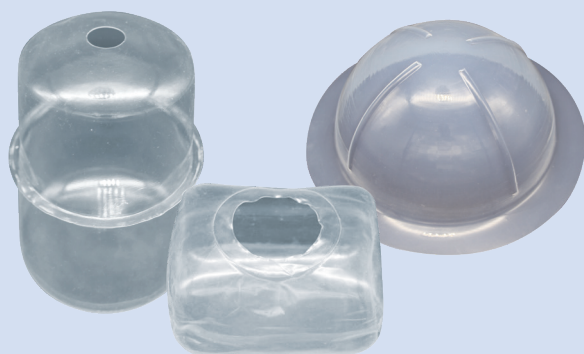




Fluoropolymer Solutions for Containment of Space Propellant

Membranes, Diaphragms and Bladders in Non-Reactive FEP

Created using fabrication techniques exclusive to Holscot



FEP Fluoropolymer (Fluoro Ethylene Propylene)

- Resistant to virtually all fluids and gases
- Compatibility tested with major propellants & solvents including Hydrogen Peroxide, MON and green propellants
- Non-contaminating
- Flexible

About Holscot:

- Over 50 years' experience working with FEP, PFA and ETFE
- Experts in manufacturing and welding techniques of Fluoropolymers
- The largest vacuum-formings ever performed in FEP
- In-house etching to provide a bondable surface
- In-house manufacture of sheet FEP, PFA and ETFE film

Holscot Fluoropolymers Ltd
UK, Netherlands and Germany

In recent years, Holscot has been involved in major projects using FEP as a medium to contain liquids whilst also being used as a means to expel the liquids from the containment vessel.

This has encompassed domed diaphragms which collapse as the liquid exits the tank, liners bonded to the internal surfaces of tanks, as well as the means to combine the two components to create a bladder.

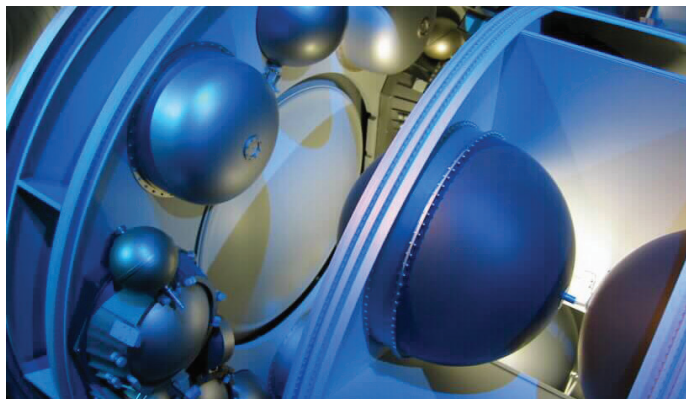
In order to do this, Holscot pushed the boundaries of FEP fabrication, necessitating the in-house development of new manufacturing techniques and equipment. By combining these with unparalleled experience in manipulating fluoropolymers, Holscot has been able to provide major Aerospace companies such as **MT Aerospace**, **Thales** and **Saab** with ground breaking innovations in containment technology. Details of one such collaboration can be read overleaf...

+44 (0)1476 574771
sales@holscot.com
@holscot-fluoropolymers-limited
www.holscot.com





Water Transportation to the International Space Station



Holscot completed a number of flexible bladders in FEP which form the inner liner for the tanks used to supply vital potable water to the Astronauts at the orbiting International Space Station.

In 2000 Man Technologie Germany (now MT Aerospace) approached Holscot for help developing a unique FEP lined tank.

FEP, which is completely inert, was to be used instead of the rubber tank liner. FEP was specified to avoid contamination of the water.

The design of the new tanks was refined by using half sized, test model tanks, cycled over a range of fill and empty simulations.

The fabricated liners were thermoformed from Holscot's own extruded FEP film. The film was vacuum formed in two parts and welded to form a circular tank construction. The top half of the tank was designed to pull down and expel the water under zero-g conditions. The lower half of the tank is bonded onto the tank's inner shell. For this the FEP had to be externally treated

using Holscot's own proprietary etching process. Almost complete expulsion of the liquid was required. The stainless-steel tank was then over wrapped with filament wound carbon fibre.

The first set of these very special tanks was integrated into the European space ferry ATV (Automated Transfer Vehicle) and successfully launched in 2008 by an Ariane 5 Heavy Lift Rocket, as part of the European Union contribution to the continuation of the International Space Station.



© ESA - A. Le Floch'h.

In time, the tanks are back loaded with waste and released to fall back into the earth's atmosphere and burn up. It is thought by Holscot that this is the first time such an FEP product has been made in this way and for this use. Holscot is proud to be chosen for this demanding application and it has shown once again that Holscot's technology, film and extrusions literally are "out of this world"!

To find out how Holscot can help you business
Call now on +44 (0)1476 574771
or e-mail sales@holscot.com

Holscot Fluoropolymers Ltd
UK, Netherlands and Germany

HOLSCOT™

☎ +44 (0)1476 574771
✉ sales@holscot.com
🌐 @holscot-fluoropolymers-limited
www.holscot.com

