



## Innovators in Composite Radiant Tube Technology

# Composite Radiant Tubes

INEX Inc., has pioneered new affordable advanced materials technology to improve heat treat operations all over the world. The superior performance and long tube life achieved with our composite silicon/silicon carbide patented material has earned us the reputation as "Innovators in Radiant Tube Technology". Outstanding tube life has meant a reduction in tube replacement costs in both labor and material, and more importantly the elimination of furnace downtime. The high temperature capability of our tubes has meant that many users have been able to reduce recovery and cycle times as well as reliably achieve higher process temperatures. An all new manufacturing technique for tubular shapes has made these advanced materials competitive with conventional nickel chrome alloys. With over ten thousand of these advanced tubes in service, INEX composite radiant tubes are the choice tubes for your heat treat process.



*Higher Operating Temperatures up to 2450° F*

*Longer Tube Life*

*Superior Resistance to Corrosive Atmospheres*

*Provides Excellent Resistance to Thermal Shock, Oxidation and Creep*

### Long-Term Field Use

Both commercial and captive heat treat facilities around the world have used INEX tubes since 1983.

Processes have included:

- Annealing
- Carburizing
- Carbide Solution Treating
- Neutral Hardening
- Carbo-Nitriding
- Ferritinitrocarburizing

Atmospheres have included:

- Endothermic (both lean and rich)
- Carbon Enriched Gasses
- Ammonia Enriched Gasses
- Nitrogen
- Mixed Endothermic/Ammonia (50/50)

## Standard Sizes

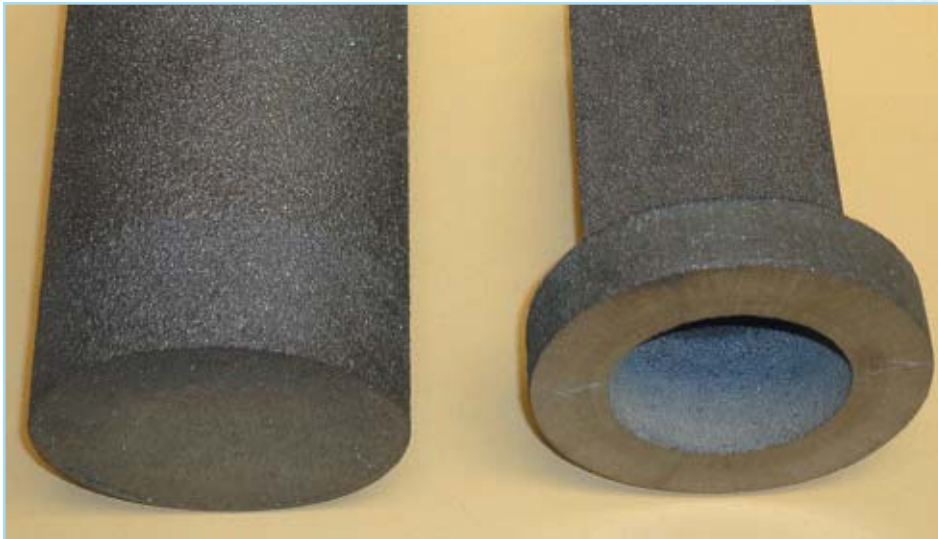
- 2 3/8 inch O.D., 1/8 inch wall (60.3 mm, 3.2 mm)
- 2 3/4 inch O.D., 1/8 inch wall (70 mm, 3.2 mm)
- 3 1/4 inch O.D., 1/8 inch wall (82.5 mm, 3.2 mm)
- 3 3/4 inch O.D., 1/8 inch wall (95.3 mm, 3.2 mm)
- 4 1/2 inch O.D., 3/16 inch wall (114.3 mm, 4.8 mm)
- 5 1/8 inch O.D., 3/16 inch wall (130 mm, 4.8 mm)
- 6 inch O.D., 13/64 inch wall (152.4 mm, 5 mm)

Special customer requirements concerning size, length or wall thickness can be quoted upon request.

## Key Physical Characteristics

Thermal Expansion:		$4.2 \times 10^{-6}$ in/in/°C
		$2.3 \times 10^{-6}$ in/in/°F
Strength:	Room Temp.	8,520 psi
	1832°F (1000°C)	8,620 psi
	2282°F (1250°C)	10,097 psi
	2462°F (1350°C)	10,491 psi

## Special Configurations



Special configurations such as closed ends, flanges and adapter plates are available.

*INEX was formed in 1983 to launch its novel composite radiant tubes (CRTs). Today, INEX continues to manufacture and supply CRTs to captive and commercial heat treaters all around the world. Those heat treaters are benefiting from the superior performance and long life made possible by this revolutionary advancement.*



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