



Type Approval Certificate

[Sandwich Core Materials]

Initial Approval	8 November 2017
Applicant	Diab International AB Drottninggatan 7, 5th floor 252 21, Helsingborg, Sweden
Product Description	1) Kind : PVC foam 2) Type : Divinycell H60/80/100/130 3) Manufacturing Site - Diab AB : Divinycell H100/130 (Norra Sofieroleden 8, 312 32 Laholm, Sweden) - Diab New Materials Co., Ltd. : Divinycell H60/80 (No. 66 Nanhai Road, Yangtze River industrial Park 215634 Zhangjiagang, Jiangsu Province China) 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.

Pt 2. Ch 2. Annex 2-8 of the Guidance relating to the Rules for Classification of Steel Ships
Ch 3. Sec 2 of the Rules for Classification of Fibreglass Reinforced Plastics Ships
Ch 3. Sec 28 of Guidance for Approval of Manufacturing Process and Type Approval, etc.

This Certificate is valid until 7 November 2027

Issued at Busan, Korea on 9 January 2024



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME24001630592) and certificate No.(CPH37821-GF001).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

Note : 1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 9 January 2024

A. Product Description

1. Product Specification

- 1) A resilient, closed cell foam sheet consisting of a polymeric alloy of a cross-linked aromatic polyurea and a linear vinyl polymer.
- Divinycell H60 / H80 / H100 /H130
- 2) The following manufacturer's specified values have been verified by type testing.

Property	Test Method	Unit		H60	H80	H100	H130
Compressive strength(2)	ASTM D 1621	MPa	Nominal	0.9	1.4	2.0	3.0
			Minimum	0.7	1.15	1.65	2.4
Compressive modulus (1), (2)	ASTM D 1621-B-73	MPa	Nominal	70	90	135	170
			Minimum	60	80	115	145
Tensile strength(2)	ASTM D 1623	MPa	Nominal	1.8	2.5	3.5	4.8
			Minimum	1.5	2.2	2.5	3.5
Tensile modulus(2)	ASTM D 1623	MPa	Nominal	75	95	130	175
			Minimum	57	85	105	135
Shear strength(2)	ASTM C 273	MPa	Nominal	0.76	1.15	1.6	2.2
			Minimum	0.63	0.95	1.4	1.9
Shear modulus(2)	ASTM C 273	MPa	Nominal	20	27	35	50
			Minimum	16	23	28	40
Shear strain(2)	ASTM C 273	%	Nominal	20	30	40	40
			Minimum	10	15	25	30
Density(2)	ISO 845	kg/m3	Nominal	60	80	100	130
			Minimum	54	67	90	117

- (1) A value of the E-Modulus was measured with the crosshead movement.
(2) Values measured at 23° C

2. Approved Drawings and Documents

- Diab Group DTS - Divinycell H (24 May. 2023, Rev. 4)

3. Test Reports, etc.

- 1) This approval is granted on the basis of test results witnessed by the surveyor dated on 16th October, 2017 at DIAB, Inc.
- 2) Test report No. KR - Renewal TA for Divinycell H60, H80(total 34 pages) witness by the surveyor dated 12 Dec. 2023 issued by Diab AB, Laholm Sweden.
- 3) Approval test report(total 19 pages) witnessed by the surveyor dated 23 Nov. 2023 issued by Diab New Materials, ZJG, China.

B. Approval Condition

1. Application & Limitation

- Core material for sandwich construction.

2. Individual Product Cert. and Drawing Approval Requirement

- Individual Product Certification is not required.

3. Marking

- The product or packing is to be marked with manufacturer name and type designation on a suitable position.

4. Others

- N/A

< End of certificate >