

## Onix™ Submittal

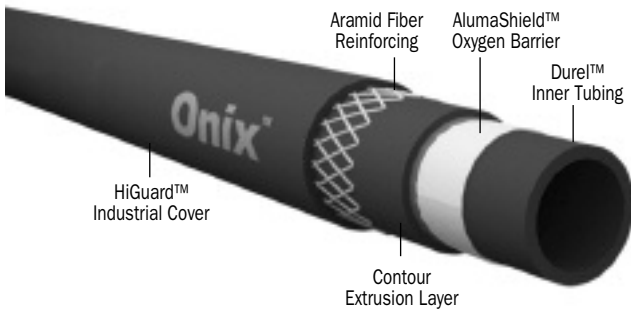
PROJECT NAME: \_\_\_\_\_

WATTS RADIANT REPRESENTATIVE: \_\_\_\_\_

Unit Tag No.: \_\_\_\_\_ Order No.: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



### PRODUCT DESCRIPTION

Onix is a polymer-rich, multi-layer, industrial-grade hose used for hydronic heating and snowmelting applications. It contains five distinct structural layers. The Durel inner tube is a peroxide-cured, cross-linked EPDM (Ethylene Propylene Diene Monomer). This layer is wrapped with a ductile 00 grade aluminum oxygen barrier, called AlumaShield. A contour layer of Durel (EPDM) is extruded over the AlumaShield. Spiral reinforcing cords of Aramid fibers are applied over the contour layer. This reinforcing is covered with the outer HiGuard cover composed of sulfur-cured, cross-linked EPDM.

### OPERATING TEMPERATURE AND PRESSURE

Onix has a maximum working temperature of 180°F at 100 psi. Burst pressure is greater than 800 psi at 70°F; greater than 600 psi at 180°F.

### ONIX ACCESSORIES

Several accessories are associated with Onix. Please reference other Watts Radiant documents for more information.

### APPROPRIATE APPLICATIONS

Onix is used for hydronic heating and snowmelting applications. Please reference the Onix Master Specification, RadiantWorks® Reports and installation manual and guidelines for information concerning design, sizing, installation and application.

### MANIFOLDS

Manifolds for Onix are made of copper, cast brass, and stainless steel, and are available in a variety of types and sizes. Refer to Watts Radiant's Onix Manifolds Submittal for more details (see reverse).

### CONNECTIONS

Onix is connected to the Onix manifolds with barbed Onix fittings using Watts Radiant SelfTite™ or TorqueTite™ clamps. SelfTite clamps should be installed using SqueezeTite™ pliers.

### INSTALLATION

Onix must be installed in accordance with all Watts Radiant installation procedures, including information provided in Watts Radiant's Onix installation manual and guidelines. Refer to RadiantWorks design information and design plans.

### CODES, LISTINGS, AND STANDARDS



**ASTM:** Onix is tested to relevant portions of ASTM standards.



**BOCA:** Provide radiant tubing carrying the BOCA certification mark, as approved by the BOCA research report number 95-47.1.



**Uniform Plumbing Code:** Provide radiant tubing carrying the UPC certification mark, as approved by the International Association of Plumbing and Mechanical officials.



**RPA:** Install radiant tubing in compliance with the Standard Guidelines for Radiant Panel Installations, as approved by the Radiant Panel Association.

### ONIX TUBING SPECIFICATIONS

Quantity	Product	Model No.	Nominal Tubing Size		Maximum Lengths	Bend Radius	Fluid Capacity Per 1,000 ft.
			I.D.	O.D.			
	3/8" Onix	086061	3/8"	11/16"	200 ft. <sup>1</sup>	3"	6.25 gal.
	1/2" Onix	086081	1/2"	7/8"	300 ft. <sup>2</sup>	4"	10.25 gal.
	5/8" Onix	086101	5/8"	1"	600 ft. <sup>2</sup>	5"	16.00 gal.
	3/4" Onix	086121	3/4"	1-1/8"	350 ft. <sup>2</sup>	6"	25.00 gal.
	1" Onix	086161	1"	1-3/8"	200 ft. <sup>3</sup>	8"	43.50 gal.

<sup>1</sup> Available in 20-ft. increments.

<sup>2</sup> Available in 25-ft. increments.

<sup>3</sup> Available in 100-ft. increments.

## Onix™ Manifold Submittal

PROJECT NAME: \_\_\_\_\_

WATTS RADIANT REPRESENTATIVE: \_\_\_\_\_

Unit Tag No.: \_\_\_\_\_ Order No.: \_\_\_\_\_ Date: \_\_\_\_\_

Engineer: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

### OPERATING TEMPERATURE AND PRESSURE

Watts Radiant Onix Manifolds are manufactured in several styles for radiant floor heating and snowmelting applications: Custom Tubular, Swedged, CustomCut™, Stainless Steel, and CazzBrass™. Manifolds are constructed of either copper, cast brass, or stainless steel as shown in the schedule below. All brass barbed branches are constructed of solid brass to accept Onix tubing. Manifolds and manifold components are assembled by brazing and/or soldering. *Ribbed branches are spaced at 2" on center (o.c.) on all Custom Tubular Manifolds. Branches on CustomCuts are spaced at either 3" or 4" o.c. Three inches are allowed on ends of manifolds, including union if supplied. Stainless Steel Manifolds have a branch spacing of 2-1/8" o.c., CazzBrass Manifolds have a spacing of 2".* All manifolds have a maximum operating pressure of 100 psig at 200°F. Several options are available as described below.

stainless steel ball and Teflon seats. MBVs are installed on the return manifold (BVR), or the supply and return manifold (BVSR) of Custom Tubular Manifolds. Swedged and CustomCut Manifolds are supplied either with or without MBVs.

**2.** Unions can be installed on Custom Tubular Manifolds for ease of installation and system maintenance. 1" all-brass unions are constructed entirely of solid brass and come with a rubber O-ring to assure a tight seal. 1-1/4" to 3" unions are constructed of brass nuts with copper sleeves and an O-ring seal.

**3.** Vent-and-purge Assemblies or End Assemblies are available for purging air and/or water from the radiant zone(s). These assemblies are constructed of a "key" type manual vent and drain valve for system purging.

**4.** Other specialized components as described and verified by manufacturer: \_\_\_\_\_

### OPTIONAL MANIFOLD FEATURES

**1.** Mini Ball Valves (MBVs) are supplied for system purging, balancing, and isolation. MBVs are made of brass construction with

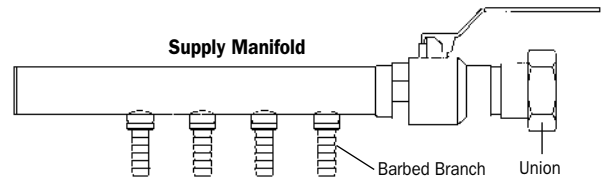
Qty.	Manifold Model Name	Trunk I.D. (Nom.)	Trunk Material	Onix Barb Sizes	Optional Mini Ball Valves	Optional Trunk Ball Valves	Optional Unions	Optional Vent/Purge Assembly
	Custom Tubular	1"	Copper	3/8"-5/8" Onix	BVR	BVSR	Brass	Brass/SS
	Custom Tubular	1-1/4"-3"	Copper	3/8"-1" Onix	BVR	BVSR	Copper/Brass	Brass/SS
	Swedged	1"	Copper	3/8"-5/8" Onix	MBV	N/A	N/A	Brass/Copper/SS
	CustomCut	1"-1-1/2"	Brass	3/8"-3/4" Onix	MBV	N/A	N/A	Brass/Copper/SS
	CazzBrass	1-1/4"	Brass	3/8"-3/4" Onix	BVR	BVSR	Brass	Brass/SS
	Stainless Steel	1"	Stainless	3/8"-3/4" Onix	BVR	BVSR	Brass	Brass/SS

\*The exact part number is based on the type of connection size and number of branches. Place a check mark in the appropriate column for optional components.

MBV = mini ball valves, BVR = mini ball valves on return manifold, BVSR = mini ball valves on supply and return manifolds, TBV = trunk ball valves, and N/A = not available.

### MANIFOLD ACCESSORIES

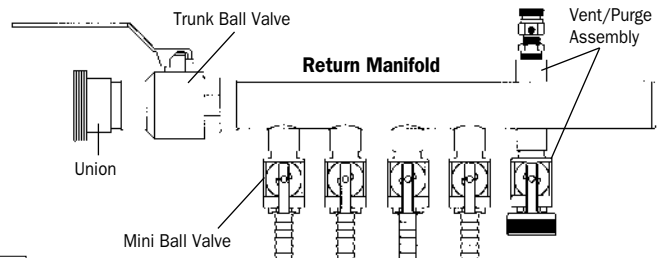
- Universal Mounting Brackets.
- Pressure Test Kits are manufactured of copper construction with integral pressure gauge, boiler drain, Schraeder air fitting and standard hose fitting. Sizes provided to match manifolds.
- Manifold Boxes.



### MANIFOLD FITTING/CONNECTION SYSTEM

Watts Radiant manifolds are constructed for connection to Onix tubing. Note that some fitting systems are not available in certain sizes. Please specify connection/fitting system:

Fitting Type	3/8" Onix	1/2" Onix	5/8" Onix	3/4" Onix	1" Onix
SelfTite™					N/A
TorqueTite™					



### MANIFOLD FLUID FLOW CAPACITIES

Nominal I.D.	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
Flow Capacity (maximum)	10 gpm	16 gpm	24 gpm	45 gpm	70 gpm	100 gpm