



# Composite Medical Cylinders

The world's largest manufacturer  
of high-pressure composite cylinders





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## Full-wrap Carbon Composite Cylinders ➤

Luxfer's ultra-lightweight full-wrap carbon composite cylinder is a high-performance oxygen cylinder that is up to 70 percent lighter than an equivalent steel cylinder. The three main components of a Luxfer carbon composite cylinder are:

- ⊙ **A seamless liner of aircraft-quality aluminum:** Although this liner is a cylinder in its own right, it provides only about 10 percent of the overall strength of the final composite cylinder.
- ⊙ **Ultra-high-strength carbon fibers in an epoxy matrix:** The main strength of the cylinder comes from this exceptionally strong carbon-fiber wrap, which surrounds the liner on all sides.
- ⊙ **Extra layer of glass fiber:** This additional fiber layer on the outside of the cylinder provides extra resistance to wear, damage and corrosion.

Parallel thread

Smooth, inert internal finish

Aluminum liner

## The Luxfer Advantage

Luxfer Gas Cylinders is the world's largest manufacturer of aluminum and composite high-pressure cylinders. With complete control over product design and development, materials, processes and testing, Luxfer is the world's most fully integrated composite cylinder manufacturer with the broadest product range in a growing number of applications. Luxfer cylinders meet or exceed all recognized international standards.

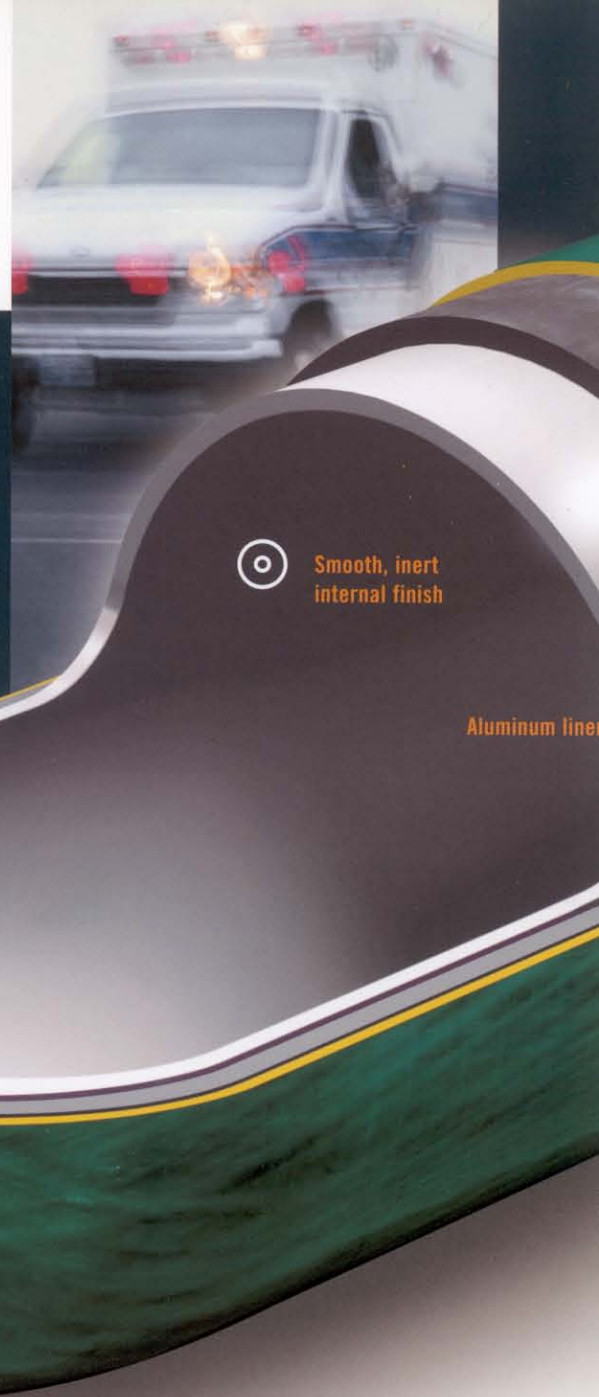
## Composite Cylinders

Composite cylinders have been used for breathing air in self-contained breathing apparatus (SCBA) for firefighters since 1976. Introduced in 1994, carbon composite cylinders have become the most popular type for SCBA use in North America, Europe and Asia because of their light weight and durability. More than a million carbon composite cylinders are now in use by firefighters around the world.

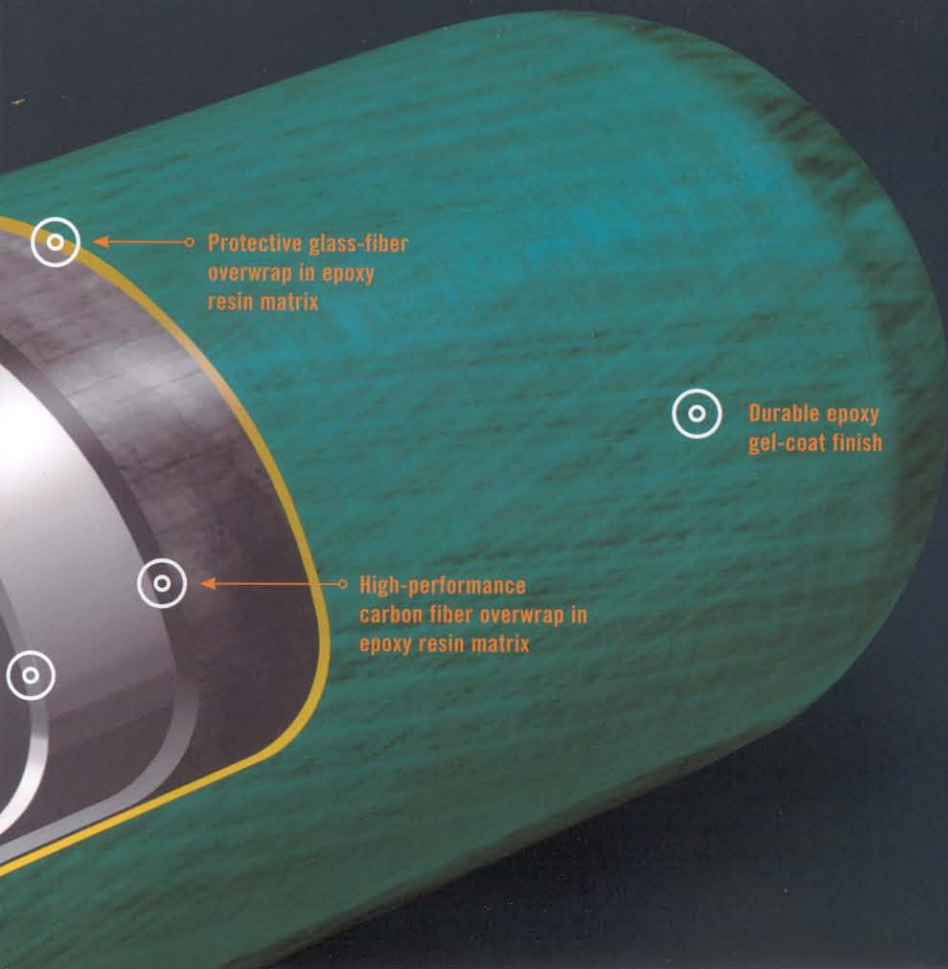
In Europe, composite cylinders have been used for medical oxygen at 3,000 psi since 1994. More than 400,000 composite medical cylinders are

currently in service, and there is a growing trend toward even higher pressure (300 bar or 4,350 psi) in order to provide patients with more oxygen in smaller, lighter-weight packages. Luxfer carbon composite cylinders are ideal for such higher-pressure applications.

Composite cylinders have been used for medical oxygen since 1985 in Japan, where more than 250,000 cylinders are now helping oxygen users lead more active lives.



*Luxfer carbon composite cylinders have been proven by firefighters in years of use.*



## ◀ Hoop-wrap Cylinders

A Luxfer hoop-wrap cylinder is manufactured by reinforcing a seamless aluminum cylinder along the parallel (straight) side with high-strength fiberglass in an epoxy resin matrix. The result is a cylinder that is lighter in weight than steel or aluminum at a very competitive price. Hoop-wrap cylinders are popular in Europe for home and institutional oxygen supply.





# Luxfer carbon composite cylinders help oxygen users get more out of life

- ⊙ Significantly lighter weight improves ambulation and mobility.
- ⊙ More oxygen per cylinder increases the duration of ambulation.
- ⊙ Oxygen users need fewer cylinders to participate in long-term activities.
- ⊙ Luxfer composite cylinders can be used with or without conserving devices—continuous oxygen flow is available for those who need it.
- ⊙ Luxfer composites are easy to transport and handle—ideal for travel.
- ⊙ Luxfer composites can be worn in a convenient shoulder bag, backpack or waist belt.
- ⊙ Use of multiple cylinders provides flexibility and freedom.
- ⊙ Unlike liquid oxygen systems, Luxfer composite cylinders do not vent constantly—you always know how much oxygen is available.
- ⊙ Unlike liquid oxygen systems, there's no danger of liquid oxygen spills and burns.



*Setting the Standard Worldwide*

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