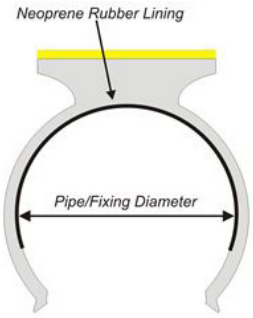
Product Data Sheet

Aquasign® Retrofit: Spring Clip

General Information

Spring Clip fixings are used to retrofit Aquasign® markers to pipes, flow-lines, risers and other tubular-sectioned objects. The spring-clip is pushed over the section and the legs secure it in place. The Neoprene rubber liner helps to ensure there is minimal slippage around the section.



A semi-circular shaped marine grade polycarbonate Spring Clip panel with extremities flared outwards to introduce it over the tubular substrate. The edges are built to produce the appropriate degree of spring which requires 50kg of applied load to top centre to place the product onto the tubular. The natural circular shape and material strength retain the marker on the pipe against environmental loads. The neoprene backing adds further security.

The marker must be manufactured to a specific substrate circumference to attain correct fit and optimum surface tension. It is design primarily for ROV application. It does not have a high fixing tension and thus should not be used in areas where high wave loads are experienced such as splash zones.

Technical Data

Characteristic	Data
Material	Clip Section – Polycarbonate Liner – Neoprene (PolyChloroprene)
Operating Temperature (Continuous)	-51°c to +132°c
Maximum Size (Fixing Diameter)	1000mm
Maximum Marker Size	600x600mm

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Mechanical Properties

Polycarbonate

Characteristic	Parameter	Value	Unit	DIN/EN/ISO
Tensile Strength at Yield	50mm/min	60	Mpa	527
Tensile Strength at Break	50mm/min	70	Mpa	527
Tensile Strain at Yield	50mm/min	6	%	527
Tensile Strain at Break	50mm/min	120	%	527
Flexural Strength at Yield	2mm/min	90	Mpa	178
Modulus of Elasticity (Flexural Test)	2mm/min	2300	Mpa	178
Izod Impact Strength 23°C	Notched	65	kJ/m^2	180/4A
Izod Impact Strength -30°C	Notched	10	kJ/m^2	180/4A
Impact Strength (Charpy)	Notched	35	kJ/m^2	179/1C
Hardness	H35/30 95	95	Mpa	2039/1

Electrical Properties

Polycarbonate

Characteristic	Parameter	Value	Unit	DIN/EN/ISO
Volume Resistivity	-	10E15	Ohm.cm	60093
Relative Permittivity	50/60Hz	2.7	-	60250
Relative Permittivity	1Mhz	2.7	-	60250
Dissipation Factor	50/60Hz	0.001	-	60250
Dissipation Factor	1Mhz	0.01	-	60250

General Properties

Polycarbonate

Characteristic	Parameter	Value	Unit	DIN/EN/ISO
Water Absorption	50%RH/23°C	0.15	%	62
Water Absorption	Saturation/23°C	2.7	-	62
Light Transmission	3mm	-	119	D495
Temperature Range	- 51°C to + 132°C			

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Thermal Properties

Polycarbonate

Characteristic	Parameter	Value	Unit	DIN/EN/ISO
Vicat Softening Temperature	B/120	145	°C	306
HDT/Ae, 1.8 MPa edgew	120*1*04/sp=100	127	°C	75
Thermal Conductivity	-	0.2	W/m.°C	8302
Coeff. Of lin. Therm. Exp. Extr	23-80°C	700 E-05	1/°C	11359-2
Ball Pressure Test	125 +2 °C	Passes	-	60695-10-2
Relative Thermal Index	Electrical Prop.	130	°C	746B
Relative Thermal Index	Mechanical Prop. (with impact)	125	°C	746B
Relative Thermal Index	Mechanical Prop. (without impact)	125	°C	746B

Environmental Characteristics

The material used to manufacture Aquasign® Spring-clip fixings has been selected due to it's resistance to seawater and general durability. A full chemical resistance chart can be provided if specific conditions are anticipated.

Availability

Aquasign® Spring-clip fixings are manufactured specific to customer requirements and are not held in stock. Please speak with your AQUASIGN representative for further information.

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