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with high technology and fine quality





Hanla NMT Co., Ltd. is growing as a top-level engineering company in areas such as specialized heavy material transportation, ship repair and conversion, which are needed in the overall industries of shipbuilding, plant engineering, and ship repair, as well as ship BWTS retrofitting, which has recently emerged as a blue ocean business.

Hanla NMT Co., Ltd. is under two parent companies: Hanla IMS Co., Ltd, which has the top-level technologies in the BWTS area, and Orient Shipbuilding, which has the largest ship repair yard in South Korea. Accordingly, Hanla NMT Co., Ltd. is a unique company that can address business relating to both ship materials/equipment and shipyards. It has the capabilities of handling the overall processes of materials/ equipment designing and heavy material transportation/installation. In addition, the advanced technologies and expertise of its parent companies have driven successful results and customer satisfaction in the numerous projects that Hanla NMT Co., Ltd. has carried out. With this, you can rest assured that Hanla NMT Co., Ltd., as your business partner, will implement projects seamlessly. Pursuing professional services, Hanla NMT Co., Ltd. promises that it will be a company that runs a business with a focus on the successes of

its customers under the slogan of top-level solutions, safe implementa-

Thank you very much.

tion of projects, and successful business.



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Hanla NMT Co., Ltd. was established in 2008 under a joint investment by Hanla IMS Co., Ltd. and Orient Shipbuilding. With this corporate structure, Hanla NMT is growing constantly in terms of technologies, facilities, and its overseas sales network.

VISION



Strategy

- Provision of top-level technologies, and implementation of successful projects at reasonable costs
- Establishment of directions for high-quality and highefficiency works based on capacity building

Service

- On-site work of expert engineers
- Implementation of project management and technical consulting
- Rapid job progress and unfailing commissioning



BWTS (Ballast Water Treatment System) retrofitting

The roles of BWTS are standing out in line with the trends where the importance of green ships is emphasized. Hanla NMT Co., Ltd., with its parent companies, one being the largest ship repair yard in South Korea, and the other being a BWTS maker, will lead to success in BWTS retrofitting projects based on the achievements of ship repair and BWTS technologies.

Process



Strengths

- Hanla NMT Co., Ltd. has expertise in BWTS retrofitting based on the ship repair track records of Orient Shipbuilding, one parent company of Hanla NMT Co., Ltd.
- Hanla NMT Co., Ltd. is capable of carrying out efficient works based on regular exchanges with Hanla IMS, which is a BWTS maker and another parent company of Hanla NMT Co., Ltd.
- Simple designing processes based on reverse modeling and rearrangement
- Hanla NMT has a high-compatibility converter software. → Flexible business collaboration is possible through the software and various rearrangements.



and confirmation thereof by the

shipowner

- sification rule , ship guardian, and customer's requirements. •Concurrent reverse modeling and rearrangement with Everything3D (E3D) software
 - •Final check on whether equipment and fittings can be installed on the ship



G.A.(General Arrangement), and P&ID

- lies based on the ship drawings



Service scope

Service Case	Equipment Only	Engineering	Purchasing & Manufacturing	Installation & Commissioning
Case1	0			
Case2	0	0		
Case3	0	0	0	
Case4	0	0	0	0

Schedule

– Do	omestic –														[v	veek
	Schedule	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
S T E P	Initial drawing review															
	3D scanning															
	Reverse drawing															
1	Submit survey report					•										
S T	Approval(Owner/Class)								-							
	Equipment assembly															
E P	Manufacture drawing							\rightarrow								
2	Delivery															
	Scaffolding, support, installation															
S T E P	EcoGuardian™ installation															
	pipe, cable working													_		
	paint & restore															
د _ا	Commissioning & Sea trial															

- Overseas -

															ľ	weeks]
	Schedule	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
S	Initial drawing review															
T	3D scanning															
P	Reverse drawing															
1	Submit survey report					\rightarrow										
S	Approval(Owner/Class)										\rightarrow					
T	Equipment assembly												\rightarrow			
P	Manufacture drawing								\rightarrow							
2	Delivery															

HANLA IMS BWTS – Eco Guardian[™]



Equipment data

1. CAPACITY: Min. 130 ton/m3 · Max. 6,000 ton/m3

2. TREAT. METHOD: Electrolysis(side-stream) \cdot Filtration (50 μ m) \cdot Neutralization

3. OPERATING: Automation · Manual(BY Local panel)

	Equipment cha
1. Small size	2. Low power consum
4. Easy operation	5. Low maintenance co
7. System for constant A/S services	

Reference projects







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ption ost

- 3. Simple installation
- 6. Reasonable price



Heavy material transportation / Equipment rental

- Human/physical networks that enable all works on a turn-key basis
- Provision of top-level equipment and services at reasonable prices
- Provision of expert engineering based on extensive experience
- The only company in South Korea that handles launching-related works utilizing a floating dock
- On-site dispatch of expert management personnel and signalers

Equipment capacity



Equipment capacity 600 TON ~ 250 TON 320 TON 550 TON MAX. 15,000 TON

*Tonnages can be combined as necessary.

Equipment data



Process



Major customers

DSME	DSSW	stx∞
· 삼강암엔티(주)	ρosco	EUNSUN
SAAMKANS MET CO. LTD	포스코플랜텍	Offsbore Marine

Shipbuilding support - Transporter arrangement and loadout

- Lug arrangement to meet the crane capacity based on shape and load
- Loadout planning based on support layout and transporter arrangement









Module equipment

- Module transporter made by Rainho, comprising power packs that play the role of an engine, and units that play the role of a vehicle
- Able to implement projects safely and efficiently based on locking cylinders and electronic systems
- Able to carry out precise work based on 360° -rotatable axles and $\pm 165^{\circ}$ -adjustable steering
- Tonnages can be combined as necessary depending on projects. (max. 4,000 tons)



SPMT equipment

- Self-propelled module transporter made by Cometto, comprising power pack units that play the role of engine, and trailers that can be jacked up/down (±350 mm)
- Up to 30 axles can be connected to each power pack, while each axle has the minimum capacity of approximately 30 tons, which enables super heavy cargo and rolled cargo.
- One unit can be assembled by serial/parallel connection of trailers.
- With a small radius of rotation, it can rotate 360°, and can move at right angles (by 90°), which enables efficient and stable work in limited spaces.

Equipment data

- 1. MAKER : COMETTO (ITALY)
- 2. MODEL: MSPE EVO1 50T / MSPE EVO2 60T

Reference projects – Module



Reference projects – SPMT







Ship repair processes



Solutions for supporting ship repair processes

Works implemented





Review of production design and drawings



Designing of engineering methods



Preparation of lug/lifting drawings



Preparation of support layout



Designing of jigs

Designing of ship retrofitting with 3-D scanner