



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB19PTB00060

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造/Manufacturer

Willbrandt KG

地址/Address

Schnackenburgallee 180, 22525 Hamburg, Germany

产品名称/Product

管系附件
Piping Fitting
膨胀节
Expansion Joint

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》(2018)及其修改通报第3篇第2章
Chapter 2, Part Three of China Classification Society Rules for Classification of Sea-Going Steel Ships 2018 and its Amendments

用于/Intended for

船舶与海上设施/Ships and Offshore Installations

证书有效期至/This Certificate is valid until 2024年02月13日/ Feb. 13, 2024

发证机构 中国船级社汉堡分社
Issued by CCS Hamburg Branch

签发日期 2020年02月14日
Date Feb. 14, 2020

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书与页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性负责。如有疑问，可向本社检验机构咨询。This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.

Form No: T01.

联系方式/Contact Us: 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)



UTN:P019-92455074

产品明细/Product Description

膨胀节/Expansion Joint (M0001)

名称/Name	属性(值)/Value	单位/Unit
产品名称/Product Name	Rubber Expansion Joints	
型号/Type	46, 50 yellow steel/yellow steel HNBR 46, 50 yellow/red/redSP 55 yellow steel/yellow/red/redSP 55S0 yellow/red	
规格/Specification	see "Additional page"	
设计温度/Design Temperature	see "Additional page"	
设计压力/Design Pressure	see "Additional page"	
本体材料/Body Material	see "Additional page"	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP19PPP02242, NP19PPP02243, NP19PPP02244, NP19PPP02246

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : 17FB0252/17FB0232/17FB0322/17FB0332
 试验报告日期/ Test Report Date : 2018-01-29
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 17FB0342/17FB0301
 试验报告日期/ Test Report Date : 2018-01-30
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 17FB0282/17FB0292/17FB0242
 试验报告日期/ Test Report Date : 2018-02-01
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 18FB0012
 试验报告日期/ Test Report Date : 2018-03-29
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 18FB0092/2 & 18FB0122/2
 试验报告日期/ Test Report Date : 2018-06-08
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 18FB0022
 试验报告日期/ Test Report Date : 2018-04-12
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 17FB0312/2
 试验报告日期/ Test Report Date : 2018-01-09
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 17FB0352
 试验报告日期/ Test Report Date : 2018-01-31
 试验单位/ Laboratory: Continental
 试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No. : 18FB0082/1
 试验报告日期/ Test Report Date : 2018-06-06
 试验单位/ Laboratory: Continental



试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No.: I8FB0231

试验报告日期/ Test Report Date: 2018-11-22

试验单位/ Laboratory: Continental

试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No.: I8FB0221

试验报告日期/ Test Report Date: 2018-11-23

试验单位/ Laboratory: Continental

试验单位地址/ Test Address: Philipsbornstr. 1, 30165 Hanover, Germany

试验报告编号/ Test Report No.: IBB 2168/HAM1900721/1

试验报告日期/ Test Report Date: 2019-03-26

试验单位/ Laboratory: Dr.-Ing. T. Baeumer GmbH

试验单位地址/ Test Address: Altensenner Weg 75, D-32052 Herford, Germany

试验报告编号/ Test Report No.: IBB 2172/HAM1900721/3

试验报告日期/ Test Report Date: 2019-03-26

试验单位/ Laboratory: Dr.-Ing. T. Baeumer GmbH

试验单位地址/ Test Address: Altensenner Weg 75, D-32052 Herford, Germany

试验报告编号/ Test Report No.: IBB 2186/HAM1900721/5

试验报告日期/ Test Report Date: 2019-03-26

试验单位/ Laboratory: Dr.-Ing. T. Baeumer GmbH

试验单位地址/ Test Address: Altensenner Weg 75, D-32052 Herford, Germany

试验报告编号/ Test Report No.: IBB 1988/HAM1800795/1

试验报告日期/ Test Report Date: 2018-04-11

试验单位/ Laboratory: Dr.-Ing. T. Baeumer GmbH

试验单位地址/ Test Address: Altensenner Weg 75, D-32052 Herford, Germany

认可后的产品检验方式/ Method of Product Inspection after Approval

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules:

认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验, 经检验合格后由本社颁发船用产品证书。

After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。

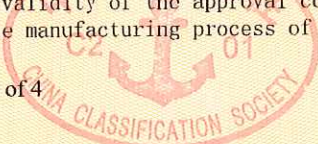
The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance



with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

5. 如果属于获得型式认可B 模式证书, 且无需颁发船用产品证书/等效证明文件的情况, 证书获得者应接受本社每年一次的定期审核, 定期审核日为认可证书期满之日对应的每一周年日, 检查工作应在周年日的前后三个月内进行。

If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

备注/Remarks

本社已审核了产品/无石棉声明, 但本社的审核不免除产品/按照合同关系向订货方保证产品无石棉的责任。
The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.
However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

Notes:

1. Where fitted in sea water lines in machinery compartments, guards are to be provided which will effectively enclose, but not interfere with the action of the expansion joint and which will reduce to the minimum practicable any flow of water in the event of failure of the flexible element.
2. The expansion joints are to be installed in well visible and accessible locations and protected against over extension and compression and against mechanical damage. The adjoining pipes are to be suitably aligned, supported, guided and anchored.
3. The producer's instructions and recommendations are to be considered.

中国船级社汉堡分社

CCS Hamburg Branch

注: 本证书含有附页, 共2页

Note: The certificate is attached with additional 2 page(s)

Type of rubber expansion joint

46, 50 yellow steel/yellow steel HNBR/yellow/red/redSP

55 yellow steel/yellow/red/redSP

55SO yellow/red

Size of rubber expansion joint46 yellow steel, yellow steel HNBR & yellow, red, redSP

Size: DN 20, 25, 32, 40, 50

50 yellow steel & 50,55 yellow, red, redSP

Size: DN 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600

50 yellow steel HNBR & 55 yellow steel

Size: DN 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400

55SO yellow, red

Size: DN 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300

No. of approval drawing

For type 46: NP19PPP02246 / For type 50: NP19PPP02244;

For type 55: NP19PPP02243 / For type 55SO: NP19PPP02242

Product descriptionExpansion joint type 46, 50

Bellow type	Design			Remark
	Inner core	Reinforcement	Cover	
yellow	NBR	PA	CR	Nil.
red	IIR	PA	EPDM	Nil.
redSP	EPDM	PEEK	EPDM	Nil.
yellow steel	NBR	Steel cord	CR	Nil.
yellow HNBR	HNBR	Steel cord	CR	Nil.
End fitting types	Screwed connection according to DIN EN 10226 (type 46); Both sides with swiveling flange made of galvanized steel with clearance holes (type 50)			

Expansion joint type 55, 55SO

Bellow type	Design			Remark
	Inner core	Reinforcement	Cover	
yellow	NBR	PA	CR	Nil.
red	IIR*	PA	EPDM	*Not available for type 55 red for DN500 and DN600
redSP*	EPDM	PEEK	EPDM	*Not available for type 55SO
yellow steel*	NBR	Steel cord	CR	*Not available for type 55SO
End fitting types	Both sides with swiveling flange made of galvanized steel with clearance holes			

Note: The inner core of type 55 red for size DN 500 and DN 600 is made of EPDM.

Application

1. Type 46, 50, 55 yellow steel and 46,50 yellow steel HNBR:

- + Fuel oil (MDO, HFO), lubricating oil, hydraulic oil;
- + Sea and fresh water cooling lines;
- + Ballast lines in machinery spaces and duct keels;
- + Bilge lines in duct keels only;
- + Cargo lines for MDO and lubricating oil carrier;
- + Cargo lines inside cargo oil tanks of oil tankers;
- + All other non- essential pipe lines.

2. Type 46, 50, 55 yellow/red/redSP and 55SO yellow/red:

- + Fresh and sea water lines;
- + Ballast lines in machinery spaces, duct keels and double bottom water ballast tanks;
- + Bilge lines inside duct keels only;
- + Sanitary discharge and cargo lines (NBR only) inside the cargo oil tanks of tankers.

Permissible operating parameters / Limitation

Bellow type available for type 46, 50 yellow HNBR/46 yellow steel, yellow, red and redSP/55SO yellow, red/ 50, 55 yellow, red, redSP and 50, 55 yellow steel for size DN20 to DN400

Type	Permissible operating parameters (MAWP/max. service temp.)			
	bar/°C	bar/°C	bar/°C	Short time(°C)
yellow	16/50	12/70	10/90	100
red	16/50	12/70	10/100	120
redSP	16/70	10/100	8/130	150
yellow steel	16/60	12/70	10/90	100
yellow HNBR	16/60	12/70	10/100	120

Bellow type available for type 50, 55 yellow, red, redSP and 50 yellow steel for size DN450 to DN600

Type	Permissible operating parameters (MAWP/max. service temp.)			
	bar/°C	bar/°C	bar/°C	Short time(°C)
yellow	10/50	8/70	6/90	100
red	10/50	8/70	6/100	120
redSP	10/70	7.5/100	6/130	150
yellow steel	10/60	8/70	6/90	100

