Structural connections and the sound insulation of cavity walls and double glazing

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ABSTRACT

Structural connections between the wall leaves of double leaf cavity walls can reduce the sound insulation of the wall. Structural connections, which are rigid enough, can move the mass-air-mass resonant frequency to a higher frequency and decrease the sound insulation of the wall in the important low frequency region. At mid and high frequencies, the sound insulation of large air gap double glazed windows is controlled by vibration transmission between the two glass panes via the window frame. This problem can be partially overcome by using primary and secondary glazing rather than sealed double glazed units.