TECHNICAL NOTE

Parylene Coating
for IP68 Hermetically Sealed Load Cells

To provide additional protection in extreme environments/atmospheres where stress corrosion could occur on stainless steel load cells, any IP68-rated hermetically sealed load cells manufactured by Thames Side Sensors Ltd. can be provided with a special transparent 'Parylene' coating to give excellent resistance to aggressive chemicals. This can increase the lifetime of these load cells by a very significant margin.

Parylene is the generic name for poly-para-xylylenes. These materials form linear, highly-crystalline polymers that are chemically & biologically inert and stable, therefore they are excellent barrier materials. Coating thicknesses on load cells are typically 15-18 microns (µm) and are pinhole-free. Contact us now for a quotation specific to your application.

Key data about Parylenes:

- They are almost completely unaffected by solvents, have low bulk permeability and easily pass a 100 hour salt-spray test.

- They also have good thermal endurance and can perform in air without significant loss of physical properties for 10 years at +80 °C.

The Parylene Coating Process:

- The process is unique in coating technology and is carried out under vacuum with specialised equipment.

- The coating chamber is at room temperature and the pyrolised Parylene vapour condenses on all surfaces uniformly and with equal thickness. This vapour can pass through holes as small as 1 micron in diameter.

- The Parylene vapour then spontaneously polymerises to form a product with a high degree of crystallinity.

Engineering Properties of Parylene:

Property		**Value**	**Units**
Density		1.29	g/cm^3
Melting Point		290	°C
Water Absorption		<0.1	%
Water Vapour Transmission @ 37 °C		0.4×10^{-3}	ng/(Pa.s.m)
Gas Permeability @ 25 °C	N_2	2.0	amol/(Pa.s.m)
	O_2	14.4	
	CO_2	15.4	
	H_2S	26.0	
	SO_2	22.0	
	Cl_2	0.7	