

MODTAGE 16 OKT. 2007

## Lloyd's Register EMEA

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A/S Hvide Sande Skibs- & Baadebyggeri

Beddingsvej 2  
DK-6960 Hvide Sande

Attention: Hans A. Holm

Date 15 October 2007

Your ref

Our ref H/I080917/0712103/BO  
V

Dear Sirs,

**24 m Crew Trimaran - Aluminium - Hvide Sande Ship and Boatyard - Yard no. 106  
Integration of retractable bowthruster**

We refer to your email dated 5 October 2007 forwarding plans in respect of above to our office.

Please find enclosed one copy of our Design Appraisal Document No. H/I080917, Issue 0 dated 12 October 2007 together with 1 hardcopy of the plan mentioned therein.

Yours faithfully,  
Lloyd's Register EMEA,



Bent Overgaard

Surveyor,

Hull Department

Copenhagen Design Support Centre

☎ +45 39 48 42 56

✉ bent.overgaard@lr.org



# HULL CONSTRUCTION CERTIFICATE

Office: **Copenhagen**

Date: **20 February 2007**

This certificate is issued to **Hvide Sande Skibs- & Baadebyggeri A/S**

This is to certify that the hull of "FOB TRIM", POR Fredericia has been surveyed by the undersigned during construction by Hvide Sande Skibs- & Baadebyggeri A/S, at Hvide Sande (their new building no. 106), and was found, on the above date, to be in accordance with the approved plans and Rules and Regulations for the Classification of Special Service Crafts July 2004 Volume 3 and Volume 5 as applicable.

The scantlings have been approved for the following conditions:

Service Area:	G2
Maximum moulded draught:	1.90 m
Maximum speed:	19.0 knots
Significant Wave Height:	1.00 m
Maximum Wave Height:	1.67 m
Displacement:	73.0 tons

If the owners wish to class the ship with this society, the ship will be eligible for the following class notation:

✳ 100 A 1 SSC Cargo (A) Trimaran G2 Service Area

With the following exceptions:

Equipment fitted is not approved or surveyed – this certificate covers hull construction only.



Preben V. Hansen and Ole Back Svendsen  
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

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Project: -

Client: Thiele GmbH & Co. KG  
Iserlohn-Kalthof / Germany

Office: Dortmund

Clients Order Number: C0511754/58005  
0/32924

Date: 01 december 2005

Order Status: complete

Inspection Dates

First: 30 november 2005

Final: 30 november 2005

This certificate is issued to the above client to certify that a Surveyor to Lloyd's Register did, at their request, attend their works for the purpose of inspecting and witnessing tests on the products listed below.

**References**

**Purchaser** G.J. Wortelboer Jr. B.V., Rotterdam, the Netherlands  
**Purchase order no.** IG593

**Description**

Short Link Chain Cable and separate End Links

**Nininal size** 13mm Ø  
**Material grade** Grade 40

**Divided into** 1 length of 15 mtr / 1 End Link Ø 16 x 80mm  
**Consisting of** CL ... CL-EL

**Specification** DIN 766 and requirements of the order  
**Heat treatment** quenched and tempered

**Proof load required / applied** 50 kN  
**Breaking load required** 100 kN  
**Breaking load found** 180 - 188 kN

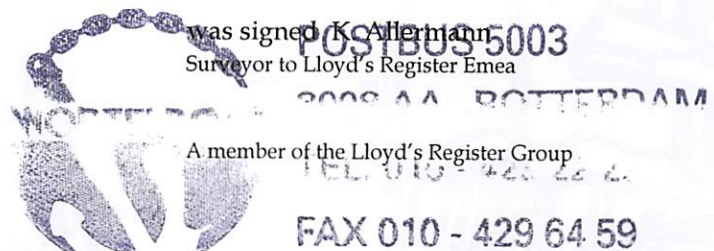
The following examinations were carried out with satisfactory result in accordance with the above listed order number and specification:

- Verified compliance of manufacturer's declared chemical analysis.
- Reviewed manufacturer's documentation of base material.
- Witnessed proof and breaking load tests.
- Visual and dimensional examinations.

For further details please refer attached works documentation (1 page) dated 30.11.2005

Identification (hard stamped):

LLOYD'S DTM 0528016, KA  
PL = 50 kN 11 05  
T3 Ø 13





# Certificate For Anchor Chain Cable and Chain Cable Fittings

12-02-2007  
Lloyd's Register EMEA  
D. Tessel  
Rotterdam Office  
Lloyd's Register

Client/Manufacturer: **Indian Chain Pvt. Ltd., 238B, A.J.C. Bose Road, Kolkata-700020**  
Chain manufacturer (if different from above):  
Testing house name and address (if different from above):

Order number on manufacturer: **IG 585 dated 26.08.05**  
Work's order number: **050839 dated 26.08.05 0/32924**  
Material certificate numbers: **025/CM/00890/98**

Purchaser: **G.J. Wortelboer Jr. B.V., Rotterdam**

This certificate is issued to the above Client to certify that the Chain Cable fittings, detailed herein, have been made, examined and tested in accordance with the Rules and Regulations for the Classification of Ships.

**Particulars of Finished Chain Cable and Fittings**

Chain grade	Nominal Diameter (mm)		
<b>U2 (a)</b>	<b>14</b>		
Total length of chain cable (m)	Length of link (mm)	Breadth of link (mm)	Mass (tonnes)
-	-	-	-
Number of enlarged shackles	Number of swivels	Number of lugged joining shackles	Number of lugless joining shackles
<b>1 (one) 'D' End Shackle</b>	<b>1 (one)</b>	-	-
Proof load applied <b>kN</b>	Break load applied <b>kN</b>	Approved alternative procedure for break test applied	
<b>82</b>	<b>116</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Break test frequency	<input type="checkbox"/> Each (27.5m) length	<input type="checkbox"/> Every four (27.5m) lengths <input checked="" type="checkbox"/> Each batch (fittings)	
Manufacturing Process	Heat treatment		
<b>Forged</b>	<b>Quenched &amp; Tempered</b>		

**Mechanical Properties – Finished Cable and Fittings**

Cast number	Cable/Fitting	Yield strength N/mm <sup>2</sup>	Tensile strength N/mm <sup>2</sup>	Elong. %	Red. of Area	Impact Values – Joules				Location base/weld	
						Temp °C	1	2	3		Average
n.a.											

**Chemical Composition – As Stated by Manufacturer**

Cast number	C%	Si%	Mn%	P%	S%	Al%	N%	Cr%	Cu%	Nb%	Ni%	V%	Mo%
<b>M0880881</b>	<b>.22</b>	<b>.21</b>	<b>1.52</b>	<b>.028</b>	<b>.024</b>	<b>.030</b>	-	-	-	-	-	-	-

**Identification Marks**

a) Office: **LR 'BG' CAL**      b) Certificate number: **501049**      c) Proof load and grade: **PL 82 kN U2a**

was signed **B. Ghosh**  
Surveyor to Lloyd's Register Asia  
A member of Lloyd's Register Group  
Date: **10-01-2006**  
Office: **Kolkata**

To be completed by the Surveyor verifying the equipment after placing on board

Surveyor to: *[Signature]*  
A member of Lloyd's Register Group  
Date: **18/3/07**



Chain cable placed on board (name of vessel): **"FOB - TRIM"**

Should the Anchor Chain Cable or fittings described above be lost or destroyed, this certificate is to be returned to your Lloyd's Register Group office, for cancellation. If the Anchor Chain or fitting is impaired or otherwise altered, so as to destroy its identity with the certificate, the facts are to be reported to your Lloyd's Register Group office in order that the certificate may be altered accordingly.

\* Delete where not applicable

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**WORTELBOER**  
POSTBUS 5003  
3008 AA ROTTERDAM  
TEL 010 - 429 64 59  
FAX 010 - 429 64 59



# Certificate for Anchor

Office	Date
<b>Haren-Groningen</b>	<b>08 February 2007</b>
Client	Work's order number
<b>HVIDE SANDE SKIBS og BADEBYGGERI</b>	<b>30070178</b>
	Manufacturer
	<b>Ship's Equipment Centre Groningen</b>

This certificate is issued to the above Client to certify that the **fabricated** steel anchor head and the **fabricated** steel shank, particulars of which are given below, have been made and examined at the manufacturer's works in accordance with the Rules and Regulations for the Classification of Ships.

The assembled anchor has been proved in the presence of the undersigned by a verified testing machine to the appropriate load for the mass of anchor, as set forth in the Rules and Regulations for the Classification of Ships, and has been examined after having been tested, weighed and marked as under. **SEC Serial: 28307**

### Particulars of Anchor

Office
<b>Haren-Groningen</b>
Material certificate number
<b>GL 46963 BUC, LR GRPQAMTC/171LAX05, LR ANT 0500001/278, LR GRPQAMTC/029RII06, LR KAT 0300891/1</b>
Type of anchor
<b>POOL TW FULLY BALANCED HIGH HOLDING POWER</b>

### Mass data

Anchor-completed (kg)	Stock (kg)
<b>75</b>	
Shank (kg)	
<b>19</b>	

### Dimensions

Width between fluke tips (mm)	Length of flukes (mm)
<b>574</b>	<b>377</b>
Width and thickness of shank (mm)	Length of shank (mm)
<b>60 x 60</b>	<b>630</b>

### Testing data

Proof load applied (kN/kgf)	Deflection (mm)
<b>39,1 kN</b>	

### Identification marks (see the rules for materials)

A)	B)	C)	D)
<b>LR GRO</b>	<b>0704006-3</b>	<b>02 (AMS) 07</b>	<b>75 KG HHP</b>
E)	F)	G)	H)

### Testing house name and address

**Coops & Nieborg B.V. Korte Borgweg 1, Foxhol**

**A.M. Salomons**

Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

Anchor manufactured based on Certificate of General Approval of

Anchor no. **ANCH 4237 R1**

and associated documentation.

To be completed by the Surveyor verifying the equipment after placing on board

Anchor placed on board ship (name of ship)

**"FOB - TRIM"**

Surveyor to

A member of the Lloyd's Register Group



Should the anchor described above be lost or destroyed, this certificate is to be returned to your Lloyd's Register Group office for cancellation. If the anchor is impaired or otherwise altered, so as to destroy its identity with the certificate, the facts are to be reported to your Lloyd's Register Group office in order that the certificate may be altered accordingly.

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Project: **"FOB TRIM"**  
**Fredericia**

Client: **Hvide Sande Skibs- & Baadebyggeri A/S**  
**Hvide Sande**

Office: **Copenhagen**

Clients Order Number:

Date: **18 December 2007**

Order Status: **Complete**

Inspection Dates

First: **22 October 2007**

Final: **02 November 2007**

This certificate is issued to **Hvide Sande Skibs & Baadebyggeri A/S**

to certify that undersigned Surveyor did, at their request, attend their works for the purpose of installation of

**Retractable bowthruster and replacing of existing thuster aft**  
In the hull on  
**"FOB TRIM"**  
**P.O.R. Fredericia**

The retractable bowthruster verified build into the hull in accordance with approved plan, Drg. No. 1206-05-02 B.

The existing thruster now replaced aft at Fr. 13 in accordance with approved plan, Drg. No. 1206-05-03A.

Workmanship examined and found satisfactory.

Welding carried out by certified welders in accordance with accepted welding procedures.

On completion all butts Dye Pen tested and found satisfactorily.

Tank in way leak tested and found tight.

Ole Back Svendsen  
Surveyor to Lloyd's Register EMEA

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# Marine Design Appraisal Document

Lloyd's Register EMEA  
Copenhagen Design Support Centre  
Strandvejen 104A  
DK-2900 Hellerup  
Denmark

Date  
12 October 2007

Quote this reference on all future communications  
H/1080917/0712103/BOV

## 24 m Crew Trimaran – Aluminium – Hvide Sande Ship - and Boatyard Yard no. 106 Integration of retractable bowthruster

1. The Document(s) listed in paragraph 1 of the appendix have been examined for compliance with:
  - 1.1. The documents have been examined for compliance with the Rules and Regulations for the Classification of Special Service Crafts July 2004 Volume 3 and Volume 5 as applicable and are assigned an appraisal stated as indicated for the issue of Hull Construction Certificate subject to the satisfactory resolution of the following:
    - 1.2. Transverse thrusters are not a Classification issue, only the integration with the hull is examined. It is assumed that the bowthruster will be deployed only while manoeuvring at low speed.
    - 1.3. The stainless steel and aluminium alloys are to be manufactured at LR approved works and tested to the Surveyor's satisfaction in compliance with the Rules for Manufacture Testing and Certification of Materials **AQS**
    - 1.4. Welding, Welding procedure and NDE are to be to the attending Surveyor's satisfaction. **AQS**
    - 1.5. The design is to ensure that the location of all bimetallic connections allows for regular inspection and maintenance of the joints and penetrations during service. **AQS**
    - 1.6. The thickness of the shell envelope plating is to be increased locally, by not less than 50 per cent in way of the bowthruster unit. The insert plate is to extend outside the line of adjacent supporting structure. **AQS**
    - 1.7. The scantlings of the foundation are based on Max thrust force of 2.5 ton.
    - 1.8. Updated drawing to be forwarded. **AQP**

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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**Lloyd's Register EMEA**  
**Copenhagen Design Support Centre**  
**Strandvejen 104A**  
**DK-2900 Hellerup**  
**Denmark**

Date  
**12 October 2007**

Quote this reference on all future communications  
**H/I080917/0712103/BOV**

## Appendix to Marine Design Appraisal Document

1. The documents listed below have been examined

<b>Drawing No.</b>	<b>Rev.</b>	<b>Title</b>	<b>Status</b>	<b>Date</b>
<b>1206-05-02</b>	<b>B</b>	<b>Nedsænkbare Bowthruster</b>	<b>AQ</b>	<b>12.10.07</b>

### Appraisal Status Key

<b>AQ</b>	Approved subject to the matters raised that require resolution - and provided the arrangements are to the surveyor's satisfaction
<b>AQS</b>	Details to be submitted by the client to the local surveyor's Office responsible for surveying the building and the arrangements verified in accordance with the Rule/Regulations requirements by the surveyor.
<b>AQP</b>	Details to be submitted by the client to the plan approval office for approval/re-approval

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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**12 October 2007**

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Surveyor  
Hull Department  
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Lloyd's Register EMEA  
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FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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