



MUNICIPEX® WATER SERVICE LINE

THE COST-EFFECTIVE, DEPENDABLE SOLUTION FOR NEW AND AGING INFRASTRUCTURE

www.municipex.com

Construction
Automotive
Industry

MUNICIPEX WATER SERVICE LINE

OVERVIEW

- Proven Alternative
- Product Range
- PEXa Technology
- PEXa Features and Benefits
- Pull-Out Testing
- Installation
- New Products
- Publications
- Standards and Certifications



MUNICIPEX WATER SERVICE LINE

PROVEN ALTERNATIVE

MUNICIPEX crosslinked polyethylene (PEXa) service line pipe is backed by more than 40 years and more than 1 billion feet (300 million meters) of installation experience worldwide.

- Development started in 1968 in Germany
- Series production started in 1972 for radiant heating
- Plumbing applications started 20+ years ago
- CSA certification received in 1994 (pipes and fittings)
- First municipal water service project installed in 1997
- MUNICIPEX brand registered in 1999
- Production began in Cullman, AL in 2003
- Certification to new AWWA C904 received in 2006
- More than 7 million feet sold in North America for municipal water services



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MUNICIPEX WATER SERVICE LINE

PRODUCT RANGE

- Pipe diameters: 3/4, 1, 1 1/4, 1 1/2 and 2 in.
- Coil lengths: 100, 300, 500 and 1,000 ft (30, 91, 152 and 305 m)
- Blue UV Shield for UV protection
- Identifiable service line pipe
- Copper Tube Size OD (CTS)
- **New 2009!** 1,000 ft (305 m) coils of 2 in. MUNICIPEX
 - Longer services and directional drilling

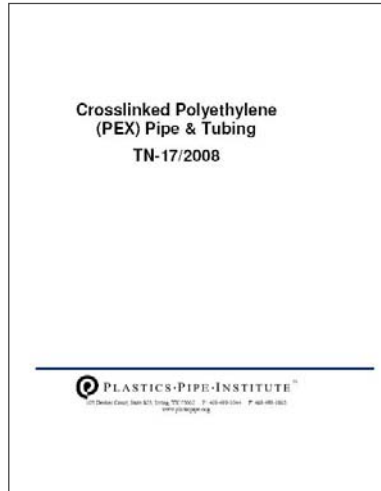


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MUNICIPEX WATER SERVICE LINE

PEXa TECHNOLOGY

PPI TN-17 SUMMARIZES THE PROPERTY CHANGES FROM PE TO PEX



PEX pipe surpasses the performance properties of HDPE (high-density polyethylene) pipe:

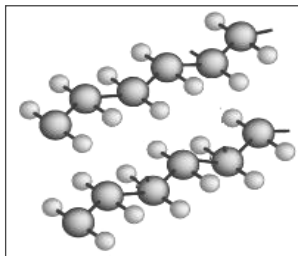
- **Increased** environmental stress crack resistance
- **Increased** resistance to slow crack growth
- **Increased** elongation to break
- **Increased** flexibility
- **Increased** hydrostatic design basis (HDB) pressure at 180°F (82.2°C)
- **Increased** resistance to creep

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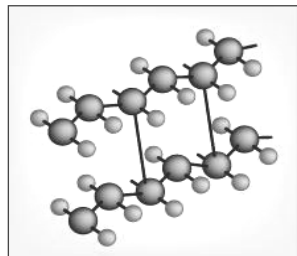
MUNICIPEX WATER SERVICE LINE

PEXa TECHNOLOGY

- PEX is a very high-performance thermoelastic polymer material
- PEX stands for **P**oly**E**thylene which is crosslinked (**X**)
 - Crosslinking is a permanent change that bonds the molecule chains together
 - Crosslinking improves the properties of polyethylene materials, especially in terms of resistance to higher temperatures, flexibility, creep and stress cracking resistance



Polyethylene Molecules



Crosslinked polyethylene (PEXa)

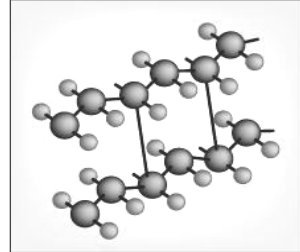
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PEXa TECHNOLOGY

PEX Crosslinking Methods

- PEXa: High-pressure peroxide extrusion method (typically 85% crosslinking)
- PEXb: Silane crosslinking groups (typically 65-70% crosslinking)
- PEXc: High energy radiation (typically 70-75% crosslinking)



PEXa crosslinked polyethylene

PEXa Structural Differences

- Uniform crosslinking over the entire wall thickness (no weak links)
- **Covalent (PEXa)** carbon-carbon bonds are stronger than the **ionic** bonds found in PEXb
- Higher degree of thermal memory
- Superior percentage of crosslinking provides greater field advantages

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PEXa TECHNOLOGY

Why is PEXa technology important?

The higher degree of crosslinking and superior flexibility of PEXa allow MUNICIPEX to excel on the job.

- Install pipe faster
- Repair or replace a damaged curb stop without completely shutting off the main
- Remove a kink in the pipe without adding joints
- Increase security of connections; only PEXa pipes can be used with cold-expansion compression-sleeve fittings (ASTM F2080)



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MUNICIPEX WATER SERVICE LINE

FEATURES AND BENEFITS

MUNICIPEX water service line is the ideal choice for infrastructure replacement and rehabilitation projects.



Cost-Effective Alternative to Copper

- Produced in SDR9 Copper Tube Sizes (CTS) according to ASTM F876 and AWWA C904
- Compatible with standard AWWA C800 compression joint brass valves and fittings (with stainless steel inserts)
- Lower, more stable material cost; 2-3 times less than copper
- Less likely than copper to be stolen from a jobsite because of low intrinsic scrap value

A Greener Material

- PEX requires less energy to produce and has a lower carbon footprint than copper¹

¹ "Life Cycle Inventory of the Production of Plastics Pipes for Use in Three Plumbing Applications," Franklin Associates, 2008 http://ppfahome.org/PPFA-_Manufacturing_LCI_Report.pdf

MUNICIPEX WATER SERVICE LINE

FEATURES AND BENEFITS

MUNICIPEX pipes are made according to national standards which establish the capabilities and application limits

Minimum Short-term Burst Strength² per ASTM F 876

- 475 psi @ 73.4°F (3,310 kPa @ 23°C)
- 210 psi @ 180°F (1,450 kPa @ 82°C)
- 180 psi @ 200°F (1,240 kPa @ 93°C)

²MUNICIPEX pipes greatly exceed these minimum requirements

Long-term Pressure Ratings³

- 160 psi @ 73.4°F (1105 kPa @ 23°C)
- 100 psi @ 180°F (690 kPa @ 82°C)
- 80 psi @ 200°F (550 kPa @ 93°C)

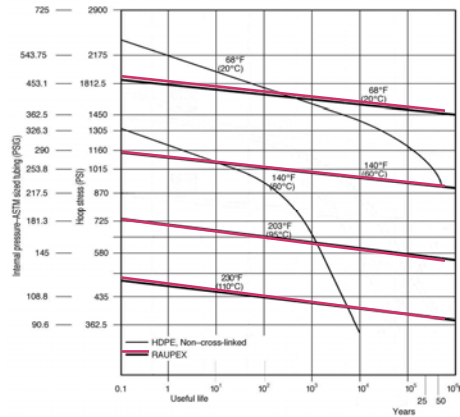
³Temperature/Pressure ratings are based on an extrapolated time-to-failure prediction as defined in ASTM D 2837, with Design Factor 0.50 on pressure

MUNICIPEX WATER SERVICE LINE

FEATURES AND BENEFITS

LONG-TERM STRENGTH: PEXa VS HDPE LONG-TERM PRESSURE CURVES

Long-term Hydrostatic Strength



- **HDPE pipes** ———
- Stronger than PEXa pipes when new due to higher stiffness, but over time show a stress “knee-point”
 - 100,000 hours = 11.4 years
 - Higher water or soil temperature may accelerate this change
- **PEXa pipes** ———
- Flat stress regression curve beyond 100,000 hrs
- REHAU PEXa pipes have been on continuous pressure test for over 25 years at up to 180°F (82°C) without seeing a “knee point”

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MUNICIPEX WATER SERVICE LINE

FEATURES AND BENEFITS

Waste Reduction

- Reduces scrap and overspending with:
 - Consecutive footage marks printed on pipe
 - Multiple coil lengths: 100, 300, 500 and 1,000 ft (30, 91, 152 and 305 m)
 - Custom cutting available

Lightweight

- Weighs five to six times less than copper
- Reduces shipping costs
- Handles more easily on jobsites, especially in larger coil lengths



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FEATURES AND BENEFITS

High Impact Resistance

- Withstands higher impact than copper, reducing the need for repairs and installation downtime
- Does not crush, kink or collapse when proper backfill techniques are used
- Native backfill can often be used (see *MUNICIPEX Installation Guide*)



Abrasion Resistance

- Resists gouges and scratches from rocks
- Offers outstanding slow crack resistance; superior to HDPE
- May be used in horizontal directional drilling applications

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FEATURES AND BENEFITS

Flexibility

- Bends with a radius as tight as five times the pipe outside diameter (OD), compared to 25 times the OD for SDR 9 HDPE
- Absorbs and dissipates energy from pressure surges better than copper, HDPE and PEXb
- Remains flexible to below -40°F (-40°C); will not become brittle or break even at cold temperatures



Pipe Size Nominal	Pipe OD Actual (in)	Minimum Bend Radius (in)	Minimum Bend Diameter (in)
3/4"	0.875	4.375	8.75
1"	1.125	5.625	11.25
1 1/4"	1.375	6.875	13.75
1 1/2"	1.625	8.125	16.25
2"	2.125	10.625	21.25

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FEATURES AND BENEFITS

Freeze Resistance

- MUNICIPEX expands when frozen, while copper is more likely to split
- Can be thawed using hot water injection equipment, warm wet rags or a hot air gun; do not use an open flame
- Can immediately be put back into service after thawing



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FEATURES AND BENEFITS

UV Resistance

- Resists UV exposure for up to one year when tested in accordance with ASTM F 2657 UV test method
- Should not be permanently installed in direct sunlight, either outdoors or indoors

Protective End Caps

- Protect pipe from dirt and debris during installation
- Remove easily without cutting pipe



*Packaging protects
from UV exposure*

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FEATURES AND BENEFITS

Chlorine Resistance

- Meets the requirements of ASTM F876 for chlorine resistance, when tested in accordance with ASTM F2023
- Achieves material designation code "3006" for chlorine resistance
 - Cold water and intermittent hot water applications (25% @ 140°F [60°C], 75% @ 73°F [23°C])
 - Timed hot water recirculation up to 12 hours per day (50% @ 140°F, 50% @ 73°F)
- Tested with free chlorine (Cl₂) at 4.0 ppm, pH 6.8, 80 psi, 140°F
- Chloramines (another water disinfectant) are less aggressive than free chlorine to PEX pipes; MUNICIPEX pipes are resistant to chloramines
 - See *PPI Statement A* research paper

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FEATURES AND BENEFITS

Chemical Resistance

- Resists a wide range of chemicals
- Check with REHAU for particular compatibility

Corrosion Resistance

- Does not corrode in soil or aggressive water conditions
- Resists scaling and internal deposits
- Provides superior flow because of its smooth interior surface

Kink Resistance

- Resists kinking, even at temperatures well below freezing
- If kinked, can be field-repaired without cutting



Corrosion



Smooth interior

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MUNICIPEX WATER SERVICE LINE

THERMAL MEMORY ALLOWS FIELD REPAIRS
DEMONSTRATION WITH NON-BARRIER PIPE

If pipe becomes kinked...



Non-Barrier PE-Xa pipe turns clear

...heat to 265°F (130°C) with hot air to
remove the kink.



Stop when kink is gone

Blue MUNICIPEX pipe will not turn clear, but re-rounds as shown.

NOTICE: Use a hot air gun, not a torch. Do not overheat the pipe.

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PULL-OUT TESTING

MUNICIPEX

- Independent testing by Cambridge Brass using a *Tinius-Olsen* tensile testing machine set for fixed elongation rate of 2 inches per minute
- Tensile force measured and recorded throughout the test
- Test is run to failure of pipe or connection, whichever comes first
- MUNICIPEX connected to standard AWWA C800 compression joint brass fittings with stainless steel inserts



*MUNICIPEX at start of test;
no load*

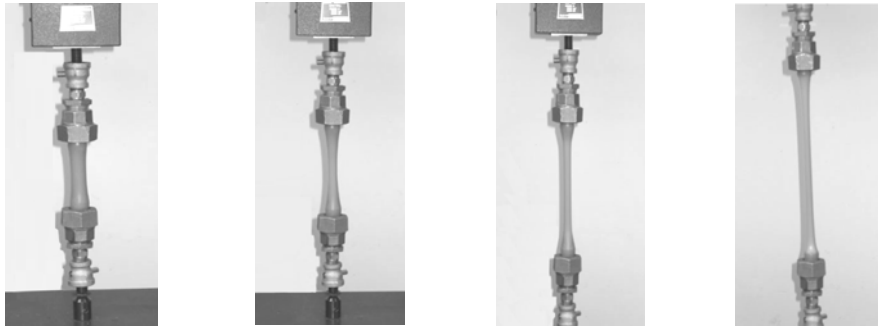
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MUNICIPEX WATER SERVICE LINE

PULL-OUT TESTING

MUNICIPEX

- Test begins; elongates pipe at 2 inches per minute
- MUNICIPEX continues to stretch at yield strength
 - 3/4 in. pipe at 600+ lb-f tensile force
 - 1 in. pipe at 1,000+ lb-f tensile force



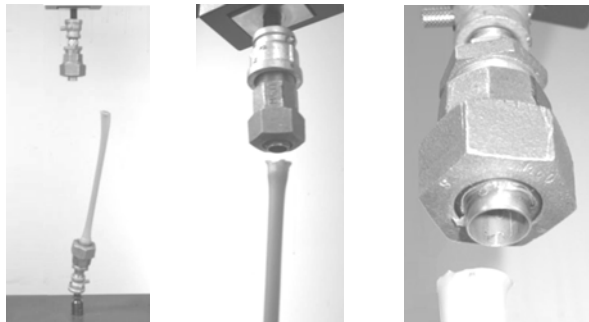
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PULL-OUT TESTING

MUNICIPEX

- After more than 400% elongation, pipe finally breaks at fitting
- **No fitting pull-out**



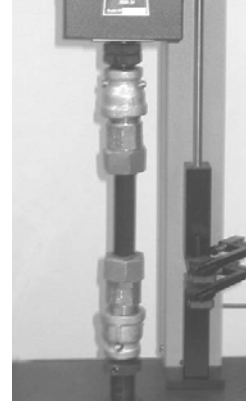
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PULL-OUT TESTING

HDPE

- Series 160 CTS SDR9 HDPE connected to standard CJ brass fittings
- Same conditions, same speed



*HDPE at start of test;
no load*

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PULL-OUT TESTING

HDPE

- Test begins; elongates pipe at 2 inches per minute
- HDPE stretches only 40% at yield strength and breaks
 - 3/4 in. pipe at 640+ lb-f tensile force



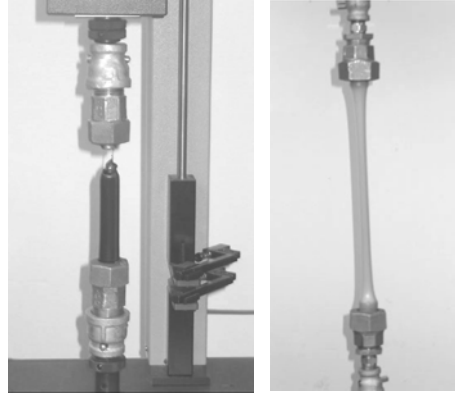
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MUNICIPEX WATER SERVICE LINE

PULL-OUT TESTING

CONCLUSIONS – HDPE VS PEXa

- HDPE tears at only 40% elongation
- MUNICIPEX stretches **400%** before breaking
- MUNICIPEX has greater flexibility with comparable short-term strength
- MUNICIPEX has greater long-term strength

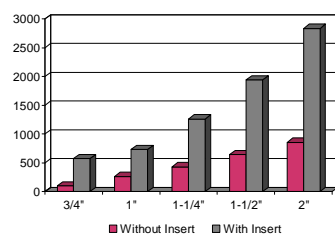


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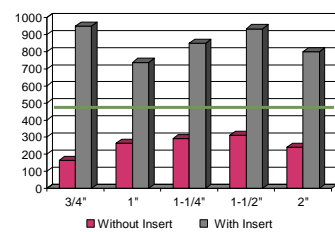
MUNICIPEX WATER SERVICE LINE

PULL-OUT TESTING

CAMBRIDGE BRASS TEST RESULTS



Pipe Size	Pull-Out Without Inserts (lb)	Pull-Out With Inserts (lb)
3/4"	98	571
1"	262	734
1 1/4"	430	1261
1 1/2"	643	1940
2"	856	2840



Pipe Size	Burst Pressure Without Inserts (psi)	Burst Pressure With Inserts (psi)	Burst Pressure AWWA Allowable
3/4"	164	950	475
1"	263	738	475
1 1/4"	290	850	475
1 1/2"	310	935	475
2"	241	800	475

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MUNICIPEX WATER SERVICE LINE

INSTALLATION

Proper installation of MUNICIPEX will provide exceptional pressure testing results at commissioning, followed by years of dependable service.

- Allow a slight curve while laying MUNICIPEX in the trench to accommodate expansion and contraction due to temperature changes
- Make connections using standard tools and fittings
- Refer to the *MUNICIPEX Installation Guide* for gooseneck procedures and backfill requirements

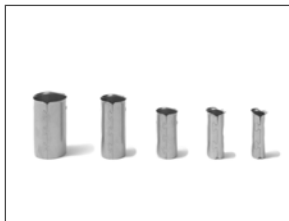


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MUNICIPEX WATER SERVICE LINE

INSTALLATION

- Compatible with standard AWWA C800 compression joint brass valves and fittings
- Always use the correct stainless steel inserts
- Inserts have negligible effect on pressure loss

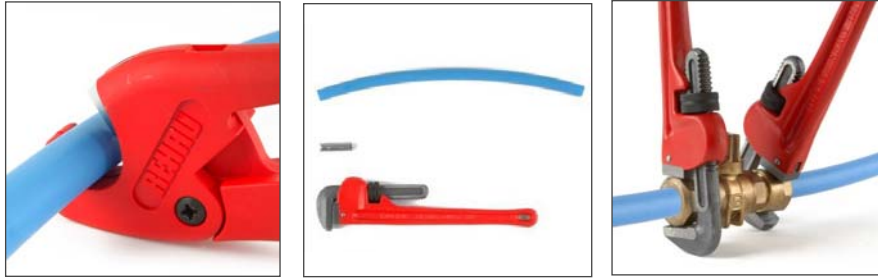


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MUNICIPEX WATER SERVICE LINE

INSTALLATION

- No special tools are required for MUNICIPEX connections
- Plastic pipe cutter is used for cutting pipe
- Standard pipe wrenches are used to make compression joints

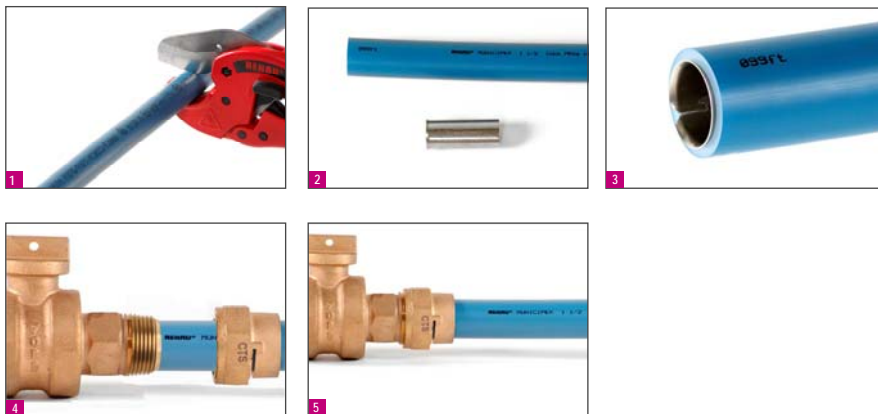


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MUNICIPEX WATER SERVICE LINE

INSTALLATION

CONNECTING TO COMPRESSION JOINT BRASS

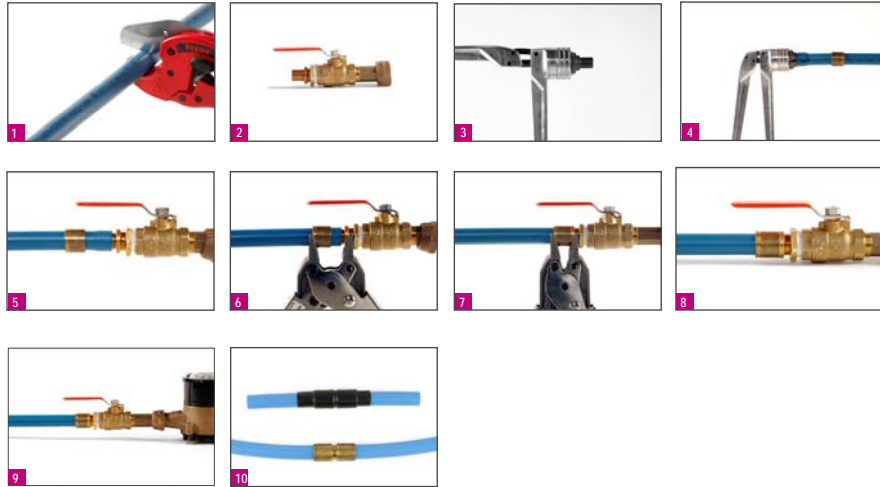


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MUNICIPEX WATER SERVICE LINE

INSTALLATION

CONNECTING TO WATER METER USING ASTM F2080 COMPRESSION-SLEEVE FITTING



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MUNICIPEX WATER SERVICE LINE

INSTALLATION

SQUEEZE-OFF TECHNIQUE

- Water flow can be stopped by "pinching" the pipe using polyethylene gas pipe squeeze-off tool
- Allows for valve or fitting repairs without major expense, customer water disruption or downtime
- Pipe does not suffer any permanent damage and immediately begins to reshape itself after tool is released
- Tool can be used to assist in re-rounding
- Repaired curbstops will be back in service quickly

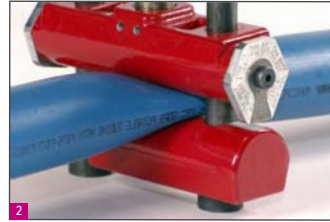


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MUNICIPEX WATER SERVICE LINE

INSTALLATION

SQUEEZE-OFF TECHNIQUE



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MUNICIPEX WATER SERVICE LINE

NEW PRODUCTS

MUNICIPEX 1,000 FT (305 M) COILS

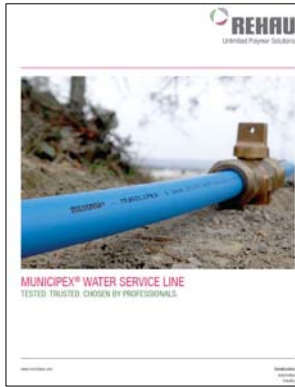
- Designed to eliminate the use of couplings in longer service laterals
- Also ideal for directional drilling (trenchless) applications
- Currently available in 2 in. (50 mm) diameter
- Can be custom cut to suit the project



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MUNICIPEX WATER SERVICE LINE

PUBLICATIONS



MUNICIPEX
Brochure



MUNICIPEX
Installation Guide



Squeeze-Off
Case Study – St. Zotique

MUNICIPEX WATER SERVICE LINE

PUBLICATIONS



Pull-out Test Results



PEXa vs. Copper Spec Sheet



PEXa vs. PEXb Spec Sheet

MUNICIPEX WATER SERVICE LINE PUBLICATIONS

PEX WATER SERVICE LINE
SUGGESTED SPECIFICATION AWWA C904

1. SCOPE
This specification is for flexible crosslinked polyethylene (PEX) municipal water service pipe in compliance with AWWA C904.

2. MATERIALS
Water service pipe is for crosslinked polyethylene (PEX) piping manufactured using the high-pressure or gasless method of crosslinking with a crosslink degree of crosslinking of 70% and based on compliance with ASTM D3350, Table 2C.

3. MANUFACTURE
Pipe shall have an outside diameter (OD) as specified in Table 1. Pipe shall have an inside diameter (ID) as specified in Table 2. Pipe shall have a wall thickness (WT) as specified in Table 3. Pipe shall have a length (L) as specified in Table 4. Pipe shall be approved by manufacturer for use with AWWA C904 fittings, when in compliance with AWWA C904.

4. APPROVALS
Pipe shall be approved by manufacturer for use with AWWA C904 fittings, when in compliance with AWWA C904.

5. TESTING
Pipe shall be tested in accordance with AWWA C904. Pipe shall be tested in accordance with AWWA C904.

6. STORAGE
Pipe shall be stored in accordance with AWWA C904. Pipe shall be stored in accordance with AWWA C904.

7. TRANSPORTATION
Pipe shall be transported in accordance with AWWA C904. Pipe shall be transported in accordance with AWWA C904.

8. INSTALLATION
Pipe shall be installed in accordance with AWWA C904. Pipe shall be installed in accordance with AWWA C904.

9. MAINTENANCE
Pipe shall be maintained in accordance with AWWA C904. Pipe shall be maintained in accordance with AWWA C904.

10. REPLACEMENT
Pipe shall be replaced in accordance with AWWA C904. Pipe shall be replaced in accordance with AWWA C904.

11. DISPOSAL
Pipe shall be disposed of in accordance with AWWA C904. Pipe shall be disposed of in accordance with AWWA C904.

12. RECORDS
Pipe shall be recorded in accordance with AWWA C904. Pipe shall be recorded in accordance with AWWA C904.

13. INSPECTION
Pipe shall be inspected in accordance with AWWA C904. Pipe shall be inspected in accordance with AWWA C904.

14. ACCEPTANCE
Pipe shall be accepted in accordance with AWWA C904. Pipe shall be accepted in accordance with AWWA C904.

15. WARRANTY
Pipe shall be warranted in accordance with AWWA C904. Pipe shall be warranted in accordance with AWWA C904.

16. NOTES
Pipe shall be noted in accordance with AWWA C904. Pipe shall be noted in accordance with AWWA C904.

17. REFERENCES
Pipe shall be referenced in accordance with AWWA C904. Pipe shall be referenced in accordance with AWWA C904.

18. HISTORY
Pipe shall be history in accordance with AWWA C904. Pipe shall be history in accordance with AWWA C904.

19. INDEXING
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20. OTHER INFORMATION
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AWWA Water Service Spec AWWA C904 (Rev. 10/10)

PEX Water Service Spec AWWA

MUNICIPEX WATER SERVICE LINE
2009 CANADA APPROVAL STATUS

Province	City/Municipality	Approved	Approved Reference	Year	Approved Reference
Alberta	Calgary	Yes		2009	
	Edmonton	Yes		2009	
	Grande Prairie	Yes		2009	
	High Level	Yes		2009	
	Peace River	Yes		2009	
	Red Deer	Yes		2009	
	St. Albert	Yes		2009	
	Strathcona County	Yes		2009	
	Sherwood Park	Yes		2009	
	Wetaskiwin	Yes		2009	
British Columbia	Abbotsford	Yes		2009	
	Delta	Yes		2009	
	Langley	Yes		2009	
	Maple Ridge	Yes		2009	
	Port Moody	Yes		2009	
	Richmond	Yes		2009	
	Surrey	Yes		2009	
	West Vancouver	Yes		2009	
	White Rock	Yes		2009	
	YVR	Yes		2009	
Ontario	Barrie	Yes		2009	
	Brampton	Yes		2009	
	Burlington	Yes		2009	
	Cambridge	Yes		2009	
	Chatham-Kent	Yes		2009	
	Collingwood	Yes		2009	
	Georgetown	Yes		2009	
	Hamilton	Yes		2009	
	Kingston	Yes		2009	
	London	Yes		2009	
Quebec	Montreal	Yes		2009	
	Quebec City	Yes		2009	
	Shawmut	Yes		2009	
	St. John's	Yes		2009	
	St. Lawrence	Yes		2009	
	Terrebonne	Yes		2009	
	Val d'Avenir	Yes		2009	
	Val de la Rivière	Yes		2009	
	Verdun	Yes		2009	
	Yamoussé	Yes		2009	

AWWA Water Service Spec AWWA C904 (Rev. 10/10)

MUNICIPEX Approvals List

MUNICIPEX WATER SERVICE LINE
CANADIAN PRICE LIST
EFFECTIVE AUGUST 15, 2009

AWWA Water Service Spec AWWA C904 (Rev. 10/10)

MUNICIPEX Price Lists

MUNICIPEX WATER SERVICE LINE PUBLICATIONS

PEX WATER SERVICE LINE
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2. MATERIALS
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Pipe shall be inspected in accordance with AWWA C904. Pipe shall be inspected in accordance with AWWA C904.

14. ACCEPTANCE
Pipe shall be accepted in accordance with AWWA C904. Pipe shall be accepted in accordance with AWWA C904.

15. WARRANTY
Pipe shall be warranted in accordance with AWWA C904. Pipe shall be warranted in accordance with AWWA C904.

16. NOTES
Pipe shall be noted in accordance with AWWA C904. Pipe shall be noted in accordance with AWWA C904.

17. REFERENCES
Pipe shall be referenced in accordance with AWWA C904. Pipe shall be referenced in accordance with AWWA C904.

18. HISTORY
Pipe shall be history in accordance with AWWA C904. Pipe shall be history in accordance with AWWA C904.

19. INDEXING
Pipe shall be indexed in accordance with AWWA C904. Pipe shall be indexed in accordance with AWWA C904.

20. OTHER INFORMATION
Pipe shall be other information in accordance with AWWA C904. Pipe shall be other information in accordance with AWWA C904.

AWWA Water Service Spec AWWA C904 (Rev. 10/10)

MUNICIPEX Approval Form

Crosslinked Polyethylene (PEX) Pipe & Tubing
TN-17/2008

PLASTICS PIPE INSTITUTE

AWWA Water Service Spec AWWA C904 (Rev. 10/10)

PPI Technical Note 17 on PEX

American Water Works Association

AWWA Standard

Cross-Linked Polyethylene (PEX) Pressure Pipe, 1/2 In. (12 mm) Through 3 In. (76 mm), for Water Service

AWWA Water Service Spec AWWA C904 (Rev. 10/10)

AWWA C904-06 Standard

MUNICIPEX WATER SERVICE LINE

STANDARDS AND CERTIFICATIONS

- ASTM F876: Standard Specification for PEX Tubing
- ASTM F877: Standard Specification for PEX Hot- and Cold-Water Distribution Systems
- AWWA C904: Crosslinked Polyethylene PEX Pressure Pipe 1/2 In. through 3 In. for Water Service
- CSA B137.5: Crosslinked Polyethylene (PEX) Tubing Systems for Pressure Applications
- PPI TR4: Listed as Standard Grade at 73.4°F, 180°F and 200°F (23°C, 82°C and 93°C)
 - Based on more than 16,000 hours continuous testing at elevated pressures



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MUNICIPEX WATER SERVICE LINE

STANDARDS AND CERTIFICATIONS

- ANSI/NSF Standard 14: Plastic Piping System Components and Related Materials
- ANSI/NSF Standard 61: Drinking Water System Components – Health Effects
- MUNICIPEX is also third-party certified by NSF to:
 - ASTM F876, F877
 - AWWA C904
- ICC¹: ES Report – ESR-1576 issued June 1, 2005
- Produced in plants with quality management system certified to ISO 9001



¹ International Code Council compliance for:
1997 ICBO Uniform mechanical Code (ICBO UMC)
1997 Standard Plumbing Code (SPC)
2003 IAPMO Uniform Plumbing Code (IAPMO UPC)
2003 IAPMO Uniform Mechanical Code (IAPMO UMC)

2003 International Plumbing Code (IPC)
2003 International Residential Code (IRC)
2003 International Mechanical Code (IMC)

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MUNICIPEX WATER SERVICE LINE

THE COST-EFFECTIVE, DEPENDABLE SOLUTION FOR NEW AND AGING INFRASTRUCTURE



Are you dealing with:

- Aging copper water service lines?
- Premature water service line failures?
- Limited funds for repair and replacement?

MUNICIPEX helps you:

- **Reduce** up-front material and installation costs
- **Reduce** maintenance costs
- **Reduce** long-term replacement costs
- **Increase** the dependability of your water services

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MUNICIPEX WATER SERVICE LINE

THE COST-EFFECTIVE, DEPENDABLE SOLUTION FOR NEW AND AGING INFRASTRUCTURE

Construction
Automotive
Industry



United Polymer Solutions

PEX WATER SERVICE LINE

SPECIFICATION AWWA C504

- Crosslinked polyethylene (PEX) municipal water service pipe shall be manufactured using the high-pressure peroxide method of crosslinking.
- Pipe shall be certified to ASTM F 854 Crosslinked Polyethylene (PEX) Pressure Pipe, 1/2 in. (12 mm) Through 3 in. (76 mm), for Water Service by approved testing agency. In addition, pipe shall be certified to standards ASTM F1975, CSA B137.2, NSF 61, NSF 61 and NSF 714, by approved testing agencies, with a standard materials designation code of 3008, as certified by the PPS.
- Pipe shall have a co-extruded UV shield made from UV resistant high density polyethylene, color Blue.
- Pipe shall have approval recommended for application from all pipe and related accessories with ASTM F2087, or as per manufacturer's recommendations.
- Pipe shall be compatible with cold expansion-compression systems (PEX certified to ASTM F2087 for installations in cold water, 40°F / 4°C).
- Pipe shall be approved by manufacturer for use with ASTM D2658 fittings, when using stainless steel inserts.
- Pipe shall be approved by manufacturer for use with manual plastic pipe expansion tools for temporary stoppage of flow.
- Pipe shall be approved by manufacturer to be repaired using hot air, if broken in the field.
- Pipe shall have the minimum ratings: PEXa 3008, CSA B137.2, ASTM F1975, F2087 and F2088, NSF 61.

Date: _____

We warrant the use of MUNICIPEX for water service only in our jurisdiction as per the specification above, effective from the date above. We reserve the right to revise the specification at any time for any reason including, without limitation, should the case arise, without any penalty or legal obligation.

Signature: _____ Title: _____

Signature: _____ Title: _____

Signature: _____ Title: _____

REHAU Representative
Signature: _____ Title: _____

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You can approve MUNICIPEX for your next water service project today.

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MUNICIPEX® WATER SERVICE LINE

THE COST-EFFECTIVE, DEPENDABLE SOLUTION FOR NEW AND AGING INFRASTRUCTURE

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