



# RESINEX

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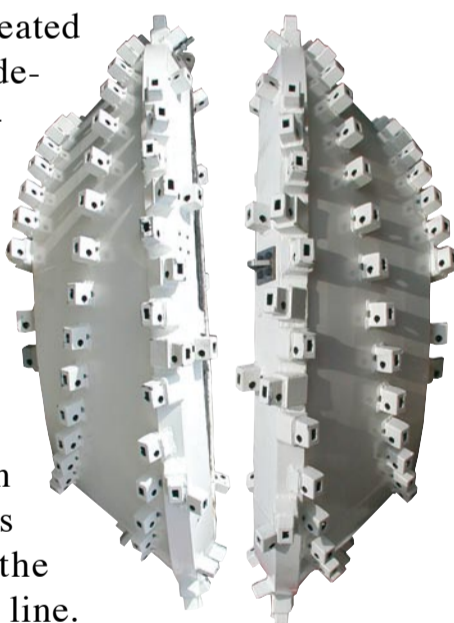
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## 3000 METERS!

**Resinex Research and Development has taken out Synt 3000 compound to such a level as to obtain the optimisation of technical performance and cost**

### Lightening the Beluga

**D**uring 2003 Resinex has created a compound aimed at rendering the Beluga excavation lighter; the innovative trenching machine which Sonsub [www.sonsub.com](http://www.sonsub.com) has projected and made to operate until a 2500 meter depth. The machine is equipped with the most sophisticated systems of direction and calibrated excavator for use in extremely deep waters. Sonsub is using the machine to excavate the trench for the Libya-Italy gas pipe line.



*The excavation cutters during filling with Synt 3000*

### Sounds in depth

**O**nce again Synt 3000 has been used with great success. The British company Sonardyne, [www.sonardyne.co.uk](http://www.sonardyne.co.uk), the world market leader in underwater positioning has commissioned Resinex to produce high performance floatation collars for its range of subsea acoustic transponders.

The smaller floatation collar is able to support transponders to depths of 500 metres while the larger float is designed for transponders operating at depths of 3000 metres. The floats were made with Synt 3000 Resinex and depth tested to 3000 metres at the Resinex Marine Research Centre.



*Sonardyne floats 3000 M*



*Floatation collars: 500 meter depth*

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## News **And now Mose closes the waters**

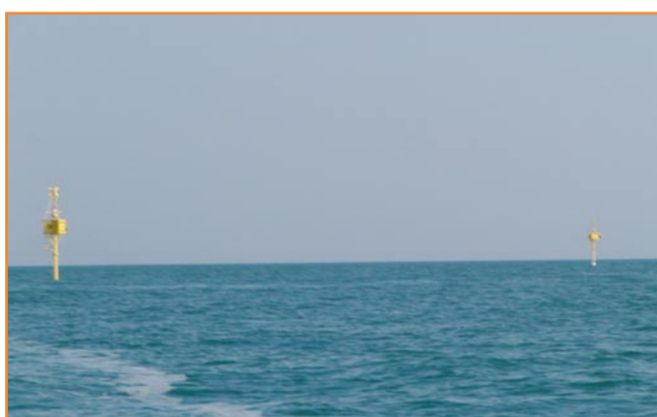


The Mose project is certainly the most important marine opera undertaken in Italy in the last few years.

The three access mouths to the Venice lagoon will be initially protected by three new rock barriers positioned south-east of Malamocco, Chioggia and Lido. In the second phase a system of mobile dams will be placed to protect the lagoon and the city of Venice from the "High Water" phenomenon. Naturally, in such an important and exact project, the safety and signalling system was



*Happiness is a Resinex beacon*



*Guarding the Mose*

awarded to Resinex. In the course of 2003 Resinex has positioned all the signalling necessary for the completion of the first barriers at Malamocco and Chioggia. 4 beacons and 12 buoys were positioned in the first months of the year.



## Sounds in depth 2

During 2003, Resinex has developed a new buoy to be used in open sea to identify the noise levels of big ships. Resinex has supplied deep-waters floats to support the chain line which carries the noise sensors. The buoy was made in non-magnetic material with an anti-collision floating structure. Important features are strong battery housing, mobility of antenna and light signal. The project took six months from the drawing board to completion.



*The upper part particulars*



*The deep water buoys*



*The buoy body*

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Offshore

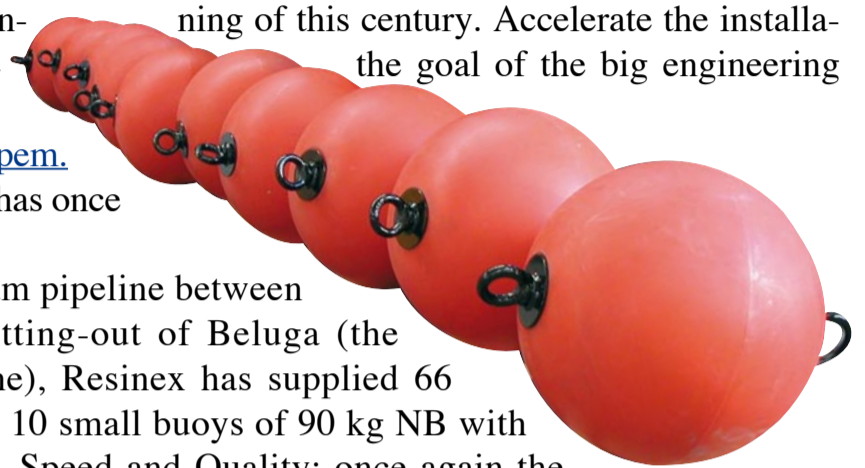
## Green Stream

Speed, speed, speed. This is the motto of underwater work at the beginning of this century. Accelerate the installation operation, maintaining a high performance quantity has become the goal of the big engineering and offshore companies.



For this reason, Saipem [www.saipem.eni.it](http://www.saipem.eni.it), world leader in this market, has once again, chosen Resinex.

For the laying of the Green Stream pipeline between Libya and Italy, besides the fitting-out of Beluga (the ultra-modern excavation machine), Resinex has supplied 66 buoys 525 kgs net buoyancy and 10 small buoys of 90 kg NB with an operative depth of 20 metres. Speed and Quality: once again the "bible" of marine work has been optimised by Resinex.



## Chain through and Pendant buoys for the East

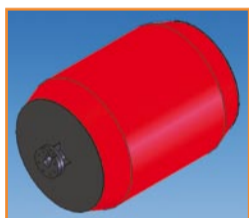


Pick-up 680 kg NB

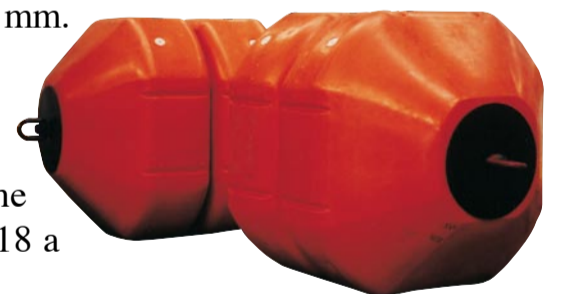
Chain Through Buoys for the Cairns Energy oil fields in India [www.cairn-energy.plc.uk](http://www.cairn-energy.plc.uk), were produced by Resinex at the beginning of 2003. With a net buoyancy of 6000 lbs (2720 kg), they are suitable to hold a 76 cm chain. They are coupled to pick-up buoys of 1200 mm in diameter with a net buoyancy of 1500 lbs (680 kg).



C.T. 2720 kg NB



Aramco [www.aramco.com](http://www.aramco.com) has also preferred the Resinex Chain Through Buoys. In this case the steel structure is filled with polyurethane foam and covered with an anti-collision layer in polyethylene foam and PU elastomer. The net buoyancy is 3850 kg, and the chain diameter is 32 mm. Five buoys has been supplied to the Saudi Company on December 2002.



Pendant 4000 kg NB

A Korean oil company has instead opted for the Resinex pendant of 1800 mm. The very thick polyethylene shell and reinforced squared configuration gives our PEM 18 a very good stability.

### The pendant old Lady

The Angolan oil fields still love our old steel Pendant buoys filled with polyurethane foam, they have an excellent resistance characteristic. The net buoyancy is 6000 kg. Notwithstanding their age, they are still an optimum solution.



### In Brief



New buoy to support a mooring of 1200 mt depth. Operational depth of the buoy: 100 Mt. End user **OGS of Trieste** for the **BOMA project**. Net buoyancy 3000 kg.



A new version of our **Monitoring Buoy FP 250 SL**. New chambers for the probes completely in stainless steel.

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## Brand New



**B**rand new buoys of great size. Resinex has made a **new buoy (PEM 25)** with a 2500 mm diameter float. The buoy in the photograph is composed of 6 interchangeable modules and a net buoyancy of over 7500 kg. This model joins our great PEM 21 buoys (diam. 2100 mm) and PEM 43 (diam. 4300 mm).

**I**n October 2002 the **ISO 9001:2000** Certification was awarded to Resinex Trading Srl. The Certification awarded by Lloyd's Register Quality Assurance is valid until 25 October 2005 and covers Project, Management, Engineering, Procurement, Production and Sales of Floating Equipment for Marine Applications.



**S**mall floats for restricted areas. The dimensions are particularly moderate, the buoyancy being only 33 kg. The metallic part (in stainless steel) was studied for a particular type of mooring.

**D**uring 2003 Resinex carried out the floating system of the wharfs for the **internal navigation of the river Tevere** in Rome. Eight floating stations from Flaminio to Ostia were installed. The project has been realized by the Base Nautica Flavio Gioia [www.basenautica.com](http://www.basenautica.com) under the direction of Arch. Franco Gnessi.



**T**his is the new Resinex **PEM 10 SL**. The float module is made up of two opposing conical sections with a maximum diameter of 1000 mm. The buoy is both very stable and designed to be fitted with a super compact signaling system.

## In Brief



In the Summer of 2003 **5 elastic beacons** of medium depth were placed to protect a pipeline in the eastern Mediterranean. Their particular characteristic, besides the extraordinary ease of positioning, is their versatility: in fact the 5 beacons have a dynamic/telescope system which allows them to vary their focal plane in relation to location, and, furthermore, permits the final user to reposition them in different sites.

**Small fenders** especially studied for the venetian wharfs: ultra strong and camouflaged.



Mooring and delimitation of **marine parks** with bi-coloured buoys: safe with this very high visibility.

Small light buoys for **beach delimitation**. The lantern is a Carmanah 501 on the upper part a stainless steel support with a warning is positioned.



When things get tough is time for Resinex. During the **swimming competition across lake Iseo** (northern Italy) Resinex buoys were used: 3 kilometers of effort but in safety.



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