Weicon HT 300 High Temperature Silicone is a one-part, acetic cure silicone adhesive and sealant used in temperatures up to 300°C. This high quality silicone is red in colour, free of solvents and bonds very well to steel, aluminium, glass, ceramics and more.

HT 300 has a pasty consistency which helps with accurate application and is dielectric. It is highly resistant to weathering, ageing and most chemicals to ensure it provides long term performance. It is also extremely elastic with a 500% maximum elongation rating.

Applications

- Sealing furnaces
- Bonding and sealing for flue gas systems
- Heating cabinet sealing
- Sealing exhaust gas routing systems
- Making high temperature silicone gaskets

Preparation of the Surface

To ensure good adhesion, the surface HT 300 will be applied to must be clean and free of greases or oils. Surface contaminants like dust or dirt can be removed with general cleaners (or Weicon Surface Cleaner). For heavily soiled surfaces, Weicon Cleaner S or Weicon Gasket Remover may be more suitable.

Most types of materials can be bonded to with Weicon HT 300 High Temperature Silicone. That said, for certain materials (such as low surface energy plastics like polyethylene or PTFE) or extreme requirements the use of a primer may be necessary. More information on these is available from Swift Supplies. Alternatively, (and for very smooth surfaces) a mechanical surface pre-treatment (e.g. sanding or sand-blasting) can considerably improve adhesion.

Application

Cartridges (310ml) of HT 300 should be applied using a cartridge gun or automatic dosing system. Squeeze packs can be applied by hand. To ensure optimum wetting and therefore adhesion to the surfaces, the parts being bonded must be joined before the first skin has formed on the adhesive. All Weicon elastic one part adhesives and sealants cure by reacting with humidity in the surrounding environment. The curing process starts at the surface of the adhesive and proceeds inwards from there. At 50% relative humidity and 23ºC, the cure speed is approximately 3mm in the first 24 hours.

Adhesive bonds of large surfaces and high layer thicknesses cure more slowly as the humidity cannot penetrate as quickly towards the inside of the adhesive if the outer layers have already cured. Higher temperature and/or higher humidity accelerates curing while lower temperatures and/or lower humidity slows it down.

Date Created: 13/11/2016
Date Modified: 21/10/2021
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Technical Details

Properties

Basis	One Part Acetate Silicone
Viscosity	Pasty
Density	1.28 g/cm³
Stability / Run-Off (ASTM D 2202)	1mm
Processing Temperature	+5°C to +35°C
Curing Temperature	+5°C to +40°C 30% to 95% Relative Humidity
Skin-Over Time	12 Minutes
Cure Speed (first 24 hours)	2-3mm
Volume Change (DIN 52451)	-1%
Gap Fill Max. Depth	5mm
Gap Fill Max. Width	25mm
Shore Hardness (DIN 53504 / ASTM D 412)	35 Shore A
Elongation at Break (DIN 53504 / ASTM D412)	500%
Tensile Strength of Sealant	2 N/mm²
Average Tensile Shear Strength (DIN 53283)	1.3 N/mm²
Tear Strength (DIN 53515 / ASTM D 624)	6 N/mm²
Max. Movement Capacity	15%
Temperature Resistance (Continuous)	-50°C to +280°C
Temperature Resistance (Short-Term, 2 Hour Max.)	+300°C
Paintable (Liquid Paint)	No
Building Material Category (DIN 4102)	B 2
Solids Content	100%
Specific Forward Resistance	2.5 x 10^15 Ohm/cm
Thermal Conductivity	0.3 W/m·K
Dielectric Strength	21 kV/mm
Shelf Life (Stored at +5°C to +25°C)	12 Months

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Weicon Black Seal Chemical Resistance After Curing

Acetic Acid (<5%)	+	Ketones	O
Acetone	+	Lyes (diluted)	+
Alcohol	+	Methanol	+
Ammonia (10%)	+	Methyl Ethyl Ketone	+
Antifreeze	+	Motor Oil (Mineral and Synthetic) +140ºC	+
Caustic potash solution (20%)	-	Motor Oil (Mineral and Synthetic)	+
Citric Acid (10%)	+	Naphtha	+
Concentrated Formic Acid	+	Nitric Acid (5%)	+
Concentrated Phosphoric Acid	-	Paint Thinner	+
Concentrated Silicon Oil	+	Paraffin Oil	+
Cooling Lubricant (Water Dilutable)	+	Petrol (92 to 100 octane)	+
Diesel / Heating Oil	+	Phosphoric Acid (5%)	+
Edible Oil / Vegetable Oil	+	Salt Water / Sea Water	+
Ethanol	+	Sodium Hydroxide Solution (20%)	+
Freon	+	Sulphuric Acid (5%)	+
Gear Oil	+	Toluene	+
Glycerine (glycol)	+	Water	+
Glycol Ether	+	Water (90ºC)	+
Hydraulic Oil	+	Xylem	+
Hydrochloric Acid (5%)	+		
Hydrogen Peroxide (3%)	+		

+ = Resistant O = Resistant for a Limited Time - = Not Resistant

Storage

When stored HT 300 High Temperature Silicone has a minimum shelf-life of 12 months.

Available Sizes

Weicon HT 300 is available from Swift Supplies in 85ml Squeeze Tubes and 310ml cartridges.

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