What Is PEX?

• Cross-linked polyethylene

• Life span at least 100 years
  – Proven in long term lab testing & field applications
  – Over 30 years
  – Nearly 6 billion feet in service
Pex is Pex

• This is a common misconception
• There are three types of Pex A, B, & C
• B&C Pex are cross linked after extrusion
• Type A Pex is cross linked as it is extruded
• Type A has a higher percentage of cross linking
• Type A has greater flexibility and memory
PEX Is PEX
Is PEX...NOT!

• Electronic/radiation method PEX
  – Cold cross linking--PE tubing made first
  – 2M volts electricity
  – Not as consistent or uniform

• Silane method PEX
  – Cold cross linking--PE tubing made first
  – X-linked by heat/moisture
  – Lower level of x-linking (less than 70%)
Wirsbo Engel Method PEX

• “Hot” cross-linked
  – Consistent/reliable
  – Strong thermal/elastic memory
  – Loses *none* of its performance characteristics
Wirsbo Tubing

- Made in USA
- hePEX plus
  - Heating only
  - $O_2$ barrier
  - 200°F
- AQUAPEX
  - Potable water or heating
  - No barrier
Pex Has Many Uses

- Radiant Floor Heating
- Snowmelt
- Feed Terminal Units
- Potable Water
- Utility Service Pipe
## Pex: The Good & The Bad

<table>
<thead>
<tr>
<th>The Bad</th>
<th>The Good</th>
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<tbody>
<tr>
<td>• Pex expands 1” every 100’ for every 10 degree in temperature rise</td>
<td>Pex is less expensive than CU or Steel</td>
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<tr>
<td>• Pex requires more hangers</td>
<td>Pex is less labor intensive</td>
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<tr>
<td>• Allows molecular O2 thru pipe wall</td>
<td>Nothing reacts with Pex which leads to long life</td>
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<tr>
<td></td>
<td>Pex is clean</td>
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<tr>
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<td>Wirsbo Pex available in 2”</td>
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Oxygen Diffusion
What Is It? What Do We Do About It?

• Dissolved oxygen molecules pass through tubing walls

• Oxygen corrodes ferrous components
Oxygen Diffusion
System Design Options

• Isolate ferrous components
  – Use AQUAPEX® non-barrier tubing and heat exchanger
• Eliminate ferrous components
  – Use AQUAPEX non-barrier tubing, non-ferrous components

• Corrosion inhibitors
  – Not endorsed by Wirsbo
• Use hePEx™ plus DIN Standard 4726 O₂ barrier tubing
Joining Methods

• Types B&C
  • All manufacturers use an insert fitting and a clamp
  • This joining method reduces flow and is susceptible to failure
  • This is a mechanical joint

• Type A Pex
  • Uses cold expansion to allow for almost a full flow fitting
  • Takes advantage of the memory of pipe
  • Creates a “factory” joint that is like a weld