

Testing and qualification for the railway industry



Your challenge

Element Materials Technology is a trusted advisor to the transport sector. We understand the challenges of interpreting the requirements of The European Railway Agency (ERA) and the Rail Safety & Standards Board (RSSB), and provide guidance in meeting the requirements of the rail industry's Technical Specifications for Interoperability (TSI).

There are many design challenges involved in gaining compliance within the Rail industry and we provide testing services to enable your compliance and support the essential requirements of reliability, availability and safety. Element is able to support your testing and qualification needs with a global platform of laboratories and over 60 years of experience. Our network of engaged experts, worldwide capacity and innovative services are designed to meet your challenges of delivering qualification on time.

Our solution

Element's rail customers benefit from pre-compliance testing and our comprehensive understanding of their statutory requirements. Our Early Stage Qualification (ESQ[®]) and Finite Element Analysis (FEA) services mean that we can work with design teams from conception to steer them away from compliance and approval pitfalls. ESQ and FEA help customers achieve first time success when rail projects reach the testing, approvals and certification phase.

We provide the following testing services:

- Environmental
- EMC
- Radio
- Safety



Environmental testing

We support the rail sector in validating products for the harsh environments they will face during their lifecycle. Element's global capacity delivers an unprecedented availability for large dynamic vibration and shock testing. We provide a complete suite of testing facilities to support all rail manufacturers' environmental testing needs, including:

- Vibration and Shock
- Temperature and Humidity
- Salt Corrosion Testing
- Driving Sand and Dust Testing
- Ingress Protection (IP) Testing
- Bespoke Testing

The environmental specifications and the standards we commonly test to are as follows:

- EN61373
- EN50125
- EN50155
- BRB/RIA 13
- BRB/RIA 20

EMC testing

Our EMC engaged experts and facilities test the rail industry's electronic products, rolling stock, signalling equipment and the interoperability of entire rail infrastructures, as well as all other rail-related EMC legislative and contractual requirements. We can provide on-site EMC testing on the mainline, underground or at the point of installation to ensure that you can deliver qualification of your final product. We test to a significant number of manufacturers' EMC specifications that draw on the following standards:

- EN50121
- EN50155
- BRB/RIA 12
- BRB/RIA 18

Radio testing

Element can provide radio compliance testing for all types of radio systems employed in the rail sector. These systems include Ultra Wideband (UWB), Bluetooth and short range device technology. The typical rail radio standards we test to include:

- EN 300 220
- EN 300 291
- EN 300 328
- EN 301 091-2
- EN 302 264-2

Engineering simulation

We provide advanced Finite Element Analysis (FEA) and bespoke testing to complement your rail product's design and development in the early stages, or where it is not possible to physically test a product due to cost or size. Our highly skilled engineers are able to predict how the physical environment or event is likely to affect a product, and advise on how to optimise its mechanical performance prior to testing and qualification.

Safety testing

Element's testing of electrical equipment provides a comprehensive range of safety testing, assessment and certification routes for manufacturers, designers, importers, exporters and distributors of rail equipment. This ensures that you can fulfil your legal obligations and demonstrate full compliance with national and international safety requirements. We are also able to offer testing and certification services to standards that include:

- EN50122
- EN50163
- EN61010
- EN60950



Why Element?

Element Materials Technology has a global capacity for EMC and environmental testing. We are UKAS accredited to BS EN ISO/IEC 17025:2005, and a Notified Body (NB) for the EMC, Radio (R&TTE), Low Voltage, Machinery and the ATEX Directives.

As an NB for EMC, Radio and Safety Testing, our industry-leading capacity enables us to help designers of rail products evaluate and qualify the behaviour and performance of their products, ensuring a faster to-market deadline.



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