



## The influence of the surface of ventilation duct on sound attenuation in the airflow

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In HVAC (heating, ventilation, and air conditioning) systems and acoustics, surface characteristics and material selections are crucial for noise reduction, system longevity, and system efficiency. The proper surface materials can increase system efficiency overall, eliminate moisture problems, lower noise levels, and improve thermal insulation. Common surfaces for ventilation ductwork are plastics, foil-faced fibreglass, non-woven materials, and metal. This study tested the attenuation of three types of ductwork: steel, galvanised, and steel coated with acrylic paint, in comparison to aluminium ductwork. We also used fast camera systems to observe the flow structures in the ductwork.