



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
GB23PTB00036_03

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.

制造厂/Manufacturer

Roxtec International AB

地址/Address

Box 540,S-37123 Karlskrona,Sweden

产品名称/Product

管路贯穿装置
Pipe Penetrations

附加标志/Notations

无/Nil.

认可标准/Approval Standard

- 1974年SOLAS公约及其修正案第II-2章第3条和第9条
Regulations 3 and 9, Chapter II-2 of 1974 SOLAS Convention, as Amended
- IMO 2010年FTP规则附件1第3部分
IMO 2010 FTP Code Annex I Part 3

用于/Intended for

船舶/Ships



证书有效期至/This Certificate is valid until 2026年11月13日/Nov. 13,2026

发证机构/Issued by 中国船级社哥德堡办事处
CCS Gothenburg Office

签发日期/Date 2023年10月06日
Oct. 06,2023

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。纸质证书每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有疑问时，可以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:P023-25774675

产品明细/Product Description**管路贯穿装置/Pipe Penetrations (M0001)**

名称/Name	属性(值)/Value	单位/Unit
型号/Type	详见附页/See additional page(s)	
规格/Specification	详见附页/See additional page(s)	
应用型式/Application Type	详见附页/See additional page(s)	
使用限制/Installation Limitations	详见附页/See additional page(s)	
装置围板/套管包覆用隔热材料/Insulation Material Bundled for Coaming Or Spigot of Pipe Penetrations	详见附页/See additional page(s)	
套管(薄片)材料/Sleeves(Sheets)	详见附页/See additional page(s)	
密封胶/Sealant	详见附页/See additional page(s)	
试验前试样液压试验压力(水密性)/Pressure of Hydraulic Before Test Specimen(Watertight)	详见附页/See additional page(s)	bar
试验前试样空气试验压力(气密性)/Pressure of Air Before Test Specimen(Airtight)	详见附页/See additional page(s)	mbar
甲板管路贯穿耐火等级/受火面/Fire Class of Deck Pipe Penetrations /Exposed Face	详见附页/See additional page(s)	
舱壁管路贯穿耐火等级/受火面/Fire Class of Bulkhead Pipe Penetrations /Exposed Face	详见附页/See additional page(s)	

批准的图纸/Approved Drawings

图纸批准号/Drawings Approval No.: 详见附页/See additional page(s)

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No.: 详见附页/See additional page(s)

试验报告日期/ Test Report Date :

试验单位/ Laboratory: 详见附页/See additional page(s)

试验单位地址/ Test Address:

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

按规范只认可不进行产品检验的产品/The product approved only in term of the rules:

认可后的产品检验由制造厂按本社批准的产品检验计划进行检验, 经检验合格后由制造厂签发合格证明, 并连同该产品的本社认可证书复印件一并交付用户, 制造厂对产品符合公约、法规、本社规范和本社认可的标准规定负责。After approval, product inspection should be carried out by the Manufacturer in accordance with the product inspection scheme approved by the Society. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

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

1. 本社已审核了产品厂无石棉声明，但本社的审核不免除产品厂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.

2. 本证书由原型式认可证书 (No. GB22PTB00041_03) 变更并替代原证书。
This Certificate is modified from and supersedes the previous Type Approval Certificate No. GB22PTB00041_03.

3. This cert was issued to Roxtec International AB.
Besides production site at Karlskrona, Sweden, Roxtec Sealing System (Shanghai) Co., Ltd (address: Ground floor, Building A, No. 875 Qiuxin Road, Lingang Nicheng Industrial Area, Pudong District Shanghai, P.R.China) is the assessed production site for the following components of the approved products:
RS PPS: Sleeve
RS PPS/S: Sleeve

4. 本证书认可产品应根据制造厂安装手册和批准图纸安装。
The approved products shall be installed as per the manufacuter's installation instructions and the approved drawings.

中国船级社哥德堡办事处 CCS Gothenburg Office

注：本证书含有附页，共5页
Note: The certificate is attached with additional 5 page(s)

Detailed Parameters

1. 产品明细/Product Description

产品名称/Product name	管路贯穿装置/Pipe transits
型号/Type	RS PPS, RS PPS/S
规格 Specification	See “4. Application details”
管路材质 Material of pipe	See “4. Application details”
图纸批准号 Drawings approval No.	GB17A00007, NP18A01785, NP23PPP00249
界面（甲板/舱壁）材质 Material of divisions（deck/bulkhead）	aluminum/steel Bulkhead and Deck
贯穿装置与舱壁或甲板连接方式 Connection method of penetration device to bulkhead or deck	RS PPS: 焊接/welded, 螺栓链接/bolted RS PPS/S: 焊接/welded, 螺栓链接/bolted, through expansion (SLFRS X)
框架或套筒材料 Material of frame or sleeve	aluminum/steel
框架或套筒包覆用隔热材料 Insulation material bundled for frame or sleeve	General A-60 approved insulation (mineral wool)
舱壁贯穿耐火等级/受火面 Fire class of bulkhead transits /Exposed face	See “4. Application details”
甲板贯穿耐火等级/受火面 Fire class of deck transits/Exposed face	See “4. Application details”
试验前试样空气试验压力(气密性) Pressure of air before test specimen(Airtight)	Bolted version: 1.67 bar Welded version: 2.67 bar
试验前试样液压试验压力(水密性) Pressure of hydraulic before test specimen(Watertight)	Bolted version: 3.33 bar Welded version: 4 bar
使用限制 Installation limitation	See “3.Application limitation”
应用型式 Application Type	See “4. Application details”
密封胶 Sealant	No Sealant

2. Product description

RS PPS

“Roxtec sealing system with multidiameter TM technology: RS PPS (steel/aluminum division)

The RS PPS plastic pipe penetration seal consist of two RS modules fitted on both ends of the sleeve with included intumescent material in between. The RS modules is consisting of two halves each with removable layers making it adaptable to a single plastic pipe of different diameters. It is available in different versions, RS and RS OMD.

The RS-seal is installed into an steel/aluminum sleeve that is either welded or bolted onto the steel/aluminum division.

RS PPS/S

Roxtec sealing system with multidiameter TM technology: RS PPS/S (steel/aluminum division)

The RS PPS/S plastic pipe penetration seal consist of two halves each with removable layers and integrated intumescent material making it adaptable to a single plastic pipe of different diameters.

The RS-seal is installed into an steel/aluminum sleeve that is either welded, bolted or attached through expansion (SLFRS X) onto the steel/aluminum division.

3. Application limitation

Approved for plastic pipe transition in decks or bulkheads with “A” class divisions (including A-15, A-30, A-60). For A-15 and A-30 applications, the penetration shall be insulated as for A-60 and the division is to be fitted with A60 insulation for a minimum distance of 200 mm around the penetration.

Not for use in tank boundaries.

RS PPS in size 31-450.

Application for plastic pipes in terms of deck and bulkheads

RS PPS/S in size 31-150.

Application for plastic pipes in terms of deck and bulkheads.

4. Application details**A60 Steel bulkhead**

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS	31- 175	Thermoplastic*	16- 125	Symmetric	S1581041 Rev A No. 1
RS PPS	31-450	Thermoplastic*	16-355	Symmetric	S1581041 Rev A No. 2
RS PPS	31- 150	PE/ALU/PE	16- 110	Symmetric	S1581041 Rev A No. 3-4
RS PPS	125-400	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1581041 Rev A No. 5-6
RS PPS/S	31- 150	Thermoplastic*	16- 110	Symmetric	S1581049 Rev A No. 1
RS PPS/S	31- 100	PE/ALU/PE	16-63	Symmetric	S1581049 Rev A No. 2
RS PPS/S	125- 150	Pre- insulated thermoplastic pipe	75- 110	Symmetric	S1581049 Rev B No. 3-4
RS PPS/S	100- 125	Pre- insulated plastic bundle pipe	67-96	Symmetric	S1581049 Rev A No. 5

*PP, PVC, PB, ABS, PE, PVDF

Abbreviation:

PP Polypropylene

PE Polyethylene

ABS Acrylonitrile Butadiene Styrene

PE/ALU/PE Multilayer pipe Polyethylene/Aluminum/Polyethylene

PB Polybutylene

PVC Polyvinyl Chloride (including cPVC and uPVC)

PVDF Polyvinylidene fluoride

A60 Steel deck

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS	31-450	Thermoplastic	16-355	Symmetric, Unexposed	S1581096 Rev A No. 1-2
RS PPS	31- 150	PE/ALU/PE	16- 110	Unexposed	S1581096 Rev A No. 5
RS PPS	125-400	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1581096 Rev A No. 3
RS PPS	125	Pre- insulated plastic bundle pipe	96	Unexposed	S1581096 Rev A No. 4
RS PPS/S	31- 150	Thermoplastic	16- 110	Symmetric, Exposed	S1581196 Rev A No. 1-2
RS PPS/S	31-68	PE/ALU/PE	16-32	Exposed	S1581196 Rev A No. 3
RS PPS/S	31-125	PE/ALU/PE	16-75	Symmetric	S1581196 Rev A No. 4
RS PPS/S	125- 150	Pre- insulated thermoplastic pipe	67-96	Symmetric	S1581196 Rev A No. 7
RS PPS/S	68- 100	Plastic bundle pipe	36-60	Symmetric	S1581196 Rev A No. 5
RS PPS/S	100- 125	Pre- insulated plastic bundle pipe	96	Symmetric	S1581196 Rev A No. 6

*PP, PVC, PB, ABS, PE, PVDF

Abbreviation as above.

A60 Aluminum bulkhead

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS/S	31- 150	Thermoplastic*	16- 110	Symmetric, Exposed	S1581032 Rev A No. 1
RS PPS/S	31- 100	PE/ALU/PE	16-63	Symmetric	S1581032 Rev A No. 3
RS PPS/S	125- 150	Pre- insulated thermoplastic pipe	75- 110	Symmetric	S1581032 Rev A No. 2
RS PPS	31-450	Thermoplastic*	16-355	Symmetric	S1580646 Rev A No. 1-2
RS PPS	31- 150	PE/ALU/PE	16- 110	Symmetric	S1580646 Rev A No. 5
RS PPS	125-400	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1580646 Rev A No. 3-4

*PP, PVC, PB, ABS, PE, PVDF

Abbreviation as above.

A60 Aluminum deck

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS	31-450	Thermoplastic*	16-355	Symmetric, Unexposed	S1581083 Rev A No. 1-4
RS PPS	31-400	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1581083 Rev A No. 5-6
RS PPS	31- 150	PE/ALU/PE	16- 110	Unexposed	S1581083 Rev A No. 7-8
RS PPS/S	31- 150	Thermoplastic*	16- 110	Symmetric	S1581032 Rev A No. 4
RS PPS/S	31- 100	PE/ALU/PE	16-63	Symmetric	S1581032 Rev A No. 5

RS PPS/S	125- 150	Pre- insulated thermoplastic pipe	75- 110	Symmetric	S1581032 Rev A No. 6
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*PP, PVC, PB, ABS, PE, PVDF

Abbreviation as above.

A0 steel bulkhead

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS	31- 450	Thermoplastic*	16- 355	Symmetric	S1581389 Rev A No. 3-4
RS PPS	31- 150	PE/ALU/PE	16- 110	Symmetric	S1581389 Rev A No. 5-6
RS PPS	125-400	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1581389 Rev A No. 1-2
RS PPS/S	31- 150	Thermoplastic*	16- 110	Symmetric	S1581388 Rev A No. 1-2
RS PPS/S	31- 100	PE/ALU/PE	16-63	Symmetric	S1581388 Rev A No. 4
RS PPS/S	125- 150	Pre- insulated thermoplastic pipe	75- 110	Symmetric	S1581388 Rev B No. 5-6
RS PPS/S	100- 125	Pre- insulated plastic bundle pipe	67-96	Symmetric	S1581388 Rev A No. 3

*PP, PVC, PB, ABS, PE, PVDF

Abbreviation as above.

A0 steel deck

Type	Size	Pipe Material	Pipe diameter (mm)	Sleeve position	Certificate drawing
RS PPS	31- 450	Thermoplastic*	16- 110	Symmetric, Unexposed	S1581391 Rev A No. 1-2
RS PPS	125-450	Pre- insulated thermoplastic pipe	90-315	Symmetric	S1581391 Rev A No. 3
RS PPS	31-68	PE/ALU/PE	16-32	Symmetric	S1581391 Rev A No. 4
RS PPS	31- 150	PE/ALU/PE	16- 110	Unexposed	S1581391 Rev A No. 5
RS PPS	125	Pre- insulated plastic bundle pipe	96	Unexposed	S1581391 Rev A No.6
RS PPS/S	31- 150	Thermoplastic*	16- 110	Symmetric, Exposed	S1581387 Rev A No. 1-2
RS PPS/S	31-68	PE/ALU/PE	16-32	Exposed	S1581387 Rev A No.3
RS PPS/S	31- 125	PE/ALU/PE	16- 110	Symmetric	S1581387 Rev A No.4
RS PPS/S	68- 100	Plastic bundle pipes	36-60	Symmetric	S1581387 Rev A No. 5
RS PPS/S	100- 125	Pre- insulated plastic bundle pipe	67-96	Symmetric	S1581387 Rev A No. 6
RS PPS/S	125-150	Pre- insulated thermoplastic pipe	75- 110	Symmetric	S1581387 Rev A No. 7

*PP, PVC, PB, ABS, PE, PVDF

Abbreviation as above.

5. Type test reports

No.	Test report no.	Division	Testing organization	Test report date
1	PG11955	A-60 Aluminum deck	DBI, Denmark	2008-09-11
2	PGB10016A	A-60 Aluminum deck	DBI, Denmark	2020-04-29
3	PGB10076A	A-60 Aluminum deck	DBI, Denmark	2020-12-07
4	PGA11371A	A-60 Aluminum deck	DBI, Denmark	2019-01-14
5	RS-19/B-224/E	A-60 Aluminum deck	CTO, Poland	2019-03-29
6	PG11898	A-60 Aluminum bulkhead	DBI, Denmark	2008-09-10
7	RS-20/B-082/E	A-60 Aluminum bulkhead	CTO, Poland	2020-02-27
8	PGA11370A	A-60 Aluminum bulkhead	DBI, Denmark	2019-01-14
9	RS-19/B-020/E	A-60 Aluminum bulkhead	CTO, Poland	2018-12-05
10	RS-20/B-408/E	A-60 Aluminum bulkhead	CTO, Poland	2020-11-09
11	PGB10031A	A-60 Aluminum bulkhead	DBI, Denmark	2020-07-08
12	RS-18/B-023/E	A-60 Steel deck	CTO, Poland	2017-12-12
13	09-346E	A-60 Steel deck	RIME, Japan	2009-02-27
14	PGA10025	A-60 Steel deck	DBI, Denmark	2011-10-24
15	PGA10141	A-60 Steel deck	DBI, Denmark	2012-06-29
16	PGB10113A	A-60 Steel deck	DBI, Denmark	2021-05-28
17	RS-19/B-256/E	A-60 Steel deck	CTO, Poland	2021-05-21
18	8P04040	A-60 Steel deck	SP, Sweden	2018-06-26
19	RS-19/B-356/E	A-60 Steel deck	CTO, Poland	2019-09-17
20	7P02167	A-60 Steel deck	SP, Sweden	2017-06-13
21	RS-18/B-484/E	A-60 Steel deck	CTO, Poland	2018-10-16
22	P902394	A-60 Steel bulkhead	SP, Sweden	2009-05-04
23	6P10024	A-60 Steel bulkhead	SP, Sweden	2017-01-31
24	RS-19/B-355/E	A-60 Steel bulkhead	CTO, Poland	2019-09-12
25	PGB10030A	A-60 Steel bulkhead	DBI, Denmark	2020-06-26
26	RS-19/B-424/E	A-60 Steel bulkhead	CTO, Poland	2019-10-24
27	RS-20/B-083/E	A-60 Steel bulkhead	CTO, Poland	2020-03-03
28	8P07094	A-0 Steel bulkhead	SP, Sweden	2019-03-28
29	RS-18/B-291/E	A-0 Steel bulkhead	CTO, Poland	2018-07-03
30	RS-21/B-240/E	A-0 Steel bulkhead	CTO, Poland	2021-05-07
31	RS-18/B-293/E	A-0 Steel bulkhead	CTO, Poland	2018-07-04
32	RS-18/B-292/E	A-0 Steel deck	CTO, Poland	2018-07-04
33	PGA11302A	A-0 Steel deck	DBI, Denmark	2018-11-05

6. Watertightness/gastightness test reports

No.	Test report no.	Testing organization	Test report date
1	SKM-04-4088	DNV, Sweden	2004-06-16
2	MLM 060511	DNV, Sweden	2006-02-28
3	MLM 070656	DNV, Sweden	2007-04-18
4	N141ZEM0	DNV, Sweden	2020-05-15
5	N141ZEM1	DNV, Sweden	2020-05-15
6	N141ZEM2	DNV, Sweden	2020-05-15
7	N142299W	DNV, Sweden	2020-11-09