



Glossary

Comfort Index

The foam elements must be able to carry a person's weight and adjust to changing body positions. At the same time, body weight must be evenly supported and diffused, if pressure zones are to be avoided. The Comfort Index is calculated by recording the ratio between the force required to compress a given block of foam to 65% of its original height and that required to compress it to 25% of the same.

The higher the Comfort Index, the better the bodu support given by the sample.

The EUCAFLEX - Standard Types have an average Comfort Index of 2, while the index of the EULASTC HR - Quality types is about 3.

Dynamic fatigue test

In the dynamic fatigue test a foam sample is compressed 80,000 times by a 75 kilo weight, after which both height loss and hardness loss are measured and expressed as a percentage.

Elasticity

Elasticity, or rebound, also plays a decisive role in the quality and comfort of foam elements. It is generally expressed as a percentage. Elasticity is gauged by dropping a steel ball onto the foam and measuring the height of its rebound.

A value of 70% would mean that the steel ball has rebounded to 70% of its initial altitude.

EUCAFLEX - Quality types attain on average between 40 and 50%, whereas EULASTIC HR - Quality types attain 50 to 60%.

Fatigue resistance and durability

It is vital that the qualities mentioned here endure for a considerable lenth of time, even under intensive use. When researching fatigue, two test methods are available: the static fatigue test, in which the foam is subjected to a fixed stress for a long period of time, and the dynamic fatigue test, in which the foam is subjected to rhythmically changing stress.

With increased vomumetric (density), fatigue performance is improved.

Flame resistance

Usually the behavior of the entire piece of furniture in the event of fire must be taken into account, i.e. foam plus framework and upholstery.

Fire testing of chairs and couches is limited to their inflammability in contact with small fire sources such as lighted cigarette, math or suchlike. The majority of fires that first catch in furniture are caused by careless smokers.

Hardness ISO 2439-2009 method B

After volumetric weight (density), hardness is the most important characteristic of a foam.

Mattresses and furniture, for example, demand complete body support from their foam elements. A material which is too soft offers insufficient support in extreme cases, while too hard a material lacks comfort. In this context thickness also plays a role. The synergy between foam quality, foam thickness and the nature of the substructure is decisive.

Hardness is laboratory tested by compressing a foam sample of given dimensions to 65%, 40% and 25% of its original thickness, while measuring the force needed to achieve this. In order to ensure the highest degree of comfort, different degrees of hardness are available, depending on the relevant sector and the intended application of the foam.

Inflamability

The combustibility of foams used in furniture cushions must be measured in relation to the fire behaviour of the material with which they are covered. The better the flame resistance of these, the better the flame resistance in general.

Materials used in the furniture industry are not expected to resist major conflagrations. Once these materials catch fire, there is a risk that the fire will spread.

Thanks to their chemical components, the EULASTIC- HR Quality types demonstrate better flame staunching characteristics than most of the EUCAFLEX - Standard types. EULASTIC CMHR - Qualities meet the strictest British standards.

Static fatigue test

In the static fatigue test, a foam sample is compressed to 75% of its initial height for a period of 22 hours at a temperature of 70 °C. Once the stress is removed, the sample is remeasured. The height reduction is then expressed as a percentage of the original height. The sample's loss of hardness can be similarly measured and expressed as a percentage.

Volumetric weight

Volumetric weight, also known as density, is expressed in kg/m³ and gives the weight of a cubic block of foam with an edge length of 1 metre.

The volumetric weight is considered the most important characteristic when differentiating between foams, other characteristics being to a large degree dependent on this measure.

Our production programme includes foams of volumetric weights of between 17 and 60 kg/m³, suitable for a wide variety of uses.

> > Welcome to the world of EUPEN FOAM PRODUCTS! > Glossary

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