



# DET NORSKE VERITAS

TRUE COPY

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-20528

This is to certify that the  
**Class A Bulkhead**

with type designation(s)  
**Marine LY-A-60-B Type A-60 Class Bulkhead**

Manufactured by  
**Shandong Luyang Share Co., Ltd.**  
Zibo SD, China

is found to comply with  
**Det Norske Veritas' Offshore Standards**  
**Det Norske Veritas' Rules for Classification of Ships**  
**Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended**

Application  
**Approved for use as a fire retarding division of class A-60.**  
**General application: Fire against either side.**

**This certificate is recognized by Transport Canada.**

This Certificate is valid until 2017-12-31.

Issued at Høvik on 2013-08-21

DNV local station: Qingdao

Approval Engineer: Øyvind Hoff

for Det Norske Veritas AS

Digitally Signed By: Langnes, Petter

Location: DNV Høvik, Norway

Signing Date: 2013-08-22

**Petter Langnes**  
**Head of Section**

内部资料  
复印无效

仅限与：  
合作资料提供

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: F-20528  
File No.: 471.11  
Job Id.: 262.1-005873-5

### Product description

"Marine LY- A-60-B Type A-60 Class Bulkhead",  
composed of 5 mm steel bulkhead insulated with 2 layer of 20 mm fibre blanket "LYHX816T Type Environmental Protective Fibre Blanket" with density of 160 kg/m<sup>3</sup> (manufactured by client).  
Total thickness of bulkhead: 45 mm.

The insulation is to be fastened with fixed nails (21 sets /m<sup>2</sup>).

For further details, see Type Approval documentation below.

### Application/Limitation

Any surface materials used have to be approved for smoke and toxicity and low flame-spread characteristics (IMO 2010 FTP Code Annex 1 Parts 2 and 5) when required according to relevant rules.

Each product is to be supplied with its manual for installation and use.

### Type Approval documentation

Certification in accordance with Standard for Certification Note No. 1.2, Type Approval, January 2013.

Test Report No. FT09076 dated 7 May 2009 from Far East Fire Testing Centre (FEFTC), Shanghai, China.

Drawing LY-A60-B from manufacturer.

### Tests carried out

Tested according to IMO-ETPC Part 3 and in compliance with IMO 2010 FTP Code Ch. 8.

### Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

### Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for Life Saving Equipment and Structural Fire Protection Products (TP 14812)", Det Norske Veritas confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

### Periodical Assessments for Retention of the Type Approval Certificate

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for certification No. 1.2 Type Approval Item 4.

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# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

TRUE COPY

CERTIFICATE NO. F-20529

This is to certify that the  
**Horizontal-Class A Division**

with type designation(s)  
**Marine LY-A-60-D Type A-60 Class Deck**

Manufactured by  
**Shandong Luyang Share Co., Ltd.**  
Zibo SD, China

Is found to comply with  
**Det Norske Veritas' Offshore Standards**  
**Det Norske Veritas' Rules for Classification of Ships**  
**Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended**

Application  
**Approved for use as a fire retarding division of class A-60.**

This certificate is recognized by Transport Canada.

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2013-08-21**

DNV local station: **Qingdao**

Approval Engineer: **Øyvind Hoff**

for Det Norske Veritas AS



Digitally Signed By: **Langnes, Petter**

Location: **DNV Høvik, Norway**

Sigining Date: **2013-08-22**

**Petter Langnes**  
Head of Section

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仅限与：  
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Certificate No.: F-20529  
File No.: 471.15  
Job Id.: 262.1-005873-5

**Product description**

"Marine LY- A-60-D Type A-60 Class Deck", composed of 5 mm steel deck insulated with 1 layer of 30 mm fibre blanket "LYHX816T Type Environmental Protective Fibre Blanket" with density of 160 kg/m<sup>3</sup> (manufactured by client). Total thickness of deck: 35 mm.

The insulation to be fastened with fixed nails (21 sets / m<sup>2</sup>).

For further details, see Type Approval documentation below.

**Application/Limitation**

Any surface materials used have to be approved for smoke and toxicity and low flame spread characteristics (IMO 2010 FTP Code Parts 2 and 5) when required according to relevant rules.

Each product is to be supplied with its manual for installation and use.

**Type Approval documentation**

Certification in accordance with Standard for Certification Note No. 1.2, Type Approval, January 2013.

Test Report No. FT09077 dated 7 May 2009 from Far East Fire Testing Centre (FEFTC), Shanghai, China.

Drawing LY-A60-D from manufacturer.

**Tests carried out**

Tested according to IMO FTPC Part 3 and in compliance with IMO 2010 FTP Code Ch. 8.

**Marking of product**

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

**Transport Canada Approval**

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for Life Saving Equipment and Structural Fire Protection Products (TP 14612)", Det Norske Veritas confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

**Periodical Assessments for Retention of the Type Approval Certificate**

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for certification No. 1.2 Type Approval Item 4.







# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

TRUE COPY

CERTIFICATE NO. F-20530

This is to certify that the  
**Non-Combustible Material**

with type designation(s)  
**LYHX816T Type Environmental Protective Fibre Blanket**

Manufactured by  
**Shandong Luyang Share Co., Ltd.**  
Zibo SD, China

is found to comply with  
**Det Norske Veritas' Offshore Standards**  
**Det Norske Veritas' Rules for Classification of Ships**  
**Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended**

Application  
The product can be used as an integrated part of tested and approved fire resisting divisions.

This certificate is recognized by Transport Canada.

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This Certificate is valid until 2017-12-31.

Issued at Høvik on 2013-08-21

DNV local station: Qingdao

Approval Engineer: Øyvind Hoff

for Det Norske Veritas AS  
Digitally Signed By: Langnes, Petter  
Location: DNV Høvik, Norway  
Signing Date: 2013-08-21

Petter Langnes  
Head of Section

仅限与：  
合作资料提供

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Certificate No.: F-20530  
File No.: 471.17  
Job Id.: 262.1-005873-5

### Product description

"LYHX816T Type Environmental Protective Fibre Blanket",  
inorganic fireproof ceramic fibre product mainly composed of  $Al_2O_3$  and  $SiO_2$ , with nominal density of approx. 80 - 160 kg/m<sup>3</sup>.

### Application/Limitation

The product may be used as an integrated part of approved fire resisting divisions only when tested as such.

Each product is to be supplied with its manual for installation and use.

### Type Approval documentation

Certification in accordance with Standard for Certification Note No. 1.2, Type Approval, January 2013.

Test Reports No. FT09075 dated 4 May 2009 and FT09284 dated 18 November 2009 from Far East Fire Testing Centre (FEFTC), Shanghai, China.

### Tests carried out

Tested according to IMO FTPC Part 4 and in compliance with IMO 2010 FTP Code Ch. 8.

### Marking of product

The product or packing is to be marked with name of manufacturer and type designation.

### Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for Life Saving Equipment and Structural Fire Protection Products (TP 14612)", Det Norske Veritas confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

### Periodical Assessments for Retention of the Type Approval Certificate

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for certification No. 1.2 Type Approval Item 4.

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