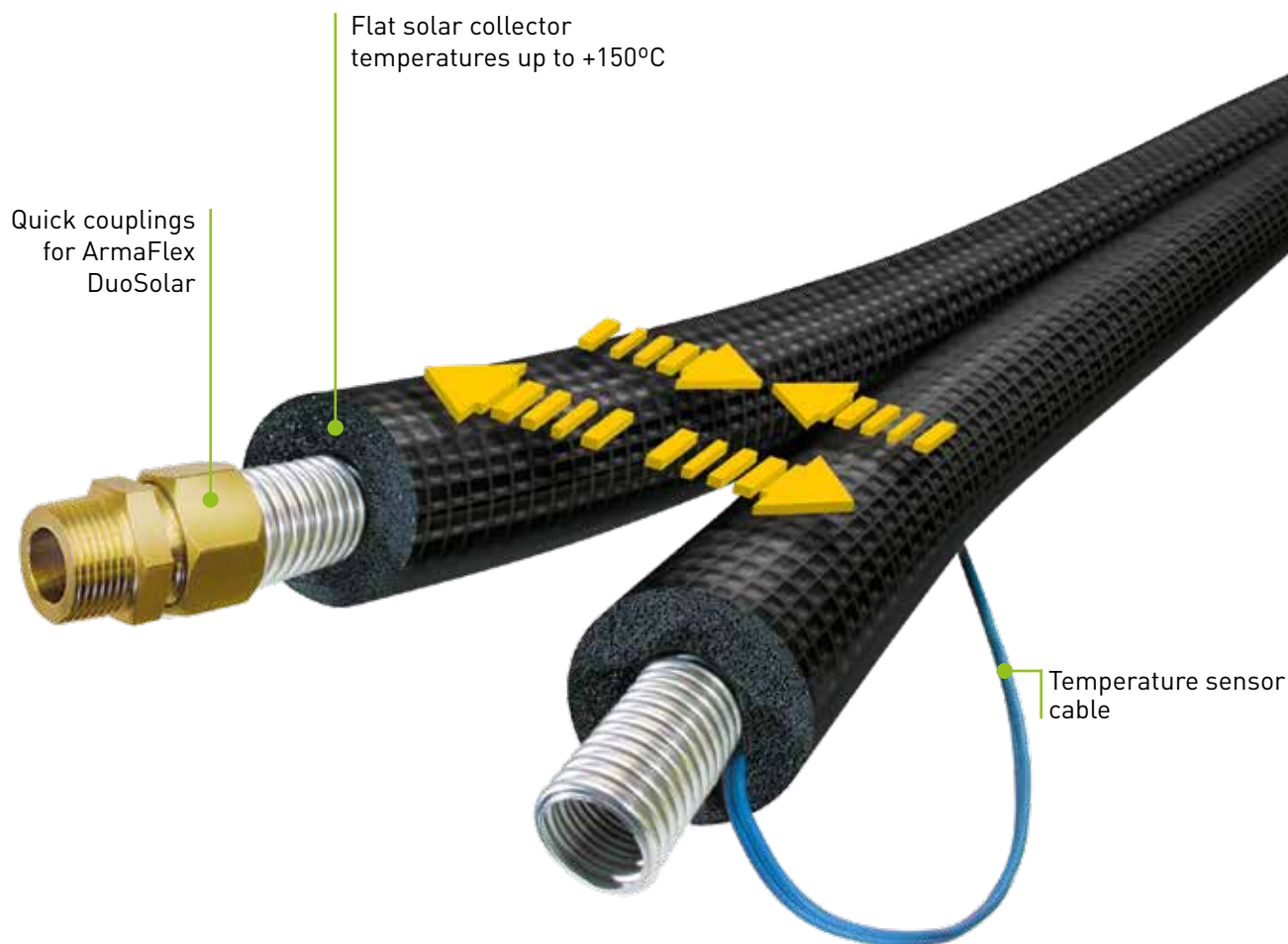# ArmaFlex® DuoSolar

THE EASY-TO-INSTALL, PRE-INSULATED PIPING SYSTEM FOR EFFICIENCY IN SOLAR HOT WATER APPLICATIONS

- Reduce cost and assembly time of solar hot water connections

- Outer layer for resistance against environmental impact

- Reduces energy loss and minimises CO2 emissions

- Wide range of accessories available for a quick and complete insulation

- Patented join split adhesive technology

- Integrated temperature sensor cable

- Polyolefin-copolymer textured coating provides good resistance to UV radiation

- Excellent resistance to water vapour diffusion combined with low thermal conductivity

- Low maintenance and repair costs

CE

Quick couplings
for ArmaFlex
DuoSolar

Flat solar collector
temperatures up to +150ºC

Temperature sensor
cable

BENEFITS

- Reduce energy loss and minimise CO_2 emissions.
- Reduce installation time and costs.
- Resistant to environmental impact.
- Excellent performance in high temperature applications.

- Integrated temperature sensor cable.
- Good resistance to UV radiation.
- Easy joining and separation of pipes during installation.
- Wide range of additional accessories available.

INSTALLATION GUIDE

Steps for a correct installation of solar pipes with quick couplings.

Cut the pipe to size — 1

Remove all burrs from the end — 2

Tighten the nut until you feel resistance — 3

Comparison: Bad - Good — 4

RANGE

PRE-INSULATED VA PIPES
Coils

VA ACCESSORIES
Pipe hanger

RAPID CONNECTIONS
Corrugated hoses, Copper pipes, female straight interal thread, Male straight thread, Male tapered thread, Cylindrical connection, Clamping ring

RECOMMENDED PRODUCTS
For a complete installation

ArmaFlex HT625 adhesive

ArmaFlex Cleaner

TECHNICAL DATA

ArmaFlex DuoSolar is a flexible pre-insulated, UV resistant insulation system used to connect solar collectors with hot-water storage tanks. The system offers a smart join-split system with twin stainless steel pipes and integrated temperature sensor cable.

Material type	**Insulation material:** Synthetic EPDM rubber based foam. **Corrugated stainless steel hose:** Austenitic stainless steel, according to EN 10088-2: X2CrNiMo 17-12-2 and DIN 17441: 1.4404. **Covering:** Polyolefin copolymer film.
Colour	Black
Material special information	The return pipe includes a temperature sensor cable (2x0.75mm^2) with halogen-free, temperature resistant silicone coating (+180˚C).
Applications	Tubing system to connect solar collectors with solar thermal hot water cylinders.
Remarks	The solar system and heat transfer fluid has to be well matched in order to guarantee corrosion and interference-free operation. We recommend an annual laboratory test of the fluid medium (density, concentration, pH). The heat transfer fluid has to be completely replaced in case the parameters no longer meet the requirements EC Certificate of Conformity no. 0543 of Güteschutzgemeinschaft Hartschaum e.V. , Celle

Property	Value/Assessment	Test	Standards & Remarks
Temperature Range			
Max service temperature	+150˚C	EU 5670	Tested acc to EN 14706 & EN 14707
Min service temperature	-50˚C		
Thermal Coductivity			
	λ 40˚C $\leqslant$ 0.042 W/(m·K) [36.92+0.125· ϑ_m + 0.0008· $(\vartheta_m$ -30)^2]/1000	EU 5670	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
Water Vapour Diffusion Resistance			
	$\mu \geqslant 4000$	EU 5670	Tested acc.to EN 13469
Fire Performance			
Reaction to fire	Euroclass E	EU 5670	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
Other technical features			
Dimensions & tolerances	In accordance with EN 14304, table 1	EU 5670	Tested acc. to EN 13467
Chemical behaviour	Excellent resistance to ozone, chemicals (consult product test list) and building materials		
UV resistance	Good		
Health aspects	Dust and fibre free		
Max operating pressure (bar)	ODP zero GWP zero	EU 5197	
Pipe volume (l/m)	CU12 = 0.085 DN16 = 0.272 CU15 = 0.141 DN20 = 0.430 CU18 = 0.201 DN25 = 0.633		

ARMAFLEX DUOSOLAR PRE-INSULATED VA PIPE (COILS)

Covering colour - Black, Pre-insulated corrugated tubes made of stainless steel 1.4404 (ASTM 316 L)

Outside - Ø (mm)	Code	Thickness (mm)	Outer pipe & insulation (mm)	Coil lengh (m)	
21.4 VA	SO-DV-14X16/E10	14	2 X 50	10	
21.4 VA	SO-DV-14X16/E15	14	2 X 50	15	
21.4 VA	SO-DV-14X16/E20	14	2 X 50	20	
21.4 VA	SO-DV-14X16/E25	14	2 X 50	25	
26.7 VA	SO-DV-14X20/E10 •	14	2 X 55	10	
26.7 VA	SO-DV-14X20/E15 •	14	2 X 55	15	
26.7 VA	SO-DV-14X20/E20 •	14	2 X 55	20	
26.7VA	SO-DV-14X20/E25 •	14	2 X 55	25	
31.8 VA	SO-DV-14X25/E15 •	14	2 X 60	15	
31.8 VA	SO-DV-14X25/E25 •	14	2 X 60	25	
21.4 VA	SO-DV-20X16/E15 •	20	2 X 61	15	
21.4 VA	SO-DV-20X16/E25 •	20	2 X 61	25	
26.7 VA	SO-DV-20X20/E15 •	20	2 X 67	15	
26.7 VA	SO-DV-20X20/E25 •	20	2 X 67	25	

VA ACCESSORIES

Code	Description	Pieces/set	
SCH-DN16-FEF14 •	Pipe hanger for DN16FEF14 with hexhead screw M8X80 and raw plugs S10, insulation thickness 14mm	4	
SCH-DN16-FEF20 •	Pipe hanger for DN16FEF20 with hexhead screw M8X80 and raw plugs S10, insulation thickness 20mm	4	
SCH-DN20-FEF14 •	Pipe hanger for DN20FEF14 with hexhead screw M8X80 and raw plugs S11, insulation thickness 14mm	4	
SCH-DN20-FEF20 •	Pipe hanger for DN20FEF20 with hexhead screw M8X80 and raw plugs S11, insulation thickness 20mm	4	
SCH-DN25-FEF14 •	Pipe hanger for DN25FEF14 with hexhead screw M8X80 and raw plugs S12, insulation thickness 14mm	4	
SO-VA-DNI-16 •	Double nipple ¾" for DN16	2	
SO-VA-DNI-20 •	Double nipple 1" for DN20	2	
SO-VA-DNI-25 •	Double nipple 1 ¼" for DN25	2	
SO-VA-FIT-16/4 •	Fitting set for DN16 with 4 of each split rings, union nuts & washers	4	
SO-VA-FIT-20/4 •	Fitting set for DN20 with 4 of each split rings, union nuts & washers	4	
SO-VA-FIT-25/4 •	Fitting set for DN25 with 4 of each split rings, union nuts & washers	4	

Other information
• Not a stock item

FITTINGS FOR CORRUGATED HOSES

Quick fitting coupling for corrugated stainless steel hoses.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-DN16 •	Corrugated stainless steel hoses DN16	10	
DN20	SO-SDN20-DN20 •	Corrugated stainless steel hoses DN20	10	
DN25	SO-SDN25-DN25 •	Corrugated stainless steel hoses DN25	4	

FITTINGS FOR COPPER PIPES

Quick fitting coupling with clamping ring for copper pipes.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-CU15 •	Plain pipes Ø 15mm	10	
DN16	SO-SDN16-CU18 •	Plain pipes Ø 18mm	10	
DN16	SO-SDN16-CU22 •	Plain pipes Ø 22mm	10	
DN20	SO-SDN20-CU15 •	Plain pipes Ø 15mm	10	
DN20	SO-SDN20-CU18 •	Plain pipes Ø 18mm	10	
DN20	SO-SDN20-CU22 •	Plain pipes Ø 22mm	10	
DN25	SO-SDN25-CU18 •	Plain pipes Ø 18mm	4	
DN25	SO-SDN25-CU22 •	Plain pipes Ø 22mm	4	

FITTINGS WITH FEMALE STRAIGHT INTERNAL THREAD

Quick fitting coupling with female straight internal thread for metal to metal or flat-sealing screw joints.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-I1/2 •	Inside thread G ½"	10	
DN16	SO-SDN16-I3/4•	Inside thread G ¾"	10	
DN16	SO-SDN16-I1 •	Inside thread G1"	10	
DN20	SO-SDN20-I3/4	Inside thread G ¾"	10	
DN20	SO-SDN20-I1	Inside thread G1"	10	
DN25	SO-SDN25-I1	Inside thread G1"	4	
DN25	SO-SDN25-I11/4	Inside thread G1 ¼"	4	

Other information
• Not a stock item

FITTINGS WITH MALE STRAIGHT THREAD

Quick fitting coupling with male staright thread for flat-sealing screw joints.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-F3/4 •	External thread G¾"	10	
DN16	SO-SDN16-F1 •	External thread G1"	10	
DN20	SO-SDN20-F3/4 •	External thread G¾"	10	
DN20	SO-SDN20-F1 •	External thread G1"	10	

FITTINGS WITH MALE TAPERED THREAD

Quick fitting coupling with male tapered thread for metal to metal sealing screw joints.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-E1/2 •	External thread R½	10	
DN16	SO-SDN16-E3/4 •	External thread R¾	10	
DN16	SO-SDN16-E1 •	External thread R1	10	
DN20	SO-SDN20-E3/4 •	External thread R¾	10	
DN20	SO-SDN20-E1 •	External thread R1	10	
DN25	SO-SDN25-E1 •	External thread R1	4	
DN25	SO-SDN25-E11/4 •	External thread R¼	4	

FITTINGS WITH CYLINDRICAL CONNECTION

Quick fitting coupling with cylindrical connection piece.

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-Z18 •	Cylindrical connection piece Ø 18mm	10	
DN20	SO-SDN20-Z18 •	Cylindrical connection piece Ø 18mm	10	

CLAMPING RING

Clamping ring for quick fitting coupling

Stainless steel VA	Code	Connection	Pieces/carton	
DN16	SO-SDN16-CR •	Clamping ring	50	
DN20	SO-SDN20-CR •	Clamping ring	50	
DN25	SO-SDN25-CR •	Clamping ring	50	

Temperature Range	
Max service temperature	+150˚C (For temperatures above +110˚C please contact our technical department)
Min service temperature	-50˚C (For temperatures below -50 ˚C please contact our technical department)
Performance	
Coverage (guidance only)	Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit) • 10mm > 1120m per litre > 140m per litre • 20mm > 280m per litre > 70m per litre • 30mm > 175m per litre > 45m per litre • 40mm > 130m per litre > 35m per litre Sheets • 3-4 m² per litre
Storage & shelf life	
	12 months in an unopened container. Do not store with expolsive substances / spontaneously combusting substances. Store as cool as possible but protected from frost. In the event of frost any gelification is reversible on warming
Preparation of surfaces	
	Clean surfaces and ArmaFlex surface with ArmaFlex Cleaner. Compatibility with bases: • Very good adhesion to metallic sufaces. • The adhesive's compatibility with colour coated sufaces needs to be tested. • Incompatible with Asphalt, bitumen and red lead (linseed oil-based)
Woking time	
Drying time	3- 5 mins
Contact adhesion	15 - 20 mins
Setting	36 hours
	The open time depends on the quantity as well as indoor climate conditions. Before operating plant the setting time needs to be allowed to lapse.
Other technical features	
Flash point	approx -26 ˚C
Expolsion limits	Lower: approx 1.1 Vol % Upper: approx 12.8 Vol %
Hazard class	Highly flammable
Ageing stability	Very good
Resistance to weathering	Very good
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Packaging with traces of cured product can be recycled. Packaging with uncured product must be recycled into new product.
Transport classes	Depending on the type of transport

ARMAFLEX HT625 ADHESIVE

Code	Description	Pieces/carton	£/pc
ADH-HT625/0.25 •	ArmaFlex HT625 one component adhesive, 0.25 Litre can, with brush	40	21.30
ADH-HT625/0.5	ArmaFlex HT625 one component adhesive, 0.5 Litre can, with brush	12	29.35
ADH-HT625/1.0	ArmaFlex HT625 one component adhesive, 1 Litre can, with brush	12	48.53

ArmaFlex HT625

THE HIGH TEMPERATURE ADHESIVE FOR USE WITH HT/ARMAFLEX

- Specially formulated for a wide range of temperatures and applications

- Water-tight bonding of HT/ArmaFlex® and ArmaFlex® DuoSolar insulation systems

- For operating temperatures up to +150 °C

- High performance, one component industrial grade adhesive

- Low-viscosity air-drying contact adhesive

ARMAFLEX HT625 One-component adhesive for high temperature applications, specifically developed for HT/ArmaFlex installations but also suitable for all ArmaFlex synthetic rubber based insulation materials.	
Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	Beige
Material special info	Liquid
Applications	Application on pipes and tanks with service temperature up to +150˚C. Gluing of HT/ArmaFlex insulation materials and other ArmaFlex synthetic rubber based insulation materials (except ArmaFlex Ultima).
Special features	Specially formulated adhesive for uniform and safe seam bonding of ArmaFlex insulation materials applied on high temperature lines.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +20˚C, not below 0˚C. At temperatures below +5˚C or high humidity approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight.
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Wait 36 hours before applying coatings (exception: ArmaFinish 99), adhesive tape, coverings etc.

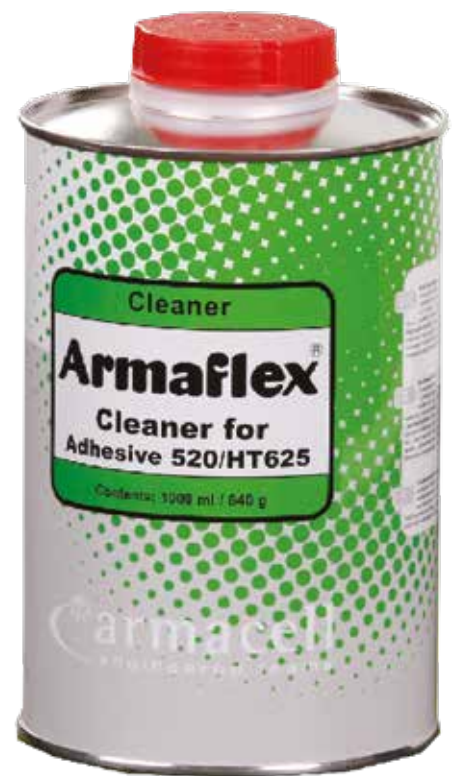| Temperature Range	
Max service temperature	+150˚C (For temperatures above +110˚C please contact our technical department)
Min service temperature	-50˚C (For temperatures below -50 ˚C please contact our technical department)
Performance	
Coverage (guidance only)	Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit) • 10mm > 1120m per litre > 140m per litre • 20mm > 280m per litre > 70m per litre • 30mm > 175m per litre > 45m per litre • 40mm > 130m per litre > 35m per litre Sheets • 3-4 m^2 per litre
Storage & shelf life	
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ArmaFlex Cleaner

SURFACE CLEANER FOR ARMAFLEX INSTALLATIONS

- Ensures a clean surface before the use of ArmaFlex® Adhesives
- Removal of dirt from surfaces
- Cleaning of brushes and tools contaminated with ArmaFlex® adhesive

ARMAFLEX Cleaner	
Special cleaner for use with all ArmaFlex adhesives	
Colour	Clear
Material special info	Liquid
Applications	Cleaning of surfaces where ArmaFlex is to be installed.
Assembly	To ensure a perfect adhesion all contaminated sufaces, including ArmaFlex, must be cleaned. In addition the cleaner can be used to sufaces where ArmaFinish 99 is being applied.
Remarks	Can also be used to clean tools.

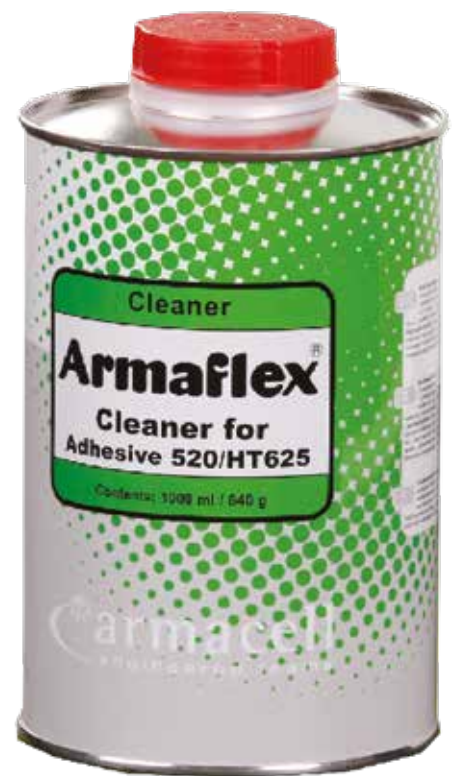| Technical features	
Storage & shelf life	12 months sealed in original container. Keep container tightly closed in a cool, well ventilated place. Protect from heat & direct sunlight. Do not store together with explosive substances or spontaneously combusting subtances.
Preparation of surfaces	Clean surfaces and ArmaFlex surface with ArmaFlex Cleaner. Compatibility with bases: • Very good adhesion to metallic sufaces. • The adhesive's compatibility with colour coated sufaces needs to be tested. • Incompatible with asphalt, bitumen and red lead (linseed oil-based)
Flash point	approx -20 ˚C
Explosion limits	Lower: approx 1% Vol, Upper: approx 13 % Vol. Regulation of inflammable liquids.
Recycling	Allocation of a waste code number, according to the European Waste Catalouge, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Cans must be emptied prior to recycling. Cans containing adhesive must be recycled into new product.
Transport classes	Dependent on the transport sector

ARMAFLEX CLEANER

Code	Description	Pices/carton
CLEANER/1.0	Special cleaner for use with ArmaFlex Adhesive	4

ArmaFlex Cleaner

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