

ZruMoos[®] FPM

A **Fluoroelastomeric Sponge Rubber**

Zrunek Gummitechnik has been engaged in fluorelastomers for over 25 years and is the leading business in this area in Austria. Over the years Zrunek has solved problems and developed solutions for numerous clients in the European market.

Cellular materials such as cork, balsa wood or cellulose are traditionally important working materials because of their thermal and acoustic insulation properties, high damping capacity and light weight. Sponge rubber has similar properties, and it has led to numerous technical developments in the rubber industry. In recent years, the Zrunek research department has been able to perfect the development and manufacture of fluoroelastomeric sponge rubber with the brand **ZruMoos® FPM**.

Sponge Rubber

Foamed elastomer material production is comparable to baking a cake with baking powder - a foaming agent is mixed with rubber compound which separates gas during vulcanization, building pores and assuming a foam-like characteristic. Sponge, cellular or foam rubber can then be manufactured according to the applied process.

Sponge Rubber, a foamed elastomeric material, with partially open and partially closed pores (see Fig. 1 + 2). In addition, sponge rubber products distinguish themselves by a closed exterior skin.

Below is a comparison of different foamed materials:

- ▶ **Cellular Rubber** can be either a closed, open or a mixed cell structure. However, products which are usually cut or peeled off in large blocks do not feature a closed external skin.
- ▶ **Latex Foam** has an open-cell structure and is manufactured, however, from Latex.



Fig.1: Predominantly open-cellular material

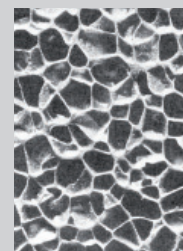


Fig.2: closed-cellular material

Fluoroelastomers

Fluoroelastomers (FPM) are polymers based on fluorinated monomers. Through the fluorination process, the FPM obtain the highest heat and chemical resistance of all elastomers developed to date. The operating temperature of FPM can be up to 200 °C, and for short periods, up to 300 °C. This material category is able to resist hundreds of normal to extremely aggressive liquids over a wide range of temperatures. Fluoroelastomers also maintain a reliable and leakage-free sealing force in situations where other elastomers fail. Other benefits include excellent ageing, weather and fire resistance and an extremely low exhaust rate in vacuum applications.

More information can be found at www.fkm-rubber.com – download.



Brochure „Designing with Fluoroelastomers“



Chemical resistance guide with over 1,700 chemicals

ZruMoos® FPM

A fluoroelastomeric Sponge Rubber

Sponge rubber made from fluoroelastomers combine properties from both material categories and applications which were not realizable in the past, are now possible.

ZruMoos® FPM is

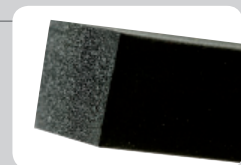
- ▶ a cellular expanded fluoroelastomer with outer skin
- ▶ soft up to 15 Shore
- ▶ poorly inflammable
- ▶ excellent resistant against ozone, light and weather
- ▶ continuous heating resistant up to 200 °C, up to 300 °C for short time
- ▶ excellent resistant against many media such as oils, fuels, acids, alkalis, saline solutions, non-polar solvents
- ▶ airtight at lowest surface pressure



light deformability of sponge rubber **ZruMoos® FPM**



Cord
ZruMoos® FPM



Rectangular Profile
ZruMoos® FPM

A few **application examples ZruMoos® FPM**:

- ▶ Sealing of engine bays with large, irregular gap lengths with sponge rubber profiles. The high temperatures prevalent there in combination with oils and grease are no problem for **ZruMoos® FPM**. The light deformability of such profiles can be seen in the above figure.
- ▶ Applications that require high acoustic damping in conjunction with aggressive chemicals.
- ▶ Due to the cellular structure of **ZruMoos® FPM**, the heat conductivity is heavily reduced. Thus, applications that require high thermal insulation in conjunction with other extreme properties of fluoroelastomers are conceivable.
- ▶ Applications that require a high toluene resistance in conjunction with a great ductility.
- ▶ **ZruMoos® FPM** can also be applied as soft wiping medium, in order to remove hot oil from rotating metal shafts. The service life is considerably longer than in conventional sponge rubber types.
- ▶ **ZruMoos® FPM** provides an interesting alternative wherever the application of silicon foam fails due to limited chemical resistance.

ZruMoos® FPM

ZruMoos® FPM **A product with a future**

Sponge rubber made of fluoroelastomers offers a multitude of variations. FPM is a high-performance elastomer that shows permanent growth as a result of the ever-rising requirements for sealing materials. Sponge rubber made from this material expands the possibilities for use and application. Accordingly this niche product will gain increasingly in importance in the future.

Specification	ZruMoos® FPM 7515M	ZruMoos® FPM 7530M
	low Density	medium Density
Durometer DIN 53505	20 Shore	30 Shore
Density DIN 53479	0,65 g/cm ³	0,85 g/cm ³
Tensile Strength DIN 53504	3 MPa	3 MPa
Elongation at break DIN 53504	200 %	250 %
Compression Set DIN 53517	45 %	27 %

Our general terms and conditions are applicable
We reserve the rights of modification of the specification



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