



# RESINEX

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**NAV-AIDS**

## SAFETY ON THE THAMES

### Tide Gauge platform for the Thames navigation

The Port of London Authority (PLA) - [www.portoflondon.co.uk](http://www.portoflondon.co.uk) has chosen Resinex for the construction of a platform, designed to hold a tide gauge for the Thames estuary. The platform (5,5 mt focal plane - 4,8 sq.mt) has been installed at a depth of 24 meters at Shivering Sands in March 2002. It measures the principal marine meteorological conditions and above all tide conditions at the river mouth. It has been studied to have a maximum inclination of 10 degrees under the worst weather conditions. Also in this case Resinex elastic beacons didn't need more than a few hours for installation. The platform will have a very important role in navigation safety along the Thames.



Connection with the sinker



Transportation at site



Immediately standing



Platform positioned



Final details



The beacon operating at Shivering Sands

### Paramount help for Venice lagoon navigation

The beauty of Venice demands navigation safety. Never have the most sophisticated expedients been so necessary as in this case, in order to increase safety for ships that enter the port of Venice and of Venice itself. Because of this, the New Venice Consortium on the advise of the



PILOTI

Italian Navy chose Resinex (and Vega products) to supply a P.E.L. (Port Entry Light) to signal this entrance to Malamocco in the Venice lagoon. The PEL, which can be seen up to a distance of 16 Nautical miles, precisely marks the port entrance thanks to a system of lights which go from red to white and from green to white.



### Signals on the lake

Four elastic beacons (2 red, 2 green) especially designed by Resinex for lake navigation safety were positioned on Lake Garda at the mouth of the two harbours of Sirmione (the village considered the jewel of the lake).

The lantern is of the self charging type, with incorporated battery and solar panel. Great stability, zero maintenance and low cost are the characteristics of this signal.



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*Nav-aids for marine parks*

Europe is moving quickly in the creation of marine parks. The variety of our signals are having a marked success in this segment.



**P**unta Campanella: 7 big buoys with virtual seabed. Seven buoys with a 2,5 meter focal plane and fitted with a virtual-sea-bed mooring were delivered to the Punta Campanella Marine Park Management Consortium in the Summer of 2002. The virtual seabed gives the maximum protection to the seabed and is therefore fundamental in the marine parks. Punta Campanella is the park which divides the Amalfitane coast from the Sorrentine.

**C**apo Rizzuto. For the particular conditions of the Marina di Capo Rizzuto Marine Park Resinex has developed biconical light buoys of major size (diam. 1000 mm NB 600kg). Twenty five of them



**P**ortofino: small lights for a sea paradise. 22 small lights to signal the Park of Portofino. The bicoloured buoys were delivered to the Portofino Marine Park Consortium during 2001. Fitted with self charging lanterns powered by batteries and solar panels, the signals are totally autonomous and do not require maintenance for at least 5 years. An intermediate buoy sustains the underwater mooring.

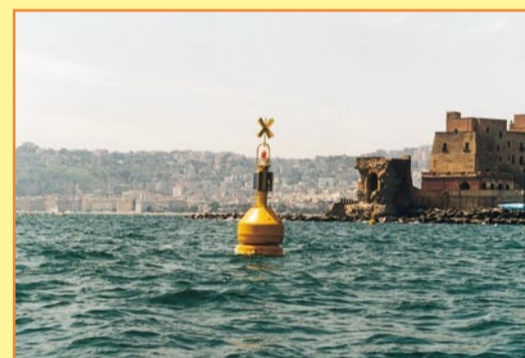


were supplied together with 350 kg NB intermediate buoys and forty smaller light biconical buoys. There were installed in the Summer of 2002.

*Nav-aids for aquaculture*



**N**aples, Castel dell'Ovo: the antique tradition returns. Right in the city centre under the gaze of Castel dell'Ovo and the great napolitan hotels once again, as many years ago, the farming of muscles has returned. The cleanliness and generally sound sea conditions consent and bode an excellent product quality. With this historic return, under the eyes of the entire city, the best signalling system has been chosen for the farming area and so, Resinex was singled out by the Coop. Orm. Luciani to supply light buoys and radar reflector perimetral buoys



**P**rocida: the beautiful island in the gulf of Naples. 90 meter depth elastic beacon for monitoring of fish water. The Mari.Sol company of Procida wanted to position a platform for the purpose of analyzing the water where various types of fish were farmed in offshore cages. The Resinex beacon, positioned at a depth of 90 mts, served both to signal the area and, at the same time, analyze the water. A double safety factor thanks to Resinex.



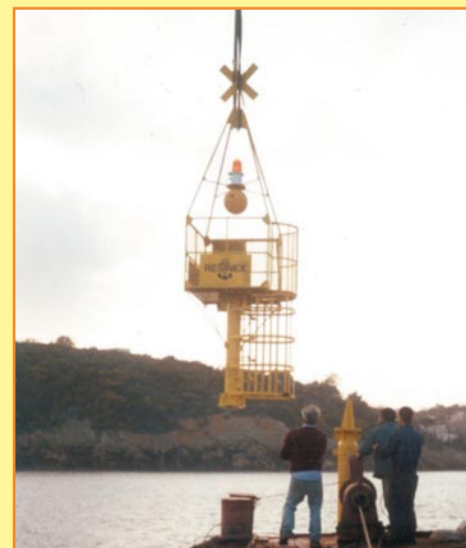
Preliminary assembly



The sub-surface float



Submerging the upper float



The platform



The final positioning

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Mooring systems

## Kursk salvage



The success of the operation. Resinex satisfied the request in full, consigning the 12 big buoys to Rotterdam in only 2 weeks. The Kursk was successfully lifted in October 2001. Resinex feels proud of its little contribution for the successful outcome of the operation.

Great success for Resinex production and consignment capacity. In July 2001, Offshore Rentals (Aberdeen) asked Resinex to urgently supply Smit International (NL) with 12 mooring buoys of six ton net buoyancy for the mooring of The Giant 4, the big salvage craft to be used for the lifting of the Kursk submarine in the Siberian sea.

The mooring safety and stability of

The Giant was of extreme importance



Offshore

## Elettra ROV and buoyancy aids

Resinex expertise and technology for the renovation of the ROV "Phoenix" used by Elettra (Telecom Italia) for the positioning of telecommunication cables in deep water. Resinex has also supplied small float modules for a depth of 2000 mt.



2000 Mt. floats



Renovation of ROV float

## High grip in the depth

Save money with innovative clamping solution

In the Autumn of 2001, Resinex produced 35 floats for cable able to reach a 1000 meter depth while developing an innovative cable clamping solution. An intermediate reducer has been developed



which is adaptable to all our cable floats and is easily replaceable by the client if there is the need to use cables of a different dimensions, thus allowing the client to amortize investment on various works.



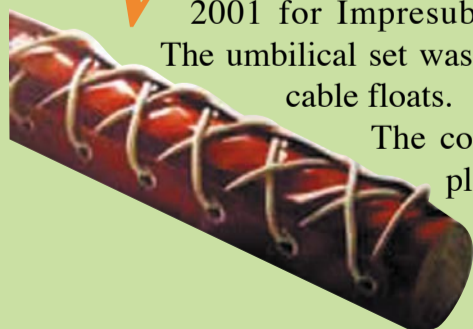
The grip is assured by a further rubber or elastomer covering on the inner part of the reducer.

The 35 floats were successfully tested at the Saclant Undersea Research Centre of La Spezia at the pressure of over 100 bars.

## Buoyancy set for cable safe

Various small floating Resinex RS4 (70mt w.d., NB 20kg) buoys for cables and lace-on for the protection of cables were produced in the second half of 2001 for Impresub ([www.impresub.it](http://www.impresub.it)).

The umbilical set was completed with other cable floats.



The completed set was supplied to the Trento company for floating and protection of umbilical system.



Use our web site: [www.resinextrad.com](http://www.resinextrad.com)

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*Anti-pollution*

## Safe in-take chambers in the Emirates desalinization plant

After the work carried out the past years in Saudi Arabia, Jordany, Qatar and Bahrein, Resinex has supplied, during the course of 2002, a complete floating protection package for the in-take chambers of the Jebel Ali Desalinization plant in Dubai, UAE. The complete system includes 210 meters floating barrier ø500mm in polyurethane skirt equipped with a protection net able to exclude the possibility of any penetration up to a depth of 10 meters. The barrier was designed to stop any type of water pollution in the area where the in-take chambers draw water for desalinization. The protection barrier is signalled by 2 Resinex light buoys.

The mooring, as in all the other metallic parts used in the light buoy and barrier, are made in Stainless steel Aisi 316 Titanium so as to guarantee the absence of corrosion. When the barrier is not in use the mooring is always positioned and sustained by 21 support buoys in plastic and Stainless Steel Aisi 316 Titanium. The system also comes with a skimmer OCS Discoil 15 ([www.ocs.it](http://www.ocs.it)), which in extreme cases can guarantee a water cleanliness of 15 cubic meters an hour in good marine conditions.



*The skimmer during test*



*Dispatching the barrier*



*The barrier with the net*

## Coastal Monitoring Buoys

Besides beacons also monitoring buoys. Two special buoys were supplied by Resinex to Systea ([www.systea.it](http://www.systea.it)) in 2001. The



buoys were installed inside the Marine Park of Capo Rizzuto (Italy). This innovative sea-water monitoring



*View of lateral chambers for sensors*

buoy can automatically measure the following large subset of quality parameters in sea water: temperature, pH, conductivity, dissolved oxygen, turbidity, ammonia, nitrate, nitrite, orthophosphate, with the automatic correlation of current direction and speed measurements. The chemical parameters analysis are performed by Systea system NPA (Nutrients Probe Analyzer), which is automatically managed by an external data-logger installed inside the buoy, using the RS-232 serial port. The buoy is self powered by three marine solar panels of 20W each; the monitoring buoy, which is 3 m high from the sea surface, can be fully configured and managed using SMS (Short Message Service) utility of GSM wireless network. Measuring data are automatically sent after the end of each chemical analysis using an SMS too; a PC installed in the Marine Park branch office automatically collects measured data.

## Boomy: introducing the new Resinex beach boom!

Small, light, resistant, nice, always standing. This is "Boomy" the new Resinex beach boom. Projected for the beach to indicate bathing areas.



*Easy connection with zip*



*Ten meters in a bag!*

It can also be used, in the event of emergency, for the stocking and transport on water of commodities. An easy solution for a difficult situation!



*Easy to handle*

## In Brief

Floats, completely in plastic, for the floating pipe terminal for La Dragaggi (2001). It substitutes the heavier and cumbersome metallic system normally used to sustain the junction head of the dredging pipe to the booster pump.



Besides the classic Resinex DF (Dredging Floats) produced by Resinex for 20 different diameters of pipe, our clients ask us for small signalling buoys for dredging operations. Here we see the latest new comer (2002) to our small buoys, specially projected for safety during dredging operations.

Light buoy for Saipem. A light buoy for 50 meters water depth supplied by Resinex to the San Donato Milanese company for use in Azerbaijan.



Elastic Pendant Buoys for Africa: Chevron Nigeria has once again chosen big Resinex Elastomer buoys for its West African Activities. The buoys have a six ton net buoyancy with an internal metallic structure and a body in polyethylene foam covered in elastomer polyurethane.

## Easy floating wharf



*Test: nine (heavy) persons on board!*

The Flavio Gioia turistic port of Gaeta ([www.basenautica.com](http://www.basenautica.com)) has developed a very simple practical and economical floating wharf. The floats are naturally Resinex.



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