

RIGIFLOAT[®]

— by Hann-Ocean —

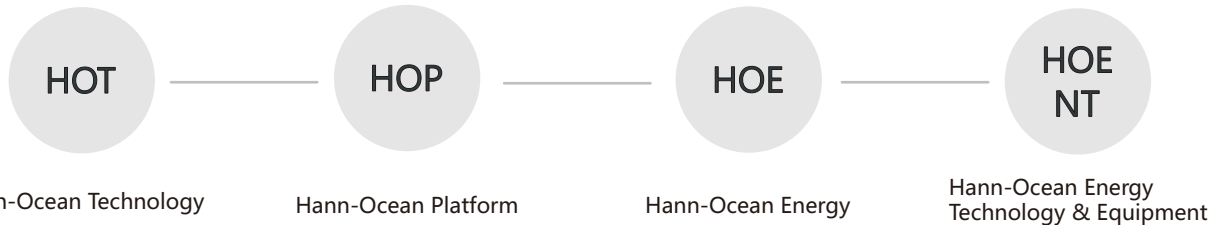


Rigifloat[®] Modular Pontoons & Connectors

- Enabling Construction of
Very Large Floating Structures (VLFS)



We are committed to creating a sustainable world and a better tomorrow.



Established in 2005, Hann-Ocean Technology Group is headquartered in Singapore. We provide innovative solutions to global marine industry customers from Australia, Singapore, Indonesia, and other countries. Hann-Ocean comprises four companies:

HOT: Specializes in Research and Development, product design, and related consultancy services for marine, defence, and renewable markets.

HOP: Provides a wide range of floating platform solutions based on customer requirements.

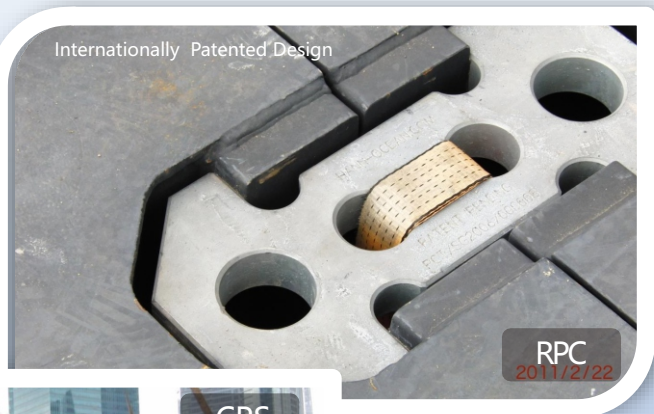
HOE: Develops and launches products for the marine renewable energy industry in the global market.

HOENT: A subsidiary of HOE, focusing on product development and performance optimisation of Wave Energy Converters. Fabricates relevant products and provides after-sales service.

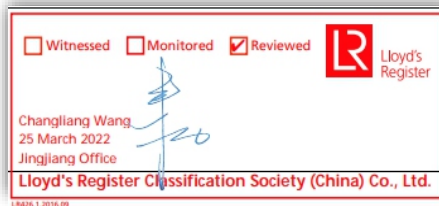
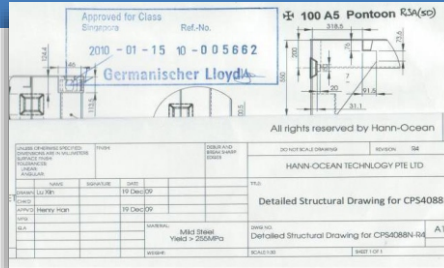
RigiFloat® Technology

What are RigiFloat products?

- Rigid Pontoon Connector (RPC)
- Containerized Pontoon System (CPS)
- Concrete-Steel Composite Pontoon System (CSC)



Ship Class Approval & Certification



TESTIMONIAL FROM CUSTOMER

Henry and his team seamlessly collaborated with our local Naval Architect to develop and finalise the design for our specialised application of the RigiFloat system. Henry's passion, dedication and technical knowledge were evident throughout the build, constantly going above and beyond to ensure delivery of high quality product that meets our specifications, while maintaining a tight production schedule through a very challenging period of COVID lockdowns and restrictions.

Hann-Ocean's active communication and professionalism throughout the project, and coordination with our Lloyd's Register surveyor ensured that we were always well informed and gave great confidence in the products being supplied.



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25/06/2022

TESTIMONIAL FOR SUPPLY OF 36X CPS4084.5R PONTOONS

Dear Henry,

It is our pleasure to provide the following testimonial for this very successful project.

Hann-Ocean recently completed production of 36 custom designed, CSC Certified RigiFloat pontoons for Polaris Marine through our Australian agent, Australia Marine Services.

Henry and his team seamlessly collaborated with our local Naval Architect to develop and finalise the design for our specialised application of the RigiFloat system. Henry's passion, dedication and technical knowledge were evident throughout the build, constantly going above and beyond to ensure delivery of a high quality product that meets our specifications, while maintaining a tight production schedule through a very challenging period of COVID lockdowns and restrictions.

Hann-Ocean's active communication and professionalism throughout the project, and coordination with our Lloyd's Register surveyor ensured that we were always well informed and gave great confidence in the products being supplied.

It has been a pleasure working with Henry and his team on this successful project and we look forward to seeing our pontoons in action.

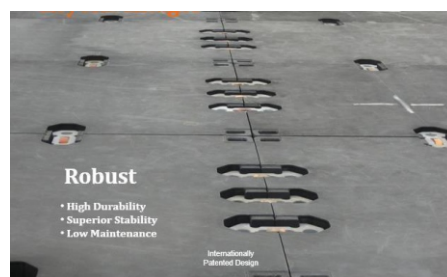
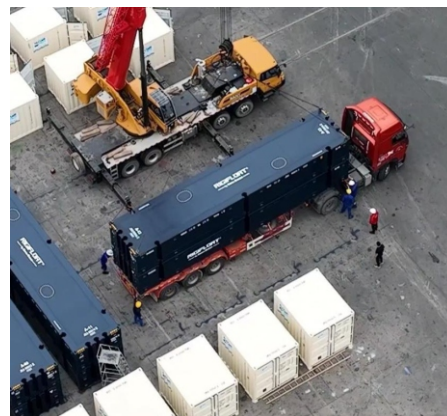
Kind Regards,

Polaris Marine Pty Ltd

Nathan Herbert - Project Manager

RigiFloat® Key Benefits

- Drop-n-Lock
- Easy to assemble
- Quick to disassemble
- Rigid & stable
- Robust & lasting
- Superior strength
- Low shipping costs
- No maintenance required



Main Product Parameters

	Containerized Pontoon System	Rigid Pontoon Connector
Material	Mild Steel	Mild Steel
Size	ISO shipping container size or customized	512 x 245 x 50 mm
Weight	5.3 - 12.3 ton	26 - 27 kg
Certification	DNV-GL and LR Class Approval & CSC	ABS Class Certificate
Customization	Fenders, anchor, color, railings and etc.	Load strength and size



Connector Specifications

Rigid Pontoon Connectors (RPC)

Model No.	RPC-S88		
Weight of keys	26 – 27 kg		
Load case	Tension	Compression	Shear
Allowable working load w/FOS>2 (ton)	98	80	52
Max proof load w/o breaking (ton)	200	160	105
Deflection stiffness (N/mm)	833,000	667,000	200,000

Note: The above data are verified by ABS through load testing.

Standard Pontoon Specifications

Containerized Pontoon System (CPS)

Variants				
Model No	CPS4088N	CPS4084.5N-3-1	CPS2088N-2-1	CPS2084.5N-2-1
Length (ft)	40	40	20	20
Width (ft)	8	8	8	8
Height (ft)	8	4.5	8	4.5
Self-weight (ton)	12.3	9.3	6.9	5.3
No.of connectors,RPC-S88	4	4	3	3
Material used	Mild Steel			
Design Capacity				
Deck load (ton/m ²)	8.5 (coastal water) / 10.0 (sheltered water)			
Full load displacement (ton)	57.6	26.4	28.4	13.1
Max payload capability (ton)	45.3	17.1	21.5	7.7
Minimum draft (mm)	422	324	477	372
Condition for connection on water	Up to Sea State 3 – Wave height < 0.9 m			

RigiFloat® Potential Applications

- Floating personal water suite
- Detachable crane barge
- Piling barge
- Floating bridge
- Floating jetty
- Floating city
- Floating island
- Floating house
- Floating apartments in lakes



RigiFloat® Potential Applications

- Floating entertainment hub
- Floating port
- Floating airport
- Floating helideck
- Floating marina jetty
- Floating offshore accommodation
- Floating breakwater
- Floating wave generator
- As many as you can imagine

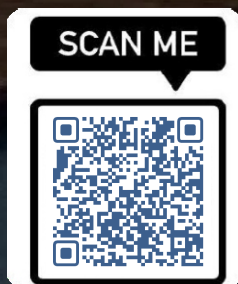




Successful RigiFloat Project in 2022

- Polaris Ranger Mine Wicking Barge

Using Hann-Ocean's RigiFloat technology, 36 units of floating modules were successfully joined with 198 pairs of rigid connectors, plus 6 pairs of hinge connectors, to form a 1082 sqm floating platform in Australia on 22 September 2022.



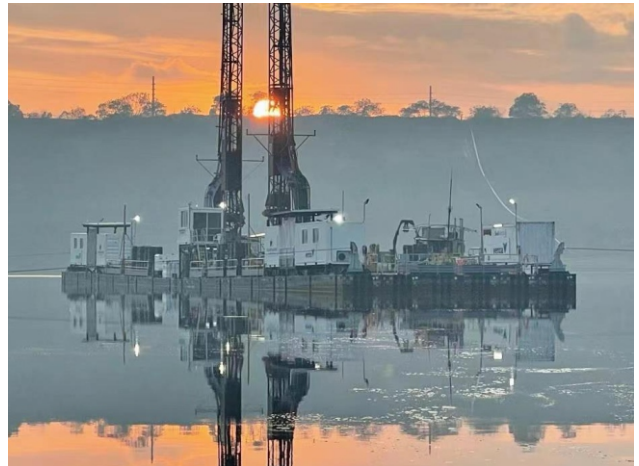
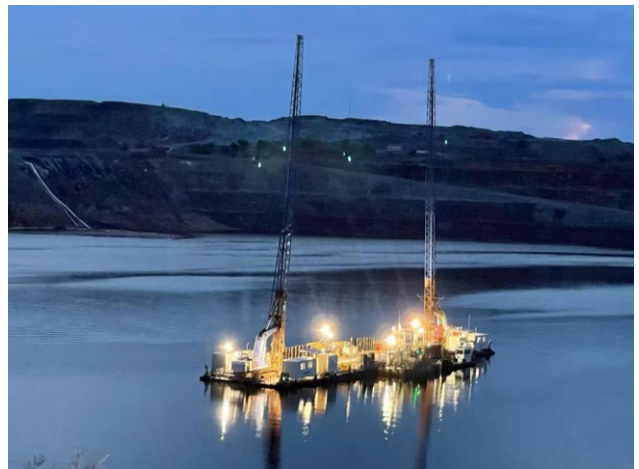


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Polaris Ranger Mine Wicking Barge

Site Operation Photos



An excellent application of RigiFloat® Modular Barge Technology



Successful RigiFloat Project in 2023

- PBM 200 DWT Ro-Ro Support Barge

Using Hann-Ocean's RigiFloat technology, 17 units of floating modules were successfully assembled into a 200 DWT Ro-Ro Support Barge in Laos on 23 December 2023, which is designed for the transport of heavy-duty mining equipment, vehicles and materials.

200 DWT Ro-Ro Support Barge

Site Assembly



An excellent application of RigiFloat® Modular Barge Technology

200 DWT Ro-Ro Support Barge

Site Assembly



An excellent application of RigiFloat® Modular Barge Technology

Modular Floating Crane Barge

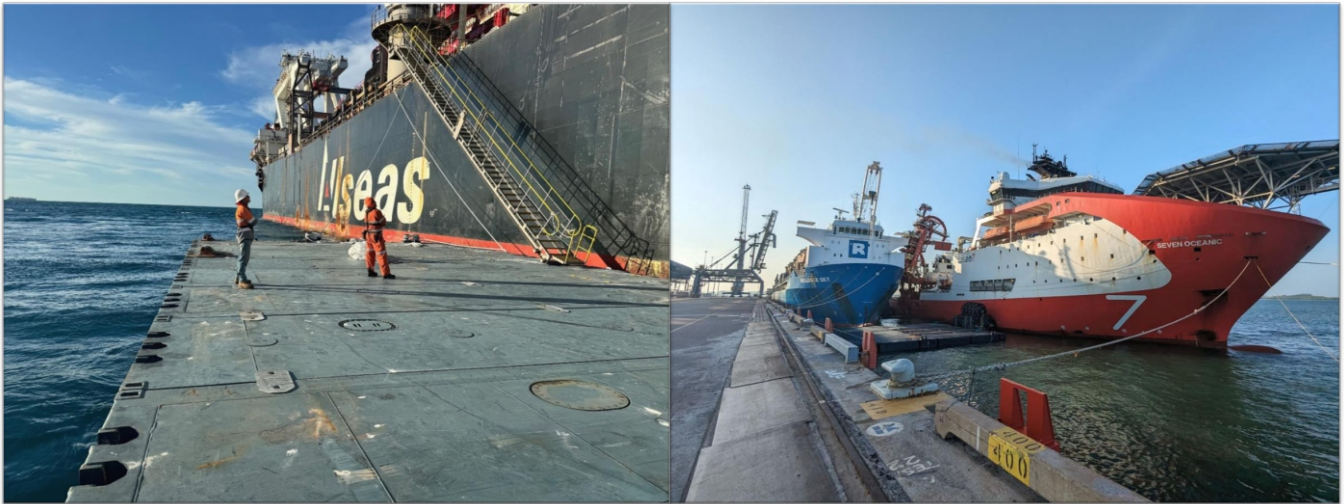
Site Operation



An excellent application of RigiFloat® Modular Barge Technology

Breasting Barge

Offshore Operations



An excellent application of RigiFloat® Modular Barge Technology

Modular Cargo Barge

Heavy Cargo Transportation



An excellent application of RigiFloat® Modular Barge Technology

Floating Integrated Entertainment Hub

Assembled by RigiFloat® Pontoons



With RigiFloat®, Sustainable Floating
Platforms become a reality.
Let's do it together!



SCAN ME



innovated by



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**Plan Your Platform &
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