



TYPE APPROVAL CERTIFICATE

Certificate No. : CPH31334-PE001 **Initial Approval** : 24th January, 2014.

Product : Expansion Joints

Manufacturer : Belman A/S
Oddevej 18, DK-6715 Esbjerg N, Denmark

Product Description : Kind : Metallic Expansion Joint
- Intended for : Cargo and associated piping system for LNG/LPG Carriers

" See appendix 1 "

Approval Condition : " See appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

Pt. 7, Ch. 5, Sec. 5 of the Rules for Classification of Steel Ships and IGC Code 5.3.2.2.

This Certificate is valid until 23rd January, 2019.

Issued at Busan, Korea on 24th January, 2014.



KOREAN REGISTER OF SHIPPING

*General Manager of
Equipment and BWMS Team*

Note : 1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or the renewal of the Certificate is not underway.

2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.

Appendix 1

Product Description and/or Approval Condition

Certificate No : CPH31334-PE001

Date of Issue : 24th January, 2014.

(1) Product Description

- 1) UN2FU-05-0250-036-0
 - Type : UN(Universal Bellows)
 - Design pressure : 0 ~ 5 bar
 - Design temperature : -165 °C ~ +125 °C
 - Length : 500 mm
 - Dwg. No. : 3205-053-010-0
- 2) AX2SU-10-0440-038-0
 - Type : AX(Axial bellows)
 - Design pressure : 0 ~ 10 bar
 - Design temperature : -165 °C ~ +125 °C
 - Length : 770 mm
 - Dwg. No. : 3205-053-020-1
- 3) LA2SU-10-0350-022-0
 - Type : LA(Lateral Bellows)
 - Design pressure : 0 ~ 10 bar
 - Design temperature : -165 °C ~ +125 °C
 - Length : 490 mm
 - Dwg. No. : 3205-053-030-1
- 4) AN1SU-10-0100-023-0
 - Type : AN(Angular Bellows)
 - Design pressure : 0 ~ 10 bar
 - Design temperature : -165 °C ~ +125 °C
 - Length : 360 mm
 - Dwg. No. : 3205-053-040-0
- 5) AN1HU-10-0050-028-0
 - Type : AN(Angular Bellows)
 - Design pressure : 0 ~ 10 bar
 - Design temperature : -50 °C ~ +125 °C
 - Length : 260 mm
 - Dwg. No. : 3205-053-050-0

(2) Approval Condition

- 1) This approval is granted on the basis of the design assesment and type test report carried out at BELMAN PRODUCTION A/S on 8 January 2012 by DNV.
- 2) Raw Materials are to be supplied by the approved manufacturers of this Society or to be satisfactory to the Surveyor.
- 3) The product or packing is to be marked with manufacturer name, size and type designation on a suitable position.
- 4) The bellows must be fitted in places where they are always accessible. Possible exceptions to be considered in each case.
- 5) Individual Product Certification is required where the expansion joints are intended to use for Class I or II piping system.

- The End -