

VSL is the PT contractor of the world's largest floating barge.



▲ *The Nkossa Barge out at sea*

The Nkossa vessel is the largest prestressed concrete barge in the world.

The quantities of materials used illustrate the gigantic size of this unique 25,000 m³ concrete floating structure which was built in record time :

- 2,500 t of 0.6" Super, 1,860 MPa prestressing strand,

- 5,200 VSL anchorages, most of which being VSL EC 6-19,

- 150,000 m of prestressing ducts made from thick steel tubes ranging from 80 to 114.3 mm diameter ; 30% were curved to follow the vessel's form, avoid inserts and permit connections with anchorage points,

- 800,000 l of specially prepared cement grout containing silica additives.

The barge will be exploited by ELF Aquitaine - the largest French industrial group - as floating support to produce oil at the Nkossa petroleum field in Congo.

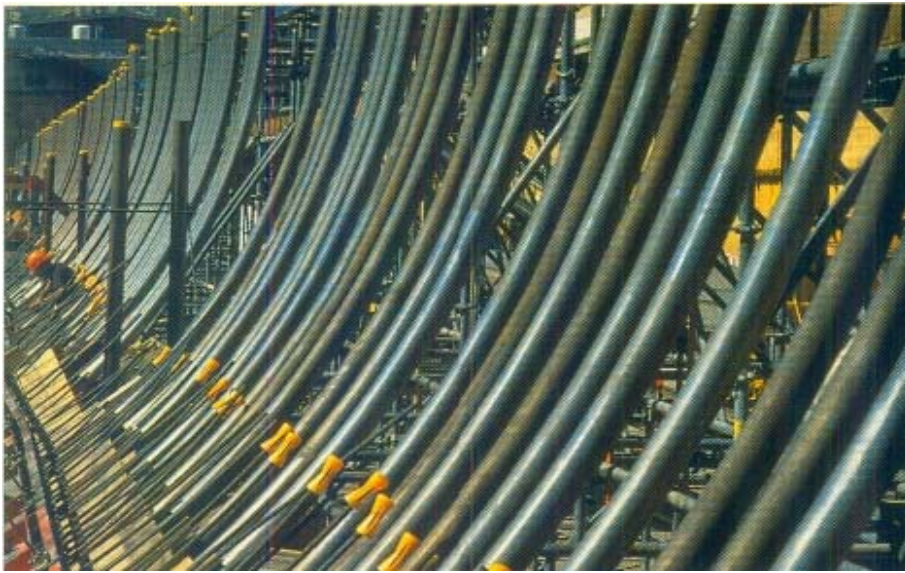
Bouygues and Bouygues Offshore were responsible for the vessel's design and construction and VSL was selected as contractor for the prestressing.

Scope of works performed

- Prestressing
- Supply and installation of the Stressbars
- Heavy lifting



▲ *Bottom slab ducts installation*



▲ *The curved pipes*

To tackle the extent of the work, and the particularly short completion deadlines, VSL brought in a large workforce and an exceptional amount of equipment. At critical stages, as many as 150 PT specialists were working on site round the clock.

For the prestressing, 24 VSL ZPE 460/31 and 14 VSL ZPE 19 jacks

were used in conjunction with 7 simultaneously operating large capacity grouting installations. The especially high density of the non-stressed and prestressed reinforcements (respectively 200 kg/m³ and 100 kg/m³) made the positioning and installation of the PT ducts an especially delicate operation.

In addition to the prestressing, VSL also supplied and installed the stressbars used to tie the deck to its fittings and living cubicles, as well as the mooring points for the chain anchors.

Moreover, VSL's expertise in heavy lifting allowed it to carry out the telescopic lifting of the derrick positioned in front of the barge. This operation involved lifting 70 t to a height of 40 m.

On completion of this intensive and challenging job, the 70,000 t, 220 m long, 46 m wide and 16 m high vessel put out to sea for the first time on July 6th, 1995, right on the schedule, leaving Platform 10 for Pier 190 in the French harbour of Marseille.

▼ *The bottom slab*



▼ *Walls and bulkheads*



▼ *The Barge at Pier 190*



OWNER
Elf Aquitaine

MAIN CONTRACTOR
Bouygues / Bouygues Offshore
(design and construction)

EQUIPMENTS
SN Technigaz

CONSTRUCTION PERIOD
1994 - 1996



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