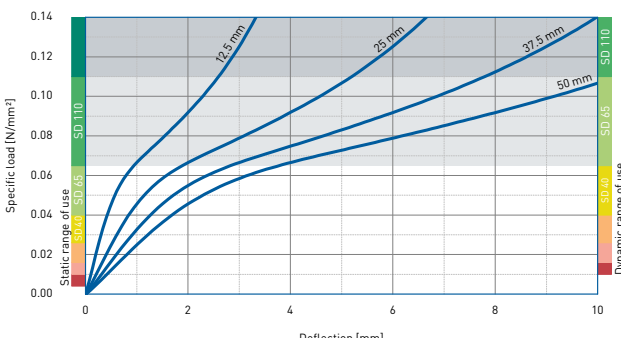
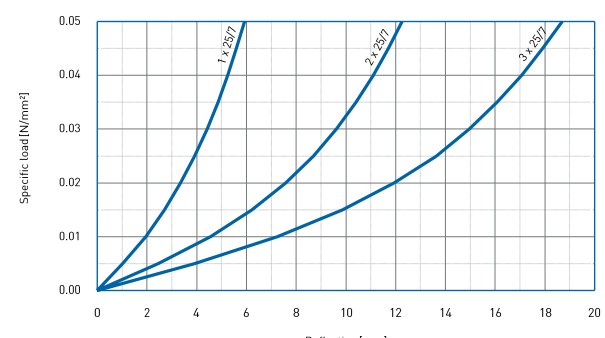


Reasons for vibration isolation with PURASYS vibrafoam / vibradyn

A wide variety of materials are used for vibration isolation in the construction and railroad sectors. At first glance, there are sometimes significant price differences between the individual materials. This comparison of PUR products from PURASYS and alternative elastomers made of rubber is intended to show you why you should choose PURASYS **vibrafoam** / **vibradyn** for vibration isolation, despite the fact that there are supposedly cheaper alternatives.

Structure

PURASYS vibrafoam / vibradyn	Rubber elastomers
<ul style="list-style-type: none"> Microcellular elastomers Densities between 150 and 1,000 kg/m³ can be realized PUR foams are volume compressible due to their cellular structure Almost linear characteristics curve in the application range for permanent static loading <div style="text-align: center; margin-top: 10px;">  </div> <p style="font-size: small; margin-top: 5px;"><i>Fig. 2: Quasi-static load deflection curve of a PURASYS vibrafoam material (SD 65)</i></p>	<ul style="list-style-type: none"> Compact or foamed material <ul style="list-style-type: none"> » High weight of rubber mats compared to PUR mats Elasticity can often only be achieved by molding <ul style="list-style-type: none"> » Special geometries can only be produced by molding No or low volume compressibility Strong progressive increase of the characteristic curve <ul style="list-style-type: none"> » Stiffening disadvantageous for vibration isolation <div style="text-align: center; margin-top: 10px;">  </div> <p style="font-size: small; margin-top: 5px;"><i>Fig. 13: Quasi-static load deflection curve of a typical rubber material</i></p>

Physical properties

PURASYS vibrafoam / vibradyn	Rubber elastomers
<ul style="list-style-type: none"> Dynamically very resilient material Ratio of static to dynamic stiffness very low Low natural frequencies and low mechanical loss factor of PUR products result in high vibration isolation efficiency High loading-bearing capacity due to relatively high static load limit and low creep behavior 	<ul style="list-style-type: none"> Resilient material Ratio of static to dynamic stiffness significantly higher compared to PUR <ul style="list-style-type: none"> » Therefore poorer dynamic properties compared to PUR products from PURASYS

Aging and long-term behavior

PURASYS vibra foam / vibradyn	Rubber elastomers
<ul style="list-style-type: none"> • PURASYS PUR products are resistant to many types of chemicals, such as <ul style="list-style-type: none"> » gasoline » mineral oils » mineral greases » diluted acids » and diluted alkalis • PURASYS vibrafoam / vibradyn products are also characterized by <ul style="list-style-type: none"> » high wear resistance » very good elongation values and tear strengths » a high recovery behavior » a high rebound elasticity » a low abrasion » no embrittlement » a good low-temperature flexibility » a very good aging behavior thanks to better UV and ozone resistances » and a long service life • Tests on mechanical fatigue strength with 12.5 million load cycles show only minor changes of less than 10 % • hydrolytically stable and resistant to microbes <ul style="list-style-type: none"> » enables use in construction and railroad applications • The application range between -30°C und + 70°C <ul style="list-style-type: none"> » can be used under a wide range of climatic conditions 	<ul style="list-style-type: none"> • Elastomers made of rubber stiffen over time <ul style="list-style-type: none"> » Plasticizers used diffuse over time • Due to the double bond in the molecular chains, less resistant to oxidation and UV radiation <ul style="list-style-type: none"> » Elastomers made of rubber become brittle over time and lose elasticity • The operating range depends on the type used and extends up to +100°C • Elastomers are not resistant to fuels, mineral oil and mineral greases

Price

In order to evaluate the price level of PUR with other elastomers such as rubber, it is imperative to compare the same product qualities. If PURASYS **vibradyn** is compared with simple rubber elastomers, the rubber material appears very favorable. In contrast, a rubber quality that achieves the properties of PURASYS **vibradyn** has a similar high price level, with the above-mentioned disadvantages. Therefore you should use PURASYS **vibra**foam / **vibradyn** for vibration isolation!

If, contrary to expectations, you are still not completely convinced by our products, our flexibility will convince you. As a self-formulator, we can react quickly and flexibly to special customer requirements and adapt our formulations to the required properties. In addition, our products can be colored differently on customer request, which increases the recognition value for customers. °