



ABS

CERTIFICATE NUMBER

08-SG365408-PDA

DATE

25 July 2008

ABS TECHNICAL OFFICE

BUREAU SINGAPORE Engineering

CERTIFICATE OF Design Assessment

This is to Certify that a representative of this Bureau did, at the request of
HANN-OCEAN TECHNOLOGY PTE LTD

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate. It will remain valid as noted below or until the Rules or specifications used in the assessment are revised (whichever occurs first).

PRODUCT: Connector, Rigid Pontoon

MODEL: Model RPC-S88

ABS RULE: 2003 Steel Barge Rules 5-3-1

OTHER STANDARD: N/A;

AMERICAN BUREAU OF SHIPPING

Jin Kiat Low
Engineering Type Approval Co-ordinator

TERMS & CONDITIONS OF ABS Design Assessment

1. AGREEMENT

The issuance and interpretation of this certificate is subject to the terms and conditions of the Request for Product Type Approval and Agreement which are hereby incorporated by reference.

2. REPRESENTATIONS AS TO DESIGN ASSESSMENT

Design Assessment is representation by ABS as to the structural and mechanical fitness for a particular use or service in accordance with its Rules and standards. The Rules of American Bureau of Shipping are not meant as a substitute for the independent judgment of professional designers, naval architects and marine engineers nor as a substitute for the quality control procedures of shipbuilders, engine builders, steel makers, suppliers, manufacturers and sellers of marine vessels, materials, machinery or equipment. ABS being a technical society can only act through Surveyors or others who are believed by it to be skilled and competent. ABS represents solely to the vessel Owner or other client (hereinafter "Client") of ABS that when assigning class it will use due diligence in the development of Rules, Guides, and standards and in using normally applied testing standards, procedures and techniques as called for by the Rules, Guides, standards or other criteria of ABS for the purpose of assigning and maintaining class. ABS further represents to the Client of ABS that its certificates and reports evidence compliance only with one or more of the Rules, Guides, standards or other criteria of ABS in accordance with the terms of such certificate or report. Under no circumstances whatsoever are these representations to be deemed to relate to any third party.

3. SUSPENSION OF CERTIFICATION

Any of the following events will cause immediate suspension of the certificate of design assessment unless the change is submitted to ABS for a new review

- a) Redesign of the product or products covered by this certificate.
- b) Substantial change in management organization;
- c) Failure to pay ABS fees.

4. RESPONSIBILITY AND LIABILITY

It is understood and agreed that the Certificate of Design Review (hereinafter referred to as "certificate") issued as part of the services rendered under the Agreement is a representation only that the vessel, structure, item of material, equipment or machinery or any other item covered by a certificate has met one or more of the Rules or Standards of American Bureau of

Shipping and is issued solely for the use of ABS, its committees, clients or other authorized entities. The validity, applicability and interpretation of a certificate issued under the terms of or in contemplation of the Agreement is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this certificate or any report issued in contemplation of this certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied nor to create any interest, right, claim or benefit in any third party. It is understood and agreed that nothing expressed herein is intended or shall be construed to give any person, firm or corporation, other than the parties hereto, any right, remedy or claim hereunder or any provisions herein contained; all provisions hereof are for the sole and exclusive benefit of the parties hereto.

5. LIMITATION

ABS makes no representations beyond those contained herein and in the provisions of the Agreement regarding its reports, statements, plan review, surveys, certificates or other services.

6. HOLD HARMLESS

The party to whom this certificate is issued, and his assignee and successor in interest, agree to indemnify and hold harmless ABS from and against any and all claims, demands, lawsuits, or actions for damages, including legal fees, to persons or other legal entities and property, tangible, intangible, or otherwise which may be brought against ABS incidental to, arising out of or in connection with the work done, services performed or material to be furnished under this certificate, except for those claims caused solely and completely by the negligence of ABS, its agents, employees, officers, directors or subcontractors.

7. ARBITRATION

Any and all differences and disputes of whatsoever nature arising out of this agreement shall be put to arbitration in the City of New York pursuant to the laws relating to the arbitration there in force, before a board of three persons, consisting of one arbitrator to be appointed by ABS, one by Client, and one by the two so chosen. The decision of any two of the three on any point or points shall be final. Until such time as the arbitrators finally close the hearings either party shall have the right by written notice served on the arbitrators and on an officer of the other party to specify further disputes or difference under this Agreement for hearing and determination. The arbitration is to be conducted in accordance with

the rules of the Society of Maritime Arbitrators, Inc. The arbitrators may grant any relief, other than punitive damages, which they, or a majority of them, deem just and equitable and within the scope of the agreement of the parties, including, but not limited to, specific performance. Awards made in pursuance to this clause may include costs including a reasonable allowance for attorney's fees and judgment may be entered upon any award made hereunder in any court having jurisdiction. ABS and client hereby mutually waive any and all claims to punitive damages in any forum.

Client shall be required to notify ABS within thirty (30) days of the commencement of any arbitration between it and third parties which may concern ABS' work in connection with this Agreement and shall afford ABS an opportunity, at ABS' sole option, to participate in the arbitration.

8. TIME BAR TO LEGAL ACTION

Any statutes of limitation notwithstanding, Client expressly agrees for itself and its affiliated companies that its right to bring or to assert against ABS any and all claims, demands or proceedings whether in arbitration or otherwise shall be waived unless (a) notice is received by ABS within thirty (30) days after Client or its affiliates had notice of or should reasonably have been expected to have had notice of the basis for such claims; and (b) arbitration or legal proceedings, if any, based on such claims or demands of whatever nature are commenced within one (1) year of the date of such notice to ABS.

9. LIMITATION OF LIABILITY

The combined liability of American Bureau of Shipping, its officers, employees, agents or subcontractors for any loss, claim, or damage arising from negligent performance or non-performance of any services under this Agreement, or from breach of any implied or express warranty of workmanlike performance in connection with the services, or from any other reason, to any person, corporation, partnership, business entity, sovereign, country or nation, shall be limited to the greater of a) \$100,000 or b) an amount equal to ten (10) times the sum actually paid for the services alleged to be deficient.

The limitation of liability may be increased up to an amount twenty-five (25) times that sum paid for services upon receipt of Client's written request at or before the time of performance of service and upon payment by Client of an additional fee of \$10.00 for every \$1,000.00 increase in the limitation.



Via E-Mail

HANN-OCEAN TECHNOLOGY PTE LTD
21 Science Park Road
02-01 Office Suite 15 & 17
The Aquarius, Singapore Science Park II
Singapore 117628

25 July 2008
File Ref.: T-8-6
Refer to: DAP/365408
Oracle ID: 1964422

Attn.: Mr. Henry Han Lei

Re: Rigid Pontoon Connector
Model RPC-S88
Type Approval – Product Design Assessment

Gentlemen,

We have your application for type approval dated 28 November 2007 and subsequent submission of documents and test reports as indicated in Attachment 1 and are pleased to advise that we have completed the design assessment phase of the type approval process.

We have pleasure in confirming that the design will be accepted for installation on ABS classed barges for the load indicated in Attachment 2 subject to calculations and analysis as required in 5-3-1/11.1 and 5-3-1/13 of ABS Rules for Building and Classing Steel Barges 2003 for each individual case.

Enclosed is your copy of the **Certificate of Design Assessment**. You may collect the original certificate at our office. Your details are published on our web site: www.typeapproval.org and can also be downloaded there.

Please read Attachment 3, the Model Listing Information, to be sure that you understand the scope and conditions of the validity of the certificate.

We recommend that you monitor the ABS Rules and other specifications used in the approval. These Rules and specifications often change on an annual basis, and you must comply with the new Rules and specifications in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules or specifications.

We do caution you that the use of the ABS logo is copyrighted. However, our Product Type Approval Logo may be used if you are conducting regular audits of your manufacturing process. Should you desire to continue with Product Type Approval or Product Quality Assurance, please contact the ABS Singapore Operations, Tel: 65-63712611, Fax: 65-62768286 to arrange for the production testing as may be necessary and audit of your quality assurance and control arrangements. To find another office, use the directory of ABS offices on the ABS Web Site at www.eagle.org.

One (1) copy of the drawings appropriately stamped to indicate our reviews are being returned electronically.

An invoice to cover the cost of the design assessment phase of the type approval process will be sent to you under separate cover.

We appreciate your confidence in ABS type Approval. If you should have any comments relative to the scope and conditions of the assessment of your product, or if we can be of any further assistance, please do not hesitate to contact us.



HANN-OCEAN TECHNOLOGY PTE LTD

DAP/365438

25 July 2008

Yours very truly,

AMERICAN BUREAU OF SHIPPING

Andrew Mak
Director of Engineering

ABS PACIFIC – SINGAPORE

A handwritten signature in black ink, appearing to read "J. K. Low", written over a horizontal line.

by: _____

J. K. Low
Principal Engineer
Ship/Offshore Structures & Statutes

Encl. Attachment 1: Drawing List

Attachment 2: Type Approved Load Table

Attachment 3: Product Listing Information

Copy of PDA certificate (The original copy is to be collected at ABS Office)

cc: Coordinator of ABS Programs (Houston) (by e-mail)

cc: ABS Surveyor (via Jonathan Park)

cc: ABS SG Operations (via Bobby Wong)



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DAP/365438

25 July 2008

ATTACHMENT 1

Document List

<i>Item</i>	<i>Drawing Number</i>	<i>Rev.</i>	<i>Drawing Title</i>
1	---	0	Detail Drawings
2	---	1	FEA Report
3	---	-	FEA Summary
4	---	1	Details of Stress Distribution
5	---	-	Load Test Survey Sheet
6	---	2	Overload Test Report



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ATTACHMENT 2

Allowable Working Load

Connector Model PRC-S88 w/Diamond Stoppers	Allowable Working Load (ton)	Max Load Tested without Breaking (ton)
Total Tension Lower plus Upper Keys (Mild Steel)	80	196
Total Tension Lower plus Upper Keys (High Tensile Steel 355)	98	200
Total Compression 2x Deck plus 2x Bottom Pads (Mild Steel)	80	170
Vertical Shear 4x Diamond Shape Stoppers (Cast Nylon)	52	105



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25 July 2008

ATTACHMENT 3

Model Listing Information

Hann-ocean technology pte ltd
21 Science Park Road
02-01 Office Suite 15 & 17
The Aquarius, Singapore Science Park II
Singapore 117628

PRODUCT: Connector, Rigid Pontoon

MODEL: Model RPC-S88

Intended Service:

Joining pontoons Together

Description:

Rigid Type Pontoon Connecting Device

Ratings:

See Allowable Working Load Table

Service Restriction:

For installation on ABS classed barge, the system should be suitable for the intended service. Each application is to be reviewed on a case by case basis.

Comments:

The Allowable Working Load table is accepted based on the tests and analysis for loads applied individually in each direction evenly distributed to connecting members. For example each key of the two will take half the total tension. For actual installation, the combined load cases are to be considered in the calculations and analysis as required by the rules.

Notes/Documentation:

This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed barges or pontoons which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product. See documents in Attachment 1 to ABS Letter DAP/365408 dated 25 July 2008.

Term of Validity:

This product/model is covered under Product Design Assessment (PDA) Certificate # 08-SG365408-PDA, dated 25/Jul/2008. This PDA Certificate expires Jun of 2013. It will remain valid for the 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first).

STANDARDS

ABS Rules:

2003 Steel Barge Rules 5-3-1

Others:

N/A