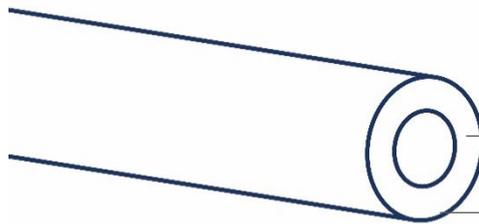


# ThermaSmart® Marine 4.0 Tube

Thermal Insulation by Thermaflex®

Advanced thermal halogen-free insulation, crafted from direct-extruded, closed-cell high-quality Polyolefin Elastomer foam and reinforced with a black aluminum foil layer. This cutting-edge material not only ensures superior thermal performance and durability but also offers enhanced flexibility, making it ideal for varied applications.



## Design

### Polyolefin elastomer foam

Robust & high quality insulation

### Aluminum black foil

Vapor barrier & mechanical strength

## Benefits

- Prevents condensation
- Features an excellent fire rating for enhanced protection
- Develops less, non-toxic smoke in case of fire
- Excellent sustainability: durable and energy saving
- Free of halogens and other harmful substances like: PFAS, ATO, PVC, SCCP and MCCP
- Fast and easy installation
- No fungus growth
- Fast and Easy Installation: Glueless installation method for all ThermaSmart Marine laminated tubes



2923/2025



### Disclaimer

All recommendations and information provided on this data sheet are based on our knowledge and experience. Product specifications are intended as guidelines. Since conditions of service are beyond our control, users must satisfy themselves that products are suitable for the intended use. No guarantee or warranty is given or implied or that any use of the products will not infringe rights belonging to other parties. We reserve the right to change product design and properties without notification.



## Applications

- Maritime sector – the preferred choice for marine applications, ensuring durability in harsh environments
- Perfect for air conditioning ducts, refrigeration and freezing systems and components
- Comprehensive system compatibility: an uniform and seamless insulation for your complete system – pipes, ducts, chillers, fans, coils, air handlers, and tanks

## Technical Properties

| Properties                              | Units SI          | Values  | Testing method  |
|---|-------------------|---|---|
| <b>Physical properties</b>              |                   |   |   |
| Dimensional tolerances                  | -                 | Coherent  | EN 14313  |
| Density (foam)                          | kg/m <sup>3</sup> | ≤ 40  | -   |
| Foam structure                          | -                 | Fine, closed cells > 85%                        | -   |
| Color                                   | -                 | Foam: grey<br>Aluminum layer: black             | -   |
| <b>Thermal properties</b>               |                   |   |   |
| Service temperature range               | °C                | -80 to +95                                      | EN 14706  |
| Maximum service temperature             | °C                | +95   | EN 14707  |
| Thermal conductivity (λ)                | W/m·K             | 0.038 @ 40°C                                    | EN 12664  |
| <b>Fire properties</b>                  |                   |   |   |
| Fire rating                             | -                 | Pass  | IMO 2010 FTP Code Annex 1 Part 5<br>Part 2 not required |
| Approvals                               | -                 | -   | Lloyds Register   |
| <b>Water resistance properties</b>      |                   |   |   |
| Water vapor diffusion resistance factor | μ                 | 14.000 ≤ μ ≤ 23.000                             | -   |
| Water absorption (hydrostatic buoyant)  | %                 | 2,6 ± 1,2                                       | ISO 2896:2001   |
| Water absorption                        | kg/m <sup>2</sup> | WS 005  | EN 1609   |
| <b>Health</b>                           |                   |   |   |
| Antimicrobial behavior                  | -                 | no fungal growth                                | ASTM C1338-19   |
| Additional features                     |                   | SCCP, MCCP, PFAS, ATO, PVC,<br>and halogen free | -   |
| <b>Flexibility</b>                      |                   |   |   |
| Shore hardness                          | scale OO          | 46  | -   |



## Availability

- Standard product length is 1m (96-102cm) in carton boxes (105x60x40cm)

| Insulation Wall Thickness [mm] |                              |                 |                 |                 |
|--------------------------------|------------------------------|-----------------|-----------------|-----------------|
|                                |                              | 19              | 25              | 30              |
| Service Pipe<br>Ø max. [mm]    | Tube<br>Insulation<br>Ø [mm] | Item code       |                 |                 |
| 12                             | 13.0-14.5                    | 3006-019012-208 | 3006-025012-208 | 3006-030012-208 |
| 15-16                          | 16.0-17.5                    | 3006-019015-208 | 3006-025015-208 | 3006-030015-208 |
| 18                             | 19.0-20.5                    | 3006-019018-208 | 3006-025018-208 | 3006-030018-208 |
| 20                             | 21.0-22.5                    | 3006-019020-208 | 3006-025020-208 | 3006-030020-208 |
| 22                             | 23.0-24.5                    | 3006-019022-208 | 3006-025022-208 | 3006-030022-208 |
| 25-27                          | 26.0-27.5                    | 3006-019025-208 | 3006-025025-208 | 3006-030025-208 |
| 28-30                          | 29.0-30.5                    | 3006-019028-208 | 3006-025028-208 | 3006-030028-208 |
| 32                             | 33.0-35.0                    | 3006-019032-208 | 3006-025032-208 | 3006-030032-208 |
| 35-38                          | 36.0-38.0                    | 3006-019035-208 | 3006-025035-208 | 3006-030035-208 |
| 40                             | 42.0-43.5                    | 3006-019040-208 | 3006-025040-208 | 3006-030040-208 |
| 42                             | 44.0-46.0                    | 3006-019042-208 | 3006-025042-208 | 3006-030042-208 |
| 48                             | 50.0-52.0                    | 3006-019048-208 | 3006-025048-208 | 3006-030048-208 |
| 50-51                          | 52.0-54.0                    | 3006-019050-208 | 3006-025050-208 | 3006-030060-208 |
| 54                             | 56.0-58.0                    | 3006-019054-208 | 3006-025054-208 | 3006-030064-208 |
| 60                             | 62.0-64.0                    | 3006-019060-208 | 3006-025060-208 | 3006-030060-208 |
| 63-64                          | 65.0-67.5                    | 3006-019063-208 | 3006-025063-208 | 3006-030063-208 |
| 70                             | 72.0-74.0                    | 3006-019070-208 | 3006-025070-208 | 3006-030070-208 |
| 75-76                          | 77.0-79.5                    | 3006-019076-208 | 3006-025076-208 | 3006-030076-208 |
| 80                             | 82.0-84.0                    | 3006-019080-208 | 3006-025080-208 | 3006-030080-208 |
| 89-90                          | 91.5-94.5                    | 3006-019089-208 | 3006-025089-208 | 3006-030089-208 |
| 102                            | 105.0-108.0                  | 3006-019102-208 | 3006-025102-208 | 3006-030102-208 |
| 108-110                        | 111.5-114.0                  | 3006-019108-208 | 3006-025108-208 | 3006-030108-208 |
| 114                            | 117.0-120.0                  | 3006-019114-208 | 3006-025114-208 | 3006-030114-208 |

Above 30 mm till 150 mm multi-layer application



## Application thickness above 30 mm

For insulation thicknesses above 30 mm the product will be delivered in two layers

- Applications may require larger thickness which can and should be done in layers:

**1<sup>st</sup> layer ThermaSmart<sup>®</sup> PRO HF version**

**2<sup>nd</sup> layer ThermaSmart<sup>®</sup> Marine 4.0**



- Combinations of all wall thicknesses from the range can be used for this with the remark that the total wall thickness doesn't exceed the maximum allowed 150 mm
- After installing the 2<sup>nd</sup> and another layer of ThermaSmart<sup>®</sup> Marine 4.0, all seams longitudinally as well as front side connections must be covered with self-adhesive ThermaSmart<sup>®</sup> Marine Black tape with a minimum width of 50 mm

| Table for multi-layer sets  |                           |                           |                           |
|-----------------------------|---------------------------|---------------------------|---------------------------|
|                             |                           | Insulation Wall Thickness | Insulation Wall Thickness |
|                             |                           | 38mm                      | 45mm                      |
| Service Pipe<br>Ø max. [mm] | Tube Insulation<br>Ø [mm] | Item code                 |                           |
| 12                          | 13.0-14.5                 | 3006-038012-208           |                           |
| 15-16                       | 16.0-17.5                 | 3006-038015-208           |                           |
| 18                          | 19.0-20.5                 | 3006-038018-208           | 3006-045018-208           |
| 22                          | 23.0-24.5                 | 3006-038022-208           | 3006-045022-208           |
| 25-27                       | 26.0-27.5                 | 3006-038025-208           |                           |
| 28-30                       | 29.0-30.5                 | 3006-038028-208           |                           |
| 32                          | 33.0-35.0                 | 3006-038032-208           | 3006-045032-208           |
| 35                          | 36.0-38.0                 | 3006-038035-208           |                           |
| 42                          | 44.0-46.0                 | 3006-038042-208           |                           |
| 48                          | 50.0-52.0                 | 3006-038048-208           |                           |
| 54                          | 56.0-58.0                 | 3006-038054-208           |                           |
| 60                          | 62.0-64.0                 | 3006-038060-208           |                           |