

Directional morphology variations of free risen polyurethane foams in sound absorption materials

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Sound absorption materials are very important for noise pollution in automobile industry. Flexible polyurethane foam used for noise, vibration and harshness (NVH) system. Flexible polyurethane foam have been studied to improve sound absorption efficiency. This property has been influenced by microstructure of polyurethane foam. Also, flexible polyurethane foam have advantage at high frequency range because of open cell structure. Flexible polyurethane foam is divided to mold and free rising foam. Difference of mold and free rising foam is directional property. Microstructure of mold foam is isotropic, however, free rising foam has anisotropic structure. Free rising foam has different sound absorption efficiency by direction. In this study, our aim is to compare with microstructure of flexible polyurethane foam by direction. The morphology effect of flexible polyurethane foam by direction was examined through SEM and the chain mechanical properties were characterized DMA and UTM. The acoustic properties was tested by using impedance tube.