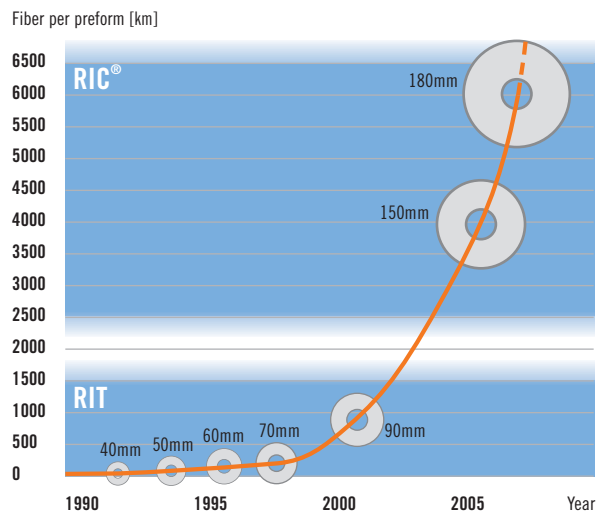


RIC[®] – The Advanced Preform Technology

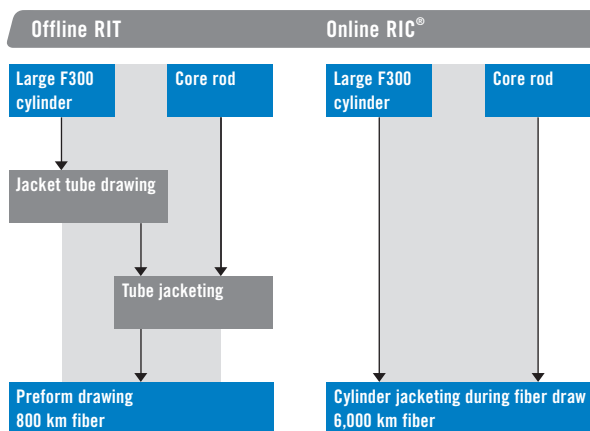
Since the beginning of optical fiber production, there has been a steady growth in the size of preforms being manufactured by Heraeus' customers. As single mode preform sizes have increased, so has the amount of fiber being drawn from these preforms. With the Rod-in-Tube (RIT) technology, our largest overclad tubes facilitated preform sizes up to 800 km. In keeping with our commitment to "The Evolution of Size," our Rod-in-Cylinder (RIC[®]) technology can result in preforms equivalent to fiber lengths of 6,000 km. These large preforms can increase our customers' profitability and significantly improve their manufacturing costs and efficiencies without compromising product quality.



Financial and operational benefits

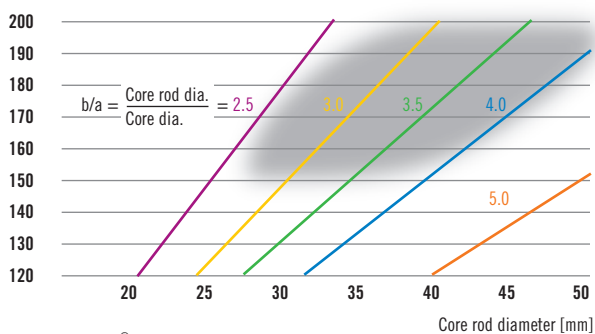
The Online RIC® technology for production of single mode fibers helps our customers to become significantly more cost competitive. The cost benefits compared to Offline RIT are substantial:

- Economy of scale
- No offline jacketing process necessary
- Reduction of b/a ratio, and therefore improved efficiency of our customers' core rod deposition equipment
- Improved utilization of fiber draw equipment.



Core Rod Design and Cylinder Dimensions

Cylinder outer diameter [mm]



■ Typical RIC® working range

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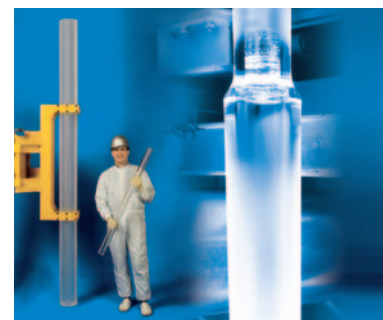
Technical benefits

Using Heraeus' high purity F300 jacketing material ensures the production of world class optical fiber. Since the F300 cladding material is essentially free of OH, low and zero water peak fibers can be readily made using the RIC® process. In production, break rates below 10 breaks per 1,000 km of fiber can be achieved thanks to the purity of our material, leading to superior product performance.

RIC® cylinders are fabricated using CNC-controlled lathes and honing machines, resulting in outstanding geometrical performance. The ground outer surface of the cylinders is suitable for direct fiber draw and results in superior fiber geometries.

Typical Cylinder Dimensions

OD	150 ... 200 mm
OD max – OD min	≅ 0.6 mm
ID tol	+/- 0.5 mm
Length	1,500 mm & 3,000 mm
Ovality	≅ 0.1 mm
Siding	≅ 1 mm
Bow	≅ 0.5 mm/m



How to get started

Heraeus possesses extensive RIC® process experience. Therefore, we can support fiber manufacturers in the implementation of the RIC® technology and can tailor it to your company's fiber manufacturing processes. As a preliminary step, the feasibility of the RIC® technology can be demonstrated by overcladding your core rods at our Offline RIC® facility in Hanau. These RIC® preforms can then be drawn into fiber and qualified at your facility.

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).