

General Product Information:

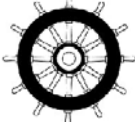
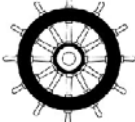
ROXUL® products are mineral wool fibre insulations made from basalt rock and slag. This combination results in a non-combustible product with a melting point of approximately 2150°F (1177°C), which gives it excellent fire resistance properties. ROXUL mineral wool is a water repellent yet vapour permeable material.

Description & Common Applications:

Roxul® Inc. manufactures a series of non-combustible mineral wool insulation products designed for thermal and fire protection required in marine applications. Its products have been tested by the SOUTHWEST RESEARCH INSTITUTE® to comply with the latest IMO/FTP Code and have Certificates of Approvals from the United States Coast Guard, Transport Canada, Lloyd's Register and carries the European Wheel Mark. The RHM™ series of marine insulations are manufactured in 3 lb/ft³ through 10 lb/ft³ (48 through 160 kg/m³) densities. In addition, RHM Series Marine Board & Blanket insulations are suitable to a full range of temperature applications including boilers, vessels, tanks, ducts, ovens, mufflers, and exhaust stacks.

Compliance and Performance:

United States Coast Guard, Transport Canada, Lloyd's Register & European Certificates of Approval

| RHM Series Marine Board, Actual Density & Installed thickness | U.S. Coast Guard Certificate of Approval Numbers | Transport Canada Certificate of Approval Numbers | Lloyd's Register Certificate of Approval Numbers | Steel Bulkhead & Steel Deck Installation "A" Class Divisions | European Certification  |
|---|--|--|--|--|--|
| For Non-Combustibility Per IMO A.779/ISO 1182: 1990 RHM 30A 3 lb/ft ³ (48 kg/m ³) through RHM 100A 10 lb/ft ³ (160 kg/m ³), and RHM 60AC 6 lb/ft ³ (96 kg/m ³) All Thickness | 164.109/26/0 and Equivalency approval for 46 CFR 164.009 | T.C. 261.F1.322 | SAS F090283 | "Non-combustible" |  1408/12 1408/12 |
| "A-60" Class Steel Bulkhead Per IMO/FTP Code A. 754 (18) RHM 60A 6 lb/ft ³ (96 kg/m ³) Install 3" (76mm) thickness on Structural Core of Bulkhead Install 1 1/2" (38mm) thickness on Stiffeners. See typical installation. | 164.107/16/0 6-10 lb/ft ³ (96-160 kg/m ³) Also Approved | T.C. 261.A1.282 | SAS F090281 | Class "A-60" | 1408/12 6-10 lb/ft ³ (96-160 kg/m ³) Also Approved |
| "A-60" Class Steel Deck Per IMO/FTP Code A.754 (18) RHM 60A & 6 lb/ft ³ (96 kg/m ³) and RHM 60AC 6 lb/ft ³ (96 kg/m ³) Install 2" (50mm) thickness on Underside Structural Core of Deck Install 1 1/2" (38mm) thickness on Stiffeners. See typical installations. | 164.107/17/0 and Equivalency approval for 46 CFR 164.007 For Bulkheads And Decks. 6-10 lb/ft ³ (96-160 kg/m ³) Also Approved. | T.C. 261.A1.283 | SAS F090280 | Class "A-60" | 1408/12 6-10 lb/ft ³ (96-160 kg/m ³) Also Approved |
| Marine Foil Facing | 164.112/142/0 | | | | 1408/12 |

Standard Dimensions: (Contact manufacturer for custom widths and lengths)

| Marine Insulation Product Name | Standard Thickness | Width & Length |
|---|--|------------------------------|
| RHM 30A, RHM40A, RHM 60A, RHM70A, RHM 80A, and RHM 100A Marine Boards | 1" (25mm) through 4" (102mm) | 24" (610 mm) x 48" (1219 mm) |
| RHM 60AC Roller Crushed Marine Blanket | 1" (25 mm), 1 1/2" (38 mm), and 2" (51 mm) | 36" (914 mm) x 48" (1219 mm) |



Physical Properties:

ASTM C 612, Type IVA
 ASTM C 612, Type IVB
 ASTM C 553, Type VII
 Maximum Continuous Use Temperature - (ASTM C 411):
 RHM 30A thru RHM 100A Board - Actual Density Range:
 RHM 30A thru RHM 100A Board - (ASTM C 1101/C 1101M):
 RHM 60AC Roller Crushed Blanket - Actual Density:
 RHM 60AC Roller Crushed Blanket - (ASTM C 1101/C 1101M):
 Corrosion to Steel, Copper Aluminum - (ASTM C 665):
 Moisture Sorption - (ASTM C 1104/C1104M):
 Austenitic Stainless Steel Stress Corrosion - (ASTM C 795*, Test method C 871, C 692 and NRC Reg. Guide #1.36*)
 Non-combustibility - (Part 1 in Annex 1 of IMO/FTPC MSC.61(67), IMO A.799, ASTM E 136, CAN4-S114):
 Surface Burning Characteristics - (ASTM E-84, UL 723, CAN/ULC-S102)
 Fungi Resistance - (ASTM C 665):

RHM 30A & RHM 40A
 RHM 60A through 80A
 RHM 60AC
 1200° F (649° C)
 3 through 10 lb/ft³ (48 - 160 kg/m³)
 Semi-Rigid Board Classification
 6 lb/ft³ (96 kg/m³)
 Flexible Blanket
 None
 Less than 0.1%

Complies and/or tested for compliance

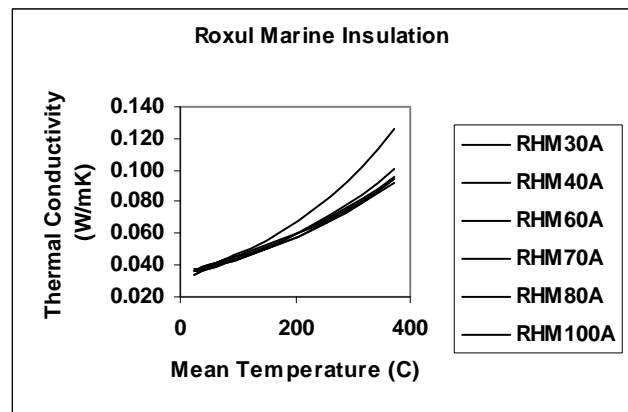
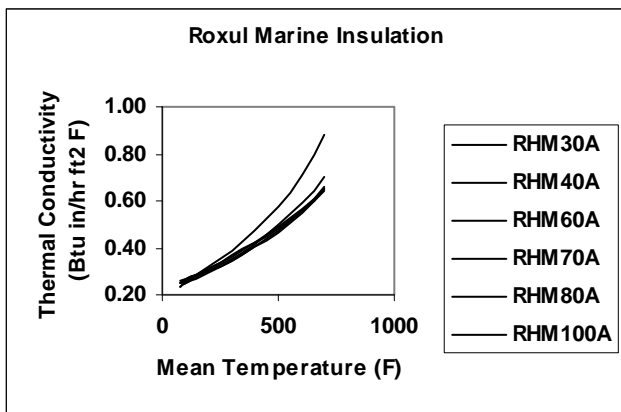
Rated as Non-Combustible

<5/0, Flame/Smoke
 Does not promote growth

* Provisions for lot testing may be required. Consult the manufacturer.

Thermal Conductivity:

Thermal Conductivity per Test Method ASTM C 177 & C 518 with C 1045 Calculations



Acoustical Performance

ASTM C423

| Thickness | CO-EFFICIENTS AT FREQUENCIES | | | | | | RHM 60 / RHM 80 |
|-----------|------------------------------|-------------|-------------|-------------|-------------|-------------|-----------------|
| | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | NRC |
| 1.0" | 0.08 / 0.11 | 0.33 / 0.31 | 0.78 / 0.82 | 1.03 / 1.01 | 1.02 / 1.02 | 1.04 / 1.01 | 0.80 / 0.80 |
| 1.5" | 0.17 / 0.21 | 0.62 / 0.64 | 1.00 / 0.92 | 1.05 / 1.00 | 1.01 / 0.95 | 1.01 / 1.01 | 0.90 / 0.90 |
| 2.0" | 0.32 / 0.43 | 0.81 / 0.78 | 1.06 / 0.90 | 1.02 / 0.97 | 0.99 / 0.97 | 1.04 / 1.00 | 0.95 / 0.90 |
| 3.0" | 0.78 / 0.75 | 0.89 / 0.82 | 1.04 / 0.89 | 0.98 / 0.94 | 1.01 / 1.00 | 1.02 / 1.00 | 1.00 / 0.90 |

Specifications:

"Non-combustible" Part 1 of Annex 1 in IMO / FTP Code-Resolution MSC.61(67); **IMO Resolution A.799**; ISO 1182:1990 Test Procedure referenced in Part 1 of Annex 1 of IMO / FTP Code; 46 CFR Part 164.009; IMO Resolution A.472 (XII)

"A-60" Class Division referenced in IMO/FTP Code Resolution MSC.61(67) per **IMO Resolution A.754(18)**

"A-60" Criteria per **46 CFR Part 164.007** - Use USCG Certificate of Approval Number 164.107/17/0

ASTM C 612-00a, Types IA, IB, II, III, IVA and/or IVB, Marine Board Product dependent on different Types.

ASTM C 553-00, Types I through VII for RHM 60AC Marine Blanket only at standard thickness.

U.S. Federal Specification **HH-I-558B & HH-I-558C**

Note:

As ROXUL Inc. has no control over installation design and workmanship, accessory materials or application conditions, ROXUL Inc. does not warranty the performance or results of any installation containing ROXUL Inc's. products. ROXUL Inc's. overall liability and the remedies available are limited by the general terms and conditions of sale. This warranty is in lieu of all other warranties and conditions expressed or implied, including the warranties of merchantability and fitness for a particular purpose.