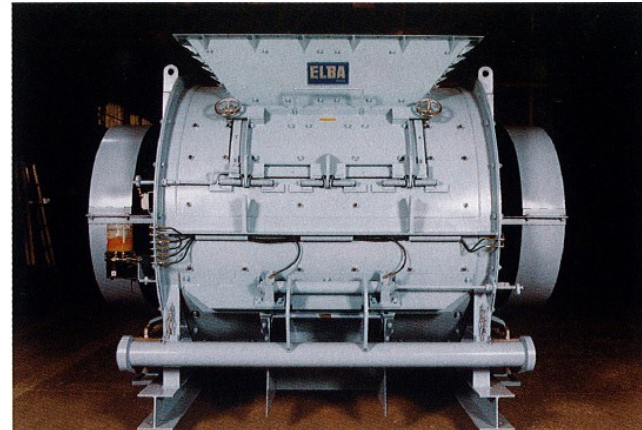


**Production, shipment and quality control system  
Liberty Navigator**



A networked control system that manages production, shipment and quality is mounted, enabling quick and efficient daily operation of complex compounding calculation as well as massive amount of forms processing on paperless basis.

**EMS mixer that can deal with any concrete slump  
at full capacity**



Elba EMS mixer (3 m<sup>3</sup>/B) performs quick and intensive mixing through up-down and right-left fluid repetitive movement enabling less uneven mix of material, which produces excellent strong and uniform concrete in a short time. The mixer has high wear resistance with easy maintenance.

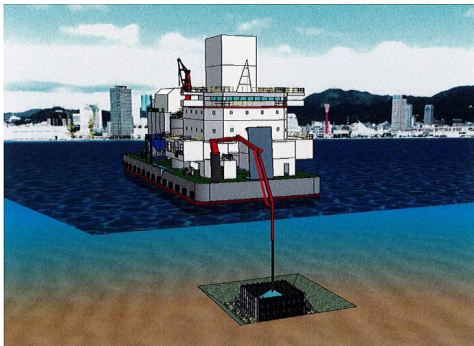
**Purpose-built inboard testing room**

Full-automatic compression tester, test kneading mixer, and circulator of constant temperature water are provided in the purpose-built inboard testing room. This facility makes it possible to conduct compression test or concrete test kneading swiftly in the same way as is conducted in the onshore plant.

**Eco-friendly waste water treatment system**

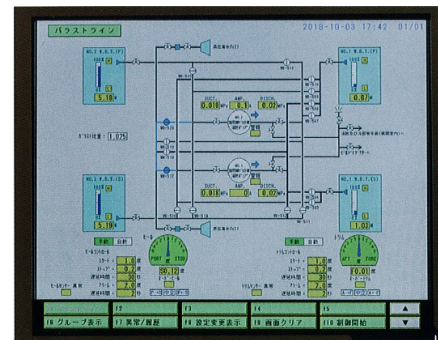
The drainage from cleaning and residual water go through the classifier inboard and the gravel, sand and sludge in the water are separated. Supernatant as well as filtered sludge water after dewatering is reused for kneading. The separated gravel, sand and the dewatered cake are then brought to land for disposal.

**Placing crane : SKK-D60H**



Marine-environment compatible distributor with a 30-meter boom enables direct placement as well as high-quality underwater placement.

**Automatic ballast adjusting device**



The device automatically adjusts trim and heel of the hull by inclinometer and liquid-level gauge.



**関 栄**  
**KAN-EI**



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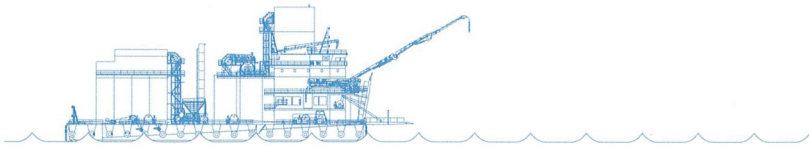
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Seawater Desalination System

100 t / day

Cement Silo

150 t x 4 units

Aggregate Storage Tank

215 m<sup>3</sup> x 8 tanks

Equipped with 8 aggregate storage tanks, each having capacity of 215 m<sup>3</sup>, Kan-ei can flexibly cope with construction works in coastal areas and remote islands where securing freshwater or good quality of land sand is difficult.



Conveyance equipment : vertical conveyor

Transportation capacity 400 t/h  
Flexible and elastic cleat rubber carries aggregate vertically. Compared with conventional steeply inclined conveyor, it is environment friendly because of being almost free from load spill, and less likely to cause dust emission and scattering.

Spud with hydraulically powered rack and pinion

1.3 m square column, total length : 25 m (effective length : 15 m)  
It stabilizes the hull, thus enhances accuracies of mix weighing and test data.

Batcher plant

Elba EMS Mixer (3 m<sup>3</sup>/B) installed  
It can produce 192 m<sup>3</sup> of concrete per hour : 3.0 m<sup>2</sup> x 64 B/h = 192 m<sup>3</sup>

Placing crane : SKK-D60H

Three-arm hydraulic placing boom  
Length 30 m  
Outreach (bow side) 26.9 m  
This enables to place concrete directly and underwater.

Aggregate storage tank

Equipped with 8 storage tanks with capacity of 215 m<sup>3</sup> (4 for gravel and 4 for sand)  
Heat insulated roof controls the rise in temperature of the aggregate and thus, ensures the good quality.

Cement silo

Four 150-ton silos with 4700 mm in outer diameter.

Seawater desalination system

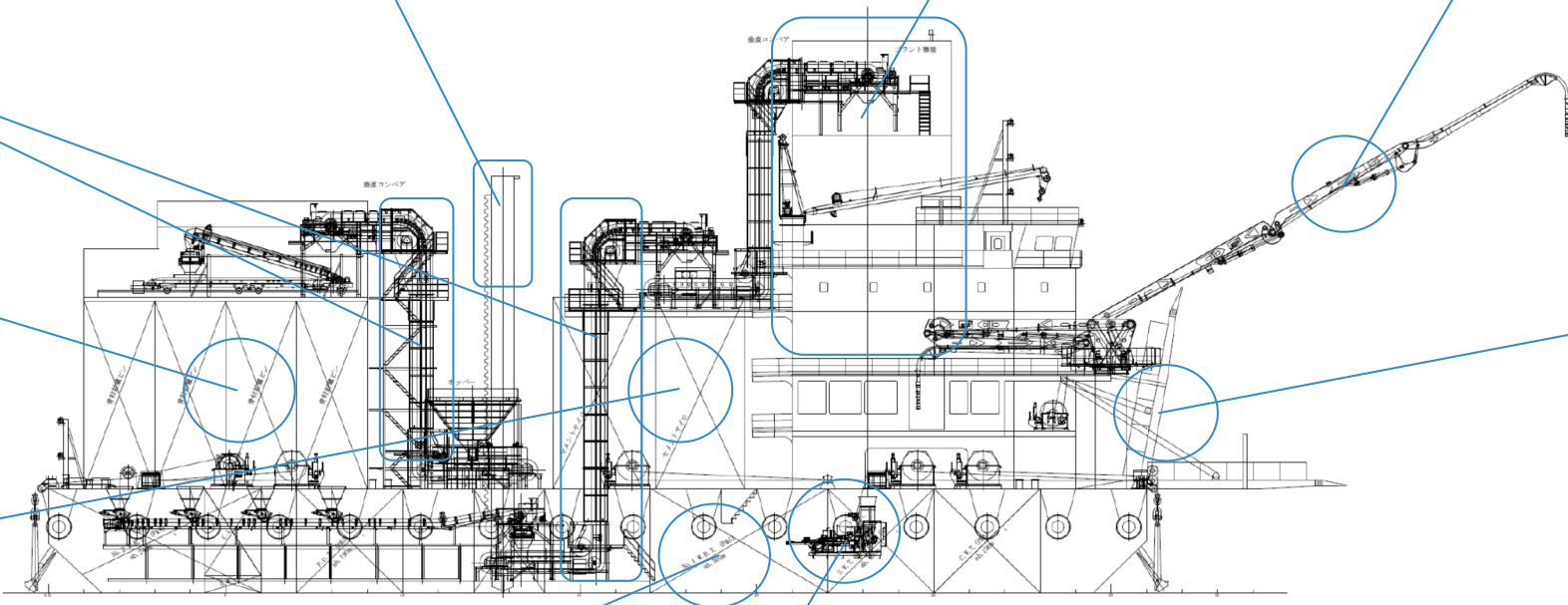
The system can produce 100 tons of freshwater from seawater a day, allowing to work in a large ocean area.

Concrete pump

Theoretical discharge : 106 m<sup>3</sup>/h (6.0 MPa)

Shore ramp

It allows direct access by large mixer trucks and pumping vehicles.  
On-site concrete production and shipping out by concrete mixer vehicles make it possible to reduce the effects on the environment by emission at the time of transportation from onshore plants.



## Kan-Ei Specifications

<b>HULL</b>	
BUILDER	Sanoyas Shipbuilding Corporation
HULL DIMENSIONS	Length : 66.0 m Breadth : 24.0 m Depth : 6.0 m
<b>DECK MACHINERY</b>	
WINDLASS (STERN)	30/12 t x 6/15 m/min x 2 sets
ANCHOR WINCH (BOW)	30/12 t x 6/15 m/min x 2 sets
MOORING WINCH (BOW)	20/8 t x 11/22 m/min x 2 sets
MOORING WINCH (STERN)	15/7.5 t x 10/18 m/min x 2 sets
SPUD	1.3 m x 1.3 m x 25 m x 1 set
ANCHOR	7,875 kg x 4 sets
ANCHOR CHAIN	44 mm x 350 m x 2 sets
ANCHOR WIRE	44 mm x 400 m x 2 sets
SHORE RAMP	Effective breadth 3.4 m Length 10 m
<b>GENERATOR</b>	
MAIN GENERATOR	AC440 V x 800 kVA x 2 units (satisfying IMO Tier II)
AUX. GENERATOR	AC440 V x 300 kVA x 2 units (satisfying IMO Tier II)
<b>OTHER EQUIPMENT</b>	
DESALINATION SYSTEM	Reverse osmotic pressure type Production capacity : 100 tons/day
BALLAST ADJUSTMENT	Automatic ballast control (trim and heel)
<b>PRODUCTION &amp; PUMPING</b>	
<b>BATCHER PLANT</b>	
PRODUCTION CAPACITY	3 m <sup>3</sup> x 64 B/h~72 B/h (192~216 m <sup>3</sup> /h)
MIXER CAPACITY	ELBA EMS MIXER 3 m <sup>3</sup> /B x 1 unit
<b>CONCRETE PLACING EQUIPMENT</b>	
CONCRETE PUMP	106 m <sup>3</sup> /h (6.0 MPa) x 1 unit
PLACING BOOM	Three-arm hydraulic slewing boom Arm length : 30.0 m (6B)
<b>MATERIAL STORAGE</b>	
COARSE AGGREGATE STORAGE ROOM	215 m <sup>3</sup> x 4 tanks
FINE AGGREGATE STORAGE ROOM	215 m <sup>3</sup> x 4 tanks
CEMENT SILO	150 t x 4 sets
WATER STORAGE TANK	392 t
ADMIXTURE TANK	10,000 L x 4 sets
<b>CONVEYANCE FACILITY</b>	
AGGREGATE RECEIVER	BELT CONVEYOR 400 t/h
AGGREGATE FEEDER	BELT CONVEYOR 400 t/h
AIR TRANSPORT CEMENT SUPPLIER	ROOTS TYPE BLOWER 50~60 t/h

