

# BELGIUM MARITIME



## POMPEI

### STONE DUMPING BARGE BUILT BY LANGERBRUGGE SHIPYARDS

One of the latest completions of the **Langerbrugge Shipyards** is the self propelled stone dumping barge *Pompei* which was completed for a consortium of Belgian owners including **Herbosch Kiere N.V.**, **Decloedt & Zn Dragages N.V.**, **Dredging International N.V.** and **Jan de Nul N.V.**

*General Description.* The vessel has been designed to carry out rock dumping projects in dedicated locations for construction projects including jetties, sea break waters and defence walls and to carry out dumping operations to cover gas and oil transport pipelines on the sea bed, provide rock protection around offshore platforms, to fill stone mattresses for the strengthening of dikes etc.

The vessel can shed its maximum load of 1,800 tons of rock or stones in a period of 11 minutes and with great precision. The cargo of stones which is loaded on the open main deck of the barge is moved sideways from the centre line by a system of four hydraulically operated vertical shovels which have been manufactured by the German company **Gluckauf**. The hydraulic installation has been supplied by **Hycom b.v.**

The shovels have been installed in pairs, two at either side of the barge's main deck. Each shovel is powered by two hydraulic cylinders each with a maximum pushing force of 1,800 kN. The length of the stroke of each cylinder is 5,700 mm.

The operation of each pair of cylinders on one shovel and the operation of two opposite shovels are synchronized to avoid listing of the vessel when dumping over both sides is in operation. The dumping speed, hence the volume of stone dumped in a unit of time, is steplessly controlled. The

control system; however, has been designed to allow separate operation of each individual shovel as well as operation in pairs of the shovels on one side or at both sides of the barge, directly or diagonally opposite.

By controlling the volume of stone dumped on the seabed and by controlling the speed of the vessel, the volume of stones dumped per unit of area on the sea bed can be very exactly determined.

The *Pompei* is fitted with a computerized dynamic positioning system fitted out for satellite control, which enables the ship to dump its load with an accuracy of 20 cm in all kinds of weather and sea states.

Position control is furthermore possible with the anchor positioning system using six anchors, four from the starboard side and two from the port side in combination with the winching system which incorporates two four-drum anchor handling winches fitted with steplessly controlled hydraulic power packs.

**Hycom** also supplied the hydraulic components for the operation of the 27 butterfly valves of the vessel's automatic microcomputer controlled ballast system. The system has been designed to keep the vessel in a vertical position during dumping operations with a maximum deviation of one degree to either side. The 4x90 kW hydraulic main power pack incorporates four axial **Trowler** piston pumps with flow control. The installation complies with the regulations for unmanned engine room. Complying with the requirement that in emergencies part of the load must be discharged without using the main power pack, an emergency pump unit has been installed outside the engine room.

*Main characteristics.* The *Pompei* has been fitted with accommodation for a complement of 14 people and has the following principal dimensions:

Length o.a. . . . .	65.500 m
Length b.p. . . . .	63.466 m
Breadth mld. . . . .	16.000 m
Depth mld to main deck . . . . .	3.850 m
Summer draught . . . . .	3.298 m
Deadweight at a draught of 3.730 m . . . . .	1,760 t
GT . . . . .	1,500
NT . . . . .	450

The total power installed in the vessel is 2,207 kW and the ship's service speed is 9 knots on a draught of 3.240 m.

*Classification.* The *Pompei* has been built to the regulations of **Bureau Veritas**, Paris for world-wide navigation with unmanned engine room to their class I° 3/3 (E) Deep sea. AUT MS and the service notation side stone dumping vessel.

*Propulsion.* The vessel has diesel electric propulsion which includes two electrically powered **Aquamaster** type 401-2250 rotational rudder propellers driven by two **Indar** electric motors RLC-400-L/4. The full output of the installation can be used in all directions by rotating the propellers to the required angle. Also installed is an 810 kW **Veth Jet** type 2K1750 bow thruster which is used in combination with the rudder propellers and the **Kongsberg Albatross** type ADP 100 D.P. system. The installation is powered by two **Caterpillar** type 3512 TA DI STD, 1,0020 kW marine diesel engines, each fitted with a **Vulastik** type 12010 coupling and driving an **Indar** generator of 1,022.5 kVA.

Electric power is generated by a **Caterpillar/Indar** generator set of 290 kW/334 kVA including a type 3408 B TA marine diesel engine, a **Vulastik** coupling and an **Indar** generator. The emergency generator set includes a **Lister** engine and a **Stamford** generator of 35 kVA.

The engine room installation furthermore incorporates the general service, ballast, fire fighting, circulating and transfer pumps, two hydrophore systems, three compressors and air vessels, heat exchangers, a sewage system, oily water separator etc.

The deck equipment incorporates a 4-tonne capstan, two 250 kN winches, six 1.5t anchors, a 6-seater emergency boat, two davits, three

inflatable life rafts etc. The vessel is furthermore fitted with a complete system of electronic navigational and communication aids.

**Equipment on board the *Pompei*.**  
(partial list)

<b>Alfa-Laval</b> , Brussels (B) . . . . .	: plate coolers, separator.
<b>Allweiler</b> , Brussels (B) . . . . .	: hydrophores.
<b>Alvesta</b> , Sweden (S) . . . . .	: doors.
<b>AMRC</b> , Antwerp (B) . . . . .	: tank level gauging system.
<b>Anker Adviesbureau</b> , Nieuwerkerk a/d IJssel (N) . . . . .	: Flipper-Delta anchors
<b>Anker, Het</b> , Schelluinen (N) . . . . .	: windows and portholes.
<b>Atlas Copco</b> , Overijse/Wilrijk (B) . . . . .	: compressor, air dryer.
<b>Aquamaster</b> , Limmen (N) . . . . .	: propeller units.
<b>Bakker Electro</b> , Sliedrecht (N) . . . . .	: electrical installation.
<b>Bakker Energy</b> , Sliedrecht (N) . . . . .	: Indar electric motors and generators.
<b>Cekadak</b> , Maassluis (N) . . . . .	: floors.
<b>CSI</b> , Antwerp (B) . . . . .	: life rafts.
<b>Flakt SF</b> , Brussels (B) . . . . .	: a.c., ventilation, heating.
<b>Helder &amp; May</b> , Rotterdam (N) . . . . .	: floor/deck covering.
<b>Hycom B.V.</b> , Apeldoorn (N) . . . . .	: hydraulic installation.
<b>IHC Systems</b> , Sliedrecht (N) . . . . .	: draught measuring system.
<b>Ines</b> , Wilrijk (B) . . . . .	: electronic equipment.
<b>Jong Eriks, De</b> , Bornem (B) . . . . .	: Thermor boiler.
<b>Kroon B.V.</b> , Hoogezand (N) . . . . .	: wainscoating, ceilings.
<b>Marine en Industrie</b> , Hoboken (B) . . . . .	: Hallapa compressors.
<b>Miele</b> , Aalst (B) . . . . .	: washer/dryer.
<b>Mulder &amp; Rijke</b> , IJmuiden (N) . . . . .	: emergency boat.
<b>Nijhuis</b> , Antwerp (B) . . . . .	: pumps.
<b>Peiniger</b> , Ertvelde (B) . . . . .	: paint application.
<b>Rijn, van</b> , Rotterdam (N) . . . . .	: fire fighting system.
<b>Sarca</b> , Antwerp (B) . . . . .	: refrigerating plant.
<b>Schat Davit Company</b> , Utrecht (N) . . . . .	: davits.
<b>Siebel, Willem</b> , Freudenberg (D) . . . . .	: air vessels.
<b>Stimac</b> , Brussels (B) . . . . .	: lathe.
<b>Thofex</b> , Rotterdam (N) . . . . .	: machine tools.
<b>Treco NV</b> , Overijse (B) . . . . .	: main engines.
<b>Uitenbogaart</b> , Rotterdam (N) . . . . .	: capstan, winches WT doors.
<b>Veth</b> , Papendrecht (N) . . . . .	: bow thruster.
<b>Vogels-Boon</b> , Antwerp (B) . . . . .	: Kockum whistle.
<b>Winkel</b> , Assen (N) . . . . .	: WT doors.
<b>Wingen, van</b> , Ghent (B) . . . . .	: emergency generator set.



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