

High-quality connections **for solar collectors**



**OTTO
CHEMIE**

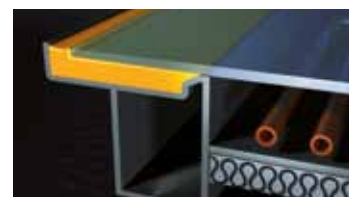
Sealants • Adhesives

Long lasting quality for an eternal source of heat

The sun can be relied on as the natural and direct source of thermal energy for millions of years to come. In order to make economic use of this energy source, solar collectors must work reliably for decades. This calls for quality right down to the smallest detail.

Adhesives play an important part in this. And they are subject to high technical demands under extreme conditions. OTTO special adhesives for hot water collectors meet these challenges in exemplary manner. Thanks to automation they also permit far more efficient production in significantly larger quantities and at reduced personnel costs. This transition from purely manual to automated production significantly reduces costs and therefore enhances the competitiveness of the manufacturer.

For over a decade OTTO has been supplying leading international solar collector manufacturers with customised adhesive solutions. We are perfectly equipped to adapt our products exactly to meet your requirements. Endurance tests in our own laboratory enable us to provide you with reliable performance indicators for our products. You, too, can benefit from over 40 years' experience in the research, development, production and industrial processing of special silicones. We will provide you with advice and assistance all the way from prototype testing to serial processing in production.



The information in the present document corresponds to the status quo on going to print. Please refer to the index on the outside back cover.

Owing to the many types and conditions of applications in which our products are used, it is always necessary for the user to test and verify in practice all important product properties for the respective purpose of the applications before using them.

To this end, please pay attention to the information in the relevant updated technical datasheet, which is available upon request.

Errors, omissions and typographical errors are expected.

Bonding of **glass panes**

4

Bonding of **angle brackets**

6

Bonding of **the bottom plate**

8

Packing Units

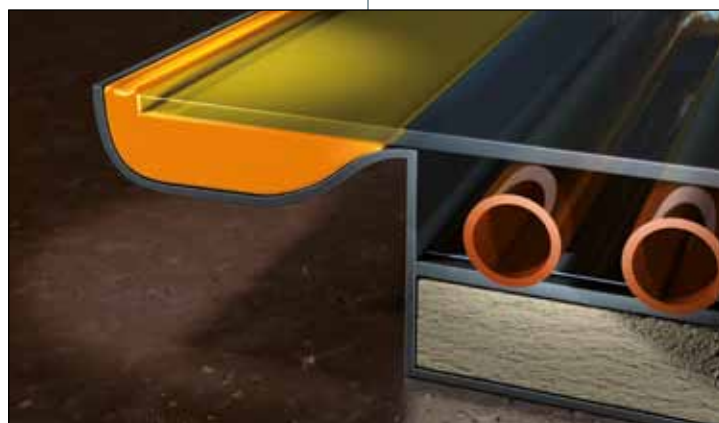
10

Special note:

For an interactive view, please visit
www.otto-solar.com

Bonding of glass panes

Solar collectors are constantly exposed to the toughest and most variable environmental conditions. UV radiation, extreme temperature differences, moisture, physical stress due to wind, snow and expansion behaviour stress the adhesive, which must fulfil its functions for decades. Therefore, when bonding the glass pane with the frame it is important to use an adhesive which meets all these requirements and can also be applied automatically.



The OTTO solution.

OTTO adhesives for fixing the top pane to collector frames are, among other things, distinguished by the following characteristics:

- Excellent adhesion to frame and glass pane under extreme weather conditions
- Compensation of all movements that occur
- Reinforcement of the entire collector construction via the elastic, but structurally effective, glass-frame joint
- Excellent temperature stability even at temperatures +150 °C



CURE SYSTEM
MIXING RATIO
KEY PROPERTIES
PROCESS ADAPTABILITY



©GREENoneTEC Solarindustrie GmbH

Novasil® S 49	Novasil® SP 5716	Novasil® SP 6116	Novasil® SP 6131
Two-part alcoxy silicone	Two-part alcoxy silicone	Two-part alcoxy silicone	Two-part alcoxy silicone
10 : 1	10 : 1	10 : 1	10 : 1
Excellent aging and weather resistance	Excellent aging and weather resistance	Excellent aging and weather resistance	Excellent aging and weather resistance
	Self-levelling	Reduced viscosity	Very fast vulcanisation
For manual, semi-automatic and automatic application	For automatic application; no manual reworking necessary	For automatic application for back injection with glass pane in place	For automatic application and very fast handling of the bonded collectors

Bonding of angle brackets

Even though not a major issue for most solar collector makers, a perfect corner joint is both secure and optically appealing. Trusting in a perfectly bonded and sealed collector as part of their marketing and sales concept, some manufacturers offer this little extra to their customers.

This simple and efficient solution, with little impact in terms of costs, offers:

- Increased moisture protection in corner sections
- Additional stabilisation against mechanical forces
- Easy insertion of internal corner angles due to the lubricating properties of the agent.



The OTTO solution.

Gluing plastic corners on the inside is advantageous for both the manufacturer and the fitter. By using plastic corners, when the frame is cut to size there is no need for elaborate, exact mitre-sawing. The corner construction is rendered very rigid in use thanks to the structural bond. Furthermore the danger of injury during mounting is extremely small since the pointed metal corners are no longer in use.

CURE SYSTEM

MIXING RATIO

KEY PROPERTIES

PROCESS ADAPTABILITY



OTTOCOLL® P 520

Two-part polyurethane

1 : 1

Extreme structural bonds

Tailor made cure leads to
optimized production output

Bonding of the bottom plate

Time-consuming and expensive mechanical work such as clinching, riveting or beading and subsequent sealing in another work step can be avoided by means of elastic bonding with a silicone adhesive/sealant.



The OTTO solution.

For bonding the bottom plate, too, OTTO products meet the different high requirements supremely:

- Non-fogging (owing to leakages or moisture escaping from the adhesive)
- Excellent adhesion to the base plate and frame
- Compensation of all movements that occur

CURE SYSTEM

MIXING RATIO

KEY PROPERTIES

PROCESS ADAPTABILITY




Novasil® S 49	Novasil® SP 6115	Novasil® SP 6131
Two-part alcoxy silicone	Two-part alcoxy silicone	Two-part alcoxy silicone
10 : 1	10 : 1	10 : 1
Excellent aging and weather resistance	Excellent aging and weather resistance	Excellent aging and weather resistance
	Higher viscosity "Position Tack" and very fast vulcanisation	Very fast vulcanisation
For manual, semi-automatic and automatic application	For automatic application	For automatic application and very fast handling of the bonded collectors

Ready to Use

The Premium products by OTTO are available in a variety of useful sizes and shapes of trading units.

To permit fast use in production, two-component adhesives are available in preconfigured mixing units for immediate use.

The following table will give you an initial overview. If you have any questions or special wishes, we would be delighted to advise you.

	20 l Plastic pail	60 l Metal pail
Outer diameter		
Inner diameter	282 mm +/- 1.5 mm	355 mm
Length		
Height	367 mm +/- 2 mm	656 mm
Width		
		
Remarks	For automized application	

200 l Metal drum	310 ml Plastic cartridge	400 ml Aluminium sachet	580 ml Aluminium sachet	330 ml Side-by-side cartridge (mixing ratio 10:1)	2 x 190 ml Side-by-side cartridge (mixing ratio 1:1)	2 x 310 ml Side-by-side cartridge (mixing ratio 1:1)
	50 mm	48 mm	48 mm			
571.5 mm +/- 1.5 mm						
	215 mm	220 mm	320 mm	247.7 mm	170.0 mm	240.0 mm
887 mm +/- 3 mm						
				70.0 x 51.0 mm	90.8 x 50.4 mm	90.8 x 50.4 mm
						
	For manual application of one-part materials			For two-part silicones in testing and / or pre-series phase	For OTTOCOLL® P 520	



**OTTO
CHEMIE**

Sealants • Adhesives

Hermann Otto GmbH • Krankenhausstr. 14 • 83413 Fridolfing, GERMANY

phone +49-8684-908 0 • fax +49-8684-1260

E-mail: info@otto-chemie.com • Internet: www.otto-chemie.com • www.otto-solar.com