Structure-medium interaction of glazing subject to blast loading

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Structure-medium interaction is normally considered for analysis of response to wave and pulse dynamic loading in dense media like soil and water. However, it has traditionally been ignored for blast loading in air because the effect is negligible on heavy military structures.

With the increasing terrorist use of Vehicle Borne Improvised Explosives Devices in urban areas and the increase in size of glazing and long span glazed facades leading to more lightweight facades, this traditional position may need to be reconsidered for analysis of glazing under blast loading.

This paper considers how to allow for structure-medium interaction in single degree of freedom and multi degree of freedom analysis of glazing and glazed facades under blast pressure loading, and the influence of the interaction on blast testing and blast analysis of glazing.