

SILICONE PROFILES



SEALING , EXPERTISE



Garlock Sealing Technologies has been operating in the area of sealing products since 1887.

The group offers the following advantages:

- operations in a large number of countries, in particular in Europe
- permanent identification of requirements
- constant exchange of information and experience between the various Research and Development departments
- effective and personalized advice from a technical sales team which is always ready to listen.

OUR SPECIALTY , SILICONE ELASTOMERS

We offer a wide range of industrial sealing solutions, transforming most current elastomers by extrusion, moulding and laying-up.

We specialize in the development and production of profiles and technical parts made from silicone elastomer, which offer unequalled performances in the areas of heat resistance, resistance to ozone and ageing, electrical insulation and unique anti-adhesion properties.

PRINCIPAL PRODUCTS



CEFIL'AIR®

An inflatable seal designed to be leaktight and ensure that elements which are frequently disconnected can be easily installed and held in position. Manufactured by laying-up or moulding, this process can be used to manufacture products measuring from a few millimetres to several tens of meters.

PROFILES

Seals extruded in a wide range of elastomers which, with regard to the quality of the silicone, are available in a large selection of shapes and shades designed to fulfil the requirements of a variety of applications - aeronautical, high temperature, food industry.

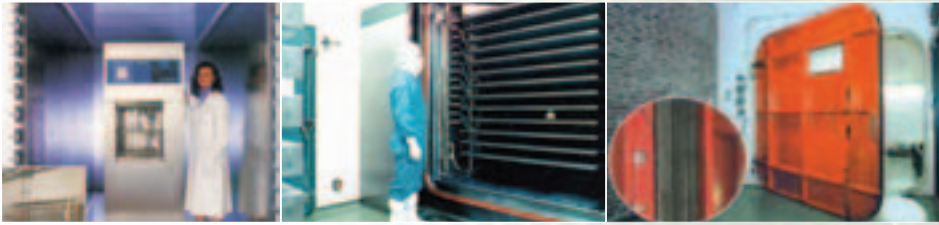
MOULDINGS

Seals and technical parts made by moulding (compression, transfer or injection) based on plans and materials specifications provided, using all types of elastomers, and ranging from prototypes to mass produced articles.

A P P L I C A T I O N S

- **OVEN DOOR SEALING:** sterilizers, autoclaves, dryers and refrigerators

- **FRAMES:** plate glass, viewing ports, metal plates.

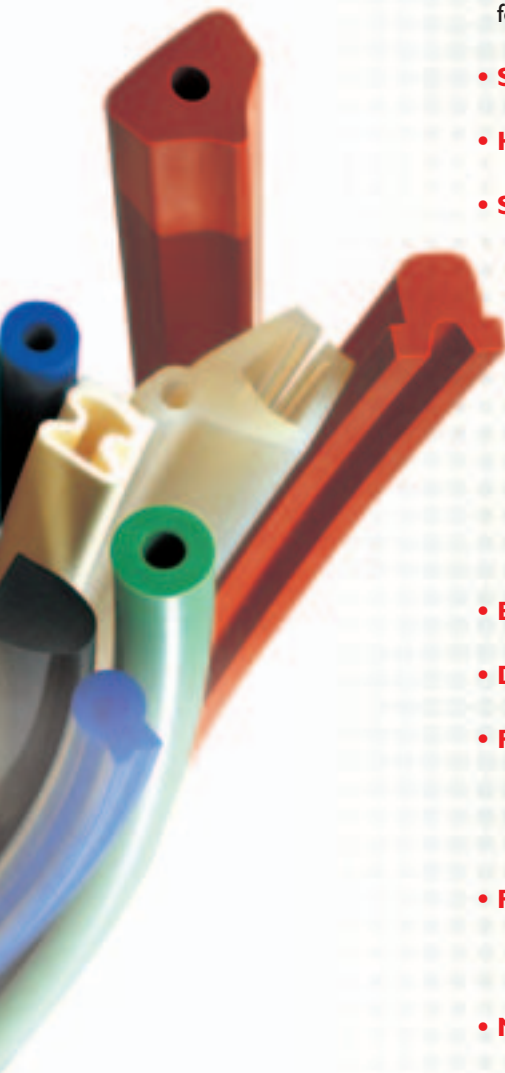


- **SEALING BETWEEN ELEMENTS:** inflatable CEFIL'AIR® seals, for which the frequency and speed of separation are determining factors

- **STATIC OR DYNAMIC SEALING:** layed-up or moulded O-rings, lip seals.

- **HOUSEHOLD APPLIANCES:** sealing and trim profiles

- **SOLAR COLLECTORS:** profiles.



- **ELECTRICAL INSULATION:** grommets, profiles, stops, fittings

- **DIELECTRIC INSULATION:** Auto-fusioning tapes, sleeving for electric leads.

- **PLASTICS INDUSTRIES:**

- Special profiles and endless beds for plastic welding machines.
- Sleeves of cylinders transporting plastic films subject to HF bombardment (corona effect) for the roughness required for impression.

- **FOOD MANUFACTURING INDUSTRIES:**

- "Food-contact" seals for sterilization containers, quick freezing tunnels.
- Adaptor connecting pieces used in the transportation of food in powder form.

- **MEDICAL AND PARA-MEDICAL INDUSTRIES:**

- Translucent tubes, multi-channel tubes for dental devices
- Seals for breast pump feeding bottles etc...
- Seals for veterinary hypodermic syringes.





NATURE:

Composite insulating sleeve of circular section comprising braided glass fibre sleeving coated in foam silicone.
In the standard version the coating is made in a shade of foam silicone CM61CR / 25 but can also, if requested, be made in other specific shades to comply with specific requirements (high temperature, oil resistant, fire/fumes classification)

UTILIZATION:

This product is generally used to thermally insulate or protect pipes, hydraulic hoses, wiring harnesses, transmission cables, or coolant piping systems.

EXAMPLES:

- Insulation of fuel pipes close to heat sources.
- Protection of electric leads.
- Insulation of heat exchanger pipes.
- Etc.

ACHIEVABLE DIMENSIONS:

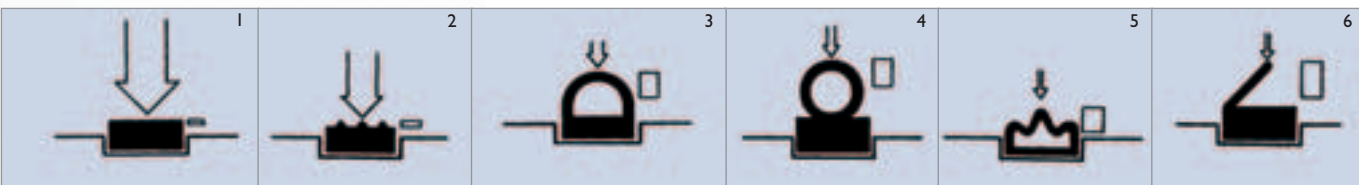
Standard products are manufactured with a minimum interior Ø of 8 mm and maximum external Ø of 45 mm, as the internal braided support is approximately 1 mm thick the foam silicone coating can vary between 2.5 and 15 mm, based on the degree of thermal protection required, the applicable tolerances are those defined in standard NF F 00-456 (08/91) i.e.:
Thickness < 5 mm...+1/-0.5 ; 5 ≤ thickness < 10 mm.....+1/-1 ; 10 ≤ thickness < 25 mm.....+1.5/-1.

O P E R A T I O N

Elastomers are incompressible in volume. A profile must therefore be mounted so that it may extend laterally, if its elastic properties are to be fully exploited. However, in many cases, as this is not possible, hollow or cellular profiles are used.

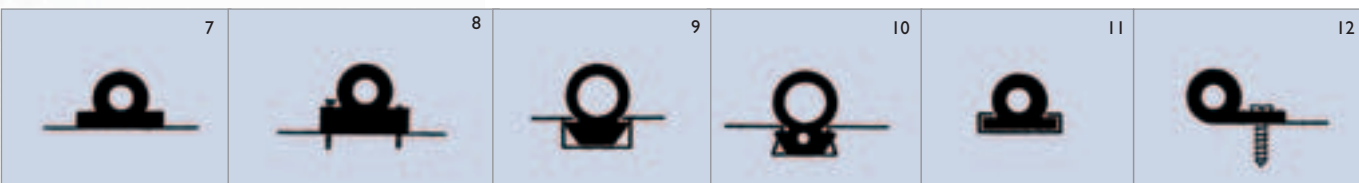
RELATIONSHIP BETWEEN PRESSURE APPLIED AND EXTENSION

Depending on the extension required, existing tolerances and compressive force, the following types of seals are generally considered.



- 1 - Profile for minimum extension and maximum compressive force
- 2 - Profile for short extension and large compressive force
- 3 - Profile for long extension and average compressive force
- 4 - Profile for long extension and weak compressive force
- 5 - Profile for average extension and weak compressive force
- 6 - Profile with long stroke extension and minimum compressive force

DIFFERENT FIXING METHODS



- 7 - Profile for gluing. Recommended only if the seal is not put under strain too often and too strongly and on the condition that adhesion is achieved
- 8 - Nailed or stapled profile
- 9 - Profile to be inserted or glued in a "plunger" channel, the most common system
- 10 - Dovetail to be wedged or clipped
- 11 - Profile for threading
- 12 - Screw-in profile.

RANGE OF ELASTOMERS

The following table shows our current manufacturing range. This list is by no means limitative. In fact, the great flexibility of "Silicones" allows us to define a formula to deal with specific problems and conditions of use or implementation.

At its "Quality Control" laboratory Garlock France is able to draw up technical specifications, to create a customized Silicone elastomer formula based on application requirements.

- Ability to create other shades, hardnesses, qualities on demand.
- When placing an order, please specify, in addition to the reference, the hardness and shade required.
- The characteristics listed in the following table are based on laboratory tests, but cannot be considered as guarantees which would engage our responsibility.
- The values given are obtained based on moulded sheets after curing.

MAIN PROPERTIES AND REFERENCES OF SILICONE MIXTURES

| Applications | References | Hardness Shore A \pm 5 | | Density g/cm ³ | Limit T ^o C | Colour | | Observations |
|--------------------------|------------|--------------------------|------------------|---------------------------|------------------------|-----------------|-----------|---|
| | | standard | other on request | | | standard | other | |
| General use | C 61 | 60 | 30 to 80 | 1,09 1,25 | - 65°C + 250°C | Grey | Red | Other colours on request |
| High temperature | C 61 THT | 60 | 40 to 70 | 1,0 1,2 | - 65°C + 315°C | Anthracite grey | | Other colours on request |
| Foodstuffs | C 66 | 60 | 40 to 70 | 1,10 1,20 | - 65°C + 250°C | Translucent | | |
| Oil resistant | C 62 | | 40 to 80 | 1,13 1,27 | - 50°C + 225°C | | Brick red | Other colours on request |
| Building | C 68 | | 50 to 80 | 1,30 1,50 | - 50°C + 180°C | | Grey | Other pastel shades on request |
| Autofusioning | C 72 | | 50 | 1,20 | - 50°C + 200°C | | Red | Other colours on request |
| Foam | CM 61 | 25 | 20 to 25 | 0,65 0,75 | - 50°C + 200°C | Red | Grey | PR for profile CR for cord Other colours on request |
| High mechanic properties | C 65 M | | 60 | 1,19 | - 50°C + 200°C | | Red | Other colours on request |
| Low DRC | C 63 LC | | 65 | 1,18 | - 50°C + 200°C | | Red | Main use sterilizers Other colours on request |
| Conductor | C 76 | | 70 | 1,18 | - 50°C + 200°C | | Black | |
| Magnetic | C 80 | | 75 | 2,70 | - 50°C + 180°C | | Brown | |
| Fluorinated | CF 61 | | 60 | 1,48 | - 50°C + 200°C | | Blue | Aeronautics use and contact with hydrocarbons |
| Low temperature | C 73 | | 70 | 1,35 | - 110°C + 200°C | | Red | |

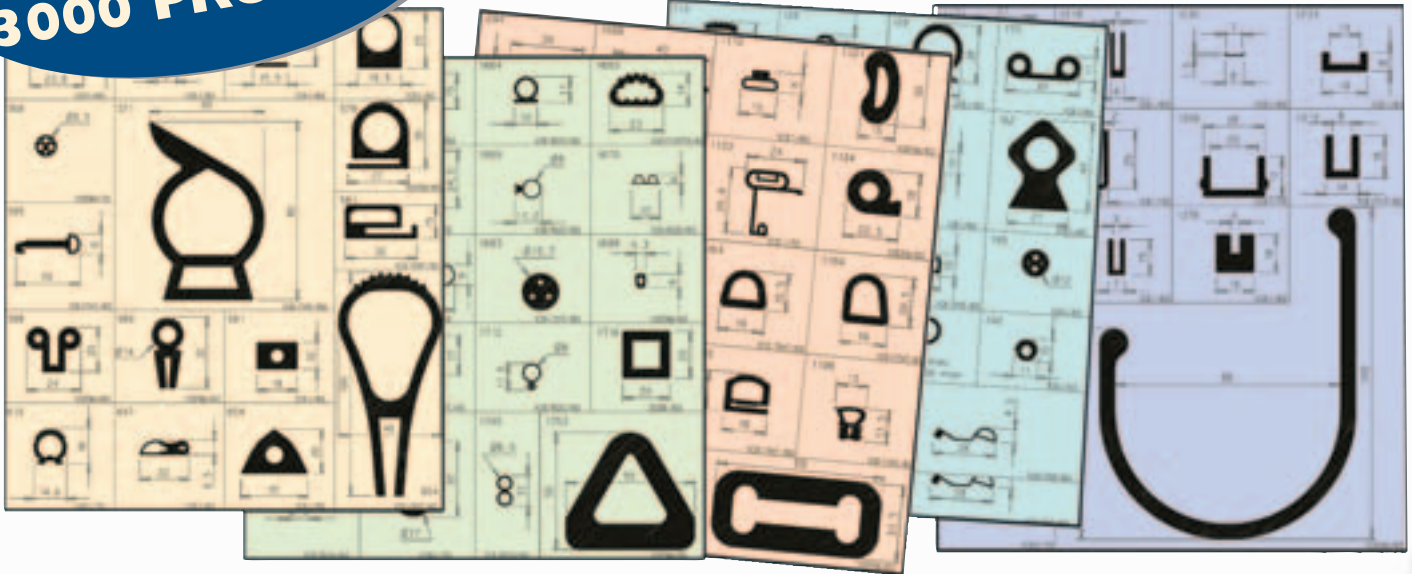
 : Standard mixes allowing short periods of time

EXAMPLES OF SILICONE PROFILES

A CHOICE OF MORE THAN 3000 PROFILES

+ 3000 EXISTING DIES

Choice of a large variety of colours and hardnesses. Possibility of achieving very different shapes for specific applications. Contact us.



AVAILABLE SILICONE PROFILES



**40 REFERENCES IN STOCK
HIGH TEMPERATURE
QUALITY AND
CELLULAR**

| Nature | Garlock References | Density | Colour | Temperature operating limit °C | Hardness Shore A | Breaking strength daN/cm² | Elongation % | Tear strength daN/cm² | DRC* | Brittle point °C approx. |
|-----------|--------------------|---------|------------|--------------------------------|------------------|---------------------------|--------------|-----------------------|------|--------------------------|
| High T °C | C61 THT/60 | 1,15 | Anthracite | + 315 | 60 | 85 | 350 | 20 | 28 | -80 |
| Cellular | *CM61/25 | 0,65 | Red | +250 | 25 | 16 | 230 | | 6 | -80 |

A VARIETY OF GEOMETRIES AVAILABLE

"TRAPEZIUM" SHAPE

"U" SHAPE

"T" SHAPE

"MUSIC NOTE" SHAPE

BUT ABOVE ALL THE ABILITY TO CREATE WITH YOU A PROFILE SUITED TO YOUR REQUIREMENTS

"ROUNDED EDGE" SHAPE

"L" SHAPE ...etc.

V F A T A P E A U T O - F U S I O N I N G S I L I C O N E T A P E

Electric Insulation class H.

PROPERTIES:

- Temperature resistance from -50°C to + 200°C
- Resistance to ageing, weather, chemical agents, ozone, water.

The auto-fusing silicone tape upon contact with itself constitutes a compact, homogeneous and leaktight mass.

It does not contain any adhesives and only adheres to itself. Silicone auto-fusing tape provides multi-layer insulation, the fusing of which increases over time and at ambient temperature.

CHARACTERISTICS:

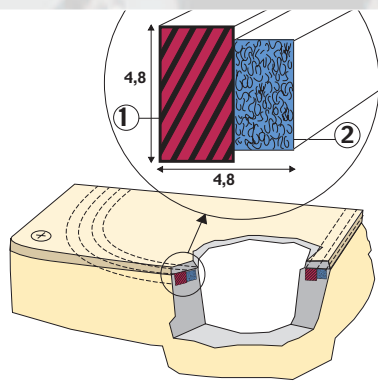
- Breaking strength: 5 Mpa
- Elongation at break: 600%
- Tearing strength: 20 kN/m
- Perforation tension: 30 kV/mm
- Adhesion to backing test ASTM D 1248-68: length when rolled out 3 cm

USES:

- Insulation of deflectors, cable ends, electric terminals, splices, windings, electronic equipment
- All external electrical protections in MT and HT
- Laboratories, marine, aviation, etc.



**COEXTRUDED SILICONE PROFILE / MONEL FABRIC
COMBINING 2 FUNCTIONS**



- ① - **SEALING:** silicone elastomer C69R20/50 (black)
- ② - **ELECTRICAL CONDUCTION:** monel fabric 4.8 x 2.4 mm (wire Ø 0.1 mm)

Application: sealing and protection against electro-magnetic interference of electric or electronic cabinets or equipment.

Other shades and dimensions which can be created on request (contact our technical departments).

THE MOST COMPLETE LINE OF



SHEETS AND CUT GASKETS



CONVENTIONAL GASKETS



RESILIENT METAL SEALS



SEALING SYSTEMS AND ASSEMBLIES



GRAPHITE SEALS AND RINGS



BRAIDS AND COMPRESSION PACKINGS



LIP SEALS AND O'RINGS



KLOZURE OIL SEALS



GPA - GULLIVER MECHANICAL SEALS



ELASTOMER SEALS



HYDRAULIC AND PNEUMATIC COMPONENTS



OTHER SEALING PRODUCTS



ON SITE SERVICES (PREST PROGRAMM)

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