

Type Approval Certificate Extension

This is to certify that Certificate No. 99/20020 (E1) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER	TPR Fiberdur GmbH & Co. KG Industriepark Emil Mayrisch 52457 Aldenhoven Germany		
DESCRIPTION	Reinforced thermosetting epoxy vinylester resin pipes and fittings filament wound. Non-conductive FIBERDUR VE. Joint types: bonded, laminated and flanged types, mechanical couplings and rubber seal lock joints		
TYPE	Fiberdur VE		
APPLICATION	In ships and offshore installations classed or intended for Classification with Lloyd's Register in the following locations: Open decks, within tanks, cofferdams, void spaces, pipe tunnels, ducts and further locations, where fire endurance tests according to Appendix 2, Level 3 and flame spread test acc. to Appendix 3 of the IMO Resolution A.753 (18) are required.		
STANDARD	Lloyd's Register Rules and Regulations for the Classification of Ships, July 2009 IMO Resolution A 753 (18)		
RATINGS	Nom. diameter (mm)	DN 25 to DN 300	DN 350 to DN 800
	M.A.W.P. (up to 60°C)	16 (bar)	10 (bar)
	M.A.W.T.	95 (°C)	95 (°C)
Certificate No.	99/20020 (E2)		
Issue Date	02 December 2009		
Expiry Date	31 July 2014		
Sheet	1 of 2		



Torsten Schröder
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Lloyd's Register EMEA

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Other Conditions

The Installation of the piping system is to be carried out by well trained personnel in accordance with the instructions and recommendations of the manufacturer respectively in accordance with the installation requirements of the IMO Resolution as applicable. For temperatures >60°C pressure deductions have to be applied.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No. ENS 21178-08, Issue No. 1, dated 02 December 2009 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 99/20020 (E1) to which this extension should be attached.

Certificate No.	99/20020 (E2)
Issue Date	02 December 2009
Expiry Date	31 July 2014
Sheet	2 of 2


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Marine Design Appraisal Document

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Date
02 December 2009

Quote this reference on all future communications
HPC 0910308/24707-09/TS/RJ

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: TPR FIBERDUR GMBH & CO. KG
FOR: FIBERDUR VE
TYPE APPROVAL CERTIFICATE NO. 99/20020 (E2)**

The plans listed in the Appendix to this Marine Design Appraisal Document supersede and supplement the corresponding plans listed in Marine Design Appraisal Document No. ENS 21178-08, issue No. 0, dated 22.02.2008.

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002, and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Form LR6606	Approval Services – Request for Quotation	20.07.2009
	Documentation NAVICON EP, 11 sheets	13.12.1996
	Mechanical and Physical Properties, Encl. 3, 1 sheet	13.12.1996
	Pressure Classes, inner press. encl.3.1, 2 sheets	13.12.1996
	Pressure Classes, external press., encl. 3.2., 2 sheets	13.12.1996
	Planning with Fiberdur, page:15,18,19,22,23,26,27,30,31,35, 38, 39, 41	02.1996
	Planning with Fiberdur, page: 36, 37	09.1995
	Quality Management Handbook, Organisation, Chapt. 1, page 6/6	04.1995
	TÜV Certificate DIN EN ISO 9001:1994	11.09.1998
	Direction R 9.9.1/8, 21 sheets	01.1990
	KRV-Worksheet A.9.8.1, 2 sheets	04.1982
	KRV- Worksheet A.9.9.3, 2 sheets	04.1982
	Visible Defects QS 100 A, 4 sheets	15.02.1996
	Acceptance criterion pipe/fitting surface inside + outside QS 101 A, 2 sheets	01.02.1996
	Instructions for Handling + Installation catalogue, edition	1996
	Planning with Fiberdur Catalogue, edition	1996
	Product information Vinylester Resin (A) Works Standard L.S. 021/B	26.08.1996
	Product information Vinylester Resin (C) Works Standard L.S: 023/B	26.08.1996
	Checklist Installation (26 sheets)	
	Third Party App. A1 (9 sheets) Material Certification	07.12.1981
	Different TÜV inspection Certificates, 18 sheets	1995 and 1996

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

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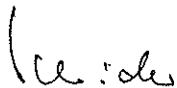
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TEST REPORTS

DTM 0920137/1, LR Visit Report	25.08.2009
2008-Efectis-R0248, Experimental investigation into the behaviour of a water-filled, DN 200 Vinylester 16 bar TPR Fiberdur pipe with joint when heated according IMO A 753 (18) level 3 GERBAM 023A/96/CI/R 102 Fire Endurance Test IMO 753 (18), 27 pages	April 2008
LAB 95000 Flame Spread: Class 2, 3 sheets, Bureau Veritas	21.03.1996
2641/1/94 Report, French Textile Institute, Smoke Generation and Toxicity, 6 pages + 2 Ann.	04.01.1995
	20.07.1997



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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.

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