



# Assurance at every step of your project and asset life cycle

Inspection Services



# Protecting the quality and integrity of high-value, safety-critical assets requires excellence from an assurance provider. From design to delivery, for the complete product lifecycle, inspection must be driven by a technical authority with a proven track record of success. *Know more. Risk less.*

At LRQA, we pride ourselves on delivering best in class inspection services against international codes, standards, and client specifications. We focus on getting it right the first time because anything else won't do.

We empower you with the knowledge you need to mitigate the risk you face each day, safeguarding against costly delays, critical failures, and other threats to your business and assets.

With our approach to service delivery, you can be confident in the quality of your inspection and supply chain processes and, therefore, the quality of your product.

We offer you our commitment to inspection excellence, which means protecting your assets and your brand reputation as if they were our own.

## How do we do that?

We make sure we know your business and what's important to you, while staying in tune to the wider inspection industry. We give you the knowledge and assurance you need to make informed decisions, helping reduce the risk that comes with competing in today's complex global marketplace.

## Our service portfolio

- Inspection and certification to codes, standards, and regulations
- Global supply chain assurance throughout the procurement process
- Design appraisal across various sectors to assess engineering designs for oil and gas, petrochemical, power, renewables, containers and cranes.
- Specialised inspection and certification of offshore and onshore containers and port cranes.

# We know inspection, inside and out

## Types of products we inspect

- Containers
- Nuclear
- Oil & Gas
- Pressure vessels, boilers & accessories
- Cranes and lifting equipment

## Codes, standards and regulations

- ASME Code services
- National approvals
- EC Directives

## Material certification and welding

- EN 10204 Type 3.2
- ISO 3834 Certification
- Welder and welding operator qualification services
- Welding procedure qualification

## Supply chain inspection and assurance

- Vendor site inspection
- Vendor assessments and audits
- Remote inspection

# International codes, standards and regulations

You can rely on LRQA to inspect and certify your products to international codes and standards.

## ASME AIA Inspection Services

LRQA Group companies have been offering ASME code services since 1973, and is one of the leading providers of the service globally.

We provide accreditation services to all parts of the ASME BPVC, including Sections I, III, Divisions 1,2 & 3, IV, VIII Divisions 1, 2 & 3, X, XI, and XII. LRQA also offers customised training courses on ASME codes.

For ASME, we can:

- Give advice on the procedures required for you to obtain ASME Certificates of Authorisation
- Assist you in preparing and establishing Quality Assurance (QA) Programmes and Quality Control (QC) Systems
- Help prepare your Quality Manuals
- Attend the ASME review, renewal reviews and surveys
- Provide authorised inspectors and supervisors to inspect manufactured components
- Arrange seminars to train your personnel in the requirements of the ASME Code

## API Inspection Services

For more than 75 years, the American Petroleum Institute (API) has led the development of petroleum and petrochemical equipment and operating standards.

As an API registered Member Company, we provide inspection services to API's standards.

LRQA Group companies can certify for the following API standards:

- API 6A
- API 16A
- API 17D
- API 53
- API 505

## Pressure Equipment Directive

The Pressure Equipment Directive (PED 2014/68/EU) is a European regulation that applies to certain pressure equipment and accessories sold in most parts of Europe.

Most pressure equipment must be certified by a Notified Body (NoBo), a third-party agency approved by an accreditation body.

As a global NoBo, we help manufacturers around the world with their PED work, helping them CE mark their equipment for the EU market.

## Indian Boiler Regulations (IBR)

All boilers and associated components manufactured for use in India must comply with the Indian Boiler Regulations (IBR 1950). It is not possible for any boiler material or equipment to enter India without a certificate endorsed by an authorised inspecting party that meets the IBR.

LRQA Group companies carry out IBR inspections globally, and we were the first independent body authorised by India's Central Boiler Board to carry out IBR inspections on its behalf within India.

## Nuclear Authorisations

LRQA Group companies have been involved with nuclear power development since its early days in the 1950s. Since then we have supported more than 1,000 projects. We undertake independent third-party inspection authority (ITPIA) roles to meet new-build regulations. We inspect pressure vessels and equipment to ASME nuclear standards, EC directives and RCC codes.

In South Korea, we hold Korean Electric Power Industry Code (KEPIC) authorisations for nuclear machinery and nuclear structures.

# We have authorisations and experience to certify to most regulations and standards



## 01 United States

**API**  
American Petroleum Institute

**ASME**  
American Society of Mechanical Engineers, Authorised Inspection Agency

**NBIC**  
National Board Inspection Code

## 02 Canada

**TSSA**  
Technical Standards and Safety Authority

## 03 European Union

**ATEX**  
Explosive Atmosphere Directive

**CPR**  
Construction Products Regulation

## Machinery Directive

**PED**  
Pressure Equipment Directive

**SPVD**  
Simple Pressure Vessels Directive

**TPED**  
Transportable Pressure Equipment Directive

## 04 South Africa

Occupational Health and Safety Act

## 05 India

**IBR (1950)**  
Indian Boiler Regulations 1950

**PESO**  
Petroleum and Explosives Safety Organisation

## 06 Malaysia

**DOSH**  
Department of Safety and Health, Malaysia

## 06 Singapore

**MOM**  
Ministry of Manpower, Singapore

## 07 South Korea

**KEPIC**  
Korea Electric Power Industry Code

## 07 Japan

**MHLW**  
Ministry of Health, Labour and Welfare

## 08 Australia

**OHS**  
Occupational Health and Safety Regulations

## 09 New Zealand

**OSH**  
Occupational, Safety and Health Service

## Containers

**CSC**  
International Convention for Safe Containers

**IMO/MSC. Circ 860**  
Guidelines for the approval of offshore containers handled in open seas

# Supply Chain Inspection

Supply chain management from design to delivery, for the life of your project.

With our wide network of surveyors and inspectors, we provide project-based, on-demand, or ongoing vendor surveillance.

LRQA can help you manage your suppliers and keep your projects on track.

We serve as your eyes on the shop floor to make sure materials, components, and equipment meets your specifications and any regulatory requirements.

## Vendor site inspection

LRQA's vendor site inspection services are designed to make sure you get what you order. Our on-site inspections are done on your behalf, providing you an inside view of the manufacturing process.

As your on-site quality control team, LRQA give you a coordinated, global approach to vendor site inspection.

## Vendor assessments and audits

Selecting vendors that are right for your business can be tricky. We provide the insight you need to make informed decisions about the vendors you use.

LRQA conducts vendor assessments and audits tailored to your specific sector. We provide crucial information about a vendor's capabilities, machinery, management systems, and other factors.

## Remote inspection

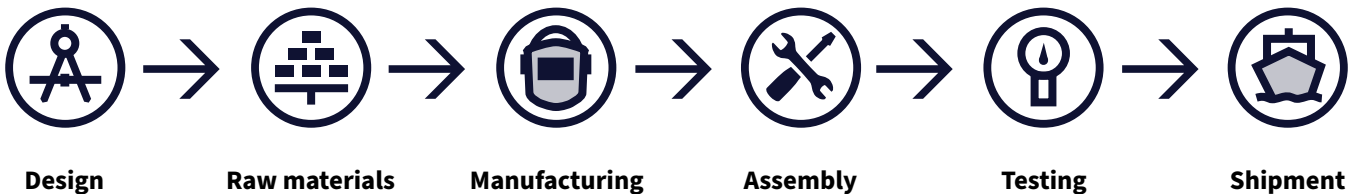
Remote inspections are conducted through live, interactive audio/video streaming from a manufacturing site to a remote inspection team. They can be conducted using the latest technology in smartphones or smart glasses, or augmented and virtual reality.

With remote inspections, you can:

- Schedule a vendor audit conducted by one of our independent, expert LRQA inspectors
- Connect your key management and project stakeholders with our on-site inspector
- Let your stakeholders get involved and interact with our inspector while they broadcast what they are assessing

## Supply chain inspection services

- Vendor site inspection
- Vendor assessments and audits
- Inspection and certification
- Vendor qualification
- Remote inspection



# We provide smarter solutions to vendor inspection and auditing

**LRQA believes in adding value to the vendor selection and control process. With our smart inspection services, we've taken vendor inspection and assessments to the next level.**

Smart inspection is a vendor risk methodology and assessment scheme that is used on a per-project basis.

Smart inspection helps our clients evaluate their global vendors against leading practice.

It also gives vendors a tool to target their own internal weaknesses.

## Smart inspection services follow three steps . . .

### 1. Assess equipment criticality

Any risk management approach requires a detailed identification of all equipment hazards, their probability of occurrence, and how they affect the successful completion of the asset, giving a resultant equipment criticality.

Equipment consequence modelling takes the following into account then produces a ranking of the equipment in criticality:

- Cost of the equipment
- Design capacity vs. required capacity
- Redundancy
- Schedule for equipment delivery and availability of vendors
- Impact of equipment failing in-service

### 2. Assess vendor risk

Choosing a vendor is complicated.

To simplify the process, we develop a set of questions for each vendor based on the client's requirements. The questions are designed to address aspects of the vendor's capabilities, including its:

- Organisation
- Quality management system
- Product inspection process
- Equipment required for inspections
- Procurement process
- In-process inspections
- Workmanship
- Corrective actions
- Capability to deliver

Each area is thoroughly evaluated and rated according to specific criteria. The results are presented in the form of a spider diagram, identifying the vendor's strengths and weaknesses.

### 3. Tailored Inspection TestPlans (ITPs)

Once vendors are chosen based on our Smart inspection results, the next step is to create plans to address the weaknesses discovered in the audit process.

These Inspection Test Plans are custom built to mitigate any possible risks with each vendor. They can be designed to intervene with appropriate skill sets in certain areas of the manufacturing process.

Putting the right people in the right place at the right time can be the key to keeping any major project on time and on budget.

# Container Inspection and Certification

**We can certify your containers, no matter what type.**

For over 50 years, LRQA has been involved in making standards for container construction.

Millions of containers around the globe carry the LRQA Container Certification Scheme approval mark, which shows they meet the correct standards and regulations.

We offer a full range of services to the container industry. We can certify your new containers and also provide in-service periodic inspection. When your containers need modifications, we can certify those too.

Our market-leading services in design appraisal, inspection, and certification were developed for a wide-range of container types.

## ISO containers



- Shipping containers
- Swap bodies
- Reefers
- Bulk containers
- Flat racks
- Platform based containers

### Regulations

Convention for Safe Containers (CSC), as set out by the International Maritime Organization (IMO)

### Standards

- ISO 1496 (5 parts)
- EN 1432
- EN 283
- EN 284
- AS 3711

## Offshore containers



- Offshore baskets
- Waste skips
- Service containers
- Portable offshore units
- Sling sets
- Offshore portable tanks

### Regulations

IMO MSC/Circ. 860

- Guidelines for the approval of offshore containers handled in open seas, as adopted by SOLAS

### Standards

- EN 12079
- API 2CCU
- DNV 2.7-1
- ISO 10855 when published

## Tank containers



- Road and rail tanks
- Swaps and swap tanks
- Offshore tanks
- Modified and refurbished tank containers

### Regulations

- ADR – for transportation by road
- RID – for transportation by rail
- IMDG – for transportation by sea
- USDOT (49 CFR) – for transport by road and rail in the US

### Standards

- EN283/4 – swap tank container framework
- CSS and ISO 1496 – tank container framework
- Pressure vessel design codes (EU Pressure Equipment Directive, ASME)
- TC Impact Approved – testing for use on Canadian railroads
- UIC – registration for use on European railways

# The LRQA Container Certification Scheme

The LRQA Container Certification Scheme has become the benchmark for technical container inspection procedures.

The goal of the scheme is to present container design, inspection and certification requirements in a clear and concise set of rules for both LRQA and its clients. It covers the three main types of intermodal equipment for both new construction and in-service inspection:

- CSC/ISO intermodal containers
- Offshore containers and equipment
- Tanks for the transport of dangerous goods

Through the scheme, we provide assurance that equipment inspected according to its procedures and rules is safe and certified correctly.

## Competent Manufacturer Certification

The Competent Manufacturer Certification Scheme is an audit of the proficiency of the manufacturer to fabricate equipment competently in accordance with the regulatory requirements for shipping containers, offshore containers, tanks for the transport of dangerous goods, or ancillary items.

Companies certified to the Competent Manufacturer Certification Scheme want to:

- Prove to their customers they can competently manufacture equipment to the specified standards and regulations
- Ensure their products can be used globally
- Improve their flexibility and competitiveness in the marketplace





# Container services that go beyond what's required

## Owner acceptance inspection programme

Sometimes inspection needs to go beyond standards and regulations. Companies who are sourcing containers from overseas want to make sure their containers will arrive exactly how they're ordered.

Through LRQA's container owner's acceptance inspection programme, companies can make sure their containers meet their specifications in areas such as:

- Construction materials
- Paintwork and markings

- Dimensions (random checks)
- General finish, welding, paintwork (including random thickness checks), floors decals, identification plates

## Benefits

- Independent assessment of units against client's acceptance criteria
- Inspection programmes tailored to suit each client's needs
- Independent third-party inspection arranged where required
- Reporting tailored to client requirements

## Full asset life-cycle services

- Design review and approval
- New construction inspection and certification
- Container type approval
- Registration
- Owner acceptance
- In-service inspection and certification

## Added-value services

- Document management
- Inspector training (CSC)
- Web-based certification access

## Key benefits to certifying your containers through LRQA

### Local design appraisals

Our design appraisal team spans the globe. It is comprised of local experts situated in key offices around the world who provide quality design appraisal services and quick turnaround.

### Global reach

We offer local services around the globe and a consistent approach to inspection. Our surveyors have extensive experience with all the major offshore container manufacturers in Asia and around the world.





# Cranes and Lifting Equipment

We can help you raise the quality of your cranes to a whole new level.

## New build cranes and lifting equipment

For equipment like port cranes and offshore and marine lifting equipment, we offer new build services that include the following consulting, inspection and certification services based on international or national standards:

- Design appraisal
  - Structural, mechanical, electrical
- Material inspection check
  - Qualification of suppliers
  - Witnessing of material verification tests
- Inspection of fabrication at manufacturer shop
  - Inspect purchased/sub-contracted parts
  - Inspect steel structures
  - Inspect machined parts
  - Inspect electrical installation
  - Painting inspection
  - Commissioning and testing
  - Loading and sea fastening
- Site acceptance testing

## Port crane inspection

LRQA will partner with you as early as design appraisal review, and continue through to on-site installation. We have experience inspecting and certifying several types of port cranes, including:

- Ship-to-shore (STS)
- Rubber tyre gantry (RTG)
- Rail-mounted gantry (RMG)
- Ship loader/unloader
- Stacker-reclaimer
- Harbour cranes
- On-shore cranes
- Workshop cranes, such as shipyard goliath cranes, hoists, ringer cranes

## In-service cranes and lifting equipment

### Residual life assessment of cranes

Our independent experts take in-depth measurements, and using advanced analysis, can give you the knowledge you need to make decisions regarding the future of your crane assets. Those decisions take into account your operational, safety and maintenance requirements and costs.

## Benefits of partnering with LRQA

- Assurance of through-life integrity
- Reduction in risk of failure and downtime
- Assurance that manufacturing, installation and maintenance work satisfies specified equipments
- Decrease in technical risk, helping to build confidence for major projects
- Independent authoritative reports to meet the requirements of insurers, banks and statutory authorities
- NDE-qualified inspectors
- Design appraisal based on independent analysis



YOUR FUTURE. OUR FOCUS.

## About LRQA:

By bringing together unrivaled expertise in certification, customized assurance, cybersecurity, inspection and training, we've become a leading global assurance provider.

We're proud of our heritage, but it's who we are today that really matters, because that's what shapes how we partner with our clients tomorrow. By combining strong values, decades of experience in risk management and mitigation and a keen focus on the future, we're here to support our clients as they build safer, more secure, more sustainable businesses.

From independent third-party auditing, certification and training; to technical advisory services; to real-time assurance technology; to data-driven supply chain transformation, our innovative end-to-end solutions help our clients negotiate a rapidly changing risk landscape – making sure they're shaping their own future, rather than letting it shape them.

## Get in touch

Visit [www.lrqa.com/uk](http://www.lrqa.com/uk) for more information



LRQA  
1 Trinity Park  
Bickenhill Lane  
Birmingham  
B37 7ES  
United Kingdom

Care is taken to ensure that all information provided is accurate and up to date; however, LRQA accepts no responsibility for inaccuracies in or changes to information.  
For more information on LRQA, click [here](#).  
© LRQA Group Limited 2022.