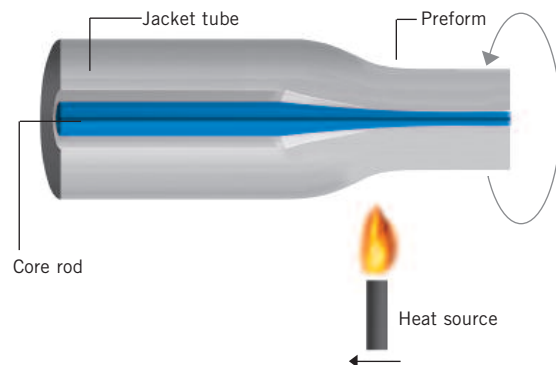


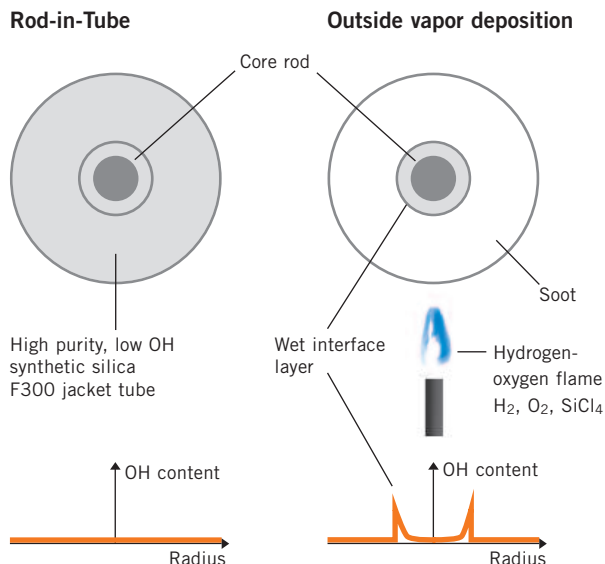
High Purity Jacket Tubes for Single and Multimode Fibers

Since market introduction in 1991, high purity synthetic fused silica F300 jacket tubes have become the standard for the production of high quality optical fiber preforms for both single and multimode fiber. Core rods which are made by such methods as MCVD, PCVD, VAD, or OVD are subsequently overlaid with jacket tubes by utilizing the Rod-in-Tube (RIT) process. The RIT process can be done either offline on a hot working lathe or online directly during fiber draw.

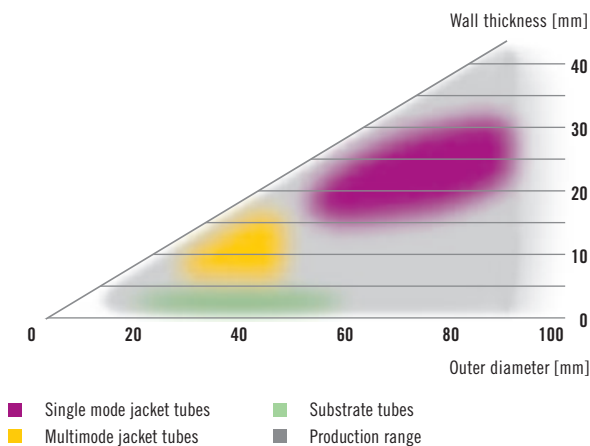


Rod-in-Tube technology (RIT)

The RIT process used to overclad core rods has significant benefits compared to other techniques, especially in terms of purity. Since the RIT process does not introduce hydroxyl groups (OH) onto the interface between core rod and outer cladding, the cladding can be very close to the core region of the fiber, resulting in a low b/a ratio. In contrast, outside vapor deposition of cladding material causes an OH layer at the interface between core rod and cladding material. The low b/a value achievable with RIT optimizes our customers core rod production both in terms of efficiency and overall quality. In the case of single mode fiber, typically more than 90% of the total fiber cross-sectional area is composed of Heraeus jacket tube material.



Typical Tube Sizes



Large variety of tube geometries enables flexibility in preform and fiber design

Jacket tubes are drawn from large cylinders of the highest purity synthetic fused silica in our Buford, Georgia, USA, plant without the use of forming dies. This proprietary process ensures high geometric precision and tube surfaces free of contamination. As a result, optical fiber manufacturers can achieve excellent fiber strength. Industry wide, typical optical fiber break rates for our products are below 10 breaks per 1,000 km of fiber when proof tested at 100 kpsi. The Heraeus tube drawing process allows for very heavy wall single mode as well as thin walled multimode jacket tubes. The outside diameter and wall thickness of the jacket tubes can be precisely controlled to meet customer preform and fiber design requirements.

Typical Geometrical Performance

	Single mode	Multimode
Outer diameter	+/- 0.2 ... 0.4 mm	+/- 0.15 ... 0.3 mm
Wall thickness	+/- 0.15 ... 0.35 mm	+/- 0.15 ... 0.35 mm
Ovality	0.15 ... 0.3 mm	0.1 ... 0.2 mm
Siding	0.13 ... 0.25 mm	0.1 ... 0.2 mm
CSA deviation*	0.5 ... 1 %	0.7 ... 2 %
Bow	0.2 ... 0.4 mm/m	0.2 ... 0.4 mm/m

*Variation of cross-sectional area within a tube

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About us

Heraeus is the key global supplier of high purity synthetic fused silica products for optical fiber manufacturing. We have been a reliable partner in the world telecommunications industry since 1976.

We are certified for ISO 9001:2000 and our Total Quality Management system is based on the Business Excellence Model of the European Foundation for Quality Management (EFQM).