

# Mr PEX® Tubing – Submittal

## Product Description

Mr PEX® Tubing with Oxygen Diffusion Barrier is a crosslinked Polyethylene Tubing with gel content of minimum 70% in accordance with ASTM D 2765. It is crosslinked in extrusion by the use of peroxides, a PEX-a process in accordance with ASTM F 876. It is equipped with an outside oxygen diffusion barrier made of ethylene vinyl alcohol (EVOH) in order to meet the requirements of DIN 4726 / DIN 4729 of less than 0.10 g/(sq.m. x day) at 104°F.

| Nominal Size | Outside | Inside | Coil Lengths                       | Bend Radii | Capacity       |
|--------------|---------|--------|------------------------------------|------------|----------------|
| 3/8"         | 1/2"    | 0.349" | 600'                               | 2.5"       | 0.50 g/100 ft. |
| 1/2"         | 5/8"    | 0.474" | 300', 500', 1,000', 1,200', 1,600' | 3.5"       | 0.92 g/100 ft. |
| 5/8"         | 3/4"    | 0.584" | 330', 1,000'                       | 4.5"       | 1.39 g/100 ft. |
| 3/4"         | 7/8"    | 0.670" | 300', 500'                         | 5.5"       | 1.83 g/100 ft. |
| 1"           | 1.125"  | 0.867" | 300'                               | 7"         | 3.07 g/100 ft. |

## Temperature and Pressure Rating

Mr PEX® Tubing carries Standard Grade Rating (= highest possible) issued by Plastics Pipe Institute as follows:

**73.4°F: 160 psi | 180°F: 100 psi | 200°F: 80 psi**

## Fittings

Mr PEX® Tubing is connected using Mr PEX® Compression Fittings consisting of a Nut, a Compression Ring, and an Insert. These fittings are certified by NSF International (NSF-rfh) to meet requirements of ASTM F 877.

## Listing, Standards

**ASTM:** Mr PEX® Tubing is certified to meet ASTM F 876 and 877.

**PPI:** Mr PEX® Tubing is temperature and pressure rated by Plastics Pipes Institute—Standard Grade Rating.

**NSF:** Mr PEX® Tubing is certified by NSF International for Radiant Floor Heating Systems (NSF-rfh).

**CSA:** Mr PEX® Tubing is manufactured to CSA B 137.5.

**ICBO:** ICBO-ES listing is pending.

## Manifolds

Mr PEX® Tubing, when used for Radiant Floor Heating and Snowmelt Systems, are hooked up to Mr PEX Manifolds available in Supply, Return, and Basic versions as described in separate information.

## Design, Installation

Mr PEX® Tubing shall be installed in accordance with Radiant Panel Association Installation Guidelines. Installed Tubing must be pressure tested in accordance with local codes before enclosure.

Mr PEX® Tubing radiant systems shall be designed utilizing Mr PEX Radiant Design Software.

Do not allow water in embedded Tubing to freeze. Limit exposure to direct sunlight (max 2–3 weeks).

There are several tools & accessories available for simplifying installations. Please refer to “Mr PEX® Parts” and “Radiant Benefits” informational leaflets.

**Limited Warranty:** 25 years (refer to detailed warranty text).

# PEX Property Comparisons

| Property                               | Mr PEX® Tubing                                                    | Traditional PEX-a                                                         | PEX-b and PEX-c                                                                   |
|----------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Flexibility</b>                     | Considerable more flexible than any other PEX tubing              | Somewhat better flexibility than Radiation and Silane crosslinked tubing. | Stiffer to work with                                                              |
| <b>Strength</b>                        | Withstands somewhat higher inside pressures than other PEX Tubing | Meets ASTM                                                                | Meets ASTM                                                                        |
| <b>Homogeneity</b>                     | Excellent                                                         | Not very good.<br>Worse than Radiation & Silane.                          | Good                                                                              |
| <b>Thermal Memory</b>                  | Excellent                                                         | Good.<br>Better than Radiation & Silane.                                  | Strength decreases after heated up to transparency.                               |
| <b>Kink Repairability</b>              | Excellent                                                         | Excellent                                                                 | See above                                                                         |
| <b>Kinking Resistance</b>              | Excellent                                                         | Fair.<br>Better than Radiation and Silane.                                | More vulnerable to be kinked                                                      |
| <b>Barrier Property</b>                | Measured 25 times better than DIN 4726                            | Meeting DIN 4726                                                          | Meeting DIN 4726                                                                  |
| <b>Thermostability</b>                 | Excellent                                                         | Better than ASTM requirements                                             | PEX-c: Better than ASTM requirements.<br>PEX-b: Silane cross-links are reversible |
| <b>Crosslinking Distribution</b>       | Excellent                                                         | Fair                                                                      | PEX-c: x-link gradients<br>PEX-b: Manufacturer dependent                          |
| <b>Memory Of Being Coiled</b>          | Very Little.<br>Easy to bend in any direction.                    | Fair.<br>Better than Radiation and Silane.                                | Tougher to straighten out.                                                        |
| <b>Minimum Bending Radius</b>          | Narrower than any other PEX tubing                                | Fair.<br>Better than Radiation and Silane.                                | Largest                                                                           |
| <b>Crack Propagation</b>               | Excellent                                                         | Excellent                                                                 | PEX-c: Fatigue cracks can develop<br>PEX-b: Unknown                               |
| <b>Density</b>                         | ~0.930 - the lowest                                               | ~0.938 - much more                                                        | ~0.941 - highest                                                                  |
| <b>State When Crosslinked</b>          | Melted                                                            | Melted                                                                    | Not melted                                                                        |
| <b>Crystal Size &amp; Distribution</b> | Small and even                                                    | Fair                                                                      | Larger and more un-even                                                           |
| <b>Degree Of Crosslinking</b>          | Over 70%                                                          | Over 70%                                                                  | Typically below 70%<br>(but approved for that in ASTM)                            |
| <b>Process Uniqueness</b>              | There is just one manufacturer                                    | Several manufacturers - not unique                                        | Available to anyone                                                               |
| <b>Commercial Dependence</b>           | None                                                              | Uponor dominates                                                          | Uponor dominates                                                                  |