

10 THINGS YOU NEED TO KNOW ABOUT ARMOR



- 1. Apples to apples.** Be sure you know the specifications for your desired threat level. Often a ballistic threat level is specified as multiple shots from a particular weapon using specific ammunition at a predetermined distance. The resulting transparent armor solution will then be 'X' millimeters thick. If a supplier offers solutions significantly thinner than their market competitors verify their test parameters are the same as your desired threat level.
- 2. Good maintenance.** Transparent armor can be supplied with a variety of materials so be sure you understand the maintenance requirements for your purchase. For example, you could purchase a low spall solution with a glass strike face and glass interior face. Typical vehicle transparent armor uses a glass exterior and polycarbonate interior face. The wrong cleaning solution will damage a window.
- 3. No Spall vs Low Spall.** What's the difference? A low spall transparent armor solution has both a glass strike face and glass interior surface. A glass polycarbonate transparent armor solution will have a polycarbonate interior surface. Other than the difference in cleaning there is a difference in performance. When shot, by the weapon/projectile specified for the transparent armor, a glass polycarbonate solution will have no spall. A low spall solution will have an acceptable level of spall.
- 4. What is spall?** Transparent armor spall is a secondary projectile resulting from an impact. To increase durability, all glass solutions can stop the projectile yet the back ply of glass fractures and glass particles leave the back surface. This is sometimes acceptable.
- 5. Was it framed?** Depending how the transparent armor is installed will determine if the glass requires an edge seal. Typically, if a window is potted in a frame, edge seal is necessary. If the edge of the window will be exposed it should have a seal.
- 6. Potted windows?** No we're not talking agriculture. Potted in manufacturing refers to bonding/gap filling between two parts using a third substance. Potting transparent armor in a frame will seal the window edge from moisture while providing some shock resistance. Your transparent armor will specify an approved compound for use with their window. Using the wrong material could promote delamination.
- 7. Delamination?** Generally, transparent armor is constructed from multiple layers of materials laminated together. Several factors affect how a window may delaminate (separate into its individual layers). This includes the process of how it was originally laminated and the surrounding environment where the window is being used.
- 8. Hot, wet, dry, cold who cares?** Know where your final product will operate. Not all transparent armor will meet its declared protection level under all environmental conditions. Clearly state all environmental requirements in addition to ballistic threat level when requesting transparent armor.
- 9. Reality!** There is no such thing as bulletproof glass. Bullet-resistant, ballistic glass or transparent armor are more accurate names.
- 10. Get a copy of the Test Certificate** for the transparent armor you are purchasing. This should be from a reputable independent testing laboratory. It should state the total window thickness tested and the threat level it was tested to including the distance to target and the number of shots.

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