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Prediction of Sound Transmission Loss of Simple Expansion Chamber with the Application of FEA Tool

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Abstract: *A muffler reduces the noise from an exhaust system. A reactive muffler achieves noise reduction by reflecting sound waves back towards the source. Transmission loss is commonly used to quantify its effectiveness, comparing the transmitted sound pressure level to the incident sound pressure level. Mufflers are typically arranged along the exhaust pipe as part of the exhaust system of an internal combustion engine to reduce noise. Simple expansion chambers with extended inlet and outlet pipes are commonly used in mufflers. Important data can be obtained for various expansion chambers by analysing these configurations. The results show the transmission loss characteristics of simple expansion chambers based on Finite Element Analysis (FEA) results.*

Keywords: Sound Transmission Loss, Wave 1-D, FEA, Muffler

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