ESTABLISHMENT OF SIMULATION OF SOUND-PROOF PACKAGE FOR A VEHICLE USING ANSA SCRIPT

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ABSTRACT – Recently, increasing the quietness of automotive cabins is an important element in enhancing commercial performance. Improving the acoustic performance of sound-proof package, including the floor carpet, is an effective way to increase the quietness. In general, two parameters are used for showing the acoustic performance of sound-proof package; absorption coefficient and transmission loss. These parameters are determined by the material specifications of sound-proof package, the thickness of this material, and surface area. Because of the restrictions imposed by the shape of the panels and other aspects of the layout which are air-conditioning duct, harnesses, it is unable that the sound -proof package is assigned a constant thickness. Therefore, evaluating the thickness distribution in the sound-proof package is challenge in drawing stage of vehicle development.
There is a function in ANSA, which enables to evaluate the thickness distribution and determine the acoustic performance of sound-proof package. However, in the vehicle development, this function is inadequate since the evaluation time is unpractical. In this study, in cooperation with Beta CAE Systems SA, it is succeeded that dramatically improve the performance of the thickness distribution.
In this presentation, the method of improve the performance of thickness distribution and the ANSA script for determining the acoustic performance of sound-proof package are reported by demonstration