

Australian made. Worldwide potential.

The XTclave™ Composite Consolidation Technology (CCT) was initially developed as a batch-type manufacturing process for ballistic protection laminates, specifically Small Arms Protective Inserts (SAPI), and employs the programmable cycling of significant isostatic pressure (300bar) and temperature to achieve composite consolidation in thermoset and thermoplastic based systems. Significant isostatic pressure is applied to the article being manufactured within the processing chamber by a circulating liquid medium that transfers heat extremely efficiently.



This manufacturing technology is ideally suited to the manufacture of high-quality, void-free, precision structural carbon fibre composite components for the aerospace and aviation industries. The XTclave™ CCT makes it possible to manufacture lighter, stronger and stiffer composite articles since the high magnitude of isostatic pressure can generate a fully dense composite with higher fibre content (better than 75%) for thermosets.

Whilst autoclave systems impart isostatic pressure to consolidate composites, the magnitude of pressure is significantly less (usually 6-10 bar) and often inadequate for moulding complicated and detailed geometry. Closed moulding in a press with expensive tooling can apply similar pressures (axially) but often have high and low-pressure regions within the composite arising from geometry.

The manufacturing technology employs the application of hydraulic pressure that is intrinsically safe. The expansive energy is approximately 99 times higher in an autoclave running identical pressure.

The XTclave™ armour manufacturing process is applicable to a wide range of lightweight armour applications (including NIJ Levels 3 & 4) and has the ability to form large complex shapes and panel joiners for vehicle protection (STANAG 4569).

In 2013, XTEK was awarded a significant contract by the United States Department of Defense Foreign Comparative Testing Program for the development of advanced light-weight hard armour plate solutions using XTclave™. In 2017 another contract was awarded to XTEK for ballistic helmets using XTclave™.



\\ Tailor-made solutions

As well as the SAPI plates, XTEK has the ability to create bespoke solutions for clients through the use of our groundbreaking XTclave™ technology. The XTEK Engineering and Development team can work with you to create custom-made ancillary solutions to meet your most demanding specialist requirements.

Examples of XTEK manufactured ancillaries:

- Light-weight ballistic armour
- Tailor-made magazines
- Personal protective equipment
- Parts and accessories



XTEK is proud to have designed and manufactured a tailor-made solution for the XTEK Tac 2 .338/7.62 sniper system.



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