. • Elms-Rustal-Ring 6 • D-07745 Jena • ☎ +49 3641 369740 • ✉ zertifizierung@tuv-thueringen.de

CERTIFICATE



for the management system
according to **ISO 14001:2004**

The proof of the conforming application with the regulation was
furnished and in accordance with certification procedure it is certified
for the company

A.T.P. Avanzate Tecnologie Plastiche S.r.l.

Via dell'Industria, 3
I – 76121 Barletta (BAT)

Scope

**Design, manufacture and trading of plastic pipes,
fittings, dripping pipes and related accessories.**

Certificate Registration No.: TIC 15 104 141239

Valid until: 2017-08-03

Valid from: 2014-08-04

Audit Report No.: 3330 2P2U A0

This certification was conducted in accordance with the TIC auditing and certification procedures and
is subject to regular surveillance audits.

TÜV Thüringen a.V.
Certification body for
systems and personnel



Jena, 2014-08-04



Deutsche
Akkreditierungsstelle
D-226-16006-05-03



ISO 14001:2004
cert. according to DIN EN ISO 14001

The current validity can be determined at our homepage: www.tuv-thueringen.de

Zertifizierungsstelle des TÜV Thüringen a.V. • Ernst-Ruhle-Ring 6 • D-07145 Jena • ☎ +49 3641 363740 • cert@tuv-thueringen.de

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
**A.T.P. AVANZATE TECNOLOGIE PLASTICHE S.R.L. -
BARLETTA**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: Thermoplastic Pipe, Fittings and Joints

MODEL: TORO 25

This Product Design Assessment (PDA) Certificate 14-GE1236458-PDA, dated 06/Oct/2014 remains valid until 05/Oct/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING



Lucio Trevisan
Engineer

TYPE APPROVAL CERTIFICATE

Certificate No:
TAK000007X
Revision No:
1

This is to certify:**That the Plastic Pipes, Thermoplastic**

with type designation(s)
TORO 25 EvO Pipes

Issued to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL
BARLETTA BA, Italy

is found to comply with

DNV GL rules for classification – Ships**DNV GL class programme CP-0072 – Type Approval of non-metallic materials – Thermoplastic piping systems****Application :**

For use in non-essential and essential systems for water with maximum allowable working pressure from 10 bar up to 25 bar. Service temperature 0°C to 70°C (shorter periods up to 95°C). For installation according to DNV GL Rules and Manufacturer's Specifications. The piping system is not tested w.r.t. Fire Endurance. The piping system is tested to Low Flame Spread in accordance with ASTM D635-06 (accepted as an alternative to IMO Resolution A.653(16)). (IMO Resolution A.753(18) adopted on 04-Nov-1993 as amended by Resolution MSC.313(88) adopted on 26-Nov-2010, except fire endurance, flame spread, toxicity and smoke generation test).

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-02-14**.Issued at **Høvik** on **2016-02-15**DNV GL local station: **Genoa**Approval Engineer: **Gisle Hersvik**for **DNV GL**

Digitally Signed By: Strande, Martin
Location: DNV GL Høvik, Norway
Signing Date: 2016-02-16

Martin Strande
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

TYPE APPROVAL CERTIFICATE

Certificate No:
TAK000007Y
Revision No:
1

This is to certify:**That the Plastic Pipes, Thermoplastic**

with type designation(s)
TORO 25 FIBER EvO Pipes

Issued to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL
BARLETTA BA, Italy

is found to comply with

DNV GL rules for classification – Ships**DNV GL class programme CP-0072 – Type Approval of non-metallic materials – Thermoplastic piping systems****Application :**

For use in non-essential and essential systems for water with maximum allowable working pressure from 10 bar up to 20 bar. Service temperature 0°C to 70°C (shorter periods up to 95°C). For installation according to DNV GL Rules and Manufacturer's Specifications. The piping system is not tested w.r.t. Fire Endurance. The piping system is tested to Low Flame Spread in accordance with ASTM D635-06 (accepted as an alternative to IMO Resolution A.653(16)). (IMO Resolution A.753(18) adopted on 04-Nov-1993 as amended by Resolution MSC.313(88) adopted on 26-Nov-2010, except fire endurance, flame spread, toxicity and smoke generation test).

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-02-14**.Issued at **Høvik** on **2016-02-15**DNV GL local station: **Genoa**Approval Engineer: **Gisle Hersvik**for **DNV GL**

Digitally Signed By: Strande, Martin
Location: DNV GL Høvik, Norway
Signing Date: 2016-02-16

Martin Strande
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

TYPE APPROVAL CERTIFICATE

Certificate No:
TAK000007W
Revision No:
1

This is to certify:**That the Plastic Pipes, Thermoplastic**

with type designation(s)
TORO 25 PP-R Pipes and Fittings

Issued to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL
BARLETTA BA, Italy

is found to comply with

DNV GL rules for classification – Ships**DNV GL class programme CP-0072 – Type Approval of non-metallic materials – Thermoplastic piping systems****Application :**

For use in non-essential and essential systems for water with maximum allowable working pressure from 10 bar up to 20 bar. Service temperature 0°C to 70°C (shorter periods up to 95°C). For installation according to DNV GL Rules and Manufacturer's Specifications. The piping system is not tested w.r.t. Fire Endurance. The piping system is tested to Low Flame Spread in accordance with ASTM D635-06 (accepted as an alternative to IMO Resolution A.653(16)). (IMO Resolution A.753(18) adopted on 04-Nov-1993 as amended by Resolution MSC.313(88) adopted on 26-Nov-2010, except fire endurance, flame spread, toxicity and smoke generation test).

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2021-02-14**.Issued at **Høvik** on **2016-02-15**DNV GL local station: **Genoa**Approval Engineer: **Gisle Hersvik**for **DNV GL**

Digitally Signed By: Strande, Martin
Location: DNV GL Høvik, Norway
Signing Date: 2016-02-16

Martin Strande
Head of Section

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BUREAU VERITAS
Certification



Certification of Conformity

Awarded to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL

Head Office and Operative Site:
Viale dell'Industria, 3 - 76121 BARLETTA (BT)

Bureau Veritas Italia S.p.A. - Industry Division certifies that the
following products:

Polypropylene fittings (PP)

Type	Material	Figure	Symbol	Class	pe	from Dn	to Dn
See Annex							

Brand:

TORO 25®

Have been audited and found to be in accordance with the requirements of the:

EN ISO 15874-3:2013

Plastics piping systems for hot and cold water installations Polypropylene (PP) – Part 3 Fittings

Certification issued in conformity to: R.F. 486 Art. 33 (D.L. 486/93) - Prescrizione per l'accertamento degli Organismi esperti la certificazione di prodotti/servizi. CIRCP Bureau Veritas Rev. 07 - Regolamento generale per la certificazione di conformità di prodotti e servizi. ISO 15874 Rev. 01 - Regole particolari per la certificazione Bureau Veritas di tubi e accessori in polipropilene (PP) per installazioni di acqua calda e fredda in conformità alle norme (UNI) EN ISO 15874.

Issued on: 08/04/2014
Expires date: 07/04/2017

The validity of this certificate is subject to a constant procedural surveillance and it can be checked on the following website:
www.certificat.bureauveritas.it. Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the originator.

Certificate: **804/002**



ISO 9001 N° 0094 FES N° 0762
ISO 14001 N° 0060 SGI N° 0099
ISO 19011 N° 0155 ENEC N° 0047
BSI N° 0047 QMS N° 0050
RINA N° 0051 ENEC N° 0060

Member degli Accordi di Riconoscimento SP e UK
Cooperative of UK and EU Mutual Recognition Arrangements

BUREAU VERITAS
Certification



Certification of Conformity

Awarded to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL

Head Office and Operative Site:
Viale dell'Industria, 3 - 76121 BARLETTA (BT)

Bureau Veritas Italia S.p.A. - Industry Division certifies that the
following products:

Polypropylene pipes (PP)

Material	Class	po	from Dn	to Dn
PP-R	1	10 bar	20	160

Brand:

TORO 25®

Have been audited and found to be in accordance with the requirements of the:

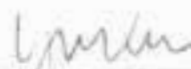
EN ISO 15874-2:2013

Plastics piping systems for hot and cold water installations Polypropylene (PP) – Part 2 Pipes

Certification issued in conformity to: RT - 06 ACCREDIA Rev. 01 - Prescrizioni per l'accreditamento degli Organismi operanti la certificazione di prodotti/servizi. GPOIP Bureau Veritas Rev. 07 - Regolamento generale per la certificazione di conformità di prodotto e servizio. SP10-15874 Rev. 01 - Regole particolari per la certificazione Bureau Veritas di tubi e raccordi in polipropilene (PP) per installazioni di acqua calda e fredda in conformità alle norme (UNI) EN ISO 15874.

Issued on: 08/04/2014
Expiry date: 07/04/2017

The validity of this certificate is subject to a constant periodical surveillance and it can be checked on the following website: www.certification.bureauveritas.it Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organisation.


Certificate **804/001**



ISO 9001 N° 0004 PMS N° 0780
ISO 9001 N° 0080 SGE N° 0084
PMS N° 0038 SHAS N° 0049
ISO 9001 N° 0050 IQHE N° 0060
PMS N° 0035 IEP N° 0048

Member of the Board of Italian Accreditation for a 10%
equivalency of 24 and 100 million euro of turnover

BUREAU VERITAS
Certification



Certification of Conformity

Awarded to

A.T.P. AVANZATE TECNOLOGIE PLASTICHE SRL

Head Office and Operative Site:
Viale dell'Industria, 3 - 76121 BARLETTA (BT)
Bureau Veritas Italia S.p.A. - Industry Division certifies that the
following products

System Components

see certificates n° 804/001, 804/002

Brand:

TORO 25®

Have been audited and found to be in accordance with the requirements of the:

EN ISO 15874-5:2013

Plastics piping systems for hot and cold water installations Polypropylene (PP) –
Part 5: Fitness for purpose of the system

Certification issued in conformity to: IT - 05 ACCREDIA Rev. 01 - Prescrizioni per l'accreditamento degli Organismi operanti la certificazione di prodotti/servizi. GP01P Bureau Veritas - Regolamento generale per la certificazione di conformità di prodotto e servizio. SP10-15874 Regole particolari per la certificazione Bureau Veritas di tubi e raccordi in polipropilene (PP) per installazioni di acqua calda e fredda in conformità alla norma (UNI) EN ISO 15874

Issued on : 08/04/2014
Expiry date: 07/04/2017

The validity of this certificate is subject to a constant periodical surveillance and it can be checked on the following website:
www.certification.bureauveritas.it. Further clarifications regarding the scope of this certificate and the applicability of standard's requirements may be obtained by consulting the organisation


Certificate n° 804/003



ISO 9001	ISO 14001	ISO 45001	ISO 50001
ISO 9002	ISO 14002	ISO 45002	ISO 50002
ISO 9003	ISO 14003	ISO 45003	ISO 50003
ISO 9004	ISO 14004	ISO 45004	ISO 50004

Member of the Bureau of Veritas Group
Bureau Veritas Italia S.p.A. - Industry Division Via Maremare, 15 - 20136 Milano - ITALY

TEST REPORT

Your Ref: WD 11071

Date: 21 June 2006

Our Ref: 545063221/LNB

Page: 1 of 3

DID: 68851432

Fax: 67793903



NOTE: This report is issued subject to PSB Corporation's "Terms and Conditions Governing Technical Services".
The terms and conditions governing the issue of this report are set out as attached within this report.

SUBJECT:

Impact Strength of PP-R (Polypropylene) Pipes

TESTED FOR:

Setsco Services Pte Ltd
16, Teban Gardens Crescent
Singapore 608925
Attn : Ms Varonica Ng

DESCRIPTION OF SAMPLE:

6 lengths of PP-R (Polypropylene) Pipes were received on 5/6/2006.

Size	Marking on pipe
20mm Ø	SISTEMA TORO 2.5 ATP Made in Italy PPR type 3 SDR6 PN20 Ø20X3,4 20° -2,0MPa/95° -0.59MPa DIN 8077-76 German Standard 2006 21/04-9
63mm Ø	SISTEMA TORO 2.5 ATP Made in Italy PPR type 3 SDR6 PN20 Ø63X10.5 20° -2,0MPa/95° -0.59MPa DIN 8077-76 German Standard 2006 23/03-01

METHOD OF TEST:

DIN 8078 – April 1996 - Types 1, 2 and 3 polypropylene (PP) pipes – General quality requirements and testing – Clause 4.5 Impact Strength





PSB Corporation

RESULTS:

Capacity of pendulum : 15 Joules
No of specimens tested : 10 per pipe size

Test	Results	DIN 8078 -- April 1996 Clause 4.5 Requirements
Impact Strength of 20mm Ø pipe	Passed, No break	Failures shall not exceed 10% of the specimens tested
Impact Strength of 63mm Ø pipe	Passed, No break	Failures shall not exceed 10% of the specimens tested


Lee Ngap Boon
Associate Engineer


Lee Sien Sun
Product Manager
Building & Industrial Products
Testing Group

Test report no.: 105747/13

Customer: ATP s.r.l.
Avanzate Technologie Plastiche
Via dell' Industria, 3
70051 BARLETTA (BA)
ITALY

Order: Long-term internal hydrostatic pressure test
on PP-R-multilayer pipes DN 63, PN 16, according to
EN ISO 15874-2:2013-06, paragraph 8-table 11

Material: Internal layer: PPR- Basell HOSTALEN PPH5416
External layer: PPR- Basell HOSTALEN PPH5416
Middle layer: Sumika Polymer Compounds-thermofil APG40P

Brand name: "TORO 25 FIBER"

Letter of: 2013-04-15 Ref: Michele Castellitti

Receipt of samples: see item 2 Sampling: "L"

Test period: from 2013-05-13 to 2013-05-19

This test report comprises 4 pages.

Würzburg, 2014-05-22

Lr/we

I. V.

Dr. Anton Zahn



I. A.

Dipl.-Ing. MAS Samir Leutner

1 Order

By its letter of 15 April 2013 company ATP s.r.l., Avanzate Technologie Plastiche, Via dell' Industria, 3, 70051 Barletta (BA), ITALIA, instructed SKZ – TeConA GmbH to perform an long-term internal hydrostatic pressure test on PP-R-multilayer pipes DN 63, PN 16, according to EN ISO 15874-2:2013-06, paragraph 8-table 11.

2 Test material

On 7 May 2013 SKZ – TeConA GmbH received following samples for testing:

Sample no.	Designation	PN	SDR	Nominal size	Quantity
1	Pipe	16	7.4	DN 63	9 x 1 m

Pipes were coloured green with 4 green stripes.

3 Test procedure

Usually we carry out tests according to standards for which we have an accreditation. The list of all standards for which we are accredited is shown on the homepage at www.skz.de.

If not otherwise noted, all tests were performed at standard atmosphere 23/50, class 2, according to DIN EN ISO 291:2008-08 "Climates and their technical application; standard climates" and after a storage of at least 88 hours in this climate.

Tests were performed according to EN ISO 15874-2:2013-06 "Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 2: Pipes (ISO 15874-2:2013); German and English version EN ISO 15874-2:2013".

Individual tests are listed in following table:

Requirements according to EN ISO 15874-2:2013-06, paragraph		Test results in test report, paragraph:	Test performed according to:
5.1	Appearance	4.1	Visually
6.2	Dimensions of pipes	4.2	DIN EN ISO 3126:2005-05
6.3	Thermal stability by hydrostatic pressure testing	4.3	DIN EN ISO 1167-1:2008-05
6.4	Marking	4.4	Visually

4 Test results

4.1 Appearance

The internal and external surfaces of the pipes were smooth, clean and free from scoring, cavities and other surface defects to an extent that would prevent conformity to this standard. The material does not contain visible impurities. The ends of the pipes were properly cut and square to pipe axis.

4.2 Dimensions

Sample no.	Measurements in "M"-status		Actual value [mm]		Set value* [mm]	
			minimum	maximum	minimum	maximum
1	Average outside diameter	d_{ave}	63.1	63.1	63.0	63.6
	Minimum wall thickness at any point	e_{min}	8.2	---	8.6	---

The minimum wall thickness for pipe series e.g. "S 3.2" must be 8.6 mm.

4.3 Thermal stability by hydrostatic pressure testing

Sample no.	Test temperature	Number of test pieces	Test pressure	Circumferential (hoop) stress	Test duration [h]	
	[°C]				Actual value	Set value
1	110	1	5.7	1.9	> 8760	≥ 8760

- Type of test: "water-in-air"
- End cap: "Type A"

4.4 Marking

Sample no.	Marking [CL = company's logo]
1	--- Sistema CL TORO 25 FIBER – ATP Made in Italy – PPR – PPR-GF-PPR – SDR 7,4 PN16 0 63X8,6 DIN 8077-78 german standard – ISO 15874 – 2013 02/05-9 ---

Pipe dimension class and application class combined with operating pressure are missing.

Test certificate no.: 43260/01

Customer: A.T.P. SRL
Avanzate Technologie Plastiche
Via dell' Industria, 3
70051 Barletta (BA)
ITALY

Order: Long-term internal pressure test on pipes
made of PP-R at 110°C, 1.9 N/mm², for 8,760 hours,
according to DIN 8078

Letter of: 2001-03-19 **Ref:** —

Receipt of sampling: 2001-03-21 **Sampling:** —

Testing period: 2001-03-04 to 2002-04-04

Result: See summary in item 5 on page 3


This test certificate comprises 3 pages.

Würzburg, 2002-06-24
Ne/we


Dipl.-Phys. Günther Poschet



by order


Dr. rer. nat. Jürgen Wüst
Dipl.-Phys.

The reproduction, duplication or translation of this report as a whole or in parts for advertising purposes is not permitted without the written approval of SKZ. The test results only apply to the products tested.

**SETSCO SERVICES PTE LTD**

18 Teban Gardens Crescent
Singapore 608925
Tel : (65) 6566 7777
Fax: (65) 6566 7718
Website: www.setsco.com
Business Reg. No. 196900269D

Your Ref:**Our Ref: MM-5775/T/2
TEST REPORT****Date: 13/07/2006**

(This Report is issued subject to the terms & conditions set out below)

Page 1 of 4

Subject : Testing of 'PPR' Pipe for use in contact with water intended for human consumption submitted by RFT Marketing Pte Ltd on 17/05/06.

Tested For : RFT Marketing Pte Ltd
No. 61, Kaki Bukit Avenue 1
#01-22
Shun Li Industrial Park
Singapore 417943
Attn: Mr Darrick

Test Method : SS 375 : 2001 - Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water.

- 1) Part 1 : Specification
- 2) Part 2:1 : Samples for testing
- 3) Part 2:2:2 : Odour and flavour of water
- 4) Part 2:3 : Appearance of water
- 5) Part 2:4 : Growth of aquatic micro-organisms
- 6) Part 2:5 : The extraction of substances that may be of concern to public health
- 7) Part 2:6 : The extraction of metals
- 8) Part 3 : High temperature tests

Sample Description : 'SISTEMA TORO 25' - PPR Pipe DN 50 x 8.3, was submitted by RFT Marketing Pte Ltd.

Micro/Text Report/MM5775-2/CTH

Terms & Conditions:

- (1) The Report is prepared for the sole use of the Client and is prepared based upon the item submitted, the Services required by the Client and the conditions under which the Services are performed by SETSCO. The Report is not intended to be representative of similar or equivalent Services on similar or equivalent items. The Report does not constitute an endorsement by SETSCO of the item.
- (2) SETSCO agrees to use reasonable diligence in the performance of the Services but no warranties are given and none may be implied directly or indirectly relating to the Services, the Report or the facilities of SETSCO.
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- (4) The Report may not be reproduced in part or in full unless approval in writing has been given by SETSCO.
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"The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme"
LA-1994-0058-A, LA-1997-0001-B, LA-1993-0067-G, LA-1993-0051-G, LA-1998-

Results :

1) Odour and Flavour of Water

Temperature of Extraction: 40°C.

Two samples were tested.

No discernible odour was detected in the first chlorine-free and chlorinated extracts.

No flavour was detected in the first dilution of both the first chlorine-free and chlorinated extracts. The first extract shall be defined as the final extract.

The results obtained show that the product complies with the requirements of SS 375:2001 part 1, Clause 4 for the odour and flavour of water test.

2) Appearance of Water

Temperature of Extraction: 40°C

One sample was tested.

Test	Sample	Requirements of SS375: Part 1 Specification (Maximum Admissible Level)
	1 st Extract	
Colour (Hazen Units)	<2.5	5
Turbidity (FNU)	<0.1	0.5

The results obtained show that the product complies with the requirements of SS375:2001 Part 1, Clause 5 for the appearance of water test.



3) Growth of Aquatic Micro-organisms

Test Temperature: 30 °C

One sample was tested.

MDOD (Mean dissolved oxygen difference)

Determination	MDOD (mg/L)	Requirements of SS375:2001 Part 1 Specification (MDOD, mg/L)
Paraffin Wax (Positive Reference)	5.6	7.5 ± 2.5
Borosilicate Glass (Negative Reference)	0.2	0.0 ± 0.6
Test Sample	0.3	≤ 1.69

MDOC (Mean dissolved oxygen concentration)

Determination	MDOC (mg/L)	Requirements of SS375:2001 Part 1 Specification (MDOC, mg/L)
Control	7.2	8.5 ± 2.5

The results obtained show that the product complies with the requirements of SS375:2001 Part 1, Clause 6 for the growth of aquatic micro-organisms test.

4) The extraction of substances that may be of concern to public health

Temperature of Extraction: 40 °C

One sample was tested.

Presence of confluent cell layer was observed in the test extract in contact with Vero cells. This observation indicates a non-cytotoxic response of the test extract to the cells.

The results obtained show that the product complies with the requirements of SS375:2001 Part 1, Clause 7 for the cytotoxicity test.



5) The extraction of metals


Temperature of Extraction: 40°C
Two samples were tested.

Analysis was performed on the first extract by using Inductive Coupled Plasma (ICP) and Atomic Absorption (AA).

Determination	Results of Metal Content in Final Extract (µg/L)		Max Allowable Concentration (µg/L)
	Sample 1	Sample 2	
Aluminium as Al	<20	<20	200
Antimony as Sb	<3	<3	5
Arsenic as As	<1.5	<1.5	10
Barium as Ba	<100	<100	700
Cadmium as Cd	<0.5	<0.5	3
Chromium as Cr	<5	<5	50
Iron as Fe	<20	<20	200
Lead as Pb	<1	<1	10
Manganese as Mn	<5	<5	50
Mercury as Hg	<0.5	<0.5	1
Nickel as Ni	<2	<2	20
Selenium as Se	<1	<1	10
Silver as Ag	<1	<1	10

The results obtained show that the product complies with the requirements of SS375:2001 Part 1, Clause 8 (Table 1) for the extraction of metals test.

Conclusion : The product is deemed suitable for use in contact with water intended for human consumption in accordance with SS375:2001.


 ELIZABETH LEE
 DIVISIONAL DIRECTOR
 BIOLOGICAL & CHEMICAL TECHNOLOGY DIVISION



Thüringen Italia

CERTIFICATO DI TEST N° 0173\FMP\FDC\15_3

Test Certificate n° 0173\FMP\FDC\15_3

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubo Multistrato in PP-RCT/PP-RCT + Fibra di Vetro/PP-RCT a marchio TORO 25 FIBER EvO
Tested products: Multilayer Pipes in PP-RCT/PP-RCT + Glass Fiber/PP-RCT brand TORO 25 Fiber EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm

Normativa di Riferimento: PN10 – PN16 – PN20
SDR 7.4 - 9 - 11 - 17
ISO 8795:2001

Ref. Standards:

Luogo del Test: CSI S.p.A
Test facility: Sede legale: Cascina Traversagna, 21
20030 Senago (MI) **Accreditato da** ACCREDIA Lab. N°006

Data del Test: 18/03/15
Test's date:

Auditor: Ing. Marco Padovano

Riferimento Test Report: 0173\FMP\FDC\15_3 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti della ISO 8795:2001 per condizioni di contatto con liquidi alimentari a temperature $\leq 60^{\circ}\text{C}$.

Tested products are compliant to ISO 8795:2001 for the conveyance of fluids for human consumption at $\leq 60^{\circ}\text{C}$ temperature.

Collecchio, 31/03/15


TÜV Thüringen Italia S.r.l.
Massimo Sansone (Direzione Ispezioni)



Per informazioni puntuali relative alla presente certificazione rivolgersi a:

TÜV Thüringen Italia S.r.l. – C.so Eguaglianza, 4 – 43044 Collecchio (PR)

Tel. +39 0521 805715 * Fax: +39 0521 800144 * E-mail: info@tuv-thueringen.it * Internet: <http://www.tuv-thueringen.it>



Thüringen Italia

CERTIFICATO DI TEST N° 010203/2014

Test Certificate n° 010203/2014

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Sistemi di Tubi e Raccordi in PP-R a marchio TORO 25
Tested products: *PP-R Pipes & Fittings System brand TORO 25*
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20 - PN25

Normativa di Riferimento: DIN 8077:2008-05;
Ref. Standards: DIN 8078:2008-05;
DIN 16962 Part 2-3-4

Luogo del Test: Laboratorio A.T.P. - Viale dell'Industria, 3 –
Test facility: 76121 Barletta (BT)

Data del Test: 24-30/05/2014
Test's date:

Auditor: Ing. Marco Padovano

Riferimento Test Report: 010203/2014
Test Report ref.:

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti delle suddette norme.

The tested products have been found conforming to the above mentioned standard.

Collecchio, 19/06/2014


TUV Thüringen Italia S.r.l.
Massimo Sansone
(Direzione Ispezioni)

Per informazioni puntuali relative alla presente certificazione rivolgersi a:

TUV Thüringen Italia S.r.l. – C.so Eguaglianza, 4 – 43044 Collecchio (PR)

Tel.: +39 0521 805715 * Fax: +39 0521 800144 * E-mail: info@tuv-thuringen.it * Internet: <http://www.tuv-thuringen.it>



Thüringen Italia

CERTIFICATO DI TEST N° 0173\FMP\FDC\15

Test Certificate n° 0173\FMP\FDC\15

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubi in PP-R a marchio TORO 25 EvO
Tested products: PP-R Pipes brand TORO 25 EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20 – PN 25
SDR 6 – 7.4 - 11 - 17

Normativa di Riferimento: **ISO 8795:2001**
Ref. Standards:

Luogo del Test: CSI S.p.A
Test facility: Sede legale: Cascina Traversagna, 21
20030 Senago (MI) **Accreditato da** ACCREDIA Lab. N°006

Data del Test: 18/03/15
Test's date:

Auditor: Ing. Marco Padovano


Riferimento Test Report: 0173\FMP\FDC\15 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti della ISO 8795:2001.

Tested products are compliant to ISO 8795:2001.

Collecchio, 31/03/15


TÜV Thüringen Italia S.r.l.
Massimo Sansone (Direzione Ispezioni)



Per informazioni puntuali relative alla presente certificazione rivolgersi a:



Thüringen Italia

CERTIFICATO DI TEST N° 0173\FMP\FDC\15_2

Test Certificate n° 0173\FMP\FDC\15_2

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubi in PP-RCT a marchio TORO 25 EvO
Tested products: PP-RCT Pipes brand TORO 25 EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20 – PN 25
SDR 6 – 7.4 - 11 - 17

Normativa di Riferimento: **ISO 8795:2001**
Ref. Standards:

Luogo del Test: CSI S.p.A. Accreditato da
Test facility: Sede legale: Cascina Traversagna, 21 ACCREDIA Lab. N°006
20030 Senago (MI)

Data del Test: 18/03/15
Test's date:

Auditor: Ing. Marco Padovano


Riferimento Test Report: 0173\FMP\FDC\15_2 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti della ISO 8795:2001.

Tested products are compliant to ISO 8795:2001.

Collecchio, 31/03/15


TUV Thüringen Italia S.r.l.
Massimo Sansone (Direzione Ispezioni)



Per informazioni puntuali relative alla presente certificazione rivolgersi a:



Thüringen Italia

CERTIFICATO DI TEST N° 0174\FMP\FDC\15

Test Certificate n° 0174\FMP\FDC\15

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubi in PP-R a marchio TORO 25 EvO
Tested products: PP-R Pipes brand TORO 25 EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20 – PN 25
SDR 6 – 7.4 - 11 - 17

Normativa di Riferimento: D.P.R. 777 dated 23/06/1982, D.L. 108 dated 25/01/1992, D.M. 34 dated 21/3/73
Ref. Standards: European Directives: 82/711/EEC GUCEE L 207 dated 23/10/82, 85/372/EEC GUCEE L372 dated 31/12/1985, 93/6/EEC GU L90 dated 14/04/1993, 97/48/EC GUCEE L 222 dated 12/8/97, Regulations 1835/2004/EC GUCEE L 338 dated 13/11/04 and 1895/2005/EC GUCEE L 302 dated 19/11/2005, Regulations 10/2011/EU GUCEE L 12 del 15/01/2011, and subsequent updatings.
UNI EN 11861 -15:2003

Luogo del Test: CSI S.p.A
Test facility: Sede legale: Cascina Traversagna, 21
20030 Senago (MI) **Accreditato da** ACCREDIA Lab. N°006

Data del Test: 12/03/15
Test's date:

Auditor: Ing. Marco Padovano

Riferimento Test Report: 0174\FMP\FDC\15 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti delle suddette norme.

Tested products are compliant to the above mentioned standard.

Collecchio, 31/03/15


TÜV Thüringen Italia S.r.l.
Massimo Sansone (Direzione Ispezioni)


Per informazioni puntuali relative alla presente certificazione rivolgersi a:



Thüringen Italia

CERTIFICATO DI TEST N° 0174\FMP\FDC\15_2

Test Certificate n° 0174\FMP\FDC\15_2

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubi in PP-RCT a marchio TORO 25 EvO
Tested products: PP-RCT Pipes brand TORO 25 EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20 – PN 25
SDR 6 – 7.4 - 11 - 17

Normativa di Riferimento: D.P.R. 777 dated 23/08/1982, D.L. 108 dated 25/01/1992, D.M. 34 dated 21/3/73
Ref. Standards: European Directives: 82/711/EEC GUCEE L 297 dated 23/10/82, 85/572/EEC GUCEE L372 dated 31/12/1985, 93/68/EEC GU L90 dated 14/04/1993, 97/48/EC GUCEE L 222 dated 12/8/97, Regulations 1835/2004/EC GUCEE L 338 dated 13/11/04 and 1895/2005/EC GUCEE L 302 dated 19/11/2005, Regulations 10/2011/EU GUCEE L 12 del 15/01/2011, and subsequent updates.
UNI EN 11861 -15:2003

Luogo del Test: CSI S.p.A
Test facility: Sede legale: Cascina Traversagna, 21
20030 Senago (MI) **Accreditato da** ACCREDIA Lab. N°006

Data del Test: 12/03/15
Test's date:

Auditor: Ing. Marco Padovano


Riferimento Test Report: 0174\FMP\FDC\15_2 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti delle suddette norme.

Tested products are compliant to the above mentioned standard.

Collecchio, 31/03/15


TUV Thüringen Italia S.r.l.
Massimo Sansone (Direzione Ispezioni)



Per informazioni puntuali relative alla presente certificazione rivolgersi a:

TUV Thüringen Italia S.r.l. – C.so Egualanza, 4 – 43044 Collecchio (PR)

Tel: +39 0521 805715 * Fax: +39 0521 800144 * E-mail: info@tuv-thueringen.it * Internet: <http://www.tuv-thueringen.it>



Thüringen Italia

CERTIFICATO DI TEST N° 0174\FMP\FDC\15_3

Test Certificate n° 0174\FMP\FDC\15_3

Produttore: A.T.P. S.r.l. Avanzate Tecnologie Plastiche
Manufacturer:

Indirizzo del sito: Viale dell'Industria, 3 – 76121 Barletta (BT) - Italy
Production site address:

Prodotti sottoposti a test: Tubo Multistrato in PP-RCT/PP-RCT + Fibra di Vetro/PP-RCT a marchio TORO 25 FIBER EvO
Tested products:
Multilayer Pipes in PP-RCT/PP-RCT + Glass Fiber/PP-RCT brand TORO 25 Fiber EvO
Da diametro 20 mm a diametro 250 mm
From diameter 20 mm to diameter 250 mm
PN10 – PN16 – PN20
SDR 7.4 - 9 - 11 - 17

Normativa di Riferimento:
Ref. Standards: D.P.R. 777 dated 23/08/1982, D.L. 108 dated 25/01/1992, D.M. 34 dated 21/3/73, European Directives: 82/711/EEC GUCEE L 297 dated 23/10/82, 85/572/EEC GUCEE L372 dated 31/12/1985, 93/8/EEC GU L90 dated 14/04/1993, 97/48/EC GUCE L 222 dated 12/8/97, Regulations 1835/2004/EC GUCE L 338 dated 13/11/04 and 1895/2005/EC GUCE L 302 dated 19/11/2005, Regulations 10/2011/EU GUUE L 12 del 15/01/2011, and subsequent updatings.
UNI EN 11861 -15:2003

Luogo del Test: CSI S.p.A
Test facility: Sede legale: Cascina Traversagna, 21
20030 Senago (MI) **Accreditato da** ACCREDIA Lab. N°006

Data del Test: 12/03/15
Test's date:

Auditor: Ing. Marco Padovano

Riferimento Test Report: 0174\FMP\FDC\15_3 (Allegato)
Test Report ref.: Annex

Sintesi dei risultati / Summary of results:

I prodotti testati sono stati individuati conformi ai requisiti delle suddette norme.

Tested products are compliant to the above mentioned standard.

Collecchio, 31/03/15

TÜV Thüringen Italia S.r.l.

Massimo Sansone (Direzione Ispezioni)

Per informazioni puntuali relative alla presente certificazione rivolgersi a:

TÜV Thüringen Italia S.r.l. – C.so Eguaglianza, 4 – 43044 Collecchio (PR)

Tel: +39 0521 805715 * Fax: +39 0521 800144 * E-mail: info@tuv-thueringen.it * Internet: <http://www.tuv-thueringen.it>





江苏省进口涉及饮用水卫生安全产品 卫生许可批件

共 2 页 第 1 页

产品名称	中文	TORO25 牌 PP-R 塑料管材		
	英文	PIPES PLASTIC brand TORO 25		
型号	$\phi \geq 20\text{mm}$			
产品类别	输配水设备			
生产企业	中文	ATP 高级塑料科技有限责任公司		
	英文	A.T.P.AVANZATE TECNOLOGIE PLASTICHE S.R.L.		
生产国（地区）	意大利	地址	DELL INDUSTRIA	3, 76121
			BARLETTA (BT), ITALY	
在华责任单位	名称	张家港保税区创先国际商贸有限公司		
	地址	张家港保税区长江润发国际大厦 A 座 708B 室		
审批结论	经审核, 该产品执行《生活饮用水卫生监督管理办法》的有关规定, 现予批准。			
批准文号	(苏)卫水进字(2013)第 0005 号			
批准日期	2013 年 12 月 16 日			
批件有效期	截至 2017 年 12 月 15 日			
附件	产品说明、主要成分或部件、使用范围和注意事项			
备注	<p>1. 本批件只对与所载明内容(包括名称、类别、规格、申请单位、企业、附件内容等)一致的产品有效, 且必须在本批件注明的实际生产企业生产。</p> <p>2. 批准时仅对其所申报材料对应产品的卫生安全性进行了审核, 未对其所宣传的功能和其他质量问题进行评价。</p>			

江苏省卫生厅(盖章)

江苏省进口涉及饮用水卫生安全产品卫生许可批件附件：

【产品说明】

该产品是以聚丙烯颗粒为原料的 PP-R 塑料管件，绿色，DN20-160mm，用于输送常温生活饮用水，材质符合《生活饮用水输配水设备及防护材料卫生安全评价规范》（2001）的要求。

【主要成分或部件】

无规共聚聚丙烯、硫化锌、酞菁染料/绿色、四【甲基-（3,5-二叔丁基-4-羟基苯基）丙酸】季戊四醇酯

【使用范围】

用于输送常温生活饮用水。

【注意事项】

最高压力不超过 2.0MPa，防止紫外线照射。



江苏省进口涉及饮用水卫生安全产品 卫生许可批件

共 2 页 第 1 页

产品名称	中文	TORO25 牌 PP-R 塑料管件		
	英文	FITTINGS PLASTIC brand TORO 25		
型 号	Φ ≥20mm			
产品类别	输配水设备			
生产企业	中文	ATP 高级塑料科技有限责任公司		
	英文	A.T.P.AVANZATE TECNOLOGIE PLASTICHE S.R.L.		
生产国（地区）	意大利	地址	DELL INDUSTRIA 3,76121 BARLETTA (BT), ITALY	
在华责任单位	名称	张家港保税区创先国际商贸有限公司		
	地址	张家港保税区长江润发国际大厦 A 座 708B 室		
审批结论	经审核，该产品执行《生活饮用水卫生监督管理办法》的有关规定，现予批准。			
批准文号	(苏)卫水进字（2013）第 0006 号			
批准日期	2013 年 12 月 16 日			
批件有效期	截至 2017 年 12 月 15 日			
附件	产品说明、主要成分或部件、使用范围和注意事项			
备注	1. 本批件只对与所载明内容（包括名称、类别、规格、申请单位、企业、附件内容等）一致的产品有效，且必须在本批件注明的实际生产企业生产。 2. 批准时仅对其所申报材料对应产品的卫生安全性进行了审核，未对其所宣传的功能和其他质量问题进行评价。			

江苏省卫生厅（盖章）

江苏省进口涉及饮用水卫生安全产品卫生许可批件附件：

【产品说明】

该产品是以聚丙烯颗粒为原料的 PP-R 塑料管材，绿色，DN20-160mm，用于输送常温生活饮用水，材质符合《生活饮用水输配水设备及防护材料卫生安全评价规范》(2001) 的要求。

【主要成分或部件】

无规共聚聚丙烯、硫化锌、酞菁染料/绿色、四【甲基-(3,5-二叔丁基-4-羟基苯基)丙酸】季戊四醇酯

【使用范围】

用于输送常温生活饮用水。

【注意事项】

最高压力不超过 2.0MPa，防止紫外线照射。

ISSUED TO THE COMPANY

A.T.P. S.R.L.

PRODUCTION SITE: Viale dell'Industrie, 3 - 76121 Barletta (BT) - ITALY

الهيئة العالمية للحلال (هيا) تقر وتشهد بأن المنتجات المذكورة في القائمة الملتصقة بهذه الشهادة هي منتجات "حلال" وهي مشروعة للتجارة وللاستهلاك من جانب المواطنين المسلمين، وأنه في مقر الشركة المذكور أعلاه تقوم الشركة بتطبيق معايير التصنيع الحلال الطيب طبقاً لأنظمتها ومواصفاتها هينة لجودة الحلال وأيضاً طبقاً للمواصفات التالية :

HIA-HQS-01, SGSO 993/1999, MS 1500:2009 AND CAC/GL 24-1997

المنتجات الحاصلة على شهادة الحلال المذكورة في قائمة ملصقة بهذه الشهادة. هذه الشهادة صالحة للمنتجات فقط إذا كانت مرفقة إلى قائمة المنتجات الحاصلة على شهادة الحلال.

HALAL INTERNATIONAL AUTHORITY (HIA) CERTIFIES THAT THE PRODUCTS ATTACHED TO THIS CERTIFICATE ARE HALAL (LAWFUL) FOR TRADE AND CONSUMPTION BY MUSLIMS, AS THEY ARE PRODUCED ACCORDING TO SHARIA'AH AND FOLLOWING COMPLETELY TRACEABLE PRODUCTION SUPPLY CHAIN. THE VERIFICATION AND CERTIFICATION HAVE BEEN EVALUATED ACCORDING ALSO TO:

HIA-HQS-01, SGSO 993/1999, MS 1500:2009 AND CAC/GL 24-1997 HALAL GUIDELINES & STANDARDS.

THE HALAL CERTIFIED PRODUCTS ARE LISTED IN AN ATTACHED DOCUMENT. THIS HALAL CERTIFICATE IS VALID FOR PRODUCTS ONLY IF ATTACHED TO THE LIST OF CERTIFIED PRODUCTS.

CERTIFICATE N.

HIA-HQS-01/ITA179/140414/CP01

رقم الشهادة:

START DATE:

14/04/2014

تاريخ الإصدار:

END DATE:

13/04/2015

تاريخ الانتهاء:


TRACEABILITY LINK:

WWW.HALALITALY.ORG

تتبع حالة الشهادة:

THE HALAL CERTIFIED PRODUCTS ARE LABELED WITH HIA'S LABEL OR LOGO

The President الرئيس
 (Prof. Dr. Eng. Sharif Lorenzini)





FONDAZIONE LABORATORIO PROVE MATERIE PLASTICHE

Dip. Chimica, Materiali e Ingegneria Chimica "Giulio Natta"

POLITECNICO DI MILANO - Piazza L. da Vinci, 32 - 20133

P. I.V.A. 10976540152

Tel. 0039-02-70630879 - Fax. 0039-02-23993266

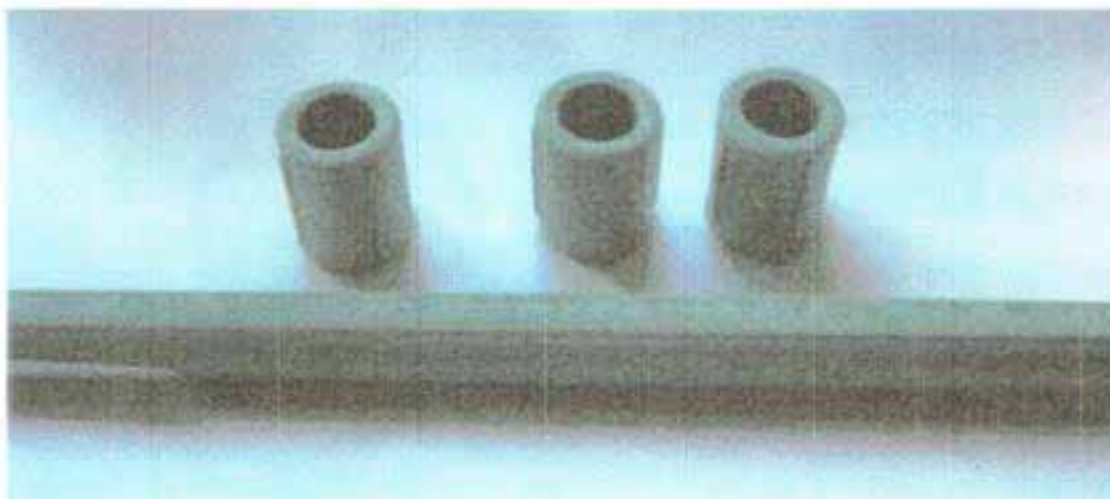
E-mail: ilprova@material.polimi.it Web: www.polimi.it/clic/fondazione

REPORT N° 073/06

Milano, 20th April 2006

Amendment to the Report n. 51/06 - Prot. 60/06⁽¹⁾

Customer: A.T.P. AVANZATE TECNOLOGIE PLASTICHE S.r.l. Viale dell'Industria, 3 - 70051 Barletta (BA)		
Protocol n°: 028/06	Dates the samples were received: 24.02.06	Beginning of tests: 14.03.06
Samples: <small>(as delivered by the customer)</small>	N° 1 pipe and n° 3 fittings of green colour marked "TORO 24".	



(1) The change is marked by a vertical line and by the underlining of the paragraph.

The results of the tests refer only to the received sample.

The partial reproduction of this report is not allowed without the authorization of the Laboratory.

DETERMINATION OF THE CHARACTERISTICS

I "Global migration in water"	
<i>Standard reference</i>	Decree n° 174 of the Ministero della Salute dated 6 th April 2004 - Annex III
<i>Number of test specimens</i>	3
<i>Test specimen preparation</i>	Pipe: by cutting. Fittings: none.
<i>Contact time [h]</i>	24
<i>Test temperature [°C]</i>	40 ± 0,5

Pipe	
Specimen	Migration [p.p.m.]
I	9
II	11
III	8

Fittings	
Specimen	Migration [p.p.m.]
I	17
II	7
III	9

Final results

<i>Global migration [p.p.m.]</i>	<i>Average value</i>	<i>Standard deviation</i>
Pipe	9	2
Fittings	11	5

[The highest limit of global migration admitted by the decree n° 174 dated 06.04.04 of the Ministero della Salute is 60 p.p.m.]

The pipes and fittings marked "TORO 25" examined, conform to the standards contained in the Decree n° 174 of the Italian Ministero della Salute dated 6th April 2004 as to the value of global migration.

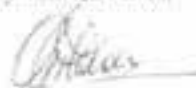
Technical Manager

P.L. Gabriele Depinto



Scientific Director

Prof. Andrea Pavoni



**FONDAZIONE LABORATORIO PROVE MATERIE PLASTICHE**

Dip. Chimica, Materiali e Ingegneria Chimica "Giulio Natta"

POLITECNICO DI MILANO - P.zza L. da Vinci, 32 - 20133

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REPORT N° 152A/11

Milan, 7th October 2011

Customer: ATP s.r.l. Via dell'Industria, 3 – 70051 Barletta (BA)		
Protocol n°: 142/11	Receipt of the samples: 07/22/2011	Beginning of tests: 09/05/2011
Samples: (Samples delivered by the customer)	N° 4 samples of pipe named: – "PN10 DN40"; – "PN16 DN32"; – "PN20 DN25"; – "PN25 DN25".	

DETERMINATION OF THE CHARACTERISTICS

I "Impact resistance by means of a tup (falling weight)"	
Standard reference	ASTM D 2444: 2010
Specimen preparation	None: prepared by the Customer
Conditioning	48 hours at test temperature
Test temperature	23° ± 2°C
Tup nose	Tup A
Tup mass	13,6 kg
Specimen holder	V-block
Definition of failure	"Failure in the test specimens shall be shattering or any crack or split created by the impact and that can be seen by naked eye. A crease visible on the surface shall not be construed as failure."

Test results:**"PN25 DN25"**

Impact energy [J]	Drop height [m]	N° of test specimens	% failure observed
200	1,50	20	0%
213	1,60	55	33%
233	1,75	60	83%
240	1,80	6	100%
Average impact resistance ⁽¹⁾ : 220 J			

⁽¹⁾ Impact energy for which a probability of 50% of failure is estimated on a normal probability graph.

"PN20 DN25"

Impact energy [J]	Drop height [m]	N° of test specimens	% failure observed
167	1,25	61	13%
187	1,40	60	48%
200	1,50	4	100%
Average impact resistance⁽¹⁾: 190 J			

⁽¹⁾ Impact energy for which a probability of 50% of failure is estimated on a normal probability graph.

"PN16 DN32"

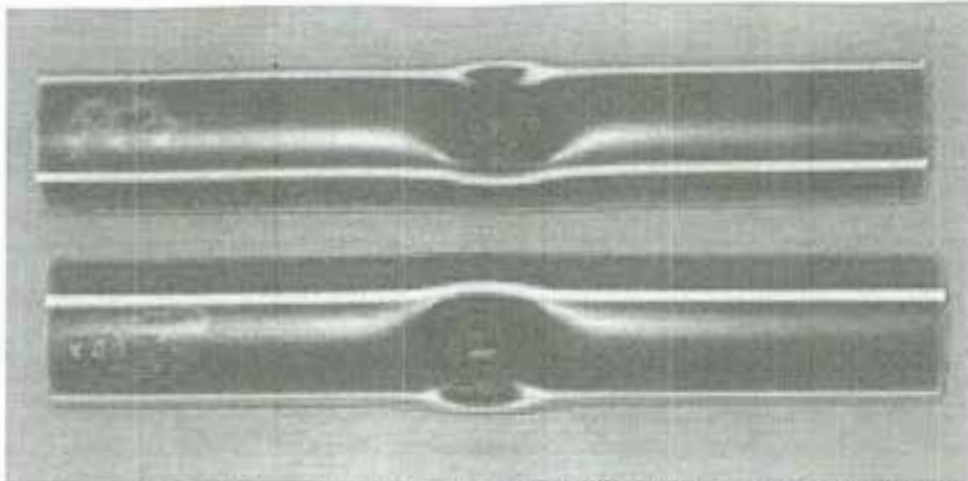
Impact energy [J]	Drop height [m]	N° of test specimens	% failure observed
200	1,50	4	0%
207	1,55	50	18%
213	1,60	10	50%
220	1,65	50	56%
240	1,80	6	100%
Average impact resistance⁽¹⁾: 215 J			

⁽¹⁾ Impact energy for which a probability of 50% of failure is estimated on a normal probability graph.

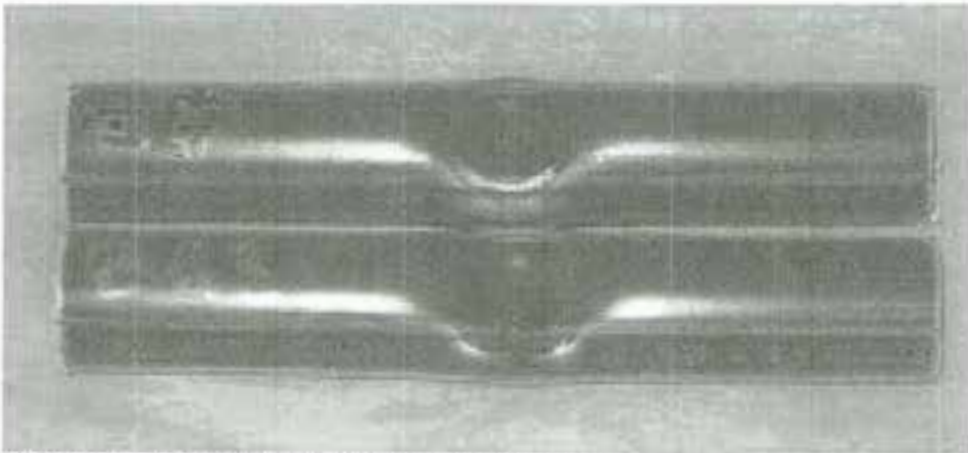
"PN10 DN40"

Impact energy [J]	Drop height [m]	N° of test specimens	% failure observed
167	1,25	60	3%
187	1,40	60	27%
200	1,50	4	100%
Average impact resistance⁽¹⁾: 195 J			

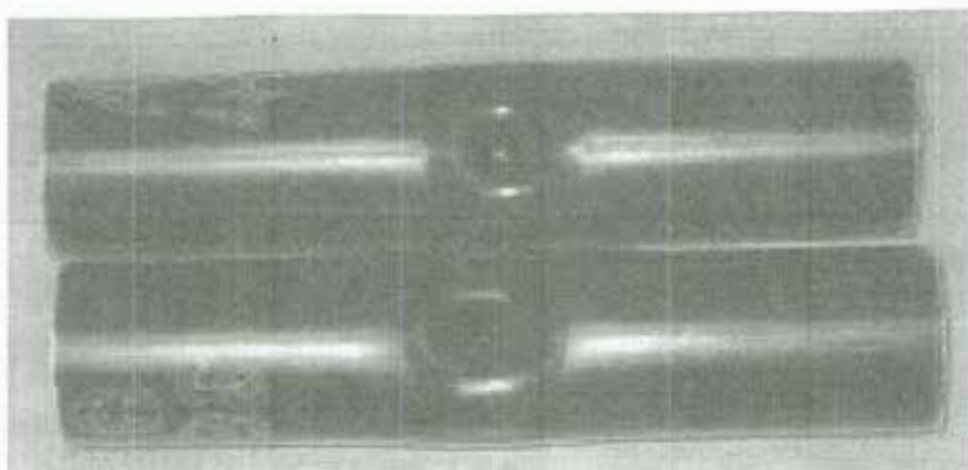
⁽¹⁾ Impact energy for which a probability of 50% of failure is estimated on a normal probability graph.



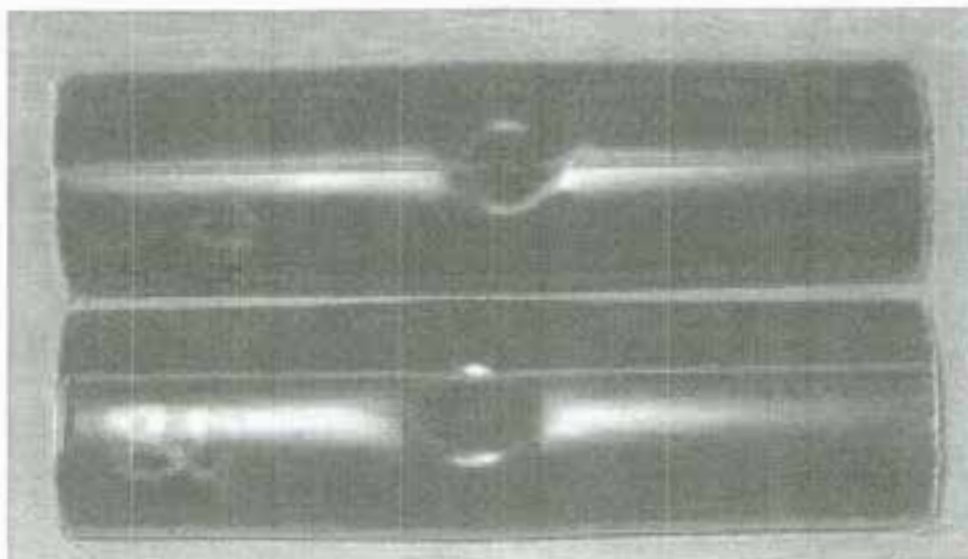
Example of the damage (plastic deformation) visible on sample PN25 DN25 after the impact with an energy of 213J (upper sample) and of 233J (lower sample)



Example of the damage (plastic deformation) visible on sample PN20 DN25 after the impact with an energy of 167J (upper sample) and of 187J (lower sample)



Example of the damage (plastic deformation) visible on sample PN16 DN32 after the impact with an energy of 207J (upper sample) and of 220J (lower sample)



Example of the damage (plastic deformation) visible on sample PN10 DN40 after the impact with an energy of 167J (upper sample) and of 187J (lower sample)

Technical Manager
Gabriele Depinto

Scientific Director
Prof. Roberto Frassine

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REPORT N° 152B/11

Milan, 7th October 2011

Customer: ATP s.r.l. Via dell'Industria, 3 - 70051 Barletta (BA)		
Protocol n°: 142/11	Receipt of the samples: 07/22/2011	Beginning of tests: 09/05/2011
Samples: (Samples delivered by the customer)	N° 1 sample of pipe named: - "PN20 DN20".	

DETERMINATION OF THE CHARACTERISTICS

1 "Rate of burning of plastics in a horizontal position"	
Standard reference	ASTM D 635: 2010
Specimen preparation	By milling
Conditioning	48 hours at test temperature
Nominal specimen dimensions	125 mm x 13 mm x pipe thickness
Gas	Methane
Flame angle	45°
Specimen support fixture	V-block in aluminium

Specimen	Thickness [mm]	Linear burning rate [mm/min]	Notes
1	3,2	16,7	The flame front passed the 100 mm reference mark
2	3,3	11,5	The flame front passed the 100 mm reference mark
3	3,1	14,1	The flame front passed the 100 mm reference mark
4	3,1	11,1	The flame front passed the 100 mm reference mark
5	3,3	13,0	The flame front passed the 100 mm reference mark
6	3,4	10,9	The flame front passed the 100 mm reference mark
7	3,4	14,2	The flame front passed the 100 mm reference mark
8	3,2	10,7	The flame front passed the 100 mm reference mark
9	3,5	10,6	The flame front passed the 100 mm reference mark
10	3,2	10,9	The flame front passed the 100 mm reference mark
Average value		12,4	
Standard dev.		2,1	

Technical Manager
Gabriele Depinto

Scientific Director
Prof. Roberto Frassine

The results of the tests refer only to the received sample.

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Page 1 of 1



PROTOCOL: 032/13
REQUEST: Quotation confirmation of 24.04.2013
CUSTOMER: A.T.P. AVANZATE TECNOLOGIE PLASTICHE S.r.l.
Viale dell'industria, 3 76121 Barletta

SAMPLES RECEIVED (Samples delivered by the customer)

1. PPR glass fiber reinforced pipes named "TORO 25-FIBER PN 16 Ø 63 mm thickness 8,6 mm"

TESTS

- A. Global migration in water
- B. Tensile properties

Scientific Director: prof. Roberto Frassine

*Nota: I risultati delle determinazioni o della ricerca si riferiscono soltanto al campione ricevuto.
La riproduzione parziale del presente Rapporto deve essere autorizzata dal Politecnico di Milano.*

1. SAMPLE RECEIVED	
<i>Description and identification</i>	PPR glass fiber reinforced pipes named "TORO 25-FIBER PN 16 Ø 63 mm thickness 8,6 mm"
<i>Colour</i>	Green
<i>Dimensions</i>	N. 4 pipes – length: 1 m - diameter 63 mm
<i>Analyzed part</i>	-



1A GLOBAL MIGRATION IN WATER	
<i>Test method</i>	Decree n. 174 dated 6 th April 2004 of Ministero della Salute
<i>Test instrument</i>	-

Test conditions	
<i>Number of specimens</i>	3
<i>Specimen preparation</i>	By machining.
<i>Contact surface</i>	Internal surface
<i>Time of contact</i>	24 h
<i>Test temperature</i>	40 ± 0,5 °C

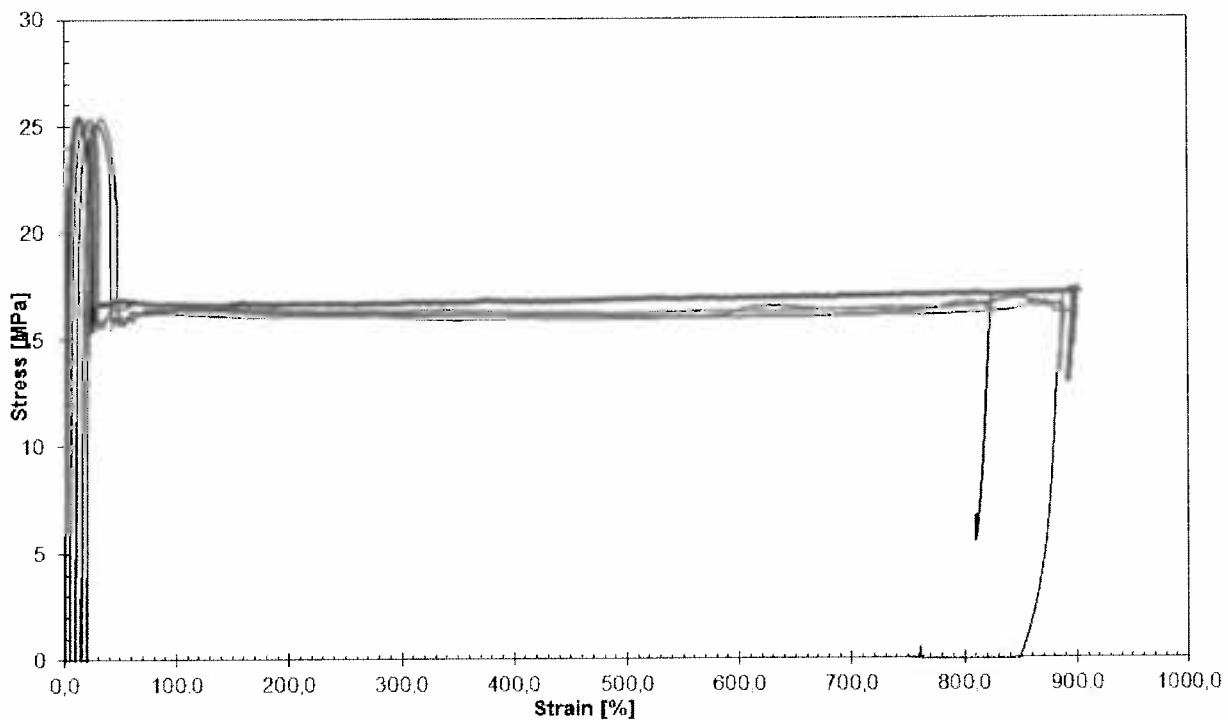
Result			
Specimen	Migration [ppm]	Mean value [ppm]	Standard deviation
I	8	8	1
II	9		
III	7		

[Highest limit of global migration allowed by Decree n° 174 dated 6th April 2004 of Ministero della Salute: 60 ppm]

1B TENSILE PROPERTIES	
Test method	UNI EN ISO 527-2: 1997
Test instrument	Cell CT1-7 on Instron mod.4302
Specimen preparation	By machining. The specimens were obtained in longitudinal direction of pipe.
Type of test specimen	Type 1B
Testing atmosphere	23 ± 2°C
Conditioning	48 h in testing atmosphere
Test speed	50 mm/min
Reference length	10 mm
Class of the instrument	0,5

Risultato						
Specimen	Length [mm]	Thickness [mm]	Stress at yield [MPa]	Strain at yield [%]	Stress at break (*) [MPa]	Strain at break [%]
1	9,84	8,58	25,7	12,7	17,2	900
2	10,25	8,39	25,6	13,9	17,2	881
3	10,09	8,60	25,6	13,6	16,7	877
4	10,14	8,40	25,3	14,2	17,2	808
5	9,64	8,26	25,7	13,0	17,6	878
		Mean	25,2	13,5	14,3	869
		Standard deviation	0,9	0,6	7,0	35

(*) for all the specimens maximum travel distance of the crosshead was reached without breaking.





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