



DEFENSE

As compared to metallic armour, composite laminates provide required ballistic protection at a much lower weight.

The kinetic energy of the projectile is absorbed as it passes through the composite armour laminate. In stopping of the projectile there three discrete stages first stage is when the deformation or blunting of the projectile occurs. In the second stage the velocity of the projectile reduces. Thirdly the projectile is caught by the protective layer. Multiple stacks of reinforcement fibers and resin form the composite laminate. When the projectile impacts the composite, the layers are engineered such that they would de-laminate. This in turn decelerates the projectile velocity and helps in stopping it. For equivalent protection against projectiles, composites can be 50% lower in weight.

A combination of glass reinforcement and phenolic resin is the most widely used anti-ballistics composite. Higher strength fibers like S2 glass enhance the ballistic protection as compared to E-glass by 10-20%. Likewise, epoxy resin would provide better performance over phenolic resin. Although phenolic is more desirable due to its higher fire resistance. As engineered materials, composites are designed to meet special requirements including threat levels, weight requirements and cost restrictions. Typically 18-20% resin content is used in ballistic composites. Personal armour is made with even lower resin content, less than 12%, as it need not be as strong.

Composite armour is used in the production of military vehicles, land-based shelters, ships and aircraft. It can be used as a structural material or as secondary plate armour just for protection. The need to reduce the weight of armoured vehicles has led to a large volume of composites being used in this area.



Product Code	Fiber	Weave Style	Areal Weight
HAP221	Aramid	Plain	221 GSM
HCAP220	HS Carbon 3K + Aramid	Plain (Hybrid)	220 GSM
HCP/T200	HS Carbon 3K	Plain/Twill	200 GSM
HCP240	HS Carbon 3K	Plain	240 GSM

E-mail : contact@hindoostantech.com
 Website : www.hindoostantech.com