



By Appointment to  
Her Majesty the Queen  
Boilermakers  
Cochran Ltd, Annan

# Steam Boiler Water Treatment Training

If you're missing vital water treatment  
knowledge this course is for YOU!



# COCHRAN

Fully Royal Society of Chemistry approved and  
CEA-accredited boiler water treatment training.



# Steam Boiler Water Treatment Training

**To inspect or operate a steam boiler or steam generator you are LEGALLY required to be adequately trained.** Over 5,000 people have now been through the highly respected Boiler Operations Accreditation Scheme training course, developed by the CEA and delivered extensively by Cochran.

If you operate a steam boiler or steam generator, you need to know how to look after your significant plant investment and how to safeguard production. Maintaining the correct water treatment regime is crucial in reducing breakdowns and extending the working life of your boilerhouse plant.

Supported by extensive training notes, this two day, fully Royal Society of Chemistry approved and CEA-accredited Cochran course is delivered online. Training builds on BOAS to cover this key operational area in significantly greater detail; providing the information on water treatment you need to know and explaining the testing you need to do.

## Who is this course aimed at?

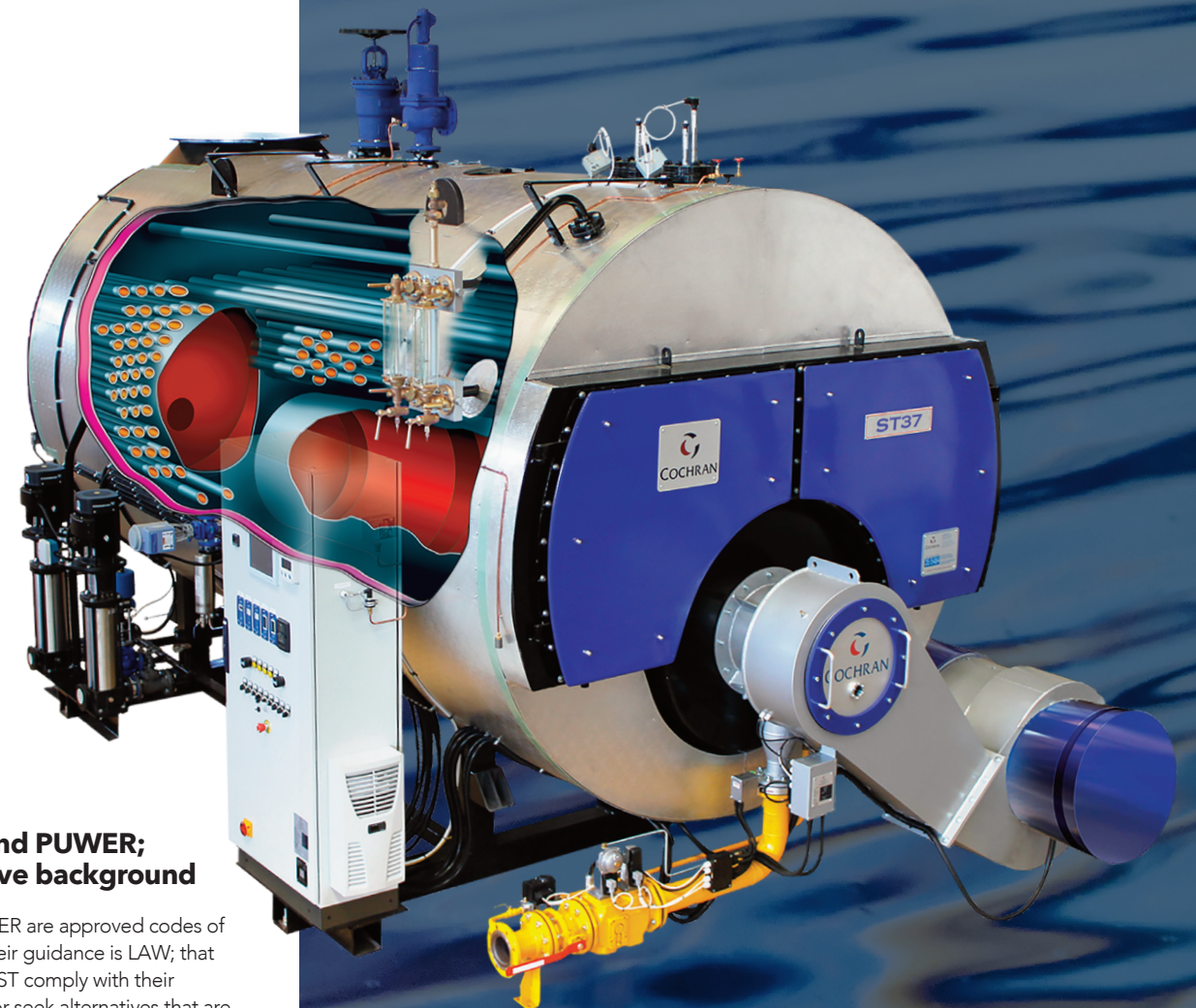
- To inspect or use a steam boiler or steam generator you must LEGALLY be adequately trained. Cochran's Steam Boiler Water Treatment course provides key information on safe, efficient operation of your boilerhouse plant.
- The Steam Boiler Water Treatment course has been primarily developed for people who are already BOAS-trained. It adds significantly to the water treatment information only briefly covered by BOAS.
- Other people this course is of value to includes those who wish to learn the principles behind correct water treatment of steam boilers and generators.
- Owners, Managers, Engineers and Operators will also benefit if they have an active interest in reducing or controlling costs, minimising plant down time, breakdowns and complying with the training requirements of PUWER.
- Please note that this course is currently being delivered online due to COVID-19 social distancing restrictions.

## What will you learn?

- **Introduction to Water Treatment:** Why do we treat water? What are the issues created by using/reusing water? What are the key differences between fire tube boilers and steam generators.
- **Water constituents:** What impact do these impurities have on using and reusing water?
- **The importance of water testing:** How to test correctly; what to test for; how often to test; and interpreting the results.
- **Key aims water treatment:** Combatting corrosion and scale and sludge control.
- **Water pre-treatment:** The various treatment systems. Obtaining good quality test samples and safety issues when collecting samples.
- **Treatment testing kits:** Relative advantages and disadvantages of using Strips, Tablets, Drop Tests and Photometer systems.
- **Practical testing session:** Testing for Alkalinity (P, M, OH), Hardness, Chloride content, pH, Total Dissolved Solids, Sulphite and Phosphate levels.
- **Recording and interpreting your results:** Key areas of concern, parameters to control against, plant efficiency, reducing plant downtime, possible failures and 'What to do in the event of'...
- **Condensate:** The value of high quality condensate, potential contaminants, and corrosion solutions.
- **Steam, its uses and purity.**
- **Key areas where you can make a difference, Scale:** The issues scale creates and how to prevent it build-up.
- **Key areas where you can make a difference, Corrosion:** Its consequences and prevention in your plant.
- **Key areas where you can make a difference, Condensate:** The value of quality condensate, potential contaminants and corrosion solutions. How to test condensate safely.
- **Key areas where you can make a difference, Water Testing:** Improving efficiency, minimising downtime and reducing the risk of major plant failure.
- **Guidance and Legislation covering Steam Boiler Water Treatment:**
  - British Standard BS2486 Recommendations for Treatment of Water for Steam Boilers and Water Heaters.
  - HSE INDG436 Safe Management of Industrial Steam and Hot Water Boilers.
  - HSE/CEA/SAFed BG01 Guidance on Safe Operation of Boilers.
  - CEA BG04 Boiler Water Treatment: Guidance for shell boilers, coil boilers, steam generators and hot water boilers.
- **The finally Steam Boiler Water Treatment competency test and certification:** On passing the final competency test you will be fully certified, CEA-accredited and Royal Society of Chemistry-approved.

## HSE PSSR and PUWER; the legislative background

- PSSR and PUWER are approved codes of practice and their guidance is LAW; that means you MUST comply with their requirements, or seek alternatives that are equal to, or better than, them.
- PSSR and PUWER covers Owners, Users, Competent Persons, Manufacturers, Suppliers, Installers etc.
- They encompass steam at ANY pressure, gases which exert a pressure in excess of 0.5 bar above atmospheric pressure, and fluids (which can be a mixture of liquids, gases and vapour).
- Only apply to storage over 250 BI (bar Litres) and do apply to mobile systems, such as a trailer mounted hire boiler.
- Provision of training is NOT covered by PSSR. However, paragraph 152 of the PSSR states 'There should be adequate instruction covering feedwater treatment, if appropriate'.
- Training IS covered by Regulation 9 of PUWER, the Provision and Use of Work Equipment Regulations (1998). In essence this states that adequate training MUST be given for purposes of Health & Safety.
- PUWER covers steam boilers, generators and any connected plant, their inspection and use. PUWER interfaces with COSHH, and covers water treatment chemicals and boiler water through this link.



## Scale

Scale formation can have a major impact on energy bills, with as little as 1mm reducing heat transfer by over 10%. Imagine what this scale deposit was adding to your energy bills. In serious instances scale build up can also result development of hot spots and even catastrophic failure of your plant.

**Monitoring your treated water and treating to minimise scale deposition is paramount.**



## Corrosion

Excessive corrosion, or to put it simply 'rust' in your boiler pipes, significantly reduces plant life and sometimes leads to complete boiler failure. Quite aside from the seriously shortening the operational life of your boiler and its associated replacement costs, corrosion can cause breakdowns that cost thousands in lost production time.

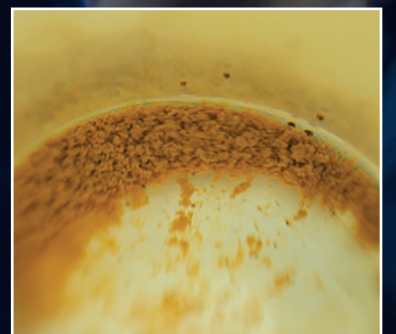
**Are you minimising corrosion in your system?**



## Condensate

An often over looked area, making use of good quality condensate can save you money. Analysis of the condensate your plant generates can also point to water treatment or operational and steam system issues in the boiler; problems that could result in breakdown or reduce the operational life of your boilerhouse plant.

**Do YOU routinely test your condensate ?**



**For more info or to book call 01461 202 111 or visit [cochran.co.uk/training.aspx](https://cochran.co.uk/training.aspx)**



## Professional boilerhouse training from Cochran and its partners:

### Officially Accredited Courses:

Boiler Operation Accreditation Scheme (BOAS) Cat 2 Steam	Five days
BOAS Cat 2 Steam Re-Accreditation	Four days
Boiler Operation, Maintenance and Safety Awareness (Logic Accredited)	Two days
Industrial Gas Training and Assessment (I-GAS)	One day, five days and five days

### Cochran Courses:

Introduction to Steam Boilers and Steam Systems	One day
Boilerhouse Risk Assessment	One day
Boilerhouse Water Treatment	One day
Reduce Boiler and Steam System Fuel Costs	One day
Maintenance of Steam Systems	Three days
Practical Operation of a Steam Boiler	One day
Boiler Operation and Maintenance with Burner Combustion (BOM-BC)	Three days

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or visit [cochran.co.uk/training.aspx](http://cochran.co.uk/training.aspx)**



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