

Onix is a flexible tubing specifically engineered and manufactured for use in radiant floors and snow melting applications as well as hydronic supply and return tubing. The unique chemical composition and manufacturing process of Onix makes it the perfect choice for any application where longevity, durability, or high temperature resistance is a requirement.

Most people are familiar with the many different types of plastic (PEX, polyethylene, CPVC, and ABS to name a few) and their different characteristics. Just as different plastics have different material properties, so do different types of rubber (EPDM, SBR, NBR, Neoprene, and natural rubber).

Onix's unique construction provides a very



flexible, durable and long-lasting product. Composed of EPDM (Ethylene Propylene Diene Monomer), Onix offers performance and reliability unmatched by other products.

With a maximum operating temperature of 180°F (82°C) and a maximum pressure rating in excess of 800 psi, Onix is more than ready to handle even the toughest conditions. In addition to the superior properties of EPDM, Onix contains an Aramid reinforcing layer which provides increased strength.

Onix also contains AlumaShield Advanced Technology, an aluminum oxygen barrier. AlumaShield helps protect the system fluid from unwanted oxygen permeation.

AlumaShield™



Flexible Tubing for Radiant Heating and Snow Melting



**“Fast and easy to work with.”**

Onix advantages:

- Flexible at any temperature
- Installs faster than other piping options
- UV resistant
- No special tools required
- Crush resistant
- Extremely durable
- No expansion movement



**WattsRadiant™**  
Floor Heating & Snow Melting

## Properties of Onix with AlumaShield

### Onix properties

Flexibility	flexible even in sub-freezing temperatures
Abrasion	highly abrasion resistant
Sunlight	not affected by exposure
Kinking	not damaged by kinking
Temperature	functional from -35°F to +200°F (-37°C to 93°C)
Stress cracking	not affected by stress cracking

### AlumaShield™ properties

Moisture	not damaged by moisture
Heat	not damaged by heat
Sunlight	not damaged by UV radiation

### Available Sizes:

Onix is available in the following nominal I.D.: 3/8", 1/2", 5/8", 3/4", and 1".

### Onix Manifolds:

Watts Radiant offers a wide range of manifolds for Onix. Manifold accessories include unions, isolation valves, temperature gauges, vent/purge assemblies, and visual flow indicators. Additional specifications can be found on the Watts Radiant Onix Submittal or in the Watts Radiant product catalog.

### Onix Product Dimensions

I.D.	O.D.	Bend Radius	Fluid Capacity per 1000 ft.
3/8"	11/16"	3"	6.25 gal.
1/2"	7/8"	4"	10.25 gal.
5/8"	1"	5"	16.00 gal.
3/4"	1-1/8"	6"	25.00 gal.
1"	1-3/8"	8"	43.50 gal.

### General Properties of EPDM:

Abrasion Resistance	Excellent
Oxidation Resistance	Excellent
Ozone Resistance	Excellent
Sunlight Aging Resistance	Excellent
Heat Aging Resistance	Excellent



Made in the  
USA



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**WattsRadiant™**  
Floor Heating & Snow Melting  
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What makes Onix so well suited for radiant heating & snow melting?

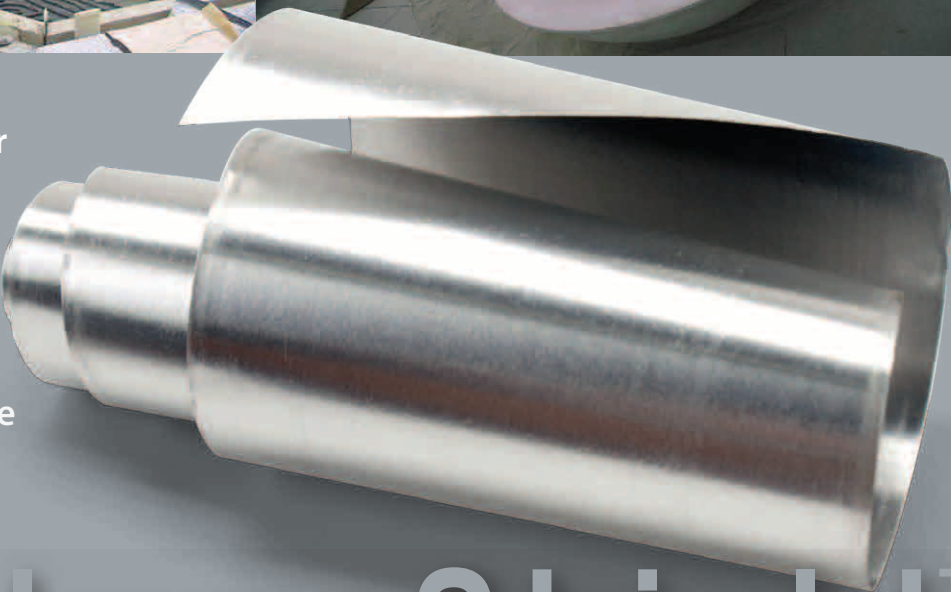
Crosslinked Durel EPDM is extruded into a tube and wrapped with an AlumaShield barrier and a second layer of EPDM. This composite tube is reinforced with 1000 denier aramid cord, the same incredibly tough and heat resistant material used to make fire and bullet proof shields. Finally, an outer jacket of EPDM is applied. The result—an extremely durable, flexible tubing formed of five heat and age resistant materials, proven in tens of thousands of installations over the years.

Onix is the product that can be installed with lifelong confidence—in blazing heat and sunlight, or in Arctic frost and shadows. Used for commercial snow melting, space heating, residential Staple-Up™ and supply/return lines—you'll find Onix installed in thousands of quality projects every year.



Unlike plastic barriers, the AlumaShield oxygen barrier is unaffected by sunlight, UV radiation, moisture, or elevated temperatures.

Due to its placement inside the hose, the AlumaShield barrier can't be scraped off or damaged by typical job site abuse.



AlumaShield™



Onix Table of Material Properties	
Tensile Strength	1000 psi
Percent Elongation	300 %
Low Temp Flexibility	10 times ID @ -30°F (-34°C)
Ozone Resistance	100 pphm, 50% extension, no cracks
Electrical Resistance	Greater than 10 mega ohms
Burst Pressures:	
at ambient	800 psi at 73°F (23°C)
at 180°F (82°C)	600 psi at 180°F (82°C)
Thermal Conductivity	0.17 Btu/hr-ft-Deg F

Why should I install Onix?

- Long lasting.
  - Backed by a comprehensive 25 year warranty.
- Installs in less time than any other radiant tube.
- Flexible to -30°F (-34°C) – Easy installations in freezing weather.
- Can't be kinked – Double it up and push it through a joist for faster Staple-Up™ installations.
- UV resistant – Leave it exposed on a job site, worry-free.
- No special tools required – No expensive connection tool.
- Crush resistant.
- Aluminum oxygen barrier. The flexible oxygen barrier is protected inside the tubing.
  - Can't damage it on the job site
  - Aluminum oxygen barrier is unaffected by temperature [just as effective at 180°F as 100°F (82°C as 38°C), unlike other oxygen barriers on the market]
- No expansion – No movement when Onix heats up
- Never noisy in a Staple-Up application; stays in contact with subfloor for better heat transfer.



1. Onix has a tighter bend radius than an equivalent PEX size, making installation easier. Onix can be installed in tighter areas, allowing for more effective coverage.
2. Onix cannot be permanently kinked, eliminating wasted job site time spent repairing kinks in other tubing.
3. Onix is UV resistant, so it can be left in the sun on a job site without damaging the tubing or the oxygen barrier.
4. Onix remains flexible in sub-zero temperatures, making it easy to install in frigid environments.
5. Onix has a typical burst pressure of 600 psig at 180°F (82°C), while PEX has a typical burst pressure of 325psig at 180°F (82°C), so it will hold up better to extreme “runaway” boiler conditions.
6. Onix does not require special tools to make the connection at the manifold, saving hundreds of dollars in tool costs.
7. Onix’s oxygen barrier is inside the tubing, protecting it from typical job site abuse.
8. Onix’s outer cover is extremely durable, protecting the inner tubing and oxygen barrier from job site abuse.
9. Onix is crush-resistant, recovering its shape after being compressed by typical job site foot traffic or the occasional wheel barrow crossing.

Onix employs features not found in other hydronic heating pipe.

