



MARINE SYSTEMS

RAC^{PLUS} RAPID ACCESS SYSTEMS

THE LIGHTEST A60 PANELISED STRUCTURAL FIRE PROTECTION SYSTEM IN THE WORLD

The System: RAC^{PLUS} is our A-60 Class Fire Division for installation on deckheads and bulkheads. Unlike conventional insulation, RAC^{PLUS} is a panelised system that provides exceptional aesthetic appeal while maintaining protection of the vessel's structural integrity in the unlikely event of a fire.

- ▶ Lightweight: As low as 4.9kg/m²
- ▶ A60 Certified for Solas & HSC Vessels
- ▶ Reversible Panels
- ▶ Efficient Area Coverage: panel system with 2400 mm x 1200 mm panels
- ▶ Rapid Access: panels can be removed in 5 minutes
- ▶ Fast Installation: 1.5 hr/m²
- ▶ Washable, non-absorbent facing: clean white finish
- ▶ Low Maintenance Costs: allows for non-destructive access to services
- ▶ Robust and Versatile: strong and impact resistant system
- ▶ Corrosion Resistant: 316 grade stainless steel or aluminum and non-metallic composite panel
- ▶ Retrofit: easy upgrade older insulation systems
- ▶ IMO certified: MED, USCG, Transport Canada approvals



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- ▶ **Lightweight:** The installed panel system weighs as little as 4.9 kg/m², which is up to 70% lighter than traditional metal-clad fire protection. This reduces fuel use, lowers CO² emissions, and increases payload capacity, helping owners and operators save on costs and enhance earning potential.
- ▶ **Certification:** The RAC^{PLUS} system is A60 certified for SOLAS and HSC vessels and meets IMO regulations and has MED, Transport Canada, and USCG approvals as an A-60 Class Fire Division
- ▶ **Hydrophobic:** The system is fully hydrophobic, featuring a non-intumescent insulation core that inhibits water absorption, ensuring the weight remains constant throughout the vessel's life. Unlike other systems, which can experience weight gains of up to 2 kg/m² over the service life, the RAC^{PLUS} panels prevent this issue
- ▶ **Biosolubility:** Fibres contained within RAC^{PLUS} system are compliant to EU protocol ECB/TM/26, Revision 7, Nota Q, European Regulation 1272/2008, Fraunhofer ITA study no.: 02G97008
- ▶ **Airgap:** Deckhead system has a theoretical airgap as low as 0mm as it may be installed directly to the beams/stiffeners. Bulkhead system airgap of 150mm between shell plate and back of the panel
- ▶ **Environmental Properties:** RAC^{PLUS} shows outstanding durability under long-term UV exposure, constant salinity, and salt spray conditions, ensuring the panels stay functional for a long time. Unlike intumescent or fiber-based systems, RAC^{PLUS} panels don't absorb water, keeping their weight stable throughout their lifespan, while other systems tend to get heavier over time
- ▶ **Reversible panel:** Due to its symmetric design, the panel can be manufactured double sided, allowing operators to easily flip the panel if one side becomes discoloured or damaged, preserving its aesthetics
- ▶ **Panel hardness and durability:** The system's hardness was optimised to handle the tough conditions of vehicle decks and engine rooms. A key benefit is that it reduces minor wear, like fingerprints, keeping the panels looking clean and pristine for a long time
- ▶ **Fast Installation:** The system's grid support structure significantly reduces installation time compared to traditional methods, with a typical installation rate of 1.5 man-hours per m². This allows for quick and efficient turnaround on new builds or upgrades, while minimizing disruption to other trades during installation. The ability to install the support structure in-situ and close up panels later in the vessel build process offers substantial advantages to shipbuilders
- ▶ **Low maintenance:** The robust design of the system results in very limited maintenance requirements. The supporting structure behind the SFP can be inspected without damaging the insulation, and the panels can be easily removed and replaced from the supporting structure in less than 5 minutes. This ease of handling significantly reduces maintenance costs over the vessel's lifespan
- ▶ **Corrosion resistant system:** The RAC^{PLUS} panel is made of a fully composite, non-metallic material that doesn't corrode. Its support structure and cover strips are made from marine-grade 316 stainless steel or aluminium, making the system highly resistant to corrosion in marine environments
- ▶ **Excellent acoustic & thermal properties:** Acoustic and thermal properties of the system reduce the need for additional insulation products. The system is tested as per ISO 354-2003, ISO 11654 1997, ISO 10140-2010, ISO 717-1 and ATSM C518-17
- ▶ **Rapid Access:** The system allows for rapid access to the vessel's services and structure, which would otherwise be inaccessible with conventional fire protection. Panel removal during service is simple and takes less than 5 minutes
- ▶ **Area Coverage:** The standard panel size of 2400 x 1200mm ensures efficient area coverage
- ▶ **Robust:** The panels are highly durable, offering excellent light to medium impact resistance
- ▶ **Versatile:** The support structure can be installed with minimal disruption to other trades, and the quick, final installation of panels later in the vessel build process provides significant advantages for the shipbuilder
- ▶ **Non-combustibility, non-intumescent, no flammable substrate:** A key requirement for the development was to classify the panel as non-combustible. This classification simplifies the arrangement and allows for a less complex installation process, as there is no need to protect the combustible structural substrate from potential flame exposure. As a result, the system can be installed on landing decks for jet-based landing crafts, such as the MV-22B Osprey
- ▶ **Panel surface finish:** Fully washable non water absorbent facing in white achieving a premium appearance of the fire protected areas
- ▶ **Facing options:**
 - Standard:** embossed white panel facing. The hard surface is resistant to handling marks and indentations and is fully washable to maintain the bright white aesthetic
 - Reversible:** a double-sided panel enables easy maintenance and extends the life of the system
 - Aluminium facing:** the most durable panel for harsh environments such as engine rooms.



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