



Marine & Offshore

Certificate number: 22592/C2 BV

File number: COMP3/1/1 to /5

Product code: 9064H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Gurit Americas Inc.

Magog, Quebec - CANADA

for the type of product

MISCELLANEOUS CORE MATERIALS FOR F.R.P. SANDWICH

Structural foam core material for sandwich construction.

Requirements:

Bureau Veritas "Hull in Composite and Plywood, Material Approval, Design Principles, Construction and Surevy" NR546 as amended

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 05 May 2025

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 31 Oct 2024,

Flavio Rosas

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=cty9x8hbrb>

BV Mod. Ad.E 530 June 2017

This certificate consists of 2 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Designation: **CORECELL™ M FOAM type M60, M80, M100, M130 and M200.**

Applications: Structural Core material for sandwich constructions.

Material description: SAN foam (styrene-Acrylonitrile polymer) with Closed Cells.

The following manufacturer's specified values are confirmed by type testing:

| Properties | Test | Method | M60 | M80 | M100 | M130 | M200 | Unit | Values(3) |
|---|------|----------|------|------|-------|------|------|-------|-----------|
| Density | ASTM | D 1622 | 65 | 85 | 107.5 | 140 | 200 | kg/m3 | msv |
| | | | 61 | 81 | 100 | 130 | 185 | | mstmv |
| Compressive strength | ASTM | D1621-04 | 0.69 | 1.16 | 1.72 | 2.58 | 4.40 | MPa | msv |
| | | | 0.60 | 1.02 | 1.48 | 2.25 | 3.66 | | mstmv |
| Compressive modulus | ASTM | D1621-73 | 48 | 78 | 112 | 169 | 317 | MPa | msv |
| | | D1621-73 | 39 | 63 | 88 | 134 | 239 | | mstmv |
| Shear strength | ASTM | C273 | 0.78 | 1.15 | 1.47 | 1.96 | 2.95 | MPa | msv |
| | | | 0.68 | 1.04 | 1.33 | 1.76 | 2.64 | | mstmv |
| Shear modulus | ASTM | C273 | 23 | 34 | 44 | 60 | 98 | MPa | msv |
| | | | 20 | 28 | 38 | 54 | 81 | | mstmv |
| Tensile strength | ASTM | D1623 | 1.21 | 1.74 | 2.23 | 3.00 | 4.29 | MPa | msv |
| | | | 1.05 | 1.56 | 1.97 | 2.67 | 3.44 | | mstmv |
| Tensile modulus | ASTM | D1623 | 67 | 98 | 134 | 186 | 334 | MPa | msv |
| | | | 50 | 80 | 102 | 145 | 155 | | mstmv |
| Styrene resistance: - Volumetric variation (1) - Mass variation(1) | ISO | 175 | 0 | 0 | 0.1 | 0.1 | 0.1 | % | - |
| | | | 0.1 | 0 | -0.1 | 0 | -0.1 | | - |
| Water absorption(2) (in % of volume increase) | ISO | 2896 | 1.61 | 1.76 | 1.18 | 1.30 | 0.95 | % | - |

Note 1: After 2 hours of immersion, and then 2hours of drying @50°C.

Note 2: After 7 days of complete immersion.

Note 3: msv: manufacturer specified value; mstmv: manufacturer minimum specified value.

2. DOCUMENTS AND DRAWINGS:

- Material Safety Data sheet "Gurit Corecell M Foam Safety datasheet " revision date 30/05/2023
- Technical Datasheet Gurit Corecell™ M Structural Foam Core M-11-0623
- Technical report Gurit Corecell M-Foam dated 04/10/2024
- Letter from Gurit dated june 1st 2015 concerning reformulation

3. TEST REPORTS:

- Gurit Corecell M-Foam Bureau Veritas update 2023 dated 04/10/2024.

4. APPLICATION / LIMITATION:

- Use: structural core for hull sandwich construction or other parts of ships according to BUREAU VERITAS Rules.
- Compatibility with resins: polyester, vinylester, epoxy.

5. PRODUCTION SURVEY REQUIREMENTS :

The *Corecell type M Foam* are to be supplied by GURIT in compliance with the type described in this certificate.

This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

GURIT has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

For information, GURIT has declared to Bureau Veritas the following production site:

GURIT Americas Inc.
Corecell Plant
555 Boul. Poirier
Magog, Quebec J1X 7L1
CANADA

6. MARKING OF PRODUCT:

Product shall be marked with *type designation, density and manufacturer's name*: **GURIT AMERICAS Inc.**

7. OTHERS:

This certificate supersedes the Type Approval Certificate N°22592/C1 BV issued by the Society.

*** END OF CERTIFICATE ***