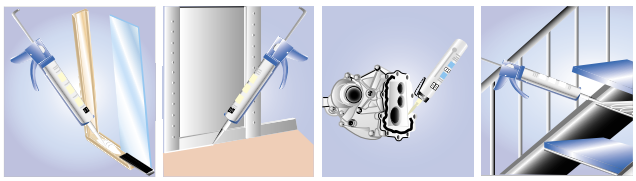
Elastic One-Component Adhesives and Sealants

• flexible • strong • durable



Elastic One-Component Adhesives and Sealants

Elastic adhesives and sealants are used today in many areas of industrial production and assembly.
They combine the advantages of adhesive bonding and sealing technology and are used wherever the elasticity and the sealing of a joint are the most important requirements.

The focus of such applications is generally not an extremely high load transmission. Rather, dynamic loads like vibrations and expansion of the joined parts are to be absorbed and compensated.


Bonding of parts in lamp production

The use of elastic adhesives and sealants offers the following advantages for the user:

- Reduction and compensation of tensions, which result due to different thermal expansion of differing materials (metal/plastic, metal/wood, metal/glass, etc.)
- Compensation of joint part tolerances
- Avoidance of material fatigue and breaks due to an even distribution of tension
- No thermal or mechanical impairment, and therefore no weakening of the jointed parts
- Prevents the unwanted penetration or escaping of materials, even with larger joints or adhesive gaps
- Material-integrated joints between the parts

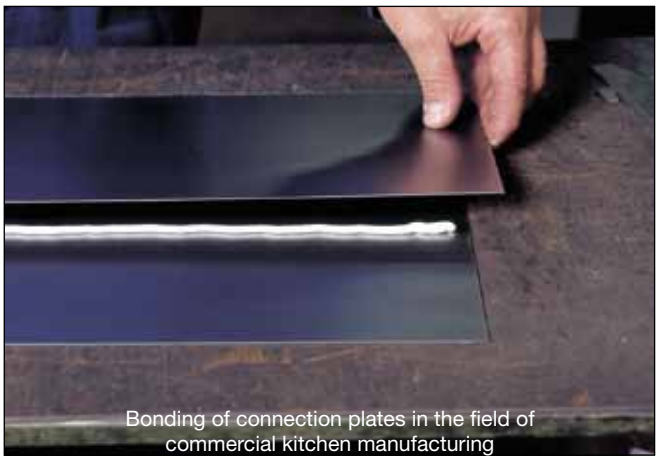
Product groups:

WEICON one-component adhesive and sealants are classified in three product groups with a differing chemical basis.

Silicones:
- High-quality sealants for industrial applications
- Excellent resistance to UV, weathering and media
- Resistant to aging
- Can be used in the temperature range up to + 300°C

Polyurethanes:
- Adhesives and sealants for a broad range of applications in the fields of metals and plastics processing
- Can be painted over (after curing)
- Sandable
- Silicon-free
- Odourless curing

MS polymers:
- Strong adhesives and sealants for material-integrated joints of metals, plastics and many other substances
- High adhesive power, even without the use of adhesive primers
- Can be painted over ("wet in wet")
- Free of silicon and isocyanate


Bonding of connection plates in the field of commercial kitchen manufacturing

Flex 310 M® Classic

Universal elastic adhesive on an MS polymer basis. Suitable for metals, many plastics, ceramic, wood, glass, stone, etc. Good adhesion on aluminium and stainless steel even without primer.

Applications:
- Metalworking
- Tank and apparatus construction
- Car body, vehicle, and freight container construction
- Ventilation and air conditioning
- Electrical industry
- Yacht and ship building

and wherever silicones or products containing silicone are not suitable.

Bonding of steel structures for interior decoration

Properties:
- Suitable for universal use
- Free of silicone, isocyanate, and halogen
- Can be painted over immediately* ("wet in wet")
- Sandable (after curing)
- Excellent aging resistance
- Good UV stability
- Resistant to fresh and salt water
- Solvent-free, odour-free

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

Gluing in floor panels in the field of "vehicle finishing"

Inspection institute for chemical, physical and microbiological analysis

Certificate of Conformity for WEICON Flex 310 M® Classic as an adhesive in food technology

Flex 310 M® Crystal

Transparent (crystal-clear) elastic adhesive on MS polymer basis. Excellent adhesion on glass, PC*, PMMA* and acrylic glass*. Therefore, especially suited for elastic connections in which the adhesive is not to be or must not be visible.

Renovation of balconies on old buildings

Applications:
- Plastics processing
- Metalworking, tank and apparatus construction
- Electrical and lighting industry
- Trade fair and shop construction
- Ventilation and air conditioning

and wherever silicones or products containing silicone are not suitable.

Properties:
- Crystal-clear curing
- Free of silicone, isocyanate, and halogen
- Excellent aging resistance
- Good UV stability
- Resistant to fresh and salt water
- Solvent-free, odour-free
- If necessary, can also be painted over** ("wet in wet")

* Only tension-free bonding
** Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

Bonding of wall elements for the interior decoration of an exhibition hall

Inspection institute for chemical, physical and microbiological analysis

Certificate of Conformity for WEICON Flex 310 M® Crystal as an adhesive in food technology

Flex 310 M® HT 200 New

High-temperature-resistant elastic adhesive on MS polymer basis. For structural adhesive bonding in industry.
The high thermal stability enables the adhesion and sealing of components that are to be subsequently coated with thermal lacquer (powder-coating).

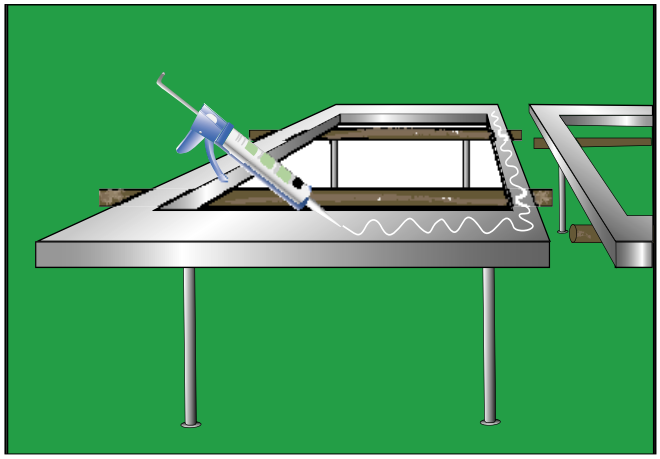
Sealing of a welding seam on a powder-coated rolling gate

Applications:
- Metalworking, tank and apparatus construction
- Ventilation and air conditioning
- Car body, freight container, train car and vehicle construction

and wherever silicones or products containing silicone are not suitable.

Properties:
- High-temperature-resistant up to +200°C
- Can be painted over immediately* ("wet in wet")
- Sandable (after curing)
- Excellent aging resistance
- Solvent-free, odour-free
- Free of silicone, isocyanate, and halogen

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)



Flex 310 M® Super-Tack New

Elastic adhesive with high initial strength on MS polymer basis. The fast development of adhesive power and the high initial strength enable problem-free applications even on vertical surfaces. Replaces screws, bolts, dowels, rivets and other conventional fasteners.

Bonding of plastic parts on a roof covering - Part 1

Applications:
- Dry construction and interior works
- Metalworking
- Tank and apparatus construction
- Ventilation and air conditioning
- Trade fair and shop construction
- Yacht and ship building

and wherever silicones or products containing silicone are not suitable.

Properties:
- High initial strength
- Fast build-up of adhesive power
- Resistant to weathering and UV
- Free of silicone, isocyanate, and halogen
- Solvent-free, odourless and non-corrosive
- Can be painted over immediately* ("wet in wet")
- Sandable (after curing)

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

Bonding of plastic parts on a roof covering - Part 2

Flex 310 M®
Stainless Steel

New

Non-corrosive elastic adhesive on MS polymer basis with high adhesive power. Especially suited for adhesive bonding and sealing seams and joints on stainless steel, aluminium and non-ferrous metals, etc.
Flex 310 M Stainless Steel can also be used wherever the colour of the sealant and adhesive is to be matched to the material (e.g. stainless steel, aluminium, etc.)

Adhesive bonding of stainless-steel elements in lift construction

Applications:
- Metalworking, tank, and apparatus construction
- Food industry
- Kitchen construction and plumbing sector
- Ventilation and air conditioning

and wherever silicones or products containing silicone are not suitable or undesirable.

Properties:
- Non-corrosive
- Free of silicone, isocyanate, and halogen
- Solvent-free, odour-free
- Aging resistance and UV stability
- Can be painted over immediately* ("wet in wet")
- Sandable (after curing)

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

Sealing connecting joints in commercial kitchen construction

ISEGA Inspection institute for chemical, physical and microbiological analysis

Certificate of Conformity for WEICON Flex 310 M® Stainless Steel as an adhesive in food technology

Flex+bond®
for universal use

Thanks to its high adhesive power, WEICON Flex+bond enables a broad range of applications for professional and private use.

Nearly all materials, e.g.
- Metal
- Wood
- Plastic
- Glass
- Ceramic etc.

can be bonded to themselves and among each other. For a great variety of repairs and bondings as well as for the sealing of seams and joints.

Gluing on type plates

WEICON Flex+bond is one-component, remains permanently elastic and can be sanded and painted over after curing (wet in wet*).

Properties:
- Permanently elastic
- Temperature resistant from -40°C to +90°C, briefly (2-3 hrs.) up to +130°C
- Resistant to weathering
- UV-stable
- Resistant to salt water
- Odourless curing
- Can be painted over immediately ("wet in wet")*
- Cures without shrinkage and bubble-free
- Sandable
- Resistant to aging
- Isocyanate and solvent-free
- Free of silicone, halogen and PVC

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

ISEGA Inspection institute for chemical, physical and microbiological analysis

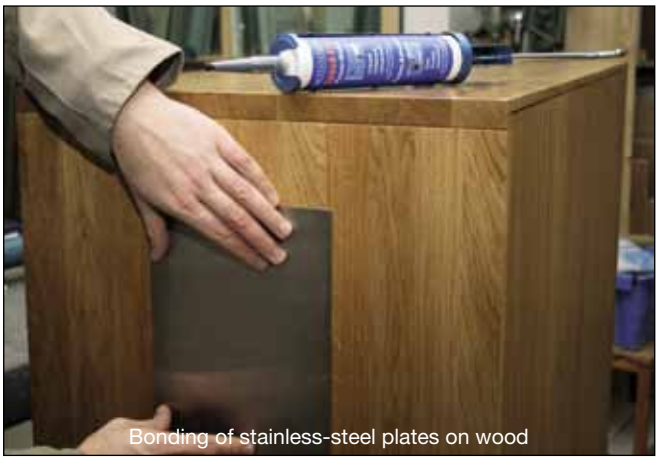
Certificate of Conformity for WEICON Flex+bond® as an adhesive in food technology

Technical Data

Properties \ Product	Flex 310 M® Classic	Flex 310 M® Crystal	Flex 310 M® HT 200	Flex 310 M® Super-Tack	Flex 310 M® Stainless Steel	Flex+bond®	
WEICON Adhesives and Sealants in non-cured condition							
Basis:	One-component MS polymer						
RAL colour*1:	white 9003 grey 7000 black 9004	transparent/ crystal-clear	white 9003 grey 7000	white 9003 grey 7000	stainless steel 9023	white 9003 grey 7000 black 9004	transparent/ crystal-clear
Content/Container:	310 ml cartridge	290 ml cartridge				85 ml tube	
Density in g/cm³:	1.44	1.04	1.44	1.62	1.06	1.44	1.04
Viscosity:	pasty						
Stability/Run-off (ASTM D 2202) in mm:	1	<1	<1	<1	<1	1	<1
Processing temperature:	+5°C to +35°C*2 (+41°F to +95°F)						
Cure type:	by humidity						
Curing conditon:	+5°C to +40°C (+41°F to +104°F) and 30% to 95% rel. humidity						
Skin-over time (minutes):*3	25	8	20	10	10	25	8
Cure speed:*3	2-3 mm in the first 24 hours						
Volume change (DIN 52451) in %:*3	-1	-3	-4	-2	-3	-1	-3
Gap filling up to max. mm:	5	3	10	10	5	5	3
Gap width up to max. mm:	25	5	30	30	25	25	5
Shelf life (+5°C to +25°C) in months:	12						
WEICON Adhesives and Sealants in cured condition							
Shore Hardness A (DIN 53505/ASTM D 2240):	42	40	60	50	45	42	40
Elongation to break (DIN 53504/ASTM D 412) in %:	650	310	350	600	250	650	310
Tensile strength of the pure adhesive/sealant (DIN 53504/ASTM D 412):	3.3 N/mm² (479 psi)	2.4 N/mm² (348 psi)	2.7 N/mm² (392 psi)	1.9 N/mm² (276 psi)	2.4 N/mm² (348 psi)	3.3 N/mm² (479 psi)	2.4 N/mm² (348 psi)
Average tensile shear strength (DIN 53283/ASTM D 1002):*4	2.1 N/mm² (304 psi)	1.0 N/mm² (145 psi)	1.7 N/mm² (247 psi)	1.5 N/mm² (218 psi)	1.8 N/mm² (261 psi)	2.1 N/mm² (304 psi)	1.0 N/mm² (145 psi)
Tear strength (DIN 53515/ASTM D 624):	20 N/mm (114 pli)	17 N/mm (97 pli)	18 N/mm (103 pli)	13 N/mm (74 pli)	10 N/mm (57 pli)	20 N/mm (114 pli)	17 N/mm (97 pli)
Movement capacity max. %:	18	20	20	20	20	18	20
Fungicide:	no						
Temperature resistance:	-40°C (-40°F) to +90°C (+194°F) briefly (approx. 2 hrs.) up to +130°C (+266°F)	-40°C (-40°F) to +90°C (+194°F)	-40°C (-40°F) to +90°C (+194°F) briefly (approx. 30 min.) up to +200°C (+392°F)	-40°C (-40°F) to +90°C (+194°F)	-40°C (-40°F) to +90°C (+194°F)	-40°C (-40°F) to +90°C (+194°F)	-40°C (-40°F) to +90°C (+194°F)
Overpaintable:*5	Only "wet in wet," within 3 hrs. at the latest after material application with suitable paint coating systems (except alkyd resin paints)						
Building material category (DIN 4102):	B 2						
Possible primers:	see Primer selection table on Page 11						

*1 Corresponds approximately to the specified RAL colours.
*2 For easier processing, the cartridges, tubes, etc. should be heated to room temperature (+20°) before use at low temperatures.
*3 Normal climate +23°C and 50% relative humidity in accordance with DIN 50014.
*4 Material combination aluminium/aluminium, cleaned and degreased with Cleaner S, 1 mm layer thickness, 10 mm per minute tearing speed, fast-bond beech/beech, without pretreatment, 1 mm layer thickness, 5 mm per minute tearing speed.
*5 The WEICON one-component adhesives and sealants listed above are free of substances that hinder the coating of lacquer, e.g. silicone. Thanks to the special composition, these can be painted over with suitable paint coating systems (no alkyd resin paints). However, to check the compatibility, suitability must always be determined individually in preliminary tests under the respective real-life conditions. This is essential due to the different compositions and the diversity of the substrates. The hardening of the adhesives and sealants is only slightly delayed by a coating of paint.

Speed-Flex®


Bonding of stainless-steel plates on wood

Highly adhesive and universal power adhesive with extremely high initial strength; on MS polymer basis. Replaces conventional fasteners, e.g. screws, bolts, dowels, rivets, etc. Speed-Flex is pasty and stable; this enables adhesive bonds even on vertical surfaces indoors and outdoors.

Applications:
Especially where additional fixing on vertical surfaces is not possible or desirable e.g.:
- Wall, ceiling and floor installation of cable ducts, post boxes, signs, etc.
- Adhesive bonding of baseboards and corner connectors
- Fixing of insulating materials, e.g. insulating material panels

Properties:
- Extremely high initial adhesion
- Pasty, stable
- Free of silicone, isocyanate, and halogen
- Cures odourless and shrinkage-free
- Excellent aging resistance
- Resistant to weathering and UV
- Can be painted over immediately* (wet in wet)

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)


Gluing in and sealing of glass panes in a stainless-steel housing

Inspection institute for chemical, physical and microbiological analysis
Certificate of Conformity for WEICON Speed-Flex® as an adhesive in food technology

Aqua-Flex

Ideal adhesive and sealant on MS polymer basis for wet and moist surfaces. Suitable for metals, many plastics, ceramic, wood, glass, stone, etc. Good adhesion on aluminium and stainless steel even without primer.

Applications
- Sealing of tubes and water pipes
- Replacement of tiles and joints even under water*1
- Bonding of decorative elements in gardens and ponds, e.g. brook basins, PVC pond films, etc.
- Sealing in humid areas and in the sanitary sector*2
- Bondings and repairs in the maritime sector
- Repair of roof leakages*3

Properties:
- Resistant to fresh water and saltwater
- Excellent aging stability
- Resistant to weathering and UV
- Fast skin-over time
- Free of silicone, isocyanate, and halogen
- Solvent-free, odour-free

*1 not suitable for applications in chloric water
*2 can be attacked by bacteria
*3 not compatible with bituminous surfaces

Inspection institute for chemical, physical and microbiological analysis
Certificate of Conformity for WEICON Aqua-Flex as an adhesive in food technology

Solar-Flex®

New

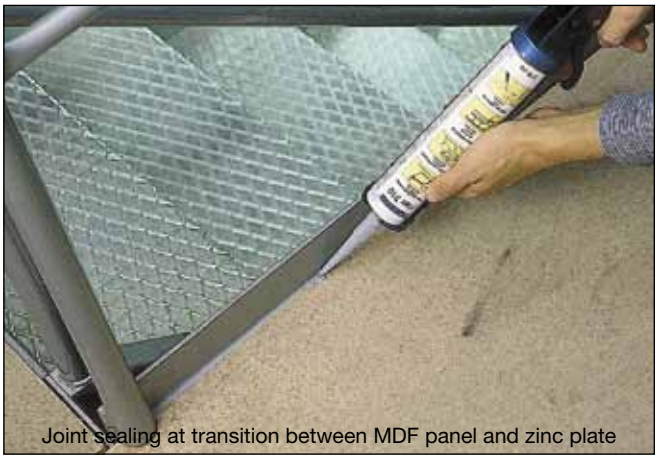
Elastic adhesive with high initial strength especially for the solar industry, on MS polymer basis. Due to the fast development of adhesive power and the high initial strength, bondings on vertical surfaces are possible. Replaces conventional fastening methods for the installation of solar and photovoltaic systems.

Applications:
- Installation of solar and photovoltaic systems
- Bonding of junction boxes
- Fixing of connecting lines
- Bonding of marking systems

Properties:
- High initial strength on vertical surfaces
- Broad range of adhesion, even on moist surfaces
- Resistant to weathering and UV
- Free of silicone, isocyanate, and halogen
- Solvent-free, odourless and non-corrosive
- Can be painted over immediately* (wet in wet)

* Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)

Flex 310



Joint sealing at transition between MDF panel and zinc plate

Elastic and strong adhesive and sealant on polyurethane (PUR) basis. For bondings and sealings on metals, many plastics, ceramic, wood, glass, stone, etc.

Applications:
- Tank and apparatus construction
- Car body, freight container and vehicle construction
- Ventilation and air conditioning
- Pipeline and fittings construction
- Energy and electrical industry
- Insulating technology

and in many areas of plastic technology and wherever silicone is not suitable.

Properties:
- Can be painted over* and sanded after curing
- Odourless curing
- Resistant to weathering and UV
- Excellent aging resistance
- Resistant to fresh water and saltwater
- Stable, pasty
- Silicone-free
- Non-foaming

A better adhesion is achieved by using suitable WEICON adhesion agents (see Page 10).

* With suitable paint coating systems (except alkyd resin paints)

Bonding and sealing of stainless-steel panels

Fast-Bond

Structural and assembly adhesive

Bonding of hard foam panels on aerated concrete

Fast-curing, one-component structural and assembly adhesive for universal use on polyurethane basis (PUR).

Suitable for MDF, wooden, particle, fibre and gypsum-plaster boards, concrete, marble, natural and synthetic stone, ceramic, metals and hard foam (e.g. polystyrene).

Applications:
- Bonding of baseboards and corner connectors
- Fixing of stairs
- Gluing* of frames, windows and doors
- Installation of handrails
- Fixing of insulating material, e.g. insulating boards
- Bonding of metal thresholds
- Wall and floor installation of cable ducts
- Fixing of metal frames
- Bonding of pegs inside walls

Properties:
- Can be painted over and sanded after curing
- Resistant to weathering and UV
- Odourless curing
- Excellent aging resistance
- Resistant to fresh water and saltwater
- Stable, pasty
- Silicone and solvent-free

* Waterproof gluing in accordance with DIN EN 204 D4

Angular adhesive bonding of wooden frames

Technical Data

Properties \ Product	Aqua-Flex	Solar-Flex®	Speed-Flex®	Flex 310	Fast-Bond
WEICON Adhesives and Sealants in non-cured condition					
Basis:	One-component MS polymer			One-component-polyurethane	
RAL colour*1:	white 9003 grey 7000 black 9004	white 9003 grey 7000	white 9003 grey 7000	white 9003 grey 7001 black 9005	beige 9010
Content/Container:	310 ml cartridge	290 ml cartridge	310 ml cartridge	300 ml cartridge	310 ml cartridge
Density in g/cm³:	1.44	1.62	1.60	1.17	1.50
Viscosity:	pasty		extremely pasty	pasty	
Stability/Run-off (ASTM D 2202) in mm:	1	<1	<1	1	>1
Processing temperature:	+5°C to +35°C*2 (+41°F to +95°F)				
Cure type:	by humidity				
Curing condition:	+5°C to +40°C (+41°F to +104°F) and 30% to 95% rel. humidity, Aqua-Flex also hardens under water			+5°C to +35°C (+41°F to +95°F) and 40% to 70% rel. humidity	
Skin-over time (minutes):*3	25	10	10	45	3
Cure speed:*3	3 mm in the first 24 hours				
Volume change (DIN 52451) in %:*3	-1	-2	-1	-6	Increase
Gap filling up to max. mm:	5	10	5	5	10
Gap width up to max. mm:	25	30	5	25	---
Shelf life (+5°C to +25°C) in months:	12				
WEICON Adhesives and Sealants in cured condition					
Shore Hardness A (DIN 53505/ASTM D 2240):	42	50	58	48	---
Elongation to break (DIN 53504/ASTM D 412) in %:	650	600	230	450	---
Tensile strength of the pure adhesive/sealant (DIN 53504/ASTM D 412):	3.3 N/mm² (479 psi)	1.9 N/mm² (276 psi)	2.2 N/mm² (319 psi)	2.0 N/mm² (290 psi)	10 N/mm² (1.450 psi)
Average tensile shear strength (DIN 53283/ASTM D 1002):*4	2.1 N/mm² (304 psi)	1.5 N/mm² (218 psi)	1.3 N/mm² (189 psi)	1.6 N/mm² (232 psi)	11 N/mm² (1.595 psi)
Tear strength (DIN 53515/ASTM D 624):	20 N/mm (114 pli)	13 N/mm (74 pli)	10 N/mm (57 pli)	9 N/mm (51 pli)	---
Movement capacity max. %:	15	20	15	10	---
Fungicide:	no				
Temperature resistance:	-40°C (-40°F) to +90°C (+194°F) briefly (approx. 2 hrs.) up to +130°C (+266°F)	-40°C (-40°F) to +90°C (+194°F)	-40°C (-40°F) to +80°C (+176°F) briefly (approx. 2 hrs.) up to +120°C (+248°F)	-40°C (-40°F) to +90°C (+194°F) briefly (approx. 2 hrs.) up to +120°C (+248°F)	-30°C (-22°F) to +100°C (+212°F) WATT 91
Overpaintable:*5	Only "wet in wet," within 3 hours at the latest after material application with suitable paint coating systems (except alkyd resin paints)			Wet in wet or after complete curing	
Building material category (DIN 4102):	B 2				
Possible primers:	see Primer selection table on Page 11				---

*1 Corresponds approximately to the specified RAL colours.
*2 For easier processing, the cartridges, tubes, etc. should be heated to room temperature (+20°) before use at low temperatures.
*3 Normal climate +23°C and 50% relative humidity in accordance with DIN 50014.
*4 Material combination aluminium/aluminium, cleaned and degreased with Cleaner S, 1 mm layer thickness, 10 mm per minute tearing speed, fast-bond beech/beech, without pretreatment, 1 mm layer thickness, 5 mm per minute tearing speed.
*5 The WEICON one-component adhesives and sealants listed above are free of substances that hinder the coating of lacquer, e.g. silicone. Thanks to the special composition, these can be painted over with suitable paint coating systems (no alkyd resin paints). However, to check the compatibility, suitability must always be determined individually in preliminary tests under the respective real-life conditions. This is essential due to the different compositions and the diversity of the substrates. The hardening of the adhesives and sealants is only slightly delayed by a coating of paint.

For conversion factors, see Page 14.

Information on surface preparation/pretreatment

Clean and grease-free surfaces are the basic condition for good bonding results. By using adhesion agents (primers), the adhesion can be considerably increased on many materials.

Material		Basis MS polymers (POP)	Basis polyurethane (PUR)
ABS		Surface Cleaner + Primer K 200	Surface Cleaner + Primer K 200
Aluminium	bare	Surface Cleaner + Primer M 100	Surface Cleaner + roughening up + Primer M 100
	chromated	Surface Cleaner	Surface Cleaner
	anodised	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	powder-coated	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	primed	Surface Cleaner	Surface Cleaner
	painted	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
EPDM		Surface Cleaner + Primer K 200	No adhesion
GFRP (polyester, epoxy)	smooth/rough side	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	web goods	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	hand laminate	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
Glass	untreated, clear	Surface Cleaner + Primer M 100**	Surface Cleaner + Primer M 100**
	ceramic-coated	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
Wood	phenol-coated	No adhesion	Surface Cleaner + roughening up + Primer M 100
	untreated	Clean with humid cloth + Primer S 300	Clean with humid cloth + Primer S 300
PA (polyamide)		Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
PIR hard foam (polyisocyanurate)		Surface Cleaner	Surface Cleaner
PMMA (Plexiglas)		Surface Cleaner + Primer M 100*	Surface Cleaner + Primer M 100*
Polywood		Roughen up finely + Surface Cleaner	Roughen up finely + Surface Cleaner
PP/PE		Surface Cleaner + Primer P 400*	Surface Cleaner + Primer P 400*
PK	hard foam	Surface Cleaner	Surface Cleaner
	panels, impact-resistant	Surface Cleaner + Primer M 100*	No adhesion
PUR hard foam (polyurethane)		Surface Cleaner	Surface Cleaner
PVC	panels	Surface Cleaner + Primer K 200	Surface Cleaner + Primer K 200
	hard foam	Surface Cleaner	Surface Cleaner
Steel	bare	Surface Cleaner + Primer K 200	Surface Cleaner + Primer K 200
	chromated	Surface Cleaner	Surface Cleaner
	film-coated	Surface Cleaner + Primer M 100	No adhesion
	primed	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	painted	Surface Cleaner + Primer M 100	Surface Cleaner + Primer M 100
	powder-coated	Surface Cleaner + Primer K 200	Surface Cleaner + Primer M 100
	VA (stainless steel)	Surface Cleaner + roughening up + Primer M 100	Surface Cleaner + roughening up + Primer M 100
	galvanised	Surface Cleaner + roughening up + Primer M 100	Surface Cleaner + roughening up + Primer M 100

* Preliminary tests are required ** Protect against UV back radiation

Primer M 100: For pretreating non-absorbent surfaces, e.g. metals, plastics, painted surfaces, enamels, ceramic and coated glass.
Primer K 200: For pretreating non-absorbent and painted plastic surfaces and elastomers, e.g. EPDM.
Primer S 300: For pretreating porous and absorbent surfaces.
Primer P 400: For pretreating polyolefins, e.g. TPE, PE, PP and difficult-to-bond elastomers.

Silicone

WEICON Silicones are used as permanently elastic adhesives and sealants for glass and metal structures and for sealing gearbox parts and flanges.

In addition to a wide range of applications, they are characterised by a very high temperature resistance (up to +300°C).
WEICON Silicones have an excellent stability to weathering, aging and UV and are resistant to many chemicals and mechanical loads.

WEICON Silicones have been designed for the demanding quality requirements in the industrial sector. They consist of 100% solid material and cure at room temperature practically without shrinkage.

Applications include tool making, mechanical and process plant engineering, vehicle construction, fine machinery, filter construction and household technology.

In electrical engineering, cables can be excellently insulated due to the high dielectric strength.

The production of seals (on any desired size), models, casting moulds and prototypes is also possible.

Many materials can be bonded to themselves and among each other. WEICON Silicones adhere to most surfaces, e.g.
- Aluminium and steel
- Glass, glass fabric and ceramic
- Duroplastics, thermoplastics and non-ferrous metals (only WEICON Silicon N suitable)
- Wood and many other materials

WEICON Silicones are compressive-proof and chemically resistant to many media*, e.g.
- Oil and fuel
- Fresh water and saltwater
- Industrial exhaust gases
- Cleaning agents
- Acids and lyes

Different types are available for a variety of applications.

* For resistance list, see Page 15.

Silicone A

- acetate cross-linking -

Highly adhesive, permanently elastic silicone adhesive and sealant, especially developed for high-quality applications in the industrial sector.
Very good adhesion on steel, aluminium, glass, ceramic and many other materials.

Sealing a glass pane in a stainless-steel housing

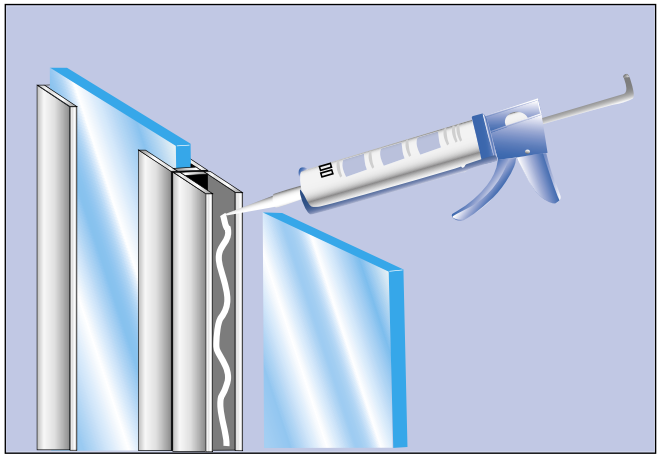
Applications:
- Mechanical and process plant engineering
- Ventilation and air conditioning
- Energy and electrical industry
- Trade fair and shop construction
- Advertising technology

Properties:
- Very good UV stability
- High compressive strength
- Elongation to break > 500%
- Very good adhesion without primer on most materials
- Excellent resistance to aging
- Good chemical resistance
- Temperature resistant up to +200°C

Sealing a glass pane in a stainless-steel housing - Close-up

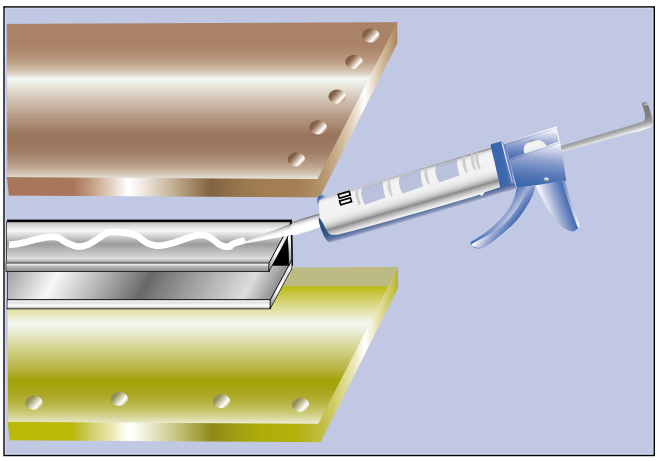
Silicone N
- neutral-curing -

Neutral-curing, non-corrosive silicone adhesive and sealant. Very good adhesion on all metals, glass, ceramic and many other materials.
Thanks to the special curing system (oxim), no corrosion results on aluminium, non-ferrous metals, etc. compared to acetate-curing silicones. Applications on sensitive plastic surfaces (PC, PMMA, etc.) are possible without tension cracks.



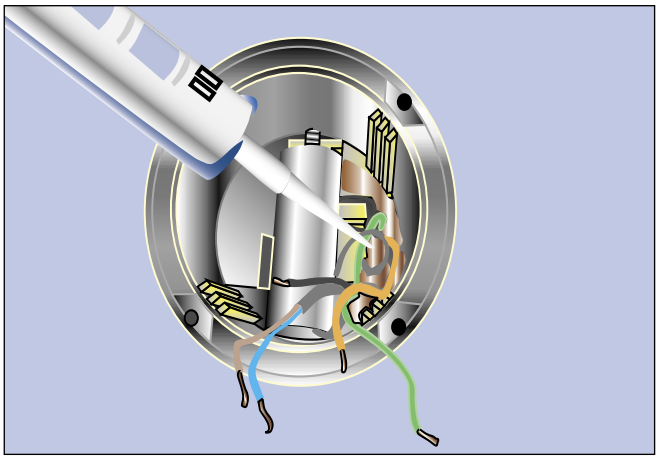
Applications:
- Plastics processing
- Electrical industry
- Energy technology (e.g. solar power systems)
- Trade fair and shop construction
- Advertising technology
- Lighting industry

Properties:
- Suitable for polycarbonate and acrylic glass (preliminary tests required)
- Also suitable for non-ferrous metals - non-corrosive
- Very good adhesion without primer on most surfaces
- Elongation to break approx. 800%
- Excellent resistance to weathering and aging
- Very good UV stability
- Good chemical resistance
- Temperature resistant up to +180°C



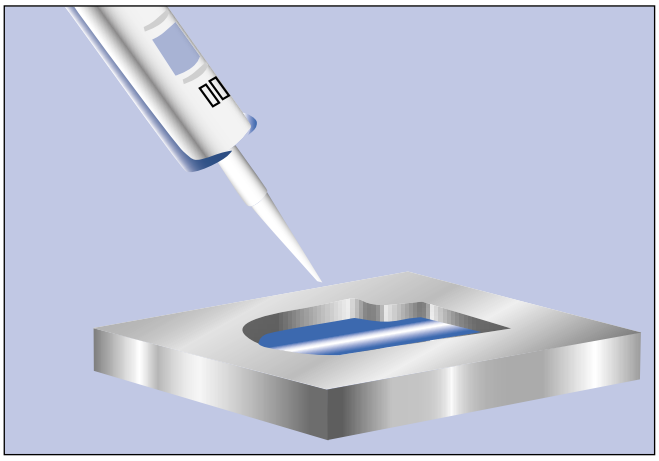
Silicone F
- liquid, self-levelling -

Liquid, self-levelling casting and coating compound. Especially for elastic adhesive bonds, insulation and impregnation. Also for sealing and casting (max. 10 mm) technical components.
Good adhesion on steel, aluminium, glass, ceramic and many other materials.



Applications:
- Mechanical and process plant engineering
- Plastics processing
- Energy and electrical industry
- Trade fair and shop construction
- Advertising technology

Properties:
- Self-levelling, spreadable
- Very good adhesion without primer on most surfaces
- High compressive strength
- Elongation to break approx. 370%
- Excellent resistance to weathering and aging
- Very good UV stability
- Good chemical resistance
- Temperature resistant up to +180°C



HT 300
- high-temperature-resistant -

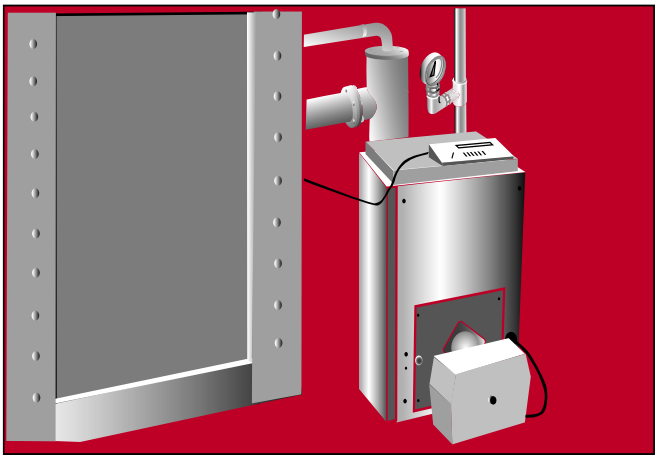
High-temperature-resistant and strong silicone adhesive and sealant. Especially suited for heat-loaded, elastic adhesive bonding and sealing.
Very good adhesion on steel, aluminium, glass, ceramic and many other materials.


Sealing on heating systems

Applications:
- Industrial furnaces
- Flue gas boxes
- Heating facilities
- Exhaust pipes
- Heating cabinets and furnaces

The outstanding product properties (e.g. permanent elasticity) are maintained in the entire temperature range from -60°C to +300°C.

Properties:
- High temperature resistance up to +300°C
- Very good UV stability
- Excellent resistance to weathering and aging
- Good chemical resistance
- Elongation to break approx. 500%
- Colour: red



Black-Seal
- Special silicone -

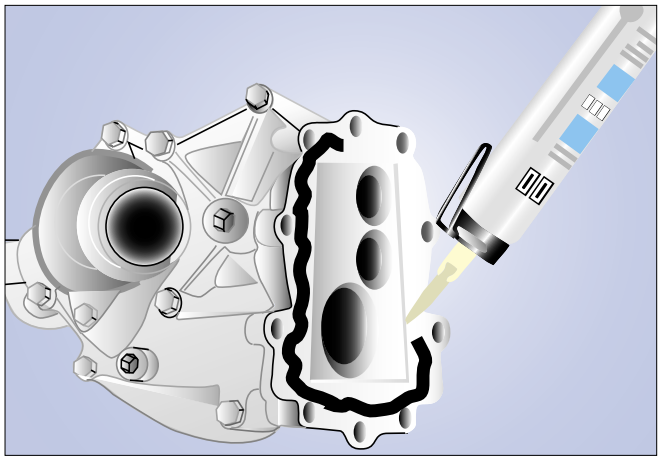
Oil-, grease and temperature-resistant silicone adhesive and sealant. Suitable for adhesive bonding and sealing for which an especially high level of oil and grease resistance is required. Very good adhesion on steel, aluminium, glass, ceramic and many other materials.


Sealing an engine cover

Applications:
- Gearbox, valve and housing covers
- Oil trays and pumps
- Water pumps
- Gearboxes and axles
- Flanges
- Tanks and containers

Properties:
- Excellent resistance to oil, grease and temperature
- Good pressure resistance
- Controlled swelling
- Leak-proof applications
- Very good UV stability
- Good resistance to aging
- Elongation to break approx. 500%
- High temperature resistance up to +300°C
- Colour: black

Black-Seal is also available in a practical press pack (200 ml). No cartridge gun is required for processing this variant.



Technical Data

Properties \ Product	WEICON Adhesives and Sealants in non-curred condition					
	Silicon A		Silicon N	Silicon F	HT 300	Black-Seal
Basis:	One-component acetate		One-comp. oxim	One-component acetate		
RAL colour*1	transparent	white 9003 dusty grey 7037 black 9005	transparent opaque		red 3016	black 9005
Content/Container:	310 ml cartridge					
	/					200 ml press pack can
	85 ml tube	/			85 ml tube	
Density (g/cm³):	1.03	1.25	1.03	1.03	1.28	1.06
Viscosity:	pasty		pasty	11,000 mPa·s	pasty	pasty
Stability/Run-off (ASTM D 2202) in mm:	1		1	liquid	1	>1
Processing temperature:	+5°C to +35°C*2 *(+41°F to +95°F)*					
Cure type:	by humidity					
Curing condition:	from +5°C to +40°C *(+41°F to +104°F)* and 30% to 95% relative humidity					
Skin-over time (minutes):*3	7		7	15	7	7
Cure speed:*3	2-3 mm in the first 24 hours					
Volume change (DIN 52451) in %:*3	-1		-2	-9	-1	-3
Gap filling up to max. mm:	5		5	2	5	5
Gap width up to max. mm:	25					
Shelf life in months (+5°C to +25°C):	12					
	WEICON Adhesives and Sealants in cured condition					
Shore Hardness A (DIN 53505/ASTM D 2240):	20		25	23	35	30
Elongation to break (DIN 53504 / ASTM D 412) in %:	>500		800	370	500	500
Tensile strength of the pure adhesive/sealant (DIN 53504/ASTM D 412) N/mm²:	1.3 N/mm² (189 psi)		1.3 N/mm² (189 psi)	1.8 N/mm² (261 psi)	2.0 N/mm² (290 psi)	2.0 N/mm² (290 psi)
Average tensile shear strength (DIN 53283/ASTM D 1002):*4	0.8 N/mm² (116 psi)		0.8 N/mm² (116 psi)	0.8 N/mm² (116 psi)	1.3 N/mm² (189 psi)	0.7 N/mm² (102 psi)
Tear strength (DIN 53515/ASTM D 624):	4.0 N/mm (23 pli)		6.0 N/mm (34 pli)	3.6 N/mm (21 pli)	6.0 N/mm (34 pli)	4.0 N/mm (23 pli)
Movement capacity max. %:	25		25	/	15	20
Temperature resistance:	-60°C (-76°F) to +200°C (+392°F)		-40°C (-40°F) to +180°C (+356°F)	-40°C (-40°F) to +180°C (+356°F)	-60°C (-76°F) to +280°C (+536°F) briefly (approx. 2 hrs.) +300°C (+572°F)	-60°C (-76°F) to +280°C (+536°F) briefly (approx. 2 hrs.) +300°C (+572°F)
Solids content in %:	100		100	90	100	96
Specific forward resistance:	2.5 x 10^{15} Ω/cm		7 x 10^{16} Ω/cm	7 x 10^{14} Ω/cm	2.5 x 10^{15} Ω/cm	2.5 x 10^{15} Ω/cm
Dielectric strength:	21 kV/mm		15 kV/mm	16 kV/mm	21 kV/mm	21 kV/mm
Thermal conductivity:	0.3 W/m•K		0.3 W/m•K	0.3 W/m•K	0.3 W/m•K	0.3 W/m•K
Overpaintable:	cannot be painted over					
Building material category (DIN 4102):	B 2					

*1 Corresponds approximately to the specified RAL colours. *2 For easier processing, the cartridges should be heated to room temperature (+20°) before use at low temperatures.
*3 Normal climate +23°C and 50% relative humidity in accordance with DIN 50014. *4 material combination aluminium/aluminium, cleaned and degreased with Cleaner S, 1 mm layer thickness, 10 mm per minute tearing speed.

Formula for calculating the consumption quantity

Width of joint \ Depth of joint	5 mm		6 mm		8 mm		10 mm		12 mm	
	ml/m	m/Cart.	ml/m	m/Cart.	ml/m	m/Cart.	ml/m	m/Cart.	ml/m	m/Cart.
5 mm	25	12,4	30	10,3						
6 mm	30	10,3	36	8,6						
8 mm	40	7,75	48	6,5	64	4,8				
10 mm	50	6,2	60	5,2	80	3,9	100	3,1		
12 mm	60	5,2	72	4,3	96	3,2	119	2,6		
15 mm	75	4,1	90	3,4	120	2,6	148	2,1	182	1,7
18 mm			108	2,9	144	2,2	182	1,7	221	1,4
20 mm					160	1,9	194	1,6	240	1,3
25 mm							258	1,2	300	1,0

Conversions

(°C x 1.8) +32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm x 5.71 = pli
N/mm² x 145 = psi
MPa x 145 = psi
MPa x 0.145 = KSI
mPa·s = cP
N·m x 8.851 = lb·ft
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
kg x 2.2046 = lb

Chemical resistance of WEICON one-component adhesives and sealants after curing

Product / Properties	Flex 310 M® Classic	Flex 310 M® Crystal	Flex 310 M® HT 200	Flex 310 M® Super-Tack	Flex 310 M® Stainless Steel	Flex+bond®	Speed-Flex®	Aqua-Flex	Solar-Flex®	Flex 310	Fast-Bond	Silicone A	Silicone N	Silicone F	HT 300	Black-Seal
2-propanol	-	-	-	-	-	-	-	-	-	o	o	+	o	o	+	+
Acetic acid >5%	+	-	+	+	-	+	+	+	+	-	-	+	o	+	+	+
Acetone	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Alcohol	o	o	o	o	o	o	o	o	o	o	o	+	+	+	+	+
Ammonia 10 %	+	o	+	+	o	+	+	+	+	o	o	+	+	+	+	+
Antifreeze	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Caustic potash solution 20%	o	o	o	o	o	o	o	o	o	+	+	-	-	-	-	-
Citric acid 10%	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Concentrated formic acid	-	-	-	-	-	-	-	-	-	-	-	+	-	o	+	+
Concentrated phosphoric acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concentrated silicon oil	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cooling lubricant, water-dilutable	+	o	+	+	o	+	+	+	+	+	+	+	+	+	+	+
Diesel/heating oil	-	-	-	-	-	-	-	-	-	-	-	o	-	-	o	+
Edible oil/vegetable oil	o	o	o	o	o	o	o	o	o	o	o	+	+	+	+	+
Ethanol	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Freon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	o
Gear oil	-	-	-	-	-	-	-	-	-	-	-	o	-	-	o	+
Glycerine (glycol)	+	o	+	+	o	+	+	+	+	+	+	+	+	+	+	+
Glycol ether	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Hydraulic oil	o	-	o	o	-	o	o	o	o	o	o	+	-	o	+	+
Hydrochloric acid 5%	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Hydrogen peroxide 3%	+	-	+	+	-	+	+	+	+	-	-	+	+	+	+	+
Ketones	-	-	-	-	-	-	-	-	-	-	-	o	o	o	o	o
Lyes, diluted	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Methanol	-	-	-	-	-	-	-	-	-	-	-	+	-	o	+	+
Methyl ethyl ketone	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Motor oil, mineral and synthetic, +140°C	-	-	-	-	-	-	-	-	-	-	-	o	-	-	o	+
Motor oil, mineral and synthetic	-	-	-	-	-	-	-	-	-	-	-	+	-	o	+	+
Naphtha	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Nitric acid 5%	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Paint thinner	-	-	-	-	-	-	-	-	-	-	-	o	-	-	+	+
Paraffin oil	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Petrol (92 to 100 octane)	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Phosphoric acid 5%	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Salt water/seawater	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sodium hydroxide solution 20%	-	-	-	-	-	-	-	-	-	o	o	+	o	o	+	+
Sulphuric acid 5%	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+
Toluene	-	-	-	-	-	-	-	-	-	-	-	+	o	+	+	+
Water	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Water, +90°C	+	-	+	+	-	+	+	+	+	-	-	+	+	+	+	+
Xylem	-	-	-	-	-	-	-	-	-	-	-	+	o	o	+	+

+ = resistant 0 = limited resistance - = not resistant

Instructions for use:

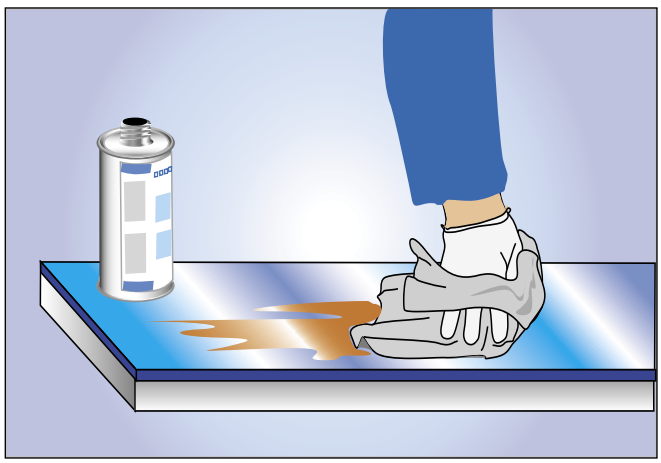
Optimum bonding results with elastic one-component adhesives and sealants from WEICON are dependent on the careful preparation of the surfaces. Dust, dirt, rust, oil and lubricants and other impurities (e.g. release agent) have a negative effect on adhesion.

Therefore, the following points must always be observed prior to use:

Surface preparation
The surfaces must be clean and grease-free. Many surface contaminants, e.g. oil, dust and dirt, can be removed with WEICON Surface Cleaner.

For heavily soiled metal surfaces, we recommend WEICON Cleaner Spray S; WEICON Sealant and Adhesive Remover is suitable for removing old paint or adhesive residues.

Surface pretreatment
Most materials can be bonded well to themselves and among each other. For certain materials or extreme requirements, we recommend the use of an adhesion agent (primer). Detailed information on this subject is contained in the Primer selection table on Page 10.



A mechanical surface pretreatment, e.g. sanding or sand-blasting, can considerably improve the adhesion.

Application
WEICON elastic one-component adhesives and sealants are supplied either in tubes or in Euro cartridges (Black-Seal also in 200 ml press pack). Euro cartridges are processed with a cartridge gun or with automatic dosing systems.
WEICON Speed-Flex should be applied only with professional-quality cartridge guns (WEICON Cartridge Gun "Special").

Bonding of steel structures for interior decoration

Joining the parts to be bonded
To ensure optimum wetting, the parts must be joined before the first skin has been formed on the adhesive (skin-over time).

Curing
All elastic one-component adhesives and sealants from WEICON cure under the influence of humidity. The curing process starts at the surface and proceeds toward the inside.
At 50 % relative humidity and +23°C, the cure speed is approx. 3 mm in the first 24 hrs.

Adhesive bonds of big surfaces and high layer thicknesses cure more slowly since the humidity can not penetrate so fast to the inside if the outer layers have already cured.

Higher temperatures or higher humidity accelerate the curing, while lower temperatures or low humidity slow it down.

Resistance
WEICON elastic one-component adhesives and sealants are resistant to a large number of media when applied properly and after complete curing (see table on Page 16).

Storage
When unopened and stored in a normal climate (+23°C and 50 % rel. humidity), WEICON elastic one-component adhesives and sealants have a shelf life of 9 - 12 months, depending on the type.

Application examples

Flex 310 M HT 200 - Sealing of a joint gap with subsequent powder coating

Flex 310 M Classic - Bonding/sealing in the model construction sector

Flex 310 M Super-Tack - Fixing of lines

Speed-Flex - Automated application during the production of doors for refrigerators in supermarkets

Flex 310 M Crystal - Bonding of blue-dyed glass on MDF panels

Speed-Flex - Bonding of stainless-steel plates on wood

Flex 310 M Crystal - Renovation of balconies on old buildings

Speed-Flex - Bonding of wall panelling for the interior decoration of buildings

Flex 310 M Classic - Gold-anodised stainless-steel panels as wall panelling

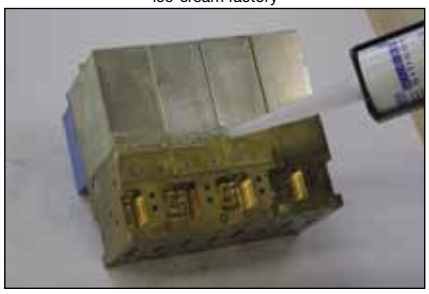
Fast-Bond - Bonding of hard foam panels on aerated concrete

Silicone F - Protective cap of black silicone for spark plug connectors

Flex 310 M Classic - Sealing on a filling plant in an ice-cream factory

Fast-Bond - Bonding a pipe clamp anchor into aerated concrete

Speed-Flex - Signs on a filling plant for gas



Silicone A - Sealing a control unit

HT 300 - Sealing on heating systems

Fast-Bond - Bonding of baseboards

Flex 310 M Classic - Steel spiral staircase step (step plate of granite)

Elastic One-Component Adhesives and Sealants

• flexible • strong • durable

Distributed by:

Bonding of coping stones of a swimming pond

Bonding of hard foam panels on aerated concrete

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