



MIXTURES

RUBBER & SILICONE

For several years, BORFLEX® has been developing, perfecting, and producing several thousands of formulae, to meet the requirements of its pioneering customers.



RUBBER MIXTURES

BORFLEX® produces all types of rubber mixture, in accordance with the ISO 1629 standard.

NR	Natural rubber
IR	Synthetic polyisoprene
SBR	Butadiene-styrene copolymer
BR	Polybutadiene
EPM / EPDM	Ethylene and propylene co- or terpolymer
IIR / BIIR / CIIR	Isobutylene-isoprene copolymer, chlorinated, brominated, or butyl
NBR	Butadiene-acrylonitrile or nitrile copolymer
CR	Polychloroprene
VMQ / FVMQ / PVMQ	Silicone, phenyl or fluorinated
FKM	Viton®-type fluorocarbonated elastomer
CM / CPE	Chlorinated polyethylene
CSM	Chlorosulfonated polyethylene
ACM / AEM	Polyacrylate
EVA	Ethylene vinyl acetate
HNBR	Butadiene copolymer
XNBR	Carboxylated butadiene-acrylonitrile copolymer
CO / ECO	Polyepichlorohydrin
AU / EU	Polyurethane

SILICONE MIXTURES

Because silicone requires specific processing, BORFLEX® has dedicated a specific environment to kneadable "silicone" mixtures.

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

A distinction can be made between the different families of silicones:

- standard temperature silicones with continuous temperature resistance from -50°C to +200°C, which can be increased to 250°C,
- tear-resistant silicones - these are standard silicones with a high resistance to tearing,
- high-strength silicones with low CSR (compression set resistance),

- low temperature silicones with continuous temperature resistance from -110°C to +200°C,
- VHT (very high temperature) silicones with continuous temperature resistance from -50°C to +300°C,
- electrically and thermally conductive silicones,
- "intelligent" photoluminescent-type silicones (3 colours available), or thermochromic silicones (ability to select the colour temperature and transition, programmable with 3 colours and 3 temperatures).

BORFLEX® silicones are present in several markets. They can fulfil aeronautical specifications 50, 52, 53, and 54 for silicones, and 61 and 63 for fluorinated silicones.

CERTIFIED MIXTURES

As a creator of rubber solutions, the BORFLEX® group places innovation at the heart of its corporate strategy.

Continual compliance monitoring allows us to develop our elastomer mixtures, with a view to offering components that are compliant with currently valid requirements:

- Foodstuff and pharmacopoeia: Regulation (CE) No. 1935/2004 of 27 October 2004, as amended, and the various European positive lists, Order of 9 November 1994 relating to rubber materials and objects in contact with foodstuffs, food products and beverages, Order of 9 August 2005 relating to plastic materials and objects in contact with foodstuffs, food products and beverages, EU Directive

1935/2004, NF EN 1186 parts 1, 2, 3, Pharmacopoeia XIth Edition (residual peroxide content), FDA 21CFR177.2600, USP class VI, etc.

- Drinkable water: ACS, KTW W270, WRAS, etc.
- Rail: EN 45545, NF F16-101, DIN 5510, ASTM, SMP 800 C, BS 6853, IEC 60695-11-10 UL94, etc.
- Aeronautics : NF L17-106, NF L17-107, etc.
- Automotive and ground transportation: IMDS, UL, REACH, etc.
- Other industrial sectors: REACH, ATEX directive no. 94/9/CE, EDF DPIH, PMUC, etc.

On request, we can offer scientific studies to meet your specifications and comply with associated standards.

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

BORFLEX® EXPERTISE

BORFLEX® mixtures are present in several markets: defence, aeronautics, nuclear, rail, automotive, energy, agri-food, agriculture, industrial maintenance, boiler making, printing, packaging, other industries etc. BORFLEX®'s organisational systems, along with its

high-performance material, enable the deliver of quantities of mixtures ranging from just a few kilos, to large series.

The large number of BORFLEX® control devices, as well as the associated procedures, guarantee a constant mixture quality in keeping with its clients' specifications, and suitable for forming by means of extrusion, moulding (injection, transfer, or compression), and calendering.

STUDY AND LAB WORK

The BORFLEX® laboratory team is available to its clients for the development of new customised and confidential mixtures. It makes use of high-quality equipment: rheometer, dynamometer, Mooney viscometer, durometers, densimeter, abrasimeter etc.

Examples of trials that can be conducted on site:

- Rheometer: to simulate extrusion processes in production.
- Dynamometers: for any traction and/or compression test application (breakage, extension, tearing, rubber/metal adherence etc.).

- Shore A and D durometers: to determine hardness (Shore A for flexible rubbers and plastics, and Shore D for more rigid rubbers and plastics).
- MOONEY viscometer: to monitor the viscosity and scorch time of the mixtures.
- Densimeter: to determine the specific density of the different materials.
- Abrasimeter: to determine the resistance to abrasion of the rubbers, based on a cylindrical test piece moving on an abrasive cloth mounted on a rotating cylindrical drum.

Production scaled for

ALL QUANTITIES

- A building spanning 9,000 m².
- Two mixing lines: a black line with a 110-litre internal mixer, and a colour line with a 60-litre internal mixer.
- A 5-litre "lab" mixer line.
- A "silicone" mixing line
- An "extrusion/calender" line for producing calendered formats in sheets, strips, and rolls.

EXPRESS MIXTURES IN SMALL QUANTITIES

Thanks to a storage space spanning 4,000 m², with more than 500 products and an autonomous "small mixtures" service, BORFLEX® can provide emergency shipping of mixtures weighing less than 30 kg, within 48/72 hours.

* Subject to raw material availability

Mixtures ready to be used in

DIFFERENT PRESENTATION FORMATS

- Black and coloured mixtures
- Continuous strips (in widths from 35 to 200 mm, and thicknesses from 5 to 11 mm).
- Rubber strips, sheets, or pellets.
- Calendered mixtures in rollers or sheets (with a max. width of 1,000 mm).



Continuous strips



Calender rollers



Calender plates

We can supply filtered mixtures and preform sleeving.