ADVANCES IN BLAST-RESISTANT GLAZING

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ABSTRACT

Blast-resistant glazing (BRG) has been incorporated into the design of many buildings in recent years. However, the risks associated with this type of glazing are sometimes not well understood, and its use may not achieve the risk reduction intended. This is primarily because the design of many BRG systems are not based on actual threats, but instead are based on prescriptive criteria. This lack of risk relatedness has resulted in a situation where the actual risk reduction achieved with BRG systems is generally unknown, may be difficult to determine, and might in some circumstances enhance the risks to a building's occupants as compared to the use of conventional non-BRG systems. This is particularly a problem where the increase of protection afforded by an existing glazing system is contemplated, for example, by strengthening it with a mechanically attached anti-shatter film, by deployment of a daylight application of film, or by replacement with a laminated glazing system. This lack has largely been ignored in common practice, whereby the nearly ubiquitous norm is to deploy some nominal, relatively low strength BRG system independently of any actual blast threat. In this paper, the circumstances leading to these concerns will be examined, particularly for the retrofit of existing windows. Fortunately, recent technologic advances have provided a means to avoid the problems altogether and achieve true risk reduction. Some of these will be described in the paper.