Pressure plant

How Zurich can help businesses meet their duty of care

The Pressure Systems Safety Regulations (PSSR) 2000 applies to most pressure systems used at work.

What does the legislation require?

Under PSSR duty holders, users and owners of pressure systems are required to:

- establish the safe operating limits (pressure and temperature) of their systems
- ensure that a suitable written scheme of examination is in place before the system is operated
- ensure that the pressure system is actually examined in accordance with the written scheme
- carry out proper maintenance and provide suitable operating instructions.

PSSR applies to pressure systems containing what the regulations term as 'relevant fluids'. These fluids include steam at any pressure, gases which exert a pressure in excess of 0.5 bar above atmospheric pressure and any liquids kept at temperatures which would generate a vapour pressure greater than 0.5 bar (for example, water above 110˚C).

Types of pressure system include:

- boilers and steam systems
- pressurised process plant and piping
- compressed air systems (fixed and portable)
- pressure cookers, autoclaves and retorts
- heat exchangers and refrigeration plant
- pipework including valves, steam traps and filters.

Written schemes of examination

Users and owners must not operate pressure systems before a written scheme of examination has been drawn up that includes:

- identification of which parts of the system need examination
- the nature of the examinations required
- how the system should be prepared for examination by the user
- the maximum interval between examinations.

A competent person normally prepares this document, however it can be prepared by another party and then certified by a competent person. A competent person must then carry out examinations on all parts of pressure systems included in the written scheme at the intervals specified. An examination will also be required before a pressure system is used for the first time.

Other responsibilities

Designers, manufacturers and suppliers must also ensure that equipment and components for pressure systems are fit for their purpose, thereby preventing danger. Those responsible for the modification or repair of pressure systems must provide users and owners with adequate information on the work undertaken.

Operation and maintenance

Operators of pressure systems must be provided with adequate and suitable instructions to allow them to operate the equipment safely and take appropriate action in the event of an emergency. Businesses must also ensure pressure systems are properly maintained and in good repair, ensuring the safe operation and condition of the system.

Regular inspections, together with a planned maintenance programme, can do more than help businesses comply with legislation. They also promote a safer working environment by identifying and helping to prevent plant breakdowns and any resultant business disruption.

How can we help your business to comply with PSSR?

Zurich's engineer surveyors are able to prepare written schemes of examination and carry out independent examinations of pressure systems in accordance with the scheme. We will also inform you immediately if your pressure system, or part of it, needs urgent attention.

To ensure minimum disruption, where appropriate we are able to carry out examinations using the latest non-invasive inspection techniques, such as non-destructive testing or remote visual examination.

For customers who use our online reporting tool Crimson, written schemes of examinations are provided free of charge.

Real-life example

The following incident is real and taken from the Health and Safety Executive.

A case relating to the failure of a pressure vessel resulted in the company receiving a £100,000 fine. An employee was seriously injured when a lid flew off a pressure vessel due to failure of the clamping bolts.

The incident could have been prevented by having adequate operating instructions and an appropriate scheme of examination.

This incident resulted in fines being imposed but the true cost is significantly higher when other factors such as lost time, legal costs, management time, employee relationships and brand damage are taken into account. Additionally, such incidents can also have a negative impact on a business's commercial insurance programme.

In the period 2004 to 2007, the proportion of boilers examined by SAFed* members that contained defects requiring rectification (defects which could have eventually resulted in failure and consequently lead to serious injury and lengthy plant downtime) rose from 5% to over 7%.

*The Safety Assessment Federation

Combining expertise and understanding

We've been helping our customers to identify, manage and control engineering business risks for over 80 years. We have a nationwide team of up to 500 highly trained and experienced engineer surveyors.

An individual approach

We understand that all businesses are different, so we take an individual approach and tailor our solutions. We have the knowledge and experience to deal with all aspects of engineering risk as they apply to your business, and will work with you in the way that suits you best.

Investing in people

We invest heavily in training to maintain our engineer surveyors' levels of technical expertise. This includes using the latest online technology to assess our staff and to identify training needs.

We regularly assess and audit our technical staff to ensure that their understanding of key technical and health and safety matters meets our exacting standards. We've established a benchmark for our engineer surveyors and ensure that all of our people are above it.

Harnessing technology

Our engineer surveyors use some of the latest technology when they carry out inspections. For example, their Toughbook laptops allow them to generate reports while they are at your site, resulting in faster, higher quality reports.

The Toughbooks also contain our technical manuals, health and safety procedures and special customer instructions. This comprehensive library of information means that if a technical issue arises during an inspection our engineer surveyors have the answers immediately to hand.

Inspections on time

We work with customers to ensure that plant is examined when required and if an inspection is likely to become overdue, we have systems and processes in place to alert you so that it can quickly be rescheduled. As a consequence your business is less likely to suffer from plant failures, protecting your turnover.

Advice you can trust

We are a Type A (fully independent) UKAS* accredited inspection body and are entirely removed from the manufacture, operation or maintenance of plant. You can therefore be confident that our advice is always independent and objective.

Our technical services team are on hand to discuss any issue a customer might have. These are senior engineers with a vast amount of engineering experience combining industry expertise as diverse as marine, nuclear, petrochemical and mining.

Instant access to engineering reports

Our online reporting tool Crimson gives you instant access to your reports and to management information on our inspection activity wherever and whenever you need it.

It also allows you to see dates for upcoming inspections – so you can plan shutdowns and maintenance work to cause minimum disruption to your business.

*United Kingdom Accreditation Service

Finding out more

If you'd like to find out more about how we can help you with statutory inspections and other areas of engineering risk, please speak to your broker or usual Zurich contact.

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