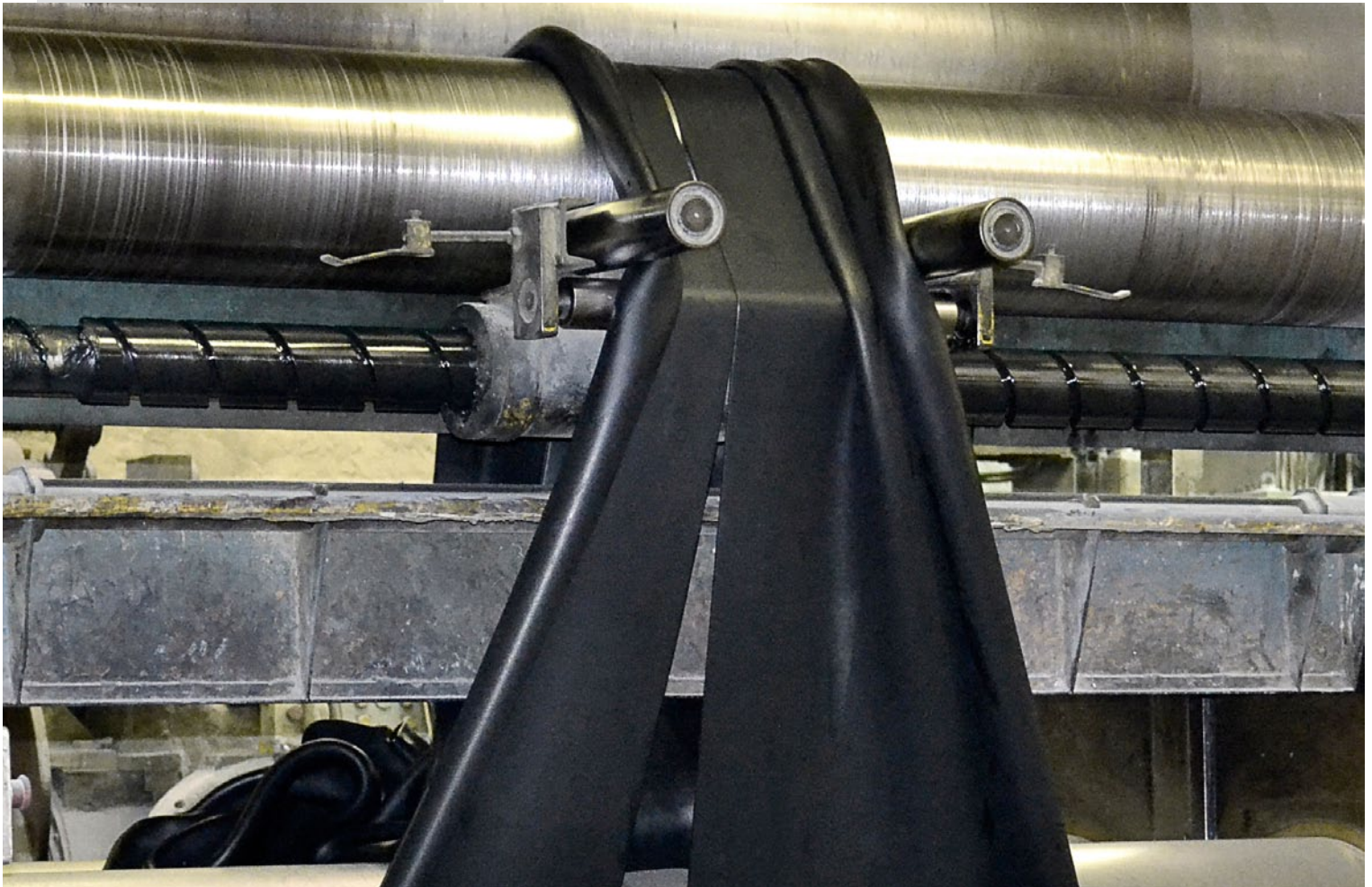




www.borflex.fr - www.borflex-group.com

For more than 30 years, BORFLEX has invented, improved and produced tailor-made compound formulations to meet customer specific needs. BORFLEX brings innovation to a wide range of industries.

COMPOUNDS *rubber & silicone*



RUBBER COMPOUNDS



BORFLEX produced all types of rubber compounds according to ISO 1629.

NR	Natural rubber
IR	Polyisoprene rubber
SBR	Styrene-butadiene rubber
BR	Polybutadiene rubber
EPM / EPDM	Ethylene-propylene rubber (Copolymer and terpolymer)
IIR / BIIR / CIIR	Isobutylene isoprene rubber (Butyl, bromo and chlorobutyl)
NBR	Acrylonitrile-butadiene rubber
CR	Chloroprene rubber
VMQ / FVMQ / PVMQ	Silicone rubber (with special grades: fluorinated and phenylated)
FKM	Fluorocarbon rubber
CM / CPE	Chlorinated polyethylene rubber
CSM	Chlorosulfonated polyethylene rubber
ACM / AEM	Polyacrylate rubber and ethylene acrylique rubber (VAMAC®)
EVA	Ethylene vinyl acetate
HNBR	Hydrogenated acrylonitrile-butadiene rubber
XNBR	Carboxylated acrylonitrile butadiene rubber
CO / ECO	Polyepichlorohydrin rubber
AU / EU	Polyurethane rubber



SILICONE COMPOUNDS

Silicone requires special processing, BORFLEX dedicated a specific environment for "silicone" malaxables compounds.

BORFLEX has developed BORSIL, a range of silicone elastomers for use in extreme conditions of temperature and chemical resistance (fluorinated silicones).



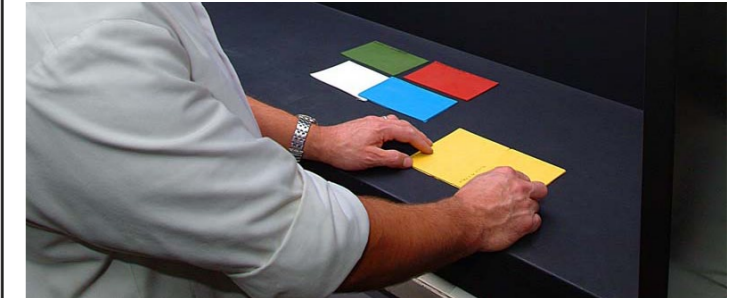
Different families of silicones can be distinguished:

- ▶ **the standard temperatures silicones** with a continuous temperature keeping -50°C to $+200^{\circ}\text{C}$, which can be raised to 250°C ,
- ▶ **high tearing silicones**, they are standard silicones with high tear resistance,
- ▶ **high resilience low DRC silicones** (residual compression set),
- ▶ **low temperatures silicones** with a continuous holding temperature from -110°C to $+200^{\circ}\text{C}$,
- ▶ **EHV silicones** (high temperatures) with a continuous holding temperature of -50°C to $+300^{\circ}\text{C}$,
- ▶ **electro and thermally conductive silicones**,
- ▶ **"smart" silicones** photo luminescent type (3 colors available) or thermo chromic (possibility of selecting the temperature and the transition color, programmable 3 colors and 3 temperatures).



The BORFLEX silicones are used in many markets. They can meet the specifications of aerospace specifications 50, 52, 53 and 54 for silicone, and 61 and 63 for fluorinated silicones.

REGISTERED COMPOUNDS



As rubber solutions provider, the BORFLEX Group places innovation at the heart of its strategy. A permanent regulatory monitoring allows us to evolve our elastomer blends to offer components comply with the requirements in force:

- ▶ **Food & pharmacopoeia:** regulation (EC) No 1935/2004 of 27 October 2004 and amended various European positive lists, order of 9 November 1994 concerning rubber materials and articles in contact with foodstuffs and Food Drink, Order of 9 August 2005 relating to plastic materials and objects in contact with foodstuffs, products and drinks, EU Directive 1935/2004, NF EN 1186 Part 1,2,3 edition XI Pharmacopoeia (residual peroxide content), 21CFR177.2600 FDA, USP class VI, ...
- ▶ **Drinking water:** ACS, W270 KTW, WRAS, ...
- ▶ **Railway:** EN 45545, NF F16-101, DIN 5510, ASTM, SMP 800 C, BS 6853, IEC 60695-11-10 UL94, ...
- ▶ **Aerospace:** NF L17-106, NF L17-107, ...
- ▶ **Automotive & Land Transport:** IMDS, UL, REACH, ...
- ▶ **Other industrial sectors:** REACH, ATEX Directive 94/9 / EC, EDF DPH, PMUC, ...

Upon request, we can offer specific studies to meet your specifications and related standards.



FDA / ACS / EN 45545
NF L17-106 / NF L17-107

THE BORFLEX EXPERTISE

BORFLEX compounds are used on many markets: defense, aerospace, nuclear, railway, automotive, energy, food and beverage, agriculture, industrial maintenance, boiler making, printing and graphic arts, packaging, other industries, ...

The organization of BORFLEX and its performant equipment allows to deliver range quantities from a few kilos to several tons.

The large availability of BORFLEX control equipment as well as its procedures ensure constant quality of their compounds, meeting the demands of their customers specifications.

RESEARCH AND DEVELOPMENT

The BORFLEX lab team is at the customer's disposal for the development of new tailor-made confidential compounds. They rely on a high-performance material: rheometer, dynamometer, Mooney viscometer, hardness tester, densimeter, abrader, ...

Examples of some of the on-site tests:

- ▶ Rheometer: to simulate extrusion processes in production.
- ▶ Dynamometer: for any application of tensile tests and/or compression (strength, elongation, tear strength, rubber-metal adherence, ...).
- ▶ Hardness testers Shore A and D: for the determination of hardness (Shore A for rubbers and plastics flexible and Shore D for rubbers and rigid plastics).
- ▶ Mooney viscometer: for testing viscosity and scorch time for compounds.
- ▶ Densimeter: to measure density of different materials.
- ▶ Abrader: to determine the abrasion resistance of rubber using a cylindrical specimen which moves over an abrasive fabric attached to a rotating cylindrical drum.

A PRODUCTION AVAILABLE IN ALL QUANTITIES

- ▶ 9000 m² building.
- ▶ Two mixing lines: one black line with an internal 110 L mixer and one color line with an internal 60 L mixer.
- ▶ One "lab" mixing 5 L line.
- ▶ One "silicone rubber" mixing line.
- ▶ One "extruding calender" line to produce plates, strips and rolls.

EXPRESS DELIVERY SMALL COMPOUNDS

With more than 500 references on 4000 m² storage area and an independent "small compounds" department, allows to quickly ship within 48/72 hours* compounds bellows 30 kg.

* Depending of the availability of raw materials

COMPOUNDS READY TO USE IN DIFFERENT FORMS

- ▶ Black and coloured compounds.
- ▶ Endless strips (from 35 to 200 mm, thickness from 5 to 11 mm).
- ▶ Slabs, pelletized or granules.
- ▶ Calendered compounds in rollers or sheets.



Continuous strips



Calendered rolls



Calendered plates



Granules

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