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Sound insulation characteristics of shipboard windows

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Although small-size windows are used in a ship, shipboard windows are a multi-layered structure with glasses and air-gaps for high sound insulation. This paper discusses how to improve the sound insulation performance of shipboard windows. First, the sound transmission loss (STL) obtained from various experiments with shipboard windows are introduced and studied. The results show the layer arrangement as well as the material property of each layer makes an effect on the window's STL. It is also found that the higher the sound insulation performance of the window is, the more important the effect of the window frame is. Next, theoretical investigations are carried out and discussed in comparison with the experimental results. The comparison provides possible clues to increase the STL of the window.