

Blast & Explosion Relief Solutions
Battery Energy Storage Systems (BESS)
Blast & Fire Protection

Mech-Tool Engineering Ltd [MTE] designs, manufactures and installs world class Blast & Explosion Relief Systems for ease of installation into walls and roofs, tailored to specific project requirements to provide the most cost-effective solution.

MTE is an all-embracing engineering design and manufacturing company with a global name for the protection of people and equipment from fire, jetfire, blast and radiant heat hazards in onshore and offshore oil and gas, nuclear, renewable energy and petrochemical facilities. MTE have a unique wealth of specialist skills and over 55 years' of experience in the design, build and delivery of individual and dependable solutions.

From its foundation in 1969, MTE has acquired a reputation for providing protection solutions for North Sea oil & gas platforms. The company has built on this heritage of skills and knowledge through a program of continuous technical improvement in response to evolving technologies.

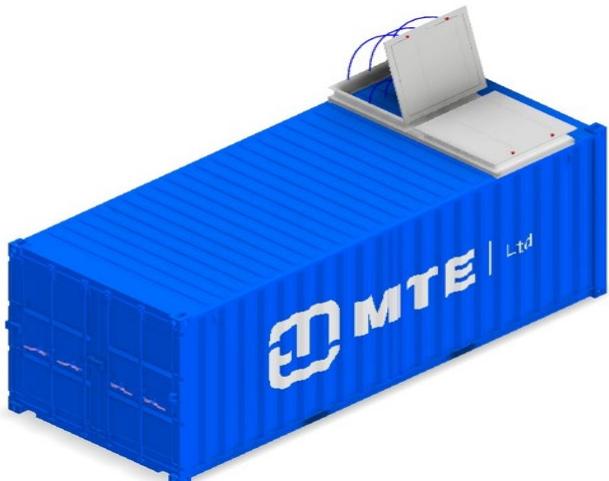
As a result, the Fire and Blast Solutions technical team at MTE today offer an unrivalled capability, not only to the Oil & Gas, Renewables & Nuclear industries, but more recently to Battery Energy Storage Systems (BESS).



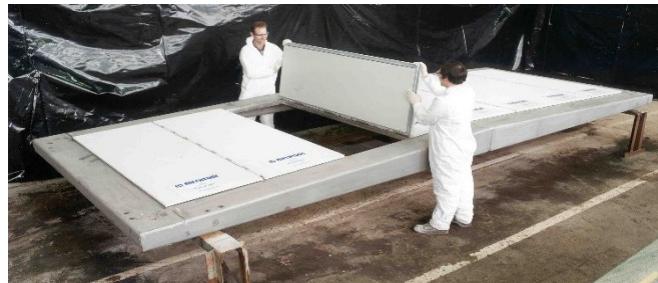
Fully Tested with LR & Accredited



Systems Operational for +30 Years



BESS Enclosure with Blast Relief Roof Panels Fitted



The complete solution

- Aluminium or Stainless Steel
- Light Weight – Low Inertia
- Rapid Activation - Patented Release Mechanism
- Simple cost-effective installation
- Maintenance free
- Bespoke design solutions provided
- Designed to meet NFPA 68 regulations
- Quality Accreditation to ISO 9001:2015
- Health & Safety Accreditation to ISO 45001:2018
- Environmental Accreditation to ISO 14001:2015

The BESS sector is rapidly moving towards adherence to more stringent legislation aimed at mitigating the potential hazards associated with Battery Storage Fire & Explosion Events. MTE is uniquely positioned to assist with the design, supply and installation of several options to reduce the consequences of these events, being world leaders in the design and supply of Fire Walls, Blast Walls and Blast / Explosion Relief Systems.

The latter of these, can be incorporated within new-build or installed retrospectively into the walls or roof of existing BESS units. These low inertia, rapid activating systems safely (directionally) vent any destructive overpressures to avoid magnitudes capable of damaging the surrounding containment structure including doors and equipment.

Prior to activation the MTE panels provide sealed solutions, capable of withstanding all extreme environmental loads without risk of "false" activation and they are also more robust than many alternative systems.

Additionally, MTE venting systems can be internally insulated to match the thermal and acoustic ratings of the surrounding BESS containment.

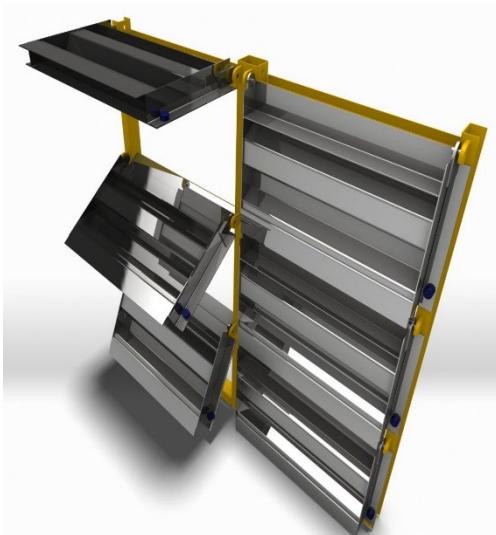
Increasing industry evidence shows that without the incorporation of additional safety features, BESS can pose a significant fire and explosion threat to surrounding structures and personnel following a thermal runaway event via escalation.



BESS Thermal Runaway Event (No Blast / Explosion Relief Installed)

MTE has performed many full-scale blast relief tests to prove the validity of the design and the associated validated software.

Panels can be supplied as individual units or multi-panel cassettes, the vent panels typically assembled in pairs to allow the panels to open "back-to-back" thereby dissipating the energy upon impact with each other.



Bespoke Designs – Client Focused



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Panels are designed to be retained by the hinges after the explosion and do not detach. Panel sizes, locations and quantities are designed on a case by case basis to meet the specific needs of the client and the requirements of the NFPA 68 Standard.

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