The Vital Role of Acoustical Door Seals

The importance of acoustical door seals is derived from a fundamental property of sound: Sound waves travel through any opening with very little loss. While the amount of air flowing through a gap increases in proportion with the size of the gap, the size of the gap in a sound barrier does not matter. A tiny hole transmits almost as much sound as a much larger gap or hole. For example, a one square inch hole in one hundred square feet of gypsum board partition can transmit as much sound as the rest of the partition.Because of this phenomenon, any unsealed gaps and clearances in door assemblies effectively cancel out the noise reduction benefits of sound rated doors. The performance loss is especially serious at medium to high frequencies, where normal conversation levels usually take place.For acoustical door seals to be effective at blocking sound, the seals around the head, jamb, and sill of the door must be complete, uninterrupted and airtight throughout the service life of the door. For uninterrupted contact, the door seals must be installed all on the same side of the door and frame. Performance also depends on good surface contact between the seals and the door edge or frame, which can usually be achieved using compression seals.However, gaps caused by imperfect door alignment are a common problem in newly installed seals and can also surface later on as buildings shift and settle and doors cycle through changes in temperature and humidity. For consistent performance over time, the most advanced acoustical door seals are designed with adjustable features to restore a sound-tight seal when clearances increase for any reason. As with the door itself, the mass of the sealing material used in acoustical gasketing is a major factor in achieving higher sound reduction ratings. Combining complimentary materials can also provide better performance. Ultimately, the quality of the acoustical gasketing or seal is the biggest factor in overcoming any installation hazards and determining how close the actual sound performance of an assembly will come to Alexander movers the published rating of the door. Acoustical door seal kits are available that include an automatic door bottom, which is spring operated, dropping a neoprene seal onto a threshold effectively sealing off the bottom of the door. In addition to that, door seal kits include high-grade neoprene door jambs for the vertical sides and the top of the door. Custom kits are available for oversized, undersized doors as well as double doors.

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