



Battery Transportation and Safe Packaging

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Session Sponsor:





LIBRIS

Mike Valentine
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the
**WHOLE
PACKAGE**

Who are Tri Wall?

- Packaging Manufacturer
- Customized packing solutions
- Heavy duty packaging
- Test facilities

- LIBRIS – Safe containment and transportation of Lithium Ion Batteries.



Capabilities

- Pre-approved dangerous goods packs
- Dangerous goods packaging testing
- Pre-production prototypes for transit trials
- Multi-material packaging
- Standard pallet packs
- Bespoke designed die-cut packaging
- Total supply chain auditing
- JIT / JIS deliveries
- VMI / Consignment stock.



Test Facilities

- Full Range of packaging, board and paper performance testing
- Specialist testing of UN Dangerous Goods – inc. Airbags, Batteries, Chemicals etc.
Independent testing in accordance with British Standards
- Knowledge of global packaging specifications and test methods
inc. DIN / ISTA



Tri-Wall UK Footprint



North Shields – Conversion and Timber

Gateshead – Conversion and Timber

Manchester – Conversion and Timber

Wolverhampton – Conversion and Timber

Monmouth - Head office, HD Corrugator,
Conversion, UN Laboratory.

Swansea – Conversion and Timber

Tri-Wall Global Presence



256 sites
€5.5 bn
17000 employees



How do we currently transport Lithium Ion Batteries?

- Different countries have different regulations
- No uniformed approach
- Current regulations are not designed around the requirements of Lithium Ion
- Class 9 Miscellaneous dangerous goods.

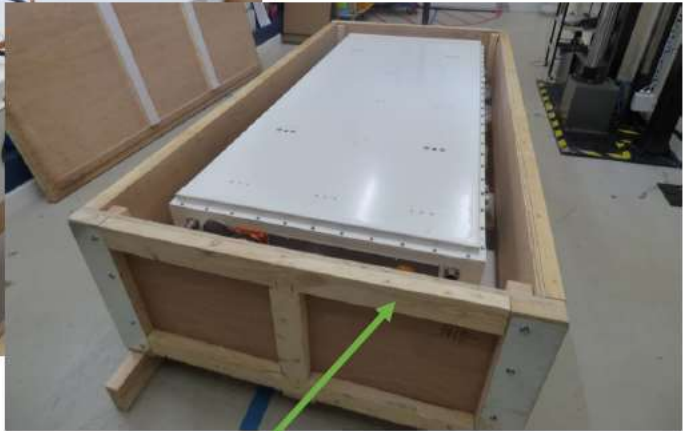


Off Highway Battery Packaging

**570kg Li-Ion
Battery**



Loading battery



Battery in position
prior to drop testing



Complete Box
awaiting Drop Test



How Dangerous is a battery?

- Packing group I – High Danger – Shown on packaging as X
- Packing group II – Medium danger – Shown on packaging as Y
- Packing group III – Low Danger – Shown on packaging as Z

Products falling in to packing group I are classed as more hazardous
Packing group III is the least hazardous.

Class 9 Miscellaneous goods

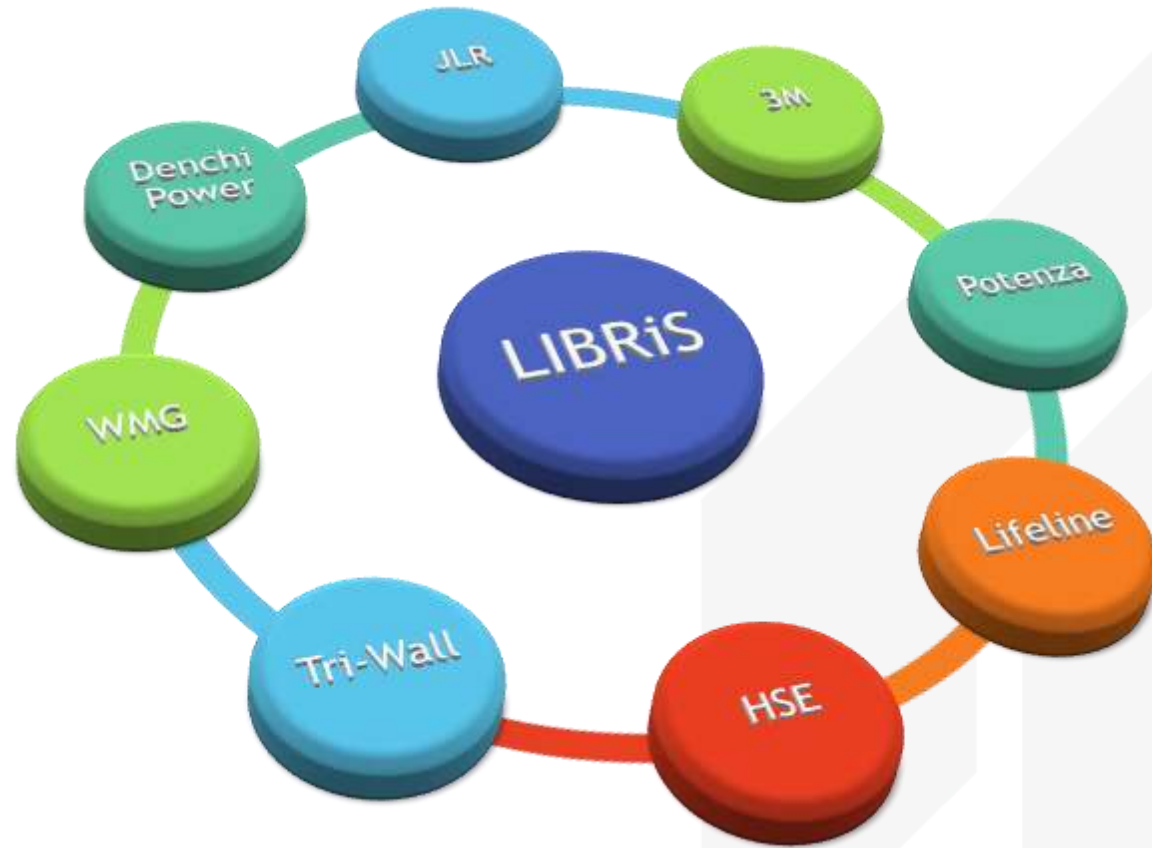


What is required?

- Appropriate shipping packaging
- Handling methodologies
- New Certification?
- Products suitable for high volume manufacturing
- Environmentally ???



LIBRiS Collaboration



We work with
Innovate UK





THANK YOU

We work with
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the
**WHOLE
PACKAGE**