

Armour Applications

High performing armour materials that increase the level of protection offered to both Australian Defence Force (ADF) vehicles and personnel is critical.

The Armour Applications program will focus on ways to reduce weight and increase payload and mobility while providing superior platform and personnel protection. Delivering short-term solutions in response to urgent operational requirements of the ADF as well as longer-term investigations to achieve major technical advancements is necessary.

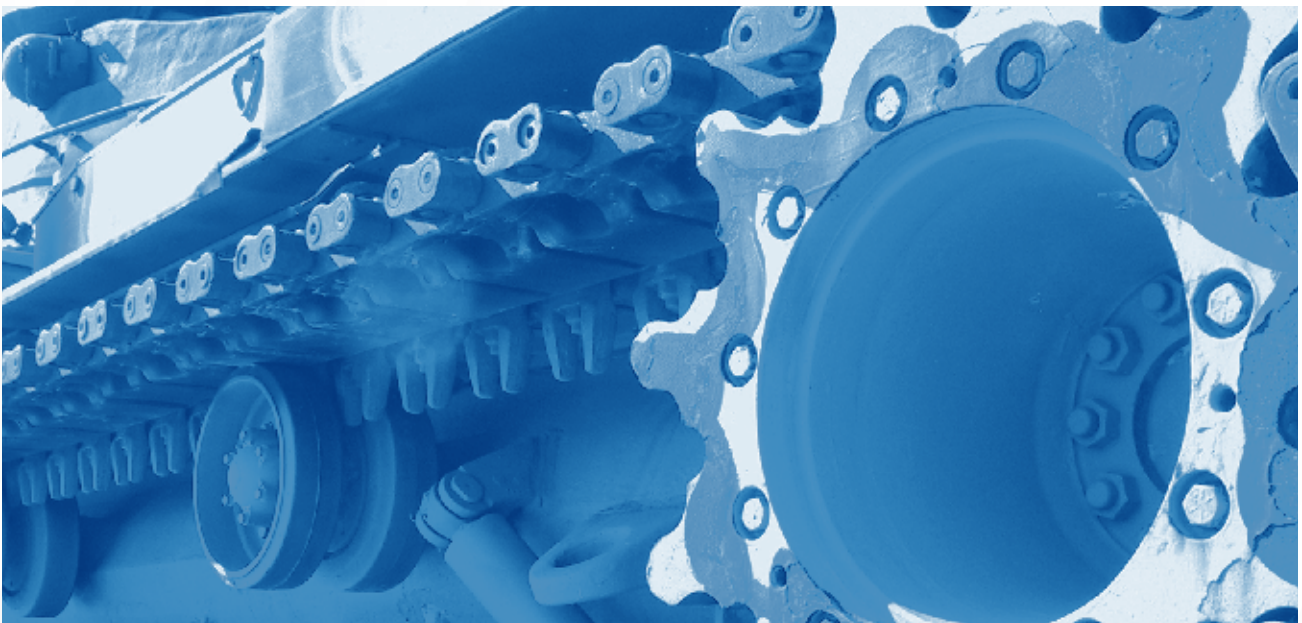
This program includes evolutionary improvement of existing metallic armour materials and exploration of the capacity of lightweight alternatives to match performance and structural integrity of metal armours.

Blast and ballistic protection solutions in the face of threats ranging from small arms fire to improvised explosive devices, rocket-propelled grenades and a range of other threats are critical to Defence capability.

Developed systems must have high consistency in their blast and ballistic performance and be affordable and durable in typical service environments. For individual combatant protection, it is crucial that materials are light-weight and flexible. Any changes to the protection proposed for vehicles must take the requirements of field repair and maintenance of system integrity into consideration and be capable of cost-effective delivery.

A range of alternative materials—such as titanium armour materials, ceramics systems with multiple hit capability, complex composite structures and aluminium alloys—will be examined and improved.

Alternative materials will also be developed throughout the program and benchmarked against existing steel armour materials for ballistic performance, blast resistance, structural properties and multi-hit capability.



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Project example:

Investigation of the feasibility of integrating blast shielding into current construction methods and light-weight transportable shielding capable of being installed in a short time-frame for use as preventative protection or under emergency conditions.

The technologies developed in this program will also extend the life and capability of existing armoured vehicles — such as the Bushmaster — and will contribute to the design of new protected light vehicles.

Program Benefits:

- High performance armour materials to increase protection for ADF vehicles and personnel
- Delivery of optimum design protective materials by cost-effective means
- Opportunities for SMEs to fill supply-chain gaps
- Enhanced limb and extremity personal protection
- Extension of the life and capability of existing armoured vehicles
- Contribution to the design of new purpose-built light vehicles
- Improved through-life support and service readiness
- Highly-skilled domestic industry
- Improved affordability of asset ownership and maintenance
- Building the whole-of-supply-chain for delivery of manufacturing technologies within Australia will provide strong competitive advantage in marketing total service to domestic and international clients
- Adaptability of products to dual-use applications across industry sectors – civil aviation, marine, automotive, medical, power generation
- Improved preventative maintenance programs
- Expertise at customising equipment for Australian requirements
- Improved manufacturing and operational efficiency

