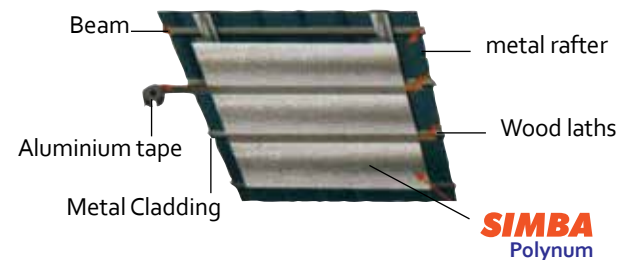
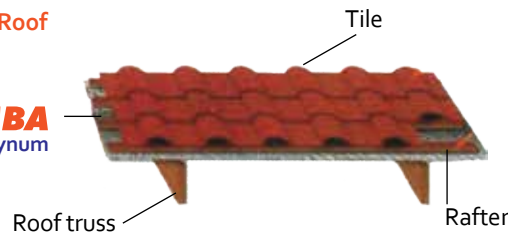




## Installation Guidelines

### New Roof

**SIMBA**  
Polynum



### Metal Roof

**SIMBA**

Insulation is an ideal partner to metal roof (GI) sheets. For nice and clean look, POLYON has developed easy yet effective installation method.

#### Step 1:

Stretch GI made metal strip across the trusses. Strips shall be installed 1.17m to 1.20m apart, under the upcoming **SIMBA** Polynum overlapping line

#### Step 2:

Starting from trusses' edge, using self-tapping metal screws, attach **SIMBA** Polynum insulation and lay across the trusses.

#### Step 3:

Attach available metal connectors, or clip lock row on top of **SIMBA** Polynum insulation using self tapping metal screws (following manufacturer instructions)

#### Step 4:

Laying roof sheets as usual. Secure roof sheets following roof manufacture instructions



## Reflective Insulation

SIMBA Polynum products are manufactured of pure aluminium foil bonded to Polyethylene bubble sheeting. SIMBA Polynum's unique design outperforms all mineral based insulation materials, reflecting 97.4% of radiated heat and saving heating costs in winter and cooling costs in summer. The easy-to-install and maintenance-free SIMBA Polynum product line comprises SIMBA Polynum One and SIMBA Polynum Super.

Simba Polynum reflective sheet is thin (4mm to 16mm), lightweight, non toxic and safe to use under all conditions.

It requires no wire mesh or attachment devices.

It is condensation free, bacteria free, fungi free and corrosion free. SIMBA Polynum is warranted for 15 years.



### MULTIPLE INDUSTRIES LTD.



#### Head Office/Factory

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Tel: +256 414 236 021/022  
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#### Sales Office/Showroom

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# Certificates and Approvals

| CERTIFICATION                                 | COUNTRY        | STANDARD                                                                    | TEST RESULT                                                              | CERTIFICATION BODY                                                                                                    |
|-----------------------------------------------|----------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Quality Management System                     | International  | ISO 9001:2000                                                               | Comply                                                                   |                                                                                                                       |
| Product Safety in Food Packaging Applications | International  | HACCP                                                                       | Comply                                                                   |                                                                                                                       |
|                                               | U.K            | BRC/IOP                                                                     | Comply                                                                   |                                                                                                                       |
| FIRE SAFETY                                   | United States  | ASTM E 84 Equivalents:<br>UL 723<br>Ansi/NFPA#255<br>UBC No. 8<br>FMVSS 302 | Class A<br>(Equiv. Class 1)<br><br>Flame spread= 0 mm/min                | SGS U.S. Testing Company Inc.<br><br>Standard Institution of Israel                                                   |
|                                               | Japan          | ISO 5660                                                                    | non-combustible                                                          | General Building Research Corp. of JAPAN<br>Officially approved By the Ministry of land, Transport and Infrastructure |
|                                               | European Union | EN 13501-1:2000                                                             | B-s2, d0                                                                 | Warrington Fire Research Centre Ltd. - U.K                                                                            |
|                                               | France         | NF P 92-507                                                                 | M1                                                                       | SNPE- Laboratoire d'Essais au Feu - France                                                                            |
|                                               | Spain          | UNE 23-727-90                                                               | M1                                                                       | CIDEMCO-Spain                                                                                                         |
|                                               | Germany        | DIN 4102                                                                    | B1                                                                       | HT Troplast AG- Germany                                                                                               |
|                                               | U.K.           | BS 476:Part 7                                                               | Class 1                                                                  | Warrington Fire Research & Standards Board                                                                            |
|                                               | Singapore      | BS 476:Part 7                                                               | Class 1                                                                  | Singapore Productivity & Standards Board (PSB Corporation)                                                            |
|                                               |                | BS 476:Part 6                                                               | Class 0                                                                  |                                                                                                                       |
|                                               | Australia      | AS 1530 Part 3                                                              | Zero all categories                                                      | APL, Applied Physics Laboratories, New Zealand                                                                        |
| ASBESTOS FREE                                 | International  | x-ray diffraction method                                                    | No asbestos fibres identified                                            | Ministry of National infrastructures, Geological Institute                                                            |
| THERMAL RESISTANCE MEASUREMENT                | United States  | RTM- 2 (AIA) -<br>ASTM C 236                                                | No asbestos<br>Fibres found<br>1.567 m <sup>2</sup> °C/W                 | "Millennium Hygiene"-Environmental measurement<br>Celotex Corporation Testing Services, U.S.A.                        |
|                                               | European Union | DIN 52.611                                                                  | 1.801 m <sup>2</sup> °C/W                                                | CIDEMCO - Spain                                                                                                       |
|                                               | Korea          | KS F 2273                                                                   | 1.695 m <sup>2</sup> °C/W<br>3.550 m <sup>2</sup> °C/W (multiple layers) | Fire Insurance Laboratories of Korea [FILK]                                                                           |
|                                               | United States  | ASTM C 236                                                                  | R = 21<br>Btu in*/(hr*ft <sup>2</sup> °F)                                | Geo Science Laboratory, San Diego, California                                                                         |
| THERMAL CONDUCTIVITY                          | International  | ASTM C 177<br>ISO 2582                                                      | -0.04 W/m <sup>2</sup> °C                                                | Standards Institution of Israel                                                                                       |
| Emmisivity                                    | Singapore      | ASTM C 1371                                                                 | 0.04                                                                     | Singapore Productivity & Standards Board (PSB Corporation)                                                            |
| Reflectivity                                  |                |                                                                             | 96%                                                                      |                                                                                                                       |
| Emmisivity                                    | Australia      | ASTM E 408                                                                  | 0.03%                                                                    | The University of Western Australia                                                                                   |
| Reflectivity                                  |                |                                                                             | 97%                                                                      |                                                                                                                       |
| Moisture Barrier                              | United States  | ASTM E 96                                                                   | 0.018 perm                                                               | SGS U.S. Testing Company Inc.                                                                                         |
| Mold Resistance                               | United States  | ASTM C 1338                                                                 | No fungal growth                                                         |                                                                                                                       |
| Thermal Stability Tests                       | United States  | ASTM D 1204                                                                 | < 0.25% change                                                           | Technion Research & Development Foundation Ltd.                                                                       |
|                                               |                | ASTM C 1263                                                                 | No Cracks / No delamination                                              |                                                                                                                       |
| TECHNICAL APPROVALS                           | Poland         | AT-15-5167/2002                                                             | Approved                                                                 | Instytut Techniki Budowlanej                                                                                          |
|                                               | Spain          | DIT                                                                         | Approved                                                                 | Instituto Eduardo Torroja de Ciencias de la Construcción                                                              |
|                                               | Australia      | AS/NZS 4859.1:2002                                                          | Approved                                                                 | JMF, Australia                                                                                                        |
|                                               | United States  | AS/NZS 4859.1:2002                                                          | Approved                                                                 | R&D Services, U.S.A.                                                                                                  |

**DISCLAIMER:** The information contained in this Technical Data Sheet is the result of extensive laboratory testing performed on our products during standard production. The values given here are typical average values and are believed to be correct to the best of our knowledge, but users should not rely on them absolutely and must confirm their validity and suitability in each particular case. Polynum makes no guarantee of results and assumes no obligation or liability in connection with this advice.

## Multiple applications for all your needs

The SIMBA Polynum family is widely used to aid climate control in pitched and tile-roofed houses, flat-roofed commercial and industrial buildings, in community buildings such as schools and arenas and in livestock structures.

SIMBA Polynum products can be applied in

conjunction with tiles or metal roof, brick or plaster walls, under floors or above ceilings. Whether for new construction, renovation, home improvement or even restoration, there's a SIMBA Polynum energy-saving product that meets your needs.



## Technical Specifications

|                                                          |                        |      |  |  |
|----------------------------------------------------------|------------------------|------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Property                                                 | Units                  | Dir  | Value<br>Regular   Reinforce (AN)                                                    | Value<br>Regular   Reinforce (AN)                                                    |
| Nominal thickness                                        | mm                     |      | 4.0                                                                                  | 3.8                                                                                  |
| Emmisivity (ASTM C 1371)                                 |                        |      | 0.05                                                                                 | 0.05                                                                                 |
| Reflectivity (ASTM C 1371)                               |                        |      | 0.95                                                                                 | 0.95                                                                                 |
| Heat resistance (R)-under roof                           | M <sup>2</sup> °C/W    | DOWN | 1.54                                                                                 | 2.98                                                                                 |
| Noise Reduction Coefficient (ASTM E-384)                 | %                      |      | 54%                                                                                  | 54%                                                                                  |
| Tensile strength @peak (ASTM C-1336)                     | g/cm-width             | MD   | 2500   4480                                                                          | 2200   5800                                                                          |
|                                                          |                        | TD   | 2400   5000                                                                          | 2500   7100                                                                          |
| Elongation @peak (ASTM C-1136)                           | %                      | MD   | 18.7   15.0                                                                          | 18.7   15.0                                                                          |
|                                                          |                        | TD   | 12.0   10.0                                                                          | 100   10.0                                                                           |
| Tear strength (ASTM D-1938)                              | N                      | MD   | 13.0   23.0                                                                          | 11.0   22.0                                                                          |
|                                                          |                        | TD   | 15.0   20.0                                                                          | 15.0   20.0                                                                          |
| Puncture resistance (TAPPI T 803)                        | Joule                  |      | 3.5   5.3                                                                            | 3.5   5.3                                                                            |
| Classement de Reaction Au Feu***                         |                        |      | M1                                                                                   | M1                                                                                   |
| * Classification of Reaction to Fire** (EN 13501-1:2002) |                        |      | Euroclass B-s2,d0                                                                    | Euroclass B-s2,d0                                                                    |
| * Water Vapor Transmission(ASTM E-96)                    | g /ft <sup>2</sup> -yr |      | 0.018 (method A)                                                                     | 0.018 (method A)                                                                     |
| Fungal Resistance Test (ASTM C 1338)                     |                        |      | No fungal growth                                                                     | No fungal growth                                                                     |
| Corrosion Resistance (Internal Test)                     | Conc.HCL               |      | High Resistance*                                                                     | High Resistance*                                                                     |
| Yield (nominal)                                          | g/m <sup>2</sup>       |      | 230   249                                                                            | 225   240                                                                            |
| Standard Roll Size                                       | m x m W= 1.2 metres    |      | L= 60 metres                                                                         | Coverage 72 sq. mtrs                                                                 |
| Standard Roll Weight (Gross)                             | kg                     |      | ± 18.4                                                                               | ±13.5                                                                                |

All products are supplied with high resistance (H.R.) Treatment against corrosion as standard.

\*\* Tested in accordance to the new European Community standard by WFRS (Report Ref.E141990)

\*\* Based on proces verbal No. 10512-02 by SNPE Propulsion - Laboratoire d'Essais au Feu