

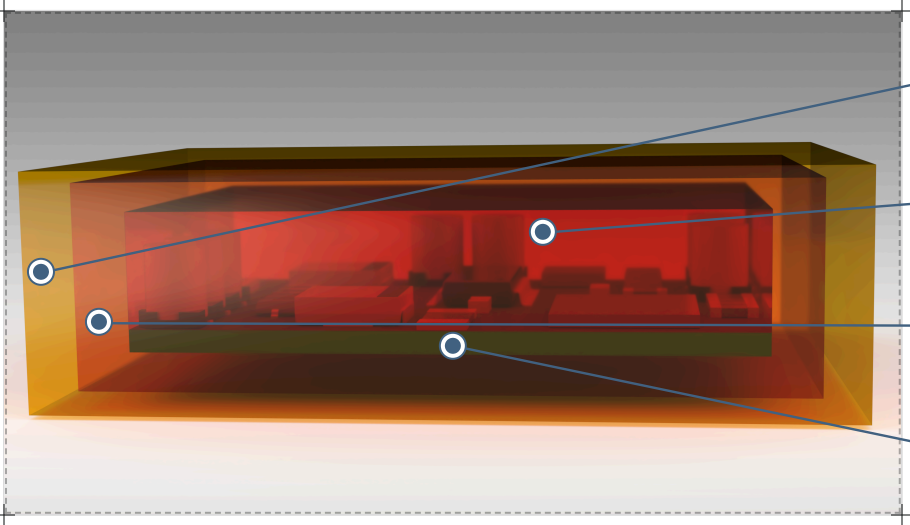
Physical protection for electronics

FORTRESON™ uses structured encapsulation around critical electronic assemblies. It helps protect circuitry from heat, impact, pressure, vibration, chemical exposure and physical tampering while restricting access to sensitive technology. Independently tested by the University of Western Australia.

- Tamper resistant
- CT-scan shielded
- Tested to 100 kN



Protection architecture



- 01 **Outer armour layer**
Ballistic, impact and abrasion resistant outer shell.
- 02 **Encapsulation core**
Electronics fully potted in a proprietary protective matrix.
- 03 **Interface layer**
Mechanical and electrical connectivity out; adapts to existing boards.
- 04 **Thermal and EMI shield**
Manages heat and blocks EMI/EMP.

What it delivers

- Resists unwanted access**
A hardened casing creates a physical obstacle to opening or inspecting the assembly.
- Deters reverse engineering**
Access attempts may damage the protective material and the electronics beneath it.
- Ballistic and shock resilience**
Withstands multi-hit and extreme impact while functional.
- Environmental endurance**
Thermal, chemical, vibration, EMI/EMC and corrosion resistant.
- Mission continuity**
Keeps operating to failure thresholds, then fails safe.

Where it is used

Military platforms, field equipment and systems exposed to harsh operating environments, where electronic survivability and protection of proprietary technology are essential. The casing follows the contours of an existing circuit board, so it can be applied to hardware already in service.

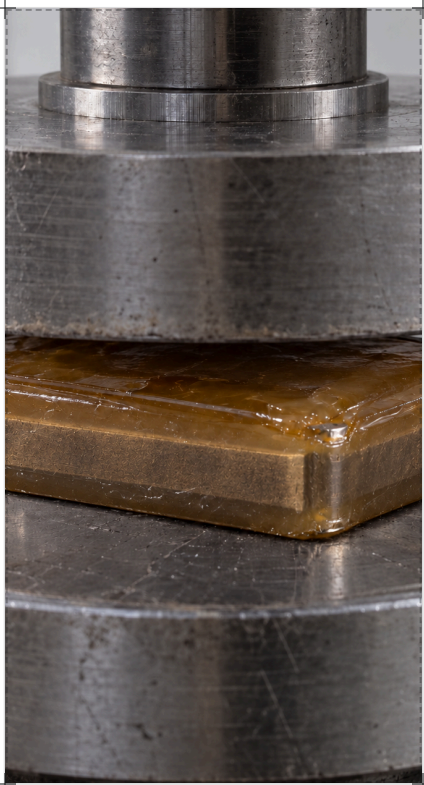
Optional embedded features

Embedded tracking and sensing can support asset awareness and tamper alerts, adding a further layer of protection for sensitive equipment in the field.

Tested to machine limits. Electronics still inaccessible.

The University of Western Australia's School of Engineering ran an independent programme of destructive mechanical, chemical, thermal, UV, impact and CT imaging tests on FORTRESON™ protection boxes. Every device was function-checked before and after each test.

TEST	CONDITION	RESULT
Compression	Instron 5982, X and Z axes, to 100 kN machine limit	Up to 70% deformation; electronics inaccessible
Chemical immersion	7 days in ethanol, heptane, MEK, conc. H ₂ SO ₄ , conc. HCl	All devices operational after exposure
Thermal shock	-18 °C to 180 °C, 1 h each, 3 cycles	Outer box damaged; internal device unaffected, functional
Thermal ageing	70 °C for 7 days	No significant degradation; operational
UV exposure	Suntest CPS+ chamber, 7 days, cover removed	No significant degradation; operational
Impact	6 kg from 1 m (≈59 J), 3 strikes on face, 3 on edge	Local damage; access not achieved
CT scanning	Nikon Versa 520, 140 kV, 2001 projections	Shielding produced substantial scan artefacts; internal electronics unreadable



"No testing condition created a viable pathway for direct access to the protected electronics, indicating a high level of resistance to physical attack and forced-entry attempts."

Prof Tim Sercombe
School of Engineering
The University of Western
Australia
Report, August 2026

What the results mean

Successful access to the embedded electronics would require destructive actions beyond those employed in the study, and likely specialised equipment. The inner protective layers kept protecting after extensive structural damage to the enclosure, giving a substantial margin against crush and forced-entry scenarios.

Chemical and imaging results

MEK, the most corrosive chemical in the programme, attacked the outer enclosure, yet after seven days of immersion the protection kept its integrity and allowed no entry to the electronics. CT scanning was defeated: the shielding created substantial artefacts that made the scan unreadable for analysis.

Discuss an application

Talk to Protection 43 Pty Ltd about integration with your platform, the conditions it must withstand, and distribution or contract opportunities. The full UWA test report is available through the due diligence process.

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