

Viega® Insulated PEX Barrier Piping

Applications

Viega's Insulated PEX Barrier piping system is suggested for use in heating, cooling and snow melting applications where underground distribution piping is necessary. Viega's insulated piping is a bonded system utilizing closed cell polyurethane foam insulation with a proprietary membrane that greatly reduces off gassing, providing superior R-value retention. Viega's Insulated PEX Barrier piping system is available with a complete range of piping and fitting offerings.

Features

- Best in class insulation value
- Flexibility allows for reduction in fittings
- Above or below ground installation options
- Only 16" burial depth allows for H-20 load rating
- Smooth jacket on most offerings allow for simple wall penetration seals
- Compression fittings require no special tools

Specifications

Material:

- Jacket – Polyethylene
- Insulation – Polyurethane
- Carrier pipe – Barrier PEX
- Cap – Polyethylene

Max Operating Temperature: 203° F (95° C)

Recommended max continuous operating temperature:
185° F (85° C)

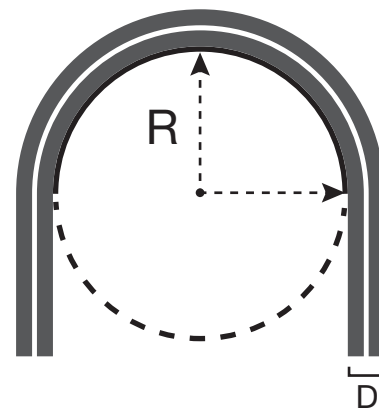
Max Operating Pressure: 87 psi (6 bar)

Thermal Conductivity:

- Insulation – 0.022 W/m*K (0.012 BTU/hr*ft*°F)
- Carrier pipe – 0.38 W/m*K (0.219 BTU/hr*ft*°F)

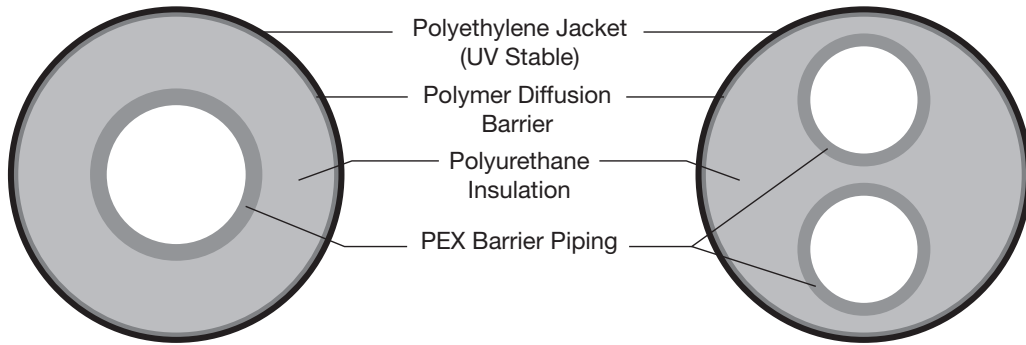
Minimum bending radius:

Wherever a change of direction is required, the insulated piping can be curved on site to reach a minimum radius depending on the dimension.



| Jacket O.D. | Minimum Bend Radius |
|-------------|---------------------|
| in (mm) | ft (m) |
| 3.5 (90) | 3.0 (0.9) |
| 4.3 (110) | 3.5 (1.1) |
| 4.9 (125) | 4.0 (1.2) |
| 5.5 (140) | 4.5 (1.4) |
| 6.3 (160) | 5.2 (1.6) |
| 7.0 (180) | 5.9 (1.8) |

Schematic



Pipe dimensional data

| | Carrier Pipe Nominal | | Carrier Pipe ID | | Carrier Pipe Wall Thickness | | Carrier Pipe OD | | Jacket OD | | Unit Weight | |
|-------------|----------------------|-----|-----------------|------|-----------------------------|-----|-----------------|-----|-----------|-----|-------------|------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | lb/ft | kg/m |
| Single Pipe | ¾ | 25 | 0.79 | 20.0 | 0.098 | 2.5 | 0.98 | 25 | 3.5 | 90 | 0.7 | 1.0 |
| | 1 | 32 | 1.03 | 26.2 | 0.114 | 2.9 | 1.26 | 32 | 3.5 | 90 | 0.8 | 1.2 |
| | 1¼ | 40 | 1.28 | 32.6 | 0.145 | 3.7 | 1.57 | 40 | 3.5 | 90 | 0.9 | 1.3 |
| | 1½ | 50 | 1.61 | 40.8 | 0.181 | 4.6 | 1.97 | 50 | 4.3 | 110 | 1.3 | 1.9 |
| | 2 | 63 | 2.02 | 51.4 | 0.228 | 5.8 | 2.48 | 63 | 4.9 | 125 | 1.6 | 2.4 |
| | 2½ | 75 | 2.41 | 61.2 | 0.272 | 6.9 | 2.95 | 75 | 5.5 | 140 | 2.2 | 3.3 |
| | 3 | 90 | 2.9 | 73.6 | 0.323 | 8.2 | 3.54 | 90 | 6.3 | 160 | 3.8 | 4.2 |
| | 4 | 110 | 3.54 | 90.0 | 0.393 | 10 | 4.33 | 110 | 6.3 | 160 | 3.7 | 5.5 |
| Dual Pipe | ¾ | 25 | 0.79 | 20.0 | 0.098 | 2.5 | 0.98 | 25 | 4.3 | 110 | 1.4 | 2.1 |
| | 1 | 32 | 1.03 | 26.2 | 0.114 | 2.9 | 1.26 | 32 | 4.3 | 110 | 1.5 | 2.2 |
| | 1¼ | 40 | 1.28 | 32.6 | 0.145 | 3.7 | 1.57 | 40 | 4.9 | 125 | 1.8 | 2.7 |
| | 1½ | 50 | 1.61 | 40.8 | 0.181 | 4.6 | 1.97 | 50 | 6.3 | 160 | 2.8 | 4.1 |
| | 2 | 63 | 2.02 | 51.4 | 0.228 | 5.8 | 2.48 | 63 | 7.0 | 180 | 3.7 | 5.5 |

Coil dimensional data

| Jacket OD | Max Coil Length | | Max Coil Height | | Coil ID | | Coil OD | | Height 100m coil | |
|--------------|-----------------|-----|-----------------|-----|---------|-----|---------|-----|------------------|------|
| | mm | ft | m | ft | m | ft | m | ft | m | ft |
| 90 | 984 | 300 | 8 | 2.4 | 5.24 | 1.6 | 7.54 | 2.3 | 1.55 | 0.47 |
| 110 (single) | 656 | 200 | | | 5.9 | 1.8 | | | 2.62 | 0.8 |
| 110 (dual) | 1134 | 346 | | | 5.9 | 1.8 | | | 2.62 | 0.8 |
| 125 | 656 | 200 | | | 6.6 | 2 | | | 3.7 | 1.13 |
| 140 | 328 | 100 | | | 6.6 | 2 | | | 7.38 | 2.25 |
| 160 | 328 | 100 | | | 6.6 | 2 | | | 7.87 | 2.4 |
| 180 | 328 | 100 | | | 6.6 | 2 | | | 7.87 | 2.4 |

Note: All sizes are metric, neither IPS nor CTS sizes; imperial adapters are supplied as required.
 1½ and 2 inch dual pipe have corrugated jackets.

TechData

viega

Heat Loss

Conditions:

Soil Temperature:
32°F (0°C)

Soil Cover:
2 ft. (600 mm)

Soil thermal
conductivity:
2.78 Btu/hr-ft²-F
(1.6 W/mK)

MHWT - Mean
Heating Water
Temperature

| Carrier Tubing | | Jacket Tubing | | Heat Loss with $\Delta T=30^{\circ}\text{F}$ (W/m) | | | |
|----------------|---------|---------------|-----|--|------------|------------|------------|
| in | mm | in | mm | MHWT=90°F | MHWT=100°F | MHWT=110°F | MHWT=120°F |
| ¾ | 25 | 3.5 | 90 | 4.28 | 4.87 | 5.45 | 6.04 |
| 1 | 32 | 3.5 | 90 | 5.28 | 6.00 | 6.72 | 7.44 |
| 1¼ | 40 | 3.5 | 90 | 6.68 | 7.59 | 8.51 | 9.62 |
| 1½ | 50 | 4.3 | 110 | 6.93 | 7.88 | 8.83 | 9.78 |
| 2 | 63 | 4.9 | 125 | 7.85 | 8.92 | 10.00 | 11.08 |
| 2½ | 75 | 5.5 | 140 | 8.57 | 9.74 | 10.92 | 12.09 |
| 3 | 90 | 6.3 | 160 | 9.29 | 10.56 | 11.84 | 13.11 |
| 4 | 110 | 6.3 | 160 | 13.92 | 15.83 | 17.73 | 19.64 |
| ¾ x ¾ | 25 x 25 | 4.3 | 110 | 4.98 | 5.84 | 6.70 | 7.56 |
| 1 x 1 | 32 x 32 | 4.3 | 110 | 6.76 | 7.93 | 9.09 | 10.26 |
| 1¼ x 1¼ | 40 x 40 | 4.9 | 125 | 7.59 | 8.90 | 10.20 | 11.51 |
| 1½ x 1½ | 50 x 50 | 6.3 | 160 | 7.50 | 8.80 | 10.09 | 11.38 |
| 2 x 2 | 63 x 63 | 7.0 | 180 | 9.50 | 11.14 | 12.78 | 14.42 |

Flow vs velocity

| Carrier Pipe Nominal | | Velocity 1.22 m/s (4 ft/s) | | | Velocity 1.52 m/s (5 ft/s) | | | Velocity 2 m/s (6.6 ft/s) | | |
|-------------------------|-----|----------------------------|------|---------------|----------------------------|------|---------------|---------------------------|-------|---------------|
| | | Flow rate | | Pressure Loss | Flow rate | | Pressure Loss | Flow rate | | Pressure Loss |
| in | mm | USGPM | l/s | psi/100ft | USGPM | l/s | psi/100ft | USGPM | l/s | psi/100ft |
| ¾ | 25 | 6.08 | 0.38 | 3.7 | 7.57 | 0.48 | 5.2 | 9.96 | 0.63 | 8.9 |
| 1 | 32 | 10.43 | 0.66 | 2.5 | 12.99 | 0.82 | 3.8 | 17.09 | 1.08 | 6.2 |
| 1¼ | 40 | 16.14 | 1.02 | 2 | 20.11 | 1.27 | 3.2 | 26.46 | 1.67 | 4.5 |
| 1½ | 50 | 25.28 | 1.60 | 1.5 | 31.5 | 1.99 | 2.2 | 41.45 | 2.61 | 3.8 |
| 2 | 63 | 40.13 | 2.53 | 1.1 | 49.99 | 3.15 | 1.7 | 65.78 | 4.15 | 2.8 |
| 2½ | 75 | 56.89 | 3.59 | 0.9 | 70.88 | 4.47 | 1.4 | 93.26 | 5.88 | 2.2 |
| 3 | 90 | 82.27 | 5.19 | 0.7 | 102.51 | 6.47 | 1.1 | 134.88 | 8.51 | 1.8 |
| 4 | 110 | 123.02 | 7.76 | 0.6 | 153.28 | 9.67 | 0.9 | 201.68 | 12.72 | 1.4 |

Maximum recommended velocity to avoid couplings erosion = 2 m/s (6.6 ft/s)

| Pressure Correction Factors | | | |
|-----------------------------|------------|------------|------------|
| 100% Water | 30% Glycol | 40% Glycol | 50% Glycol |
| 1.00 | 1.24 | 1.33 | 1.40 |

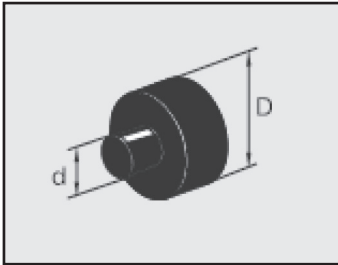
Protective caps

Description

Polyethylene cap with the dimension of the casing and service pipe used to protect the cut end from exposure to sunlight and moisture.

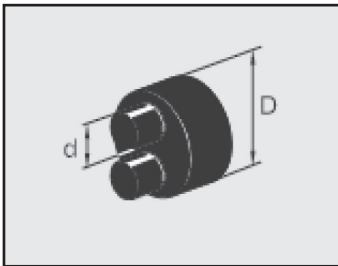
Protection cap single

Protection cap has no shrinking properties.



| Carrier Pipe Nominal | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 4 |
|----------------------|------|------|------|-------|-------|-------|-------|-------|
| d | 0.98 | 1.30 | 1.60 | 2.00 | 2.50 | 3.00 | 3.50 | 4.30 |
| in (mm) | (25) | (32) | (40) | (50) | (63) | (75) | (90) | (110) |
| D | 3.50 | 3.50 | 3.50 | 4.30 | 4.90 | 5.50 | 6.30 | 6.30 |
| in (mm) | (90) | (90) | (90) | (110) | (125) | (140) | (160) | (160) |

Protection cap double



| Carrier Pipe Nominal | ¾ | 1 | 1¼ | 2 | 2½ |
|----------------------|-------|-------|-------|-------|-------|
| d | 0.98 | 1.30 | 1.60 | 2.00 | 2.5 |
| in (mm) | (25) | (32) | (40) | (50) | (63) |
| D | 4.30 | 4.30 | 4.90 | 6.30 | 7.00 |
| in (mm) | (110) | (110) | (125) | (160) | (180) |

Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

This document is subject to updates. For the most current Viega technical literature please visit www.viega.us.

Viega LLC • 585 Interlocken Blvd. • Broomfield, CO 80021 • Phone (800) 976-9819 • www.viega.us