

NEW!



AF/Armaflex[®]

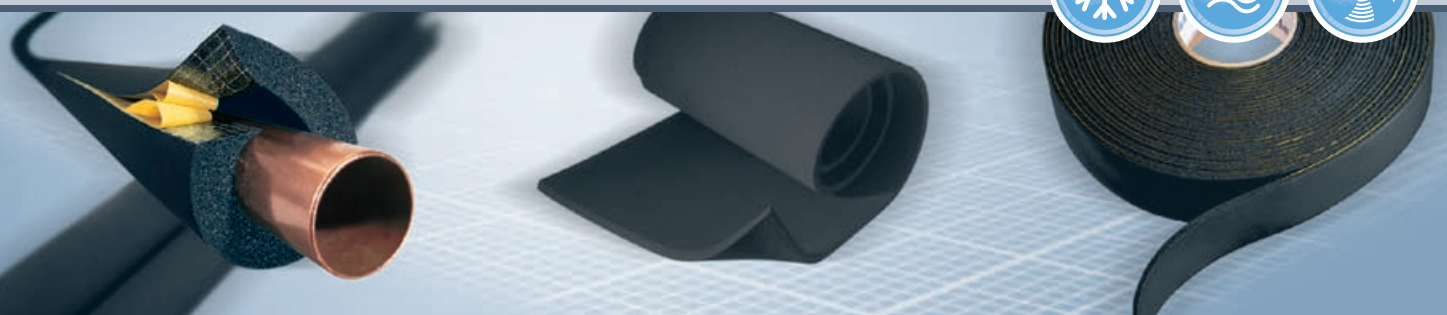


▶ **AF/Armaflex[®]**

▶ even easier
to use

**THE FLEXIBLE PROFESSIONAL INSULATION WITH
REVOLUTIONARY CHARACTERISTICS**

AF/ARMAFLEX – the sustainable solution for use in air conditioning,
refrigeration and process facilities



The revolutionary insulation with double performance: reliable condensation control and effective energy saving

NEW!

Supervised $\mu \geq 10.000$, $\lambda_{0^\circ\text{C}} \leq 0,033$

Higher performance allows smaller wall thickness

Highly flexible

AF/Armaflex®

Great stability of the material for precise application

Self-adhesive strips on both sides for twice the security

Closed microcell structure

Your Benefit:

The new AF/Armaflex® is a reliable flexible insulation with a long term performance in condensation control – which is achieved thanks to the unique combination of its extremely low thermal conductivity and a high water vapour diffusion resistance. The additional advantages are a longer life-time expectancy and a higher energy efficiency of the insulated installation. This results in additional energy cost savings during the service life of the equipment. Due to the unique micro cell structure, the new AF/Armaflex® has more stability, making it even easier to install. Your advantage: the quicker and easier installation saves even more time and money.



Ventilation

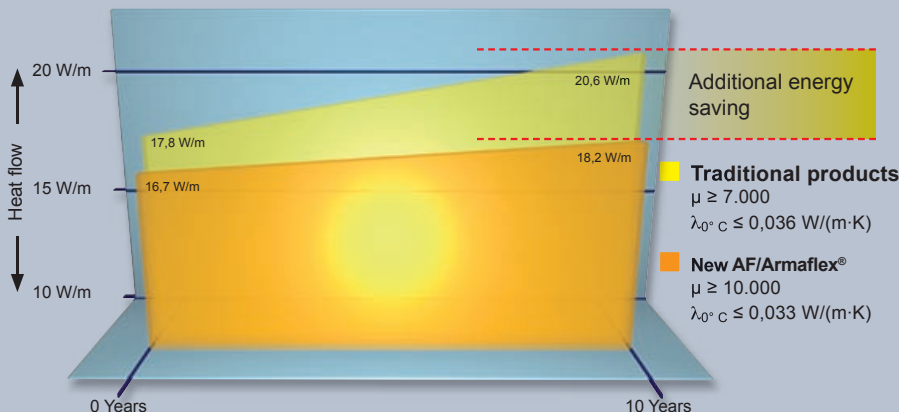


Air conditioning



Refrigeration

New: Improved energy efficiency through insulation



Even good things can be improved. To achieve the best and most efficient product yet, we have continuously developed our premium product AF/Armaflex® further. Once again, we are setting new standards for professional insulation. As a result, we have supplemented the proven water vapour diffusion resistance factor with energy savings and superior long-term performance. Over a 10 year period, the new AF/Armaflex® will provide up to 10% more energy conservation efficiency - an advantage in terms of sustainability which saves costs and protects your investment and our environment!

	Maximum	Average	
Ambient temperature	26° C	24° C	Line temperature 2° C
Relative humidity	65%	60%	Outer diameter of pipe = 88,9 mm
			Insulation thickness = 10 mm Sheet

Certification and independent supervision

The unusual combination of a high μ value, an extremely low λ value and the fire performance classification makes AF/Armaflex® unique: only when all properties of the system have been assured can we achieve the level of reliability that we expect from our products.

This system supervision is our own personal seal of quality. And your guarantee for safety and reliability. Therefore, all production processes and technical values for our products are constantly monitored by external bodies and institutes. We support and participate the develop-

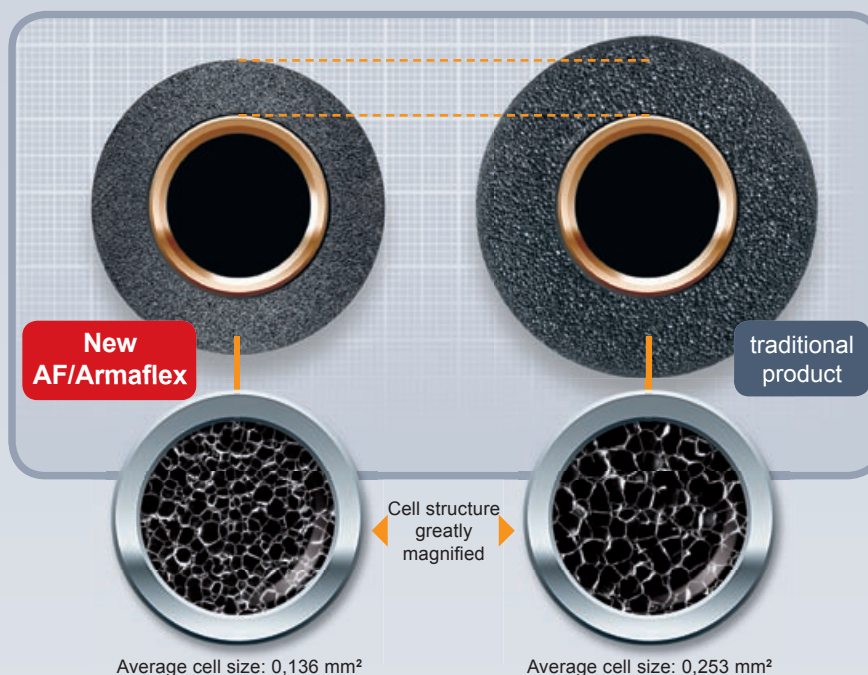
ment and implementation of new standards for quality and product control – so that you and your clients enjoy consistently high quality products.

Since AF/Armaflex® is distributed throughout Europe, it does not just comply with national standards and controls but we are also thinking ahead, preparing for the future European product and testing standards.



System control of the product properties by independent institutes and bodies is confirmed by DinCertco GmbH with the VDI 2055 certification.

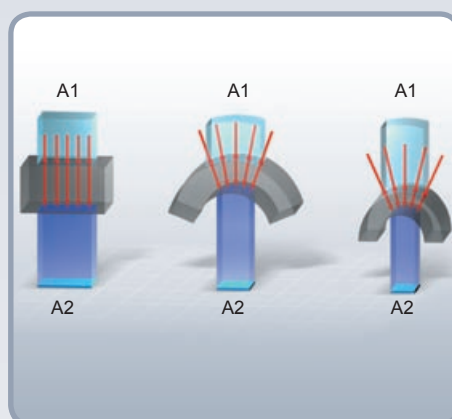
New Foam Technology



The new AF/Armaflex® distinguishes itself from traditional elastomeric materials through its visibly smaller cell structure. Persistent research and development of the quality-determining properties of the product have resulted in the new technical values of AF/Armaflex®. Until recently, these were believed to be an impossible combination for a flexible insulation material.

The new foam technology with its unique combination of technical values - thermal conductivity $\lambda_{0°C} \leq 0,033$ W/(m·K) and water vapour diffusion resistance factor $\mu \geq 10.000$ - as the highest and lowest values, make the insulation truly accountable.

Engineered wall thickness



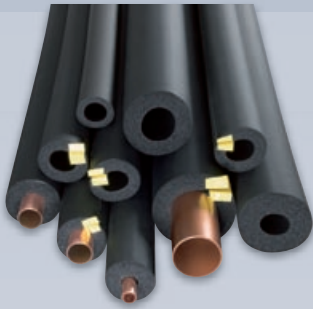
One of the requirements for effectively preventing condensation, is that the outer surface temperature of the insulation is always higher than or at least as high as the dew point temperature of the ambient air at every point on the insulated object. Because of the smaller heated surface area in direction of heat flow ($A1 > A2$), cylindrical insulating materials compress the heat flow inwards towards the object. Because of this build-up of heat, cylindrical insulating materials (tubes) can be thinner than insulation materials on flat surfaces (sheets) but still achieve a constant surface temperature.

When developing AF/Armaflex® insulation tubes, Armacell took these physical properties into account. Consequently, the heat flow density on the surface of the tubes is the same.

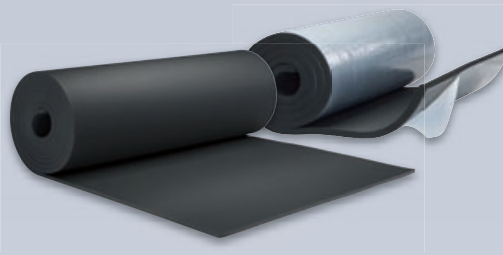
The tubes are named accordingly: the insulation thicknesses are divided into groups that have a common code (e.g. AF-2 tubes). This type of tube has an insulating thickness of between 9.5 mm and 16 mm, depending on the dimensions of the pipe). The advantage of this concept is that it saves calculating the insulating thickness for every individual pipe size: one calculation is enough!

AF/Armaflex®: a system with a complete range

AF/Armaflex® tubes



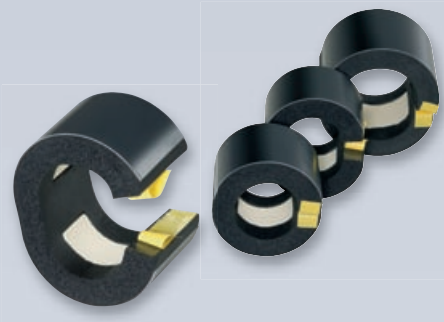
AF/Armaflex® sheets



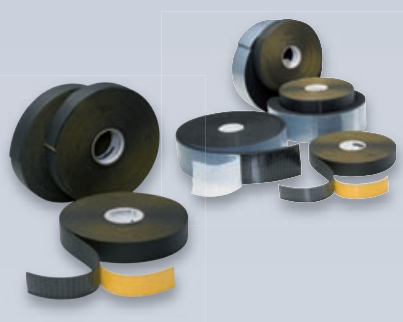
Product range

-  Tubes
-  Self-adhesive tubes
-  Pipe hanger
-  Sheets
-  Self-adhesive sheets
-  Endless sheets
-  Self-adhesive endless sheets
-  Self-adhesive tape
-  Stripe

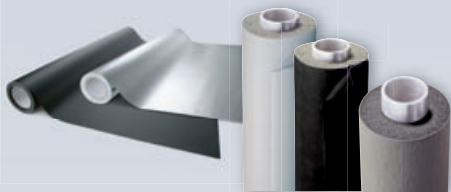
Armafix pipe hanger



AF/Armaflex® tape & stripe



Arma-Chek covering systems



Accessories



Flexible covering and pre-covered insulation systems for additional mechanical resistance.

- Arma-Chek D
- Arma-Chek S
- Arma-Chek T
- Arma-Chek R

- Armaflex Adhesive 520
- Armaflex special Cleaner
- Armafinish 99 protection paint



Efficient low temperature insulation prevents condensation and reduces energy losses. To achieve this, the thermal conductivity (λ) of the insulation material must be as low as possible. At the same time, the water vapour diffusion resistance factor (μ) must be as high as possible. A high μ -value on its own is useless. Therefore, Armacell has continued to improve the physical material properties of AF/Armaflex®. By achieving the previously unattained combination of $\mu \geq 10.000$ and $\lambda_{0°C} \leq 0,033 \text{ W/(m}\cdot\text{K)}$ - tested and controlled by independent institutes - it has once again broken new ground. This makes the new AF/Armaflex® the ideal solution to efficiently prevent energy loss, thus saving money also in the long term.

Product range

AF/Armaflex Tubes, length 2 m, black.

Copper pipes		Steel pipes			AF-1		AF-2		AF-3		AF-4		AF-5		AF-6	
Outside Ø mm	Nom. size DN	Inches	Outside Ø mm	Nom. size DN	Ref. code	Nom. insulation thickness	Ref. code	Nom. insulation thickness	Ref. code	Nom. insulation thickness	Ref. code	Nom. insulation thickness	Ref. code	Nom. insulation thickness	Ref. code	Nom. insulation thickness
6	4				AF-1-006 ²⁾	7,0	AF-2-006 ²⁾	9,5								
8	6				AF-1-008 ²⁾	7,0	AF-2-008 ²⁾	10,0								
10	8	1/8	10,2	6	AF-1-010 ²⁾	7,0	AF-2-010 ²⁾	11,0	AF-3-010	12,5	AF-4-010	15,5			AF-6-010	32,0
12	10				AF-1-012 ²⁾	7,5	AF-2-012 ²⁾	11,0	AF-3-012	13,0	AF-4-012	16,0			AF-6-012	32,0
15		1/4	13,5	8	AF-1-015 ¹⁾²⁾	7,5	AF-2-015 ¹⁾²⁾	11,0	AF-3-015 ¹⁾	13,5	AF-4-015 ¹⁾	17,0			AF-6-015	32,0
18	15	3/8	17,2	10	AF-1-018 ¹⁾²⁾	8,0	AF-2-018 ¹⁾²⁾	11,5	AF-3-018 ¹⁾	14,0	AF-4-018 ¹⁾	17,5	AF-5-018	25,0	AF-6-018	32,0
22	20	1/2	21,3	15	AF-1-022 ¹⁾²⁾	8,5	AF-2-022 ¹⁾²⁾	12,0	AF-3-022 ¹⁾	14,5	AF-4-022 ¹⁾	18,0	AF-5-022	25,0	AF-6-022	33,5
25	20		25		AF-1-025	8,5	AF-2-025	12,5	AF-3-025	14,5	AF-4-025	18,5				
28	25	3/4	26,9	20	AF-1-028 ¹⁾²⁾	8,5	AF-2-028 ¹⁾²⁾	12,5	AF-3-028 ¹⁾	15,0	AF-4-028 ¹⁾	19,0	AF-5-028	25,0	AF-6-028	35,0
30	25		30		AF-1-030	8,5	AF-2-030	12,5	AF-3-030	15,0	AF-4-030	19,0				
35	32	1	33,7	25	AF-1-035 ¹⁾	9,0	AF-2-035 ¹⁾	13,0	AF-3-035 ¹⁾	15,5	AF-4-035 ¹⁾	19,5	AF-5-035	27,0	AF-6-035	35,0
38	32		38		AF-1-038	9,0										
42	40	1 1/4	42,4	32	AF-1-042 ¹⁾	9,0	AF-2-042 ¹⁾	13,5	AF-3-042 ¹⁾	16,0	AF-4-042 ¹⁾	20,0	AF-5-042	27,0	AF-6-042	36,5
44,5			44,5		AF-1-045	9,0	AF-2-045	13,5	AF-3-045	16,0	AF-4-045	20,5				
48,3		1 1/2	48,3	40	AF-1-048 ¹⁾	9,0	AF-2-048 ¹⁾	13,5	AF-3-048 ¹⁾	16,0	AF-4-048 ¹⁾	20,5	AF-5-048	27,5	AF-6-048	37,5
54	50		54		AF-1-054 ¹⁾	9,0	AF-2-054 ¹⁾	13,5	AF-3-054 ¹⁾	16,5	AF-4-054 ¹⁾	21,0	AF-5-054	28,5	AF-6-054	38,0
57	50		57		AF-1-057	9,0	AF-2-057	14,0	AF-3-057	16,5	AF-4-057	21,0			AF-6-057	38,5
60,3		2	60,3	50	AF-1-060 ¹⁾	9,0	AF-2-060 ¹⁾	14,0	AF-3-060 ¹⁾	16,5	AF-4-060 ¹⁾	21,5	AF-5-060	29,0	AF-6-060	39,0
64			63,5		AF-1-064	9,5	AF-2-064	14,0	AF-3-064	16,5	AF-4-064	21,5	AF-5-064	29,0	AF-6-064	39,5
70			70		AF-1-070	9,5	AF-2-070	14,0	AF-3-070	17,0	AF-4-070	22,0	AF-5-070	29,5	AF-6-070	40,0
76,1	65	2 1/2	76,1	65	AF-1-076 ¹⁾	9,5	AF-2-076 ¹⁾	14,0	AF-3-076 ¹⁾	17,0	AF-4-076 ¹⁾	22,0	AF-5-076	30,0	AF-6-076	40,5
80					AF-1-080	9,5	AF-2-080	14,5	AF-3-080	17,0	AF-4-080	22,5			AF-6-080	41,0
88,9	80	3	88,9	80	AF-1-089 ¹⁾	9,5	AF-2-089 ¹⁾	14,5	AF-3-089 ¹⁾	17,5	AF-4-089 ¹⁾	22,5	AF-5-089	30,5	AF-6-089	41,5
104,3		3 1/2	101,6/104,3		AF-1-102	9,5	AF-2-102	14,5	AF-3-102	17,5	AF-4-102	23,0			AF-6-102	42,5
108	100		108		AF-1-108	9,5	AF-2-108	14,5	AF-3-108	18,0	AF-4-108	23,0	AF-5-108	31,0	AF-6-108	42,5
114	100	4	114,3	100	AF-1-114	9,5	AF-2-114	15,0	AF-3-114	18,0	AF-4-114	23,5	AF-5-114	31,5	AF-6-114	43,0
125			125		AF-1-125	9,5	AF-2-125	15,0	AF-3-125	18,5	AF-4-125	23,5				
133	125		133		AF-1-133	9,5	AF-2-133	15,5	AF-3-133	18,5	AF-4-133	24,0			AF-6-133	44,0
139,7		5	139,7	125	AF-1-140	10,0	AF-2-140	15,5	AF-3-140	19,0	AF-4-140	24,5	AF-5-140	32,0	AF-6-140	44,5
159	150		160		AF-1-160	10,0	AF-2-160	16,0	AF-3-160	19,0	AF-4-160	25,0			AF-6-160	45,0
Tolerance					± 1,0 mm		± 1,0 mm		± 1,5 mm		± 1,5 mm		± 2,5 mm		± 3,0 mm	
¹⁾ also available as self-adhesive tubes ²⁾ also available as endless tubes					NEW! Independently supervised $\mu \geq 10.000$ and $\lambda_{0^\circ\text{C}} \leq 0,033 \text{ W}/(\text{m}\cdot\text{K})$								Independently supervised $\mu \geq 7.000$ and $\lambda_{0^\circ\text{C}} \leq 0,036 \text{ W}/(\text{m}\cdot\text{K})$ Single certificates $\mu \geq 10.000$ and $\lambda_{0^\circ\text{C}} \leq 0,033 \text{ W}/(\text{m}\cdot\text{K})$			

AF/Armaflex Sheets

Ref. code	Insulation thickness	Tolerance	Compatible with tube range *	
AF-10MM	10 mm	± 1,0 mm	AF-1	NEW! Independently supervised $\mu \geq 10.000$ and $\lambda_{0^\circ\text{C}} \leq 0,033 \text{ W}/(\text{m}\cdot\text{K})$
AF-13MM	13 mm	± 1,0 mm	AF-1 / AF-2	
AF-16MM	16 mm	± 1,0 mm	AF-2	
AF-19MM	19 mm	± 1,0 mm	AF-3	
AF-25MM	25 mm	± 1,0 mm	AF-4	Independently supervised $\mu \geq 7.000$ and $\lambda_{0^\circ\text{C}} \leq 0,036 \text{ W}/(\text{m}\cdot\text{K})$ Single certificates $\mu \geq 10.000$ and $\lambda_{0^\circ\text{C}} \leq 0,033 \text{ W}/(\text{m}\cdot\text{K})$
AF-32MM	32 mm	± 2,0 mm	AF-5	
AF-50MM	50 mm	± 2,0 mm	AF-6	

Sheets are available in a standard and self-adhesive version, either as pieces or as endless material.
 *please consult the Armaflex Installation Instruction manual.

Years of experience with typical application situations and continuous initiatives in research, development and production have resulted in an optimized product range. The tube range has been newly designed and adapted to the sheet range. Even easier and more practical than ever.

Technical Data

Brief description:	Highly flexible closed-cell insulation material with high water vapour diffusion resistance and low thermal conductivity
Material:	Elastomeric foam based on synthetic rubber Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure. Covered with polyethylene foil.
Applications:	Insulation / protection for pipes, air ducts, vessels (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration and process equipment to prevent condensation and save energy.

Property	Value / Assessment	Test certificate *1	Supervision *2	Special remarks
Temperature range (Temperature limits) Max. line temperature Min. line temperature	+ 105° C (flat surface and tape +85° C) - 50° C (-200° C) Our Customer Service Center should be consulted for applications with temperatures below -50° C.	D 4158 D 4159	●/○ ●/○	Tested acc. to prEN 14706, prEN 14707 and prEN 14304
Thermal Conductivity λ_d [W/(m·K)] at various mean temperatures v_m [°C]				Tested acc. to
Sheets, stripes, tape (AF-10MM to AF-25MM)	-50 -30 -20 +/-0 +10 +20 +40 +70 +85 0,027 0,029 0,031 0,033 0,034 0,035 0,037 0,040 0,042	D 4158	●/○	DIN EN 12667
Tubes (AF-1 to AF-4)	- 0,029 0,031 0,033 0,034 0,035 0,037 0,040 -	D 4159	●/○	EN ISO 8497
Tubes (AF-5 to AF-6)	- 0,033 0,034 0,036 0,037 0,038 0,040 0,043 -	D 3262	●/○	EN ISO 8497
Sheets (AF-32MM to AF-50MM)	0,031 0,033 0,034 0,036 0,037 0,038 0,040 0,043 0,045	D 3266	●/○	DIN EN 12667
Water vapour diffusion resistance factor μ Sheets (AF-10MM to AF-25MM) and tubes (AF-1 to AF-4) Sheets (AF-32MM to AF-50MM) and tubes (AF-5 to AF-6)	≥ 10.000 ≥ 7.000	D 4128 D 4129 D 4108 D 3325	●/○ ●/○	Tested acc. to EN ISO 12086 and EN 13469
Reaction to fire 1. Building material class	low flammability (DIN 4102-B1) **3 P-MPA-E-03-510 Complete range 3 mm low flammability (B - s3 - d0) **3 Z-56.269-768	moderately flammable (DIN 4102-B2)		
Tubes (incl. self-adhesive) Tape, self-adhesive		3 mm	●/○	Tested acc. to DIN 4102, part 1
Sheets Sheets, self-adhesive Endless sheets Endless sheets, self-adhesive Stripes, self-adhesive	AF-10MM to AF-32MM (10 - 32 mm) AF-10MM to AF-32MM (10 - 32 mm) AF-10MM to AF-32MM (10 - 32 mm) AF-10MM to AF-32MM (10 - 32 mm) AF-10MM to AF-19MM (10, 13, 16, 19 mm)	AF-50 (50 mm) AF-50 (50 mm)	●/○	Tested acc. to DIN EN 13823
2. Practical fire behaviour	self-extinguishing, does not drip, does not spread flames			
3. Fire resistance of structural element Wall penetrations Ceiling penetrations	$\leq R90$ P-3849/5370-3 MPA BS $\leq R90$ P-3849/5370-3 MPA BS	D 2300		Tested acc. to DIN 4102, part 11
Acoustic insulation (DIN 4109) Reduction of structure-borne sound transmission	Insulation effect up to 30 dB(A)	D 3660		Tested acc. to DIN 52219 and DIN EN ISO 3822-1
Dimensions and limit deviations	in accordance with prEN 14304, table 1	D 4158		Tested acc. to EN 822, EN 823, EN 13467
AGI Designation Code	Tubes: 36.12.01.06.04/06 **4 Sheets: 36.07.01.02.04 **4	D 4158 D 4159		Tested acc. to AGI Q 143-1
Storage Storage life	Self-adhesive tapes, self-adhesive sheets, tubes, stripes: 1 year	Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0° C – 35° C).		

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

* 2 ●: Supervised according to VDI 2055, certificate no.: 6V079 (D 4160) and official supervision by testing institute (fire behaviour - B1 or euroclass B-s3-d0).
○: Own in-factory monitoring according to or following prEN 14304 Production plants: Münster. Zeulenroda

* 3 The building materials classification is valid on metal or solid, mineral surfaces.

* 4 The AGI Designation code will be replaced by the CE description code as soon as EN 14304 is available.

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. Installation instructions are available in our Armaflex installation manual. Please consult our technical service before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some new refrigerants the discharge temperature may exceed +105 °C, consult Technical Service for further information. For outside use, AF/Armaflex® should be protected within 3 days, eg. with Armafinish 99.