ARMAPROTECT

PROFESSIONAL FIRE PROTECTION WITH TRUSTED ARMACELL QUALITY

• A rich and complete portfolio with various solutions for all types of service penetrations through both walls and floors
• Strong fire resistance ratings (up to EI 240)
• Stronger with the unique ArmaFlex Protect technology
• Confirmed quality and data with European Technical Assessments
• Supported by strong and comprehensive literature
Armaflex Protect

PIPE MATERIALS AND ZERO DISTANCE
Due to its intumescent effect in the event of a fire, the new Armaflex Protect can be used to securely seal off penetrations not only for copper, steel and stainless steel pipework but also for combustible supply pipes such as multilayer composite pipes, PE, PE-HD, PP or PVC pipes. Armaflex Protect is a system component working with all Armaflex elastomeric insulation materials and Armaflex 520 Adhesives. Best of all: There are no minimum distance requirements with Armaflex Protect, so all pipes can be installed with zero distance.

LIGHTWEIGHT WALL
In fire-rated lightweight walls, Armaflex Protect is installed centrally. The annular gap is closed within the insulation level using Armaprotect 1000 or conventional filler is used against the gypsum board. Additional strips or protective insulation are not required.

SOLID WALL
In fire-rated solid walls, Armaflex Protect is installed centrally. The gap is closed using Armaprotect 1000 or ordinary mineral mortar. Additional strips are not required!

CEILING PENETRATION
Armaflex Protect can also be installed centrally in ceiling penetrations. Armaprotect 1000 or mineral mortar is used to close the remaining gap in the penetration or core-drilled hole. The appropriate test certificates are to be consulted for information on permitted pipe materials and other necessary basic conditions. During planning and execution, not only the diagrams shown but also the basic conditions of the test certificate must be observed.
The new ArmaProtect Wrap System is designed to securely seal off service penetrations of plastic and metal pipes, both with and without insulation. Whether in rigid floors, rigid or flexible walls, the ArmaProtect Wrap System guarantees reliable fire protection in structural elements. The modular system can be combined with premium Armaflex elastomeric insulation materials and has been tested for a wide range of applications.

For detailed information on the scope of application please consult the comprehensive application guide for the ArmaProtect Wrap System and its components.

ArmaProtect Wrap

In the event of a fire, the intumescent and reactive wrap provides a high volume expansion and pressure seal, thus preventing fire and smoke from spreading through the penetration to adjoining rooms. The fire resistance of the halogen-free, non-toxic wrap is classified up to EI 120 according to EN 13501-2. It is supplied in a convenient 25 m long, 40 mm wide and 2 mm thick roll. The ultra-thin design ensures an easy application in tight places.

ArmaProtect Board

This ablative coated mineral fibre board is the ideal system supplement for Armacell’s passive fire protection solutions. ArmaProtect Board is designed to maintain fire resistance performance of wall constructions where they have been provided with apertures for the penetration of single or multiple service lines. ArmaProtect Board is also able to provide a range of solutions for cable penetrations. It has strong acoustic properties and is air permeable.

ArmaProtect Seal

For closing the annular gap around pipe penetrations which have been sealed off with ArmaProtect Wrap Armacell provides ArmaProtect Seal. The acrylic based, fire resistant sealant also provides slight intumescent properties. The easy to use sealant is an integral part of ArmaProtect Wrap System and also offers a solution for non-insulated metal pipes and a range of electrical apertures. It is halogen-free, resists fungi and vermin and has good acoustic insulation properties.
Technical Data - ArmaFlex Protect

Brief description: Flexible fire seal and insulation for metal and composite pipes through fire-resistant walls and floors (up to EI 120).

Material type: Flexible elastomeric foam based on synthetic rubber

Colour: black

Product Range: For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-11/0454).

Applications: Insulation and fire protection barrier for drinking water hot / cold, heating and refrigeration metal pipes up to 326 mm diameter and composite pipes up to 75 mm.

Special Features: Detailed information on the fields of application (building elements, services, limits in size) and description of construction of the penetration seal are available in the Armaflex Protect installation instructions.

Safety and Environment: Please refer to latest product Safety Datasheet (SDS)

Assembly: Please refer to “ArmaFlex Application Manual” and “ArmaProtect System Comprehensive Compendium”.

For information on marine applications, please consult your local Armacell contact or get in touch with our Customer service.

Remarks: Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: www.armacell.com/DoP

---

### Property | Value/Assessment | Test | Special Remark
--- | --- | --- | ---
**Temperature Range** | | | |
Temperature Range | max. service temperature | +85 °C | EU 5925
min. service temperature | -50 °C |

**Thermal Conductivity** | | | |
Thermal Conductivity | $\delta_m$ | 0 °C | EU 5925
| $\lambda$ | ≤ 0.056 | W/(m · K) |

**Water vapour diffusion resistance** | | | |
Water vapour diffusion resistance | $\mu$ | ≥ 7.000 | EU 5925

**Fire performance** | | | |
Other Fire Class | Marine applications | A-60 class decks and bulkheads | EU 5616
| | | EU 5883
| | | EU 5870
| | | D 5555
| | | Tested according to 2010 FTP-Code part3, IMO A.754 (18)
| | | Classified acc. to MED 96/98/EC
| | | MODULE D

**Practical Fire Behaviour** | | | |
Self-extinguishing, does not drip, does not spread flames

Fire resistance of structural element | up to EI 120 (ETA-11/0454) | EU 4384
| | | EN 1366-3, EN 13501-2

**Other technical features** | | | |
UV resistance | Protection against UV-radiation is necessary.

Storage & Shelf life | Cartons shall be stored horizontally.
Can be stored in dry, clean rooms at normal relative humidity (50 % - 70 %) and ambient temperature (0 °C - 35 °C).
Minimum temperature for transport -50 °C under condition of frost-free storage before installation.

Use category | Type Y2 - intended for use at temperatures below 0 °C, but with no exposure to rain nor UV | EU 4384
| | | EOTA TR 024

---

1. If Armadex is applied under UV-radiation the material must be protected within 3 days with a covering.

*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.
Technical Data - ArmaFlex Protect

Armaflex Protect – ideal for condensation control on refrigeration and coolant piping

<table>
<thead>
<tr>
<th>Pipe outer diameter</th>
<th>Line temperature / Ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+6 °C / 23 °C</td>
</tr>
<tr>
<td>≥ 10 mm ≤ 323,9 mm</td>
<td>Relative humidity ≤ 80 %</td>
</tr>
</tbody>
</table>

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.
Technical Data - ArmaProtect Wrap

Brief description
A halogen-free, non-toxic, reactive intumescent wrap with high volume expansion designed to maintain the fire resistance performance of service penetrations.

Material type
Thermoplastic composites based on graphite intumescent

Colour
Dark grey

Product Range
Roll dimensions (thickness x width x length); 2 mm x 40 mm x 25 m

Applications
Passive Fire Protection for non-insulated and insulated plastic pipes and insulated metal pipes.

Special Features
Suitable plastic pipe dimensions: 32 mm, 40 mm, 50 mm, 55 mm, 63 mm, 75 mm, 82 mm, 90 mm, 100 mm, 110 mm, 125 mm, 140 mm, 160 mm, 200 mm and 250 mm

Safety and Environment
Halogen free, contains no asbestos, ceramic or mineral fibres. Not affected by fungus, vermin or rodents.

Please refer to latest product Safety Data Sheet (SDS).

Assembly
Ensure that the services in question are tested with ArmaProtect Wrap, and the site conditions are within the application specifications. Sufficient annular space needs to be present around the service (pipe penetration) to allow adequate installation depth. All services need to be clean and free of all dust and loose particles. The aperture temperature needs to be +5 °C or above at the time of installation.

1. Ensure that the "non-mesh" side is facing the application surface (mesh side is facing away from the application surface).
2. Make sure that ArmaProtect Wrap is applied around the pipe in the correct number of layers as per the tables provided in related literature or on the product packaging.
3. It is recommended to apply the wrap relaxed (not tight) approximately 5mm from the surface of application to allow some measure of movement between the applied wrap and the application surface.
4. Slide the applied wrap into the annular space between the pipe and the separating element (wall / floor), with a 5 mm recess from the surface (the distance between the surface of the wall / floor and the closest side of the wrap should be 5 mm). Further documents such as test certificates, approvals and the like can be requested using the registration number given.
5. If the assembly detail requires ArmaProtect Wrap to be applied from both sides of the wall or floor then the number of layers provided in literature should be installed on both sides.

General data
For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0714), ArmaProtect Wrap can also be used as a part of a system (with ArmaProtect Board) for maintaining fire resistance of insulated metal pipes and insulated plastic pipes. Please refer to “ArmaProtect Wrap System Comprehensive Application Guide” and ETA-19/0712 or consult Armacell for more information.

Remarks
For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0714).

Applications
Passive Fire Protection for non-insulated and insulated plastic pipes and insulated metal pipes.

Breathability
Tight

Intumescent Wrap

Passive Fire Protection for non-insulated and insulated plastic pipes and insulated metal pipes.

Intumescent volume expansion
up to EI 120 (ETA-19/0714)

Other technical features

- Density: 1.2 g/cm³
- Expansion Pressure: up to 1.30 N/mm²
- Volume Expansion: approx. 25 times at 450 °C
- Use category: Type X – intended for use in conditions exposed to weathering

Intumescent thickness (% of layers by pipe diameter)¹
32 mm - 50 mm: 1 layer of 40 mm (width) x 2 mm (thickness)
51 mm - 82 mm: 2 layers of 40 mm (width) x 2 mm (thickness)
83 mm - 115 mm: 3 layers of 40 mm (width) x 2 mm (thickness)
116 mm - 160 mm: 4 layers of 40 mm (width) x 2 mm (thickness)
161 mm - 200 mm: 5 layers of 40 mm (width) x 2 mm (thickness)
201 mm - 250 mm: 6 layers of 40 mm (width) x 2 mm (thickness)

Please note that if the assembly detail requires ArmaProtect Wrap to be applied from both sides of the wall or floor then the number of layers provided in literature should be installed on both sides. General data provided for plastic pipes only. Please see ArmaProtect Wrap System Comprehensive Application Guide for information on the use of ArmaProtect Wrap on metal pipes.

¹ For further information, please contact our customer service.

1. Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. All the statements and technical information within this document should be read in conjunction with the customer’s own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer’s specification. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein.
### Technical Data - ArmaProtect Board

**Brief description**
ArmaProtect Board is an ablative painted mineral wool board to maintain the fire resistance performance of wall / floor constructions provided with apertures for penetration of single and multiple services.

**Material type**
Ablative painted mineral wool

**Colour**
Surface color: white

**Product Range**
Board: 1200 mm x 600 mm x 50 mm (length x width x thickness)

**Applications**
ArmaProtect Board may be used to provide a penetration seal with pipes and cables, cable trays and ladders. Pipes must be installed singular, cables require no minimum separation.

**Safety and Environment**
Please refer to latest product Safety Datasheet (SDS).

**Assembly**
Ensure that the apertures and services in question are tested with ArmaProtect Board, and the site conditions are within the application specification. All services and apertures need to be clean and free of all dust and loose particles. The aperture temperature needs to be +5 °C or above at the time of installation. Upon installation make sure that ArmaProtect Board is installed with at least 10 % friction fit. Coat all joints and interfaces (also along the edges of the newly formed ArmaProtect Board sections if cutting was required) of ArmaProtect Board thoroughly and homogeneously with ArmaProtect Seal. Once compacted within the frame, finish off all exposed edges with ArmaProtect Seal ensuring a complete sealing is achieved. Smoothen off bullying sections of ArmaProtect Seal with a palette knife to ensure a professional looking finish. For patress installation; upon application make sure that ArmaProtect Board is installed with 100mm overlap. Fix the board to the substrate with the minimum 80 mm steel wood screws and penny washers and maximum 300 mm centers over-coated with 2 mm ArmaProtect Seal bead. Coat all joints using ArmaProtect Seal, ensuring all leading edges of the ArmaProtect Board are coated thoroughly and homogeneously.

**Remarks**
For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0712).

### Property

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Assessment</th>
<th>Test</th>
<th>Special Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thermal Conductivity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>( \lambda )</td>
<td>( +10 ^\circ C )</td>
<td>( \leq )</td>
</tr>
<tr>
<td><strong>Fire performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire resistance of structural element</td>
<td></td>
<td>up to EI 120 (ETA-19/0712)</td>
<td>EU 7137</td>
</tr>
<tr>
<td><strong>Acoustic Performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculated broadband insertion loss</td>
<td>( Rw )</td>
<td>=</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>( C;Ctr )</td>
<td>=</td>
<td>(-2;3)</td>
</tr>
<tr>
<td><strong>Other technical features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td></td>
<td></td>
<td>ISO 2811-1</td>
</tr>
<tr>
<td>Storage &amp; Shelf life</td>
<td>Store in dry conditions off the floor between +5 °C and +25 °C, further details see Safety Data sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coating thickness(^2)</td>
<td>nominal 1 mm ; 2.2 kg wet film coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum size of seal</td>
<td>Rigid Wall: 5.76m², Rigid Floor: 2.88m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use category</td>
<td>Type Z1 – intended for use in internal conditions with humidity ≥ 85 °C, excluding temperatures below 0 °C, without exposure to rain and UV</td>
<td></td>
<td>EOTA TR 024</td>
</tr>
</tbody>
</table>

1. For further information, please contact our customer service.
2. Based on single test results. Can be used for information / reference only.
3. Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document shall be read in conjunction with the customer’s own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer’s specification.
Technical Data - ArmaProtect Seal

Brief description  ArmaProtect Seal is an acrylic based, fire resistant sealant with slight intumescent properties.

Material type  Acrylic

Colour  White

Product Range  Paste form contained within 310 ml cartridge.

Applications  As a part of a system with ArmaProtect Wrap and/or ArmaProtect Board; ArmaProtect Seal is used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetrations of multiple services.

Safety and Environment  Halogen free, resists fungi and vermin.

Assembly  For good adhesion ensure the application surfaces are firm, clean, dry, homogeneous and free from any contaminants like oil, grease or dust and the aperture and services in question are tested with ArmaProtect Seal and finally the site conditions are within the application specification. Annular space needs to be present around the service to apply sufficient installation depth. All services and apertures need to be clean and clear of all dust and loose particles. The aperture temperature needs to be at 5 °C or above at time of installation. Upon installation make sure that you install ArmaProtect Seal around all services needed. Once compacted, smooth off ArmaProtect Seal to produce a professional finish.

Remarks  For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA 19/0711).

### Property | Value/Assessment | Test* | Special Remark
--- | --- | --- | ---
**Fire performance** |  |  |  |
Fire resistance of structural element | up to EI 120 (ETA-19/0711) | EU 7138 |  |
Acoustic Performance |  |  |  |
Calculated broadband insertion loss | Rw = 38 dB (C,Ctr) = (-2;-7) dB | EN ISO 10140 |  |
Other technical features |  |  |  |
Density | 1610 kg/m³ ± 50 kg/m³ (uncured material) | ISO 2811-1 |  |
Drying time | 30 mins at 23 °C, 50% RH |  |  |
Storage & Shelf life | 18 months unopened store in dry conditions off the floor between +5 °C and +25 °C |  |  |
Tack free | 30 mins at 23 °C, 50% RH |  |  |
Slump | 5 mm after 1 hours in 30 mm joints |  |  |
Joint movements | Remains flexible | EN 1366-4 |  |
Use category | Type Z1 – intended for use in internal conditions with humidity ≥ 85 °C, excluding temperatures below 0 °C, without exposure to rain and UV | EOTA TR 024 |  |
Operating temperature | -5 °C to +40 °C |  |  |
Application temperature | +5 °C to +40 °C |  |  |

*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100% accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer’s own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer’s specification. All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.
Technical Data - ArmaProtect Collar

Brief description
Intumescent pipe collar for pipe penetration seals of fire resistance class up to EI 240

Material type
Several layers of highly intumescent material incorporated into a mild steel case. In the event of a fire, the intumescent material expands with high pressure and thus seals the opening hermetically against flames and smoke.

Colour
Steel casing: Green
Intumescent material: Grey

Applications
Fire resistant collar for pipe penetrations in solid walls and floors made of concrete or aerated concrete and lightweight partition walls. Suitable to be used with non-insulated PVC, PP and PE pipes.

Special Features
Identification sign provided. Free of halogens and contains no asbestos or ceramic. Not affected by fungus, vermin or moisture.

Assembly
Ensure that the aperture and services in question are tested with ArmaProtect Collar, and the site conditions are within the application specification. An annular space needs to be present around the service to apply sufficient installation depth of ArmaProtect Seal. All services and apertures need to be clean and clear of all dust and loose particles. The aperture temperature needs to at 5 °C or above at time of installation. Upon installation make sure that you fill in the annular gap around the pipe maximum 10mm annulus with ArmaProtect Seal, place the ArmaProtect Collar around the pipe and fix the collar to the wall or floor with the recommended fixings.

Remarks
For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0713).

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Assessment</th>
<th>Test(^1)</th>
<th>Special Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire resistance of structural element</td>
<td>Floor penetrations (PVC, PE, PP)</td>
<td>≤ EI 240 U/C</td>
<td>EU 7140</td>
</tr>
<tr>
<td></td>
<td>Wall penetrations (PVC, PE, PP)</td>
<td>≤ EI 120 U/C</td>
<td></td>
</tr>
<tr>
<td>Other technical features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion Rate</td>
<td>20:1</td>
<td>EOTA TR 024</td>
<td></td>
</tr>
<tr>
<td>Expansion Pressure</td>
<td>1.30 N/mm²</td>
<td>EOTA TR 024</td>
<td></td>
</tr>
<tr>
<td>Use category</td>
<td>Type X – intended for use in conditions exposed to weathering</td>
<td></td>
<td>EOTA TR 024</td>
</tr>
<tr>
<td>Working temperature</td>
<td>-20 °C up to +120 °C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.
**Technical Data - ArmaProtect Seal X**

**Brief Description**
ArmaProtect Seal X is a highly intumescent graphite sealant used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetrations of multiple services.

**Material Type**
Intumescent graphite sealant

**Colour**
Grey

**Product Range**
Paste form contained within 310 ml cartridge

**Applications**
Passive fire protection applications:
- Insulated metal pipe and various non-insulated plastic pipe penetrations
- Upon MLC pipe penetrations
- Various electrical aperture penetrations

**Safety and Environment**
Ensure that the aperture and services in question are tested with ArmaProtect Seal X, and the site conditions are within the application specification. An annular space needs to be present around the service to allow sufficient installation depth.

**Assembly**
When required use backing material as indicated in ETA 19/0715. The backing material should be non-combustible stone wool. Upon installation ensure that enough application is left around the penetration. Apply ArmaProtect Seal X in 20 mm width around annular and at a depth of 25 mm around all penetrations thoroughly and homogeneously. Once compacted, smoothen off the ArmaProtect Seal X surface to produce a professional finish.

For applications where ArmaProtect Seal X is used with ArmaProtect Board, please also refer to ArmaProtect Board literature and ETA-19/0712 in addition to those of ArmaProtect Seal X.

**Remarks**
For further information, please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0715).

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Assessment</th>
<th>Test</th>
<th>Special Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fire performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire resistance of structural element</td>
<td>up to EI 120 (ETA-19/0715)</td>
<td>EU 7139</td>
<td>Tested acc. to EN 1366-3 Classified acc. to EN 13501-2</td>
</tr>
<tr>
<td><strong>Acoustic Performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculated broadband insertion loss</td>
<td>Rw = 52 dB (C,Ctr) = (-1;-6) dB</td>
<td>EU 7139</td>
<td>EN ISO 10140</td>
</tr>
<tr>
<td><strong>Other technical features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1280 kg/m³ ± 50 kg/m³ (uncured material)</td>
<td></td>
<td>ISO 2811-1</td>
</tr>
<tr>
<td>Storage &amp; Shelf life</td>
<td>12 month unopened store in dry conditions off the floor between +5 °C and +25 °C</td>
<td></td>
<td>ISO 7619-1</td>
</tr>
<tr>
<td>Hardness after curing (Shore A)</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cure rate</td>
<td>1.7 mm / 24 h at 50% RH and 23 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin time</td>
<td>15 min. at 50% RH and 23 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion Pressure</td>
<td>0.7 N/mm²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume Expansion</td>
<td>approx. 20 times at 180 °C</td>
<td></td>
<td>EOTA TR 024</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-5 °C to +40 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application temperature</td>
<td>+5 °C to +35 °C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Further documents such as test certificates, approvals and the like can be requested using the registration number given.*

---

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein.

---

2020 © Armacell Enterprise GmbH & Co. KG – Subject to alterations without prior notice. Our general conditions of sales & delivery shall apply.
ArmaProtect 1000-HS is a non-shrinking, fast setting, gypsum based, fire protection mortar.

Gypsum based mortar

Grey

20 kg bags

Passive fire protection, floor penetrations: metal pipes insulated with non-combustible insulation materials, and various electrical apertures encased with non-combustible duct wraps: up to EI 120.

Form: free flowing powder

Mixing ratios:

For pour grade: 3 - 3½ portion of ArmaProtect 1000-HS powder to 1 portion of clean water

For trowel grade: 4 portion of ArmaProtect 1000-HS powder to 1 portion of clean water

Please refer to the most recent Safety Datasheet (SDS).

Please refer to related literature provided by Armacell and European Technical Assessment of the product (ETA-19/0716).

ArmaProtect 1000-HS mix. Once this has set the remaining depth of seal should be poured in one operation.

ArmaProtect 1000-HS to produce a professional finish.

Minimum load of 100 mm. Fill in single layer up to 150 mm thickness (20-30 minutes).

Fire performance

Fire resistance of structural element

up to EI 120 (ETA-19/0716)

EU 7155

Tested acc. to EN 1366-3 Classified acc. to EN 13501-2

Acoustic Performance

Rw = 52 dB

(C;Ctr) = (-4;-8) dB

EU 7155

at 100 mm (with ArmaProtect Board 50 mm thickness)

Drying time can change based on application conditions.

Drying time: 30-90 mins (at 25 °C)

Storage & Shelf life

6 months

store in dry conditions off the floor between +5 °C and +25 °C.

Load Bearing

2.5 N/m² (fully cured)

BS 6399-1

Use category

Type Z1 – intended for use in internal conditions with humidity ≥ 85 °C, excluding temperatures below 0 °C, without exposure to rain and UV

EOTA TR 024

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, verify with us in due time whether or not the data and information apply to the intended application area. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein.

Further documents such as test certificates, approvals and the like can be requested using the registration number given.

2020 © Armacell Enterprise GmbH & Co. KG – Subject to alterations without prior notice. Our general conditions of sales & delivery shall apply.
ArmaFlex Protect tubes

Length 1,0 m

<table>
<thead>
<tr>
<th>Code</th>
<th>Vare nr.</th>
<th>Roll length [m]</th>
<th>Width [m]</th>
<th>Insulation thickness [mm]</th>
<th>m²/carton</th>
<th>Rolls/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-AX-13MM/E</td>
<td>498643056</td>
<td>6</td>
<td>0.5</td>
<td>13.0</td>
<td>2 x 3</td>
<td>2</td>
</tr>
</tbody>
</table>

Remark
For sealing purposes at least two layers of sheet material must be installed; DIN 4140 requires that, in addition to being glued, they are secured by wire.

ArmaFlex Protect sheets endless

<table>
<thead>
<tr>
<th>Code</th>
<th>Vare nr.</th>
<th>Roll length [m]</th>
<th>Width [m]</th>
<th>Insulation thickness [mm]</th>
<th>m²/carton</th>
<th>Rolls/carton</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Vare nr.</th>
<th>Roll length [m]</th>
<th>Width [m]</th>
<th>Insulation thickness [mm]</th>
<th>m²/carton</th>
<th>Rolls/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-AX-13MM/E</td>
<td>498643056</td>
<td>6</td>
<td>0.5</td>
<td>13.0</td>
<td>2 x 3</td>
<td>2</td>
</tr>
</tbody>
</table>

Remark
For sealing purposes at least two layers of sheet material must be installed; DIN 4140 requires that, in addition to being glued, they are secured by wire.

Armaprotect 1000 fire protection compound

pro-1000-0,5B in easy to handle plastic bag with removable lid
Ready to use in plastic buckets

<table>
<thead>
<tr>
<th>Code</th>
<th>Vare nr.</th>
<th>Packaging units</th>
<th>Pieces/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-1000-0,5B</td>
<td>498649005</td>
<td>0.5 l</td>
<td>20</td>
</tr>
<tr>
<td>PRO-1000-1,0</td>
<td>498649010</td>
<td>1.0 l</td>
<td>27</td>
</tr>
<tr>
<td>PRO-1000-2,5</td>
<td>498649025</td>
<td>2.5 l</td>
<td>12</td>
</tr>
<tr>
<td>PRO-1000-5,0</td>
<td>498649050</td>
<td>5.0 l</td>
<td>8</td>
</tr>
</tbody>
</table>

Remark
other packaging units on request
● Item not in stock. Delivery on request. [MTO]

ArmaProtect Wrap fire protection system

Halogen-free, non-toxic, graphite intumescent wrap, in a roll

<table>
<thead>
<tr>
<th>Code</th>
<th>Width [mm]</th>
<th>Length [m]</th>
<th>Thickness [mm]</th>
<th>Rolls/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-WR-240</td>
<td>40,0</td>
<td>25</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
### ArmaProtect Board fire protection system

1200 mm x 600 mm x 50 mm (length x width x thickness) ; surface color: white

<table>
<thead>
<tr>
<th>Code</th>
<th>Article description</th>
<th>Pieces/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-BO-50</td>
<td>Ablative coated mineral fibre board</td>
<td>1</td>
</tr>
</tbody>
</table>

### ArmaProtect Seal fire protection system

310 ml cartridge; white color

<table>
<thead>
<tr>
<th>Code</th>
<th>Article description</th>
<th>Pieces/carton</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO-SE-310 W</td>
<td>310 ml cartridge</td>
<td>12</td>
</tr>
</tbody>
</table>