

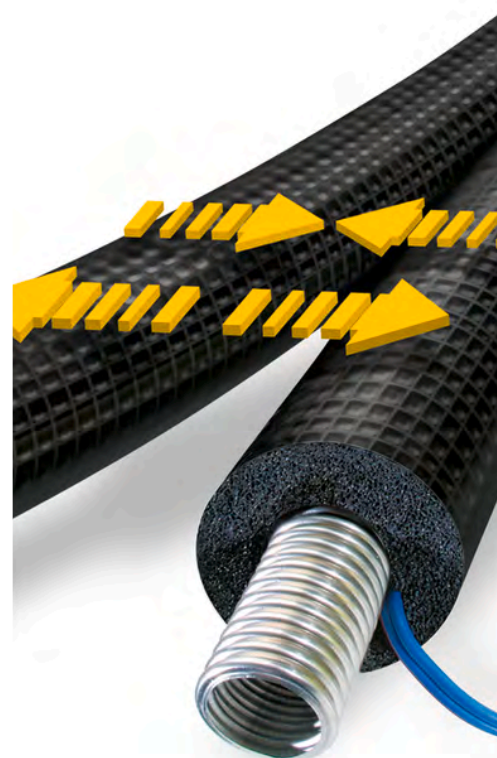


INSTALL IT. OPTIMIZE SOLAR ENERGY.

ArmaFlex DuoSolar

Provides a full system solution and ease of installation for solar energy applications

- // Specially designed, pre-insulated solar tubing
- // Stainless steel and copper pipe options
- // Easy and fast to install
- // Wide range of accessories
- // Integrated sensor cable



 **armacell**[®]
ArmaFlex[®]

INSTALL IT. OPTIMIZE SOLAR ENERGY

ArmaFlex DuoSolar



The ArmaFlex DuoSolar range offers reliable and easy-to-install solutions for solar thermal systems. The pre-insulated feed and return pipes connect the solar panel with the thermal storage water heater. They optimize thermal efficiency and increase life time expectancy of the entire system. ArmaFlex DuoSolar for flat solar collectors with up to +150 °C is available as covered corrugated stainless-steel tubing (ArmaFlex DuoSolar VA) and copper piping (ArmaFlex DuoSolar CU). Due to the patented joint-split fastening system, the pre-insulated pipes can be split and re-joined easily during the installation process without any damage to the protective foil.

// DuoSolar 220

While solar pipes for flat plate collectors are only suitable for a maximum application temperature of 150 °C, DuoSolar 220 even withstands the high temperatures of tube collectors of up to 220 °C. Flexible foam insulation materials become brittle at such high temperatures and lose their insulating properties. With DuoSolar 220 Armacell has closed this gap and also provides a twin-pipe system for the high operating temperatures of evacuated tube collectors.

ArmaFlex DuoSolar e-Save



// Quick-fitting Couplings

System accessories which are especially tailored to the solar range ensure tight connections. For the installation of ArmaFlex DuoSolar VA Armacell offers quick-fitting couplings:

The flexible pipes can be connected to the system components of solar thermal systems in seconds – simply by tightening a nut. This eliminates the time-consuming flanging of connections and allows considerable cost savings. The couplings provide a permanent and leakproof seal for corrugated stainless steel tubes.

With ArmaFlex DuoSolar e-Save Armacell now provides a space-saving “100% solution”. Based on calculations by FIW Munich using the finite element method, the R&D department developed pre-insulated twin pipes that not only offer high energy savings, but are also extremely space-efficient. ArmaFlex DuoSolar e-Save requires less than half the space needed by separately laid solar pipes to achieve same energy efficiency.



// Your Benefits

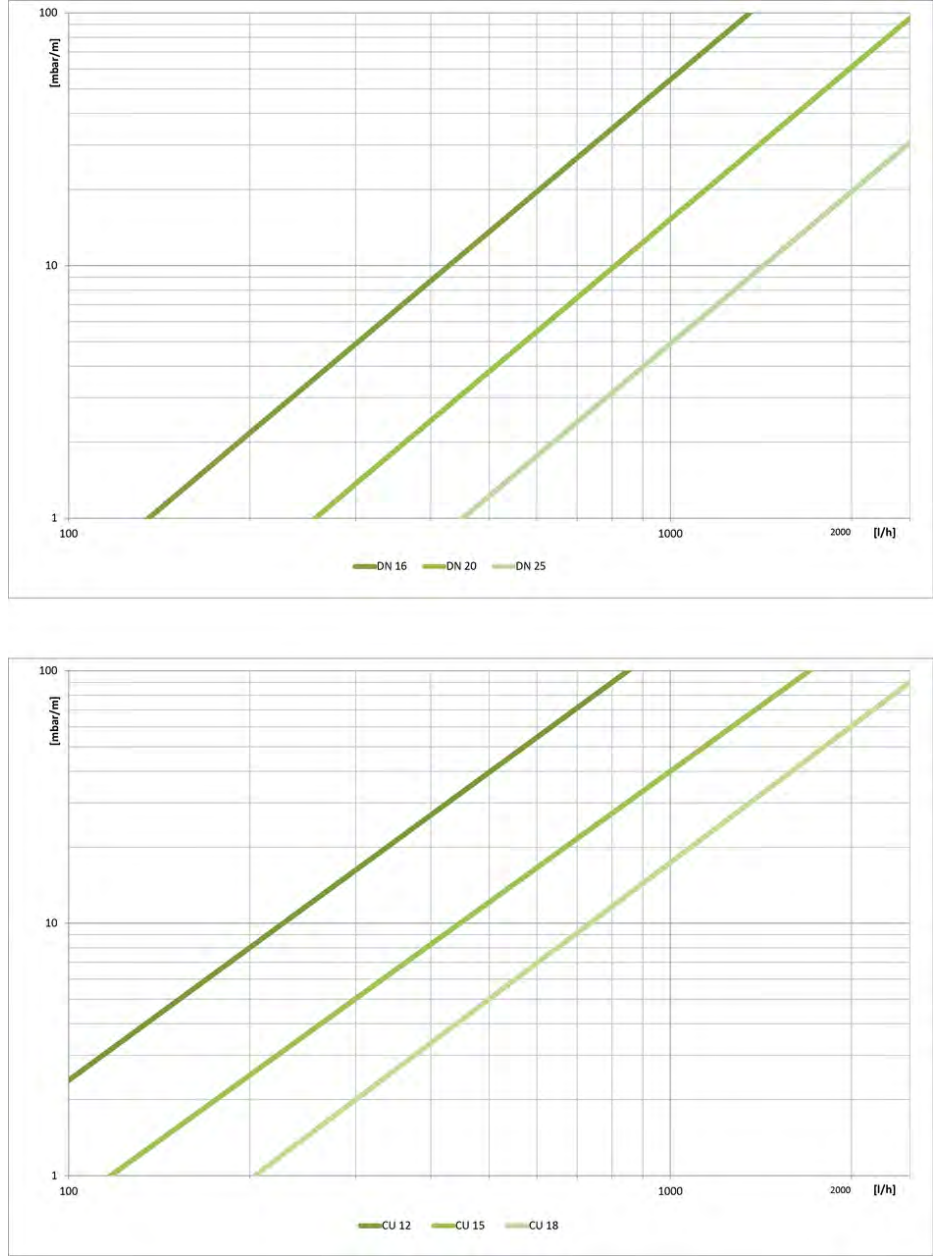
- Space-saving ‘100% solution’
- Pre-insulated twin pipes
- Maximum energy savings with extreme space-efficiency
- Requires less than half the space needed by separately laid solar pipes



TECHNICAL DATA - ARMAFLEX DUOSOLAR

Brief description	ArmaFlex DuoSolar is a flexible pre-insulated, UV resistant piping system used to connect solar collectors with the hot-water storage tank in an easy and professional way. The system is offered with a smart join-split system with two copper or stainless steel hoses and includes a sensor cable.
Material type	Factory-made flexible elastomeric foam based on ethylene propylene diene methylene (EPDM), according to EN 14304. Corrugated austenitic stainless steel hose according to EN 10088-2: X 2 CrNiMo 17-12-2 and DIN 17441: 1.4404 // Fullfill EN ISO 10380:2013 and EN 13618 p.B. 7.2. Polyolefin-copolymer coating.
Product colour range	Black
Product range	Pre-insulated copper pipes or corrugated stainless steel hoses in different coil lengths. In the return pipe, a sensor cable [2x0.75 mm ²] with halogen free, temperature resistant silicon coating (+180°C) is integrated.
Applications	Piping system to connect solar collectors with the hot-water storage tank, hot-water boiler and for other uses.
Installation	ArmaFlex HT 625 is a certified and compatible adhesive for a long-term performing system.
Declaration of performance	Declaration of Performance in accordance with Article 7(3) of Regulation (EU) No 305/2011 is available at www.armacell.com/DoP .
Remarks	During installation, we strongly recommend that proprietary hangers are used at every one meter distance to support the whole system. The solar system and heat transfer fluid has to be well matched to ensure corrosion- and interference-free operations. We recommend an annual laboratory test of the fluid medium (density, concentration, corrosion, pH value). The heat transfer fluid has to be completely replaced in case the parameters are out of limits. EC Certificate of Conformity no. 0543 of Güteschutzgemeinschaft Hartschaum e.V. Celle

Property	Value / Assessment	Standard / Test method
Temperature range		
Service temperature ¹	Min. °C -50	Max. °C 150
Thermal conductivity		
Declared thermal conductivity	θm λd ≤ [W/(m·K)] Formula	40°C 0,042 λ = [36.92 + 0.125 · θm + 0.0008 · (θm-30) ²] / 1000
Fire Performance and Approvals		
Reaction to fire	E(L)	EN 13501-1, EN ISO 11925-2
Resistance to water vapour		
Water vapour diffusion resistance factor	μ ≥ 4,000	EN 13469
Physical attributes		
Dimensions and tolerances	In accordance to EN 14304, table 1.	EN 13467
Weather and UV resistance		
UV resistance	Very good	EN ISO 4892-2
Other technical features		
Maintenance	Long term corrosion and failure proof operation of the solar thermal equipment is only possible when the system and heat transfer medium are optimally matched to each other. We recommend an annual laboratory test of the medium (e.g. density, concentration, corrosion protection, pH). The heat transfer medium must be replaced completely, if the parameters do not longer meet the specifications.	
Maximum operating pressure (bar)	CU 12 = 79 // DN 16 = 16 CU 15 = 62 // DN 20 = 10 CU 18 = 65 // DN 25 = 10	

Property	Value / Assessment	Standard / Test method
Maximum operating pressure (graph) ²		

Pipe volume (l/m)
 CU 12 = 0,085 // DN 16 = 0,272
 CU 15 = 0,141 // DN 20 = 0,430
 CU 18 = 0,201 // DN 25 = 0,633

¹For use in temperatures beyond the maximum and minimum service temperature range indicated in the technical data table, please contact our Customer Service Centre.

²Pressure drop [mbar/m] over Volume flow [l/h] for Medium temperature 60°C // Heat fluid 1,2-Propylenglycol // Dynamic Viscosity 1612.8×10^{-6} kg/ms // Weight density 1008 kg/m³.

Coil – pre-insulated with copper pipes

Pipe Ø [mm]	Item	Outer diameter [mm]	Thickness [mm]	Length [m]	EAN	Content [metric]
12	SO-DC-14X12/E15	40	14	15	7612207243475	15 m
12	SO-DC-14X12/E25	40	14	25	7612207278866	25 m
15	SO-DC-14X15/E10	43	14	10	7612207227055	10 m
15	SO-DC-14X15/E15	43	14	15	7612207227062	15 m
15	SO-DC-14X15/E20	43	14	20	7612207227079	20 m
15	SO-DC-14X15/E25	43	14	25	7612207227086	25 m
18	SO-DC-14X18/E10	46	14	10	7612207227093	10 m
18	SO-DC-14X18/E15	46	14	15	7612207227109	15 m
18	SO-DC-14X18/E20	46	14	20	7612207227116	20 m
18	SO-DC-14X18/E25	46	14	25	7612207227123	25 m

Coil – pre-insulated with stainless steel pipes. Black foam with black covering. Pre-insulated corrugated stainless steel pipes 1.4404 (ASTM 316 L)

Pipe Ø [mm]	Item	Outer diameter [mm]	Thickness [mm]	Length [m]	EAN	Content [metric]
21	SO-DV-14X016/X5	50	14	15	7612207451382	15 m
21	SO-DV-14X016/X7	50	14	15	7612207462142	15 m
21	SO-DV-14X16/100	50	14	100	7612207369496	100 m
21	SO-DV-14X16/E10	50	14	10	7612207227178	10 m
21	SO-DV-14X16/E15	50	14	15	7612207227185	15 m
21	SO-DV-14X16/E20	50	14	20	7612207227192	20 m
21	SO-DV-14X16/E25	50	14	25	7612207227208	25 m
21	SO-DV-14X16/E50	50	14	50	7612207290547	50 m
21	SO-IV-14X16/100	50	14	100	7612207404944	100 m
27	SO-DV-14X20/100	55	14	100	7612207371413	100 m
27	SO-DV-14X20/E10	55	14	10	7612207227215	10 m
27	SO-DV-14X20/E15	55	14	15	7612207227222	15 m
27	SO-DV-14X20/E20	55	14	20	7612207227239	20 m
27	SO-DV-14X20/E25	55	14	25	7612207227246	25 m
27	SO-DV-14X20/E50	55	14	50	7612207301762	50 m
27	SO-IV-14X20/100	55	14	100	7612207404937	100 m
32	SO-DV-14X25/100	60	14	100	7612207371420	100 m
32	SO-DV-14X25/E15	60	14	15	7612207280975	15 m
32	SO-DV-14X25/E25	60	14	25	7612207280982	25 m
32	SO-IV-14X25/100	60	14	100	7612207404951	100 m

Coil – pre-insulated with stainless steel pipes. Black foam with black covering. Pre-insulated corrugated stainless steel pipes 1.4404 (ASTM 316 L)

Pipe Ø [mm]	Item	Outer diameter [mm]	Thickness [mm]	Length [m]	EAN	Content [metric]
21	SO-DV-20X16/E15	62	20	15	7612207280968	15 m

VA accessories

Item	Description	EAN	Content [quantity]
SO-VA-DNI-16	Double nipple ¾" for DN 16	7612207234268	1 piece
SO-VA-DNI-20	Double nipple 1" for DN 20	7612207234275	1 piece

VA accessories

Item	Description	EAN	Content [quantity]
SO-VA-DNI-25	Double nipple 1¼" for DN 25	7612207278637	1 piece
SO-VA-FIT-16/4	Fitting set for DN16 with 4 of each spring rings, union nuts, washers	7612207234244	1 piece
SO-VA-FIT-20/4	Fitting set for DN20 with 4 of each spring rings, union nuts, washers	7612207234251	1 piece
SO-VA-FIT-25/4	Fitting set for DN25 with 4 of each spring rings, union nuts, washers	7612207279948	1 piece

Clamping ring. Clamping ring for quick fitting coupling

Item	Description	EAN	Content [quantity]
SO-SDN16-CR	Clamping ring	7612207355819	50 piece
SO-SDN20-CR	Clamping ring	7612207355826	50 piece
SO-SDN25-CR	Clamping ring	7612207355833	50 piece

CU accessories

Item	Description	EAN	Content [quantity]
SCH-CU15-FEF14	Pipe hanger for CU15-FEF14 with hex-head screw M8x80 and raw plugs S11, insulation thickness 14mm	7612207289756	1 piece
SCH-CU18-FEF14	Pipe hanger for CU18-FEF14 with hex-head screw M8x80 and raw plugs S12, insulation thickness 14mm	7612207289770	1 piece

VA accessories

Item	Description	EAN	Content [quantity]
SCH-DN16-FEF14	Pipe hanger for DN16-FEF14 with hex-head screw M8x80 and raw plugs S10, insulation thickness 14mm	7612207289763	1 piece
SCH-DN16-FEF20	Pipe hanger for DN16-FEF20 with hex-head screw M8x80 and raw plugs S10, insulation thickness 20mm	7612207289046	1 piece
SCH-DN20-FEF14	Pipe hanger for DN20-FEF14 with hex-head screw M8x80 and raw plugs S11, insulation thickness 14mm	7612207289787	1 piece
SCH-DN20-FEF20	Pipe hanger for DN20-FEF20 with hex-head screw M8x80 and raw plugs S11, insulation thickness 20mm	7612207289053	1 piece
SCH-DN25-FEF14	Pipe hanger for DN25-FEF14 with hex-head screw M8x80 and raw plugs S12, insulation thickness 14mm	7612207289039	1 piece

Fitting for copper pipes. Quick fitting coupling with clamping ring for copper pipes

Item	Description	EAN	Content [quantity]
SO-SDN16-CU12	Plain pipes Ø 12 mm	7612207336634	10 piece
SO-SDN16-CU15	Plain pipes Ø 15 mm	7612207324839	10 piece
SO-SDN16-CU18	Plain pipes Ø 18 mm	7612207324846	10 piece
SO-SDN16-CU22	Plain pipes Ø 22 mm	7612207324853	10 piece
SO-SDN20-CU15	Plain pipes Ø 15 mm	7612207324938	10 piece
SO-SDN20-CU18	Plain pipes Ø 18 mm	7612207324945	10 piece
SO-SDN20-CU22	Plain pipes Ø 22 mm	7612207324952	10 piece
SO-SDN25-CU18	Plain pipes Ø 18 mm	7612207377187	4 piece

Fitting for copper pipes. Quick fitting coupling with clamping ring for copper pipes

Item	Description	EAN	Content [quantity]
S0-SDN25-CU22	Plain pipes Ø 22 mm	7612207377170	4 piece

Fitting with cylindrical connection. Quick fitting coupling with cylindrical connection piece

Item	Description	EAN	Content [quantity]
S0-SDN16-Z18	Cylindrical connection piece Ø 18 mm	7612207352764	10 piece
S0-SDN20-Z18	Cylindrical connection piece Ø 18 mm	7612207352771	10 piece

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

Item	Description	EAN	Content [quantity]
S0-SDN16-I1	Inside thread G1"	7612207324822	10 piece
S0-SDN16-I1/2	Inside thread G½"	7612207324808	10 piece
S0-SDN16-I3/4	Inside thread G¾"	7612207324815	10 piece
S0-SDN20-I1	Inside thread G1"	7612207324921	10 piece
S0-SDN20-I3/4	Inside thread G¾"	7612207324914	10 piece
S0-SDN25-I1	Inside thread G1"	7612207377156	4 piece
S0-SDN25-I11/4	Inside thread G1 ¼"	7612207377163	4 piece

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

Item	Description	EAN	Content [quantity]
S0-SDN16-F1	External thread G1"	7612207324877	10 piece
S0-SDN16-F3/4	External thread G¾"	7612207324860	10 piece
S0-SDN20-F1	External thread 1"	7612207324976	10 piece
S0-SDN20-F3/4	External thread G¾"	7612207324969	10 piece

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

Item	Description	EAN	Content [quantity]
S0-SDN16-E1	External thread R1"	7612207324792	10 piece
S0-SDN16-E1/2	External thread R½"	7612207324778	10 piece
S0-SDN16-E3/4	External thread R¾"	7612207324785	10 piece
S0-SDN20-E1	External thread R1"	7612207324907	10 piece
S0-SDN20-E3/4	External thread R¾"	7612207324891	10 piece
S0-SDN25-E1	External thread R1"	7612207377149	4 piece
S0-SDN25-E11/4	External thread R1 ¼"	7612207377194	4 piece

VA accessories. Quick fitting coupling for corrugated stainless steel hoses

Item	Description	EAN	Content [quantity]
S0-SDN16-DN16	Corrugated stainless steel hoses DN 16	7612207324761	10 piece
S0-SDN20-DN20	Corrugated stainless steel hoses DN 20	7612207324884	10 piece
S0-SDN25-DN25	Corrugated stainless steel hoses DN 25	7612207377132	4 piece