

Temporary Steam and Hot Water Boiler Plant

GUIDANCE FOR SAFE INSTALLATION AND USE

REF: BG08



THIS PAGE IS INTENTIONALLY BLANK

| TABLE OF CONTENTS: | Page |
|--|-------------|
| 1. Foreword | 4 |
| 1.1 About this guide | 5 |
| 1.2 Acknowledgments | 6 |
| 2. Scope | 6 |
| 3. Introduction | 7 |
| 4. Design and Installation of Temporary Boiler Plant | 9 |
| 4.1 Access | 9 |
| 4.2 Location | 9 |
| 4.3 Steam connections | 10 |
| 4.4 Hot Water connections | 13 |
| 4.5 Water supply | 13 |
| 4.6 Condensate | 14 |
| 4.7 Blowdown and drainage | 14 |
| 4.8 Electrical supply | 14 |
| 4.9 Fuel Supply | 14 |
| 4.10 Environmental permits | 15 |
| 4.11 Commissioning | 15 |
| 4.12 Insurance | 15 |
| 5. Operation and Maintenance | 16 |
| 5.1 Daily operations | 16 |
| 5.2 Maintenance | 16 |
| 5.3 De-commissioning | 16 |
| 6. Checklists for Hire Companies and Their Customers | 17 |
| 6.1 Temporary steam or hot water pipework supplied by the Hire company | 17 |
| 6.2 Temporary steam or hot water pipework supplied by the customer: | 18 |
| 6.3 Permanently installed pipework between the hire boiler and the customer's system inlet isolation valve | 18 |
| 7. Legislation | 19 |
| 7.1 The Management of Health and Safety at Work Regulations 1999 (MHSWR) | 19 |
| 7.2 The Pressure Equipment (Safety) Regulations 2016 (PER) | 20 |
| 7.3 The Pressure Systems Safety Regulations 2000 (PSSR) | 20 |
| 7.4 The Provision and Use of Work Equipment Regulations 1998 (PUWER) | 23 |
| 7.5 The Water Industry Act 1991 | 23 |
| 7.6 The Construction (Design and Management) Regulations 2015 (CDM) | 23 |
| 8. References and Further Reading | 24 |

1. FOREWORD

Temporary Steam and Hot Water Boiler Plant - Guidance for Safe Installation and Use (Ref: BG08) is a guidance document intended to provide advice to all those involved in the design, procurement, manufacture, supply, installation and use of temporary steam and hot water boiler installations. It is applicable to all temporary installations of boilers and addresses the following issues:

- The Legal and Regulatory framework, ownership and responsibilities;
- The Specification and Design of temporary boiler installations;
- Temporary boiler installation guidance and best practice;
- Operation and maintenance of the temporary plant.

British Engineering Services clearly state on their website under Boiler inspection:

“Wrongly designed, sited or installed boilers can lead to serious failures that can have a major effect on people, production and the plant in general. As a manager or an employer, you have an obligation to ensure the safe installation and operation of your boiler systems, as well as conduct regular engineering inspections as identified by the written scheme of examination, governed by the Pressure Systems Safety Regulations 2000”.



THE FOLLOWING WORDS CONVEY SPECIFIC MEANING:

Should: Compliance with this clause is not essential where supported by risk assessment and/or design calculation.

Shall: Compliance with this clause is required in order to claim compliance with this document.

Must: Compliance with this clause is a legal requirement within the United Kingdom.

Unless otherwise stated, all pressures refer to gauge pressure.

THIS DOCUMENT IS COPYRIGHT OF
THE COMBUSTION ENGINEERING ASSOCIATION © 2019
ALL RIGHTS RESERVED

1.1 ABOUT THIS GUIDE

This comprehensive guide deals with all aspects of designing, procuring, installing and operating a temporary steam or hot water boiler installation. We trust that by studying the contents and following this advice your temporary boiler plant will operate safely and more efficiently, and provide you with a trouble-free system. If in any doubt contact the relevant supplier, the system designer, or your Competent Person for advice.

It is aimed at the Owner, Operator, Engineer and Manager of the boiler plant to help them understand all aspects that affect the use of temporary boilers, both from a practical operational performance view and for the legal requirements.

It covers who is responsible for the design and creation of the temporary installation, the safe installation of the boiler plant, and who is responsible for managing the safe and efficient operation of this type of equipment. Ultimately the responsibility lies with the most senior person on a site; however, they can delegate the responsibility for daily operations, but only to a suitably trained and competent person on the site.

With other HSE guidance being withdrawn, and having taken all factors into consideration, the Combustion Engineering Association (CEA) agreed to write this guide with the help of its members.

Within this Guide there are a significant number of legal requirements, regulations and standards highlighted; these regulations and standards are periodically reviewed and they can and do change, but they are as accurate as possible at the time of publication. Users should ensure they are referring to the latest edition of published guidance and Approved Codes of Practice, available from gov.uk, hse.gov.uk, Environment Agency, safed.co.uk, igem.org.uk etc.

The CEA cannot accept any liability for the information provided herein; however, be assured that we have consulted widely with our member companies during the compilation of this guide. This publication should not be regarded as an authoritative interpretation of the law, nor a mandatory legal requirement. However, if the guidance provided is followed, it will normally be regarded as sufficient to comply with the relevant health and safety duties.

1.2 ACKNOWLEDGMENTS

The Combustion Engineering Association is an educational charity with the objective of giving advice to plant engineers on the design, manufacture, operation and maintenance of a wide variety of combustion processes and associated activities. This guide has been compiled from the combined experience of a number of CEA Members and special thanks go to:

| | |
|-------------------|---|
| Paul Whitehead | Author - Energy and Environmental Solutions |
| Adrian Rhodes | CEA Chairman and Technical Director Byworth Boilers |
| David Kilpatrick | CEA Director |
| Andy Wright | British Engineering Services |
| Michael Rutter | Byworth Boiler Hire |
| James Brown | Cochran Ltd |
| Chris Callaghan | Cochran Ltd |
| Adrian Stephenson | Kings Boiler Hire |
| John Milsom | Metalflex |
| Steve Danks | Watkins Hire |
| Mark Walton | Watkins Hire |
| Jon Halliwell | Allianz Engineering, Construction and Power |

Photographs and diagrams in this document are copyright of the originator as identified from the list above.

2. SCOPE

This guidance applies to all steam and hot water boilers supplied and installed as temporary plant on a site to replace or supplement existing steam or hot water capacity. Temporary boilers on trailers or in containers are normally available in sizes up to around 8,000 kg/h and 15 bar steam. It includes guidance on design, procurement, supply, installation, operation and maintenance of all temporary boiler plants.

Readers are directed towards BG01, *Guidance on Safe Operation of Steam Boilers*, published jointly by the CEA and SaFed, BG02, *Guidance on Safe Operation of Hot Water Boilers* (CEA), and HSE INDG436, *Safe management of industrial steam and hot water boilers*. These contain guidance that is relevant to all steam and hot water boiler installations, including those of a temporary nature.

INDG 436 - Background:

As the manager of a workplace, you have a duty to manage the risks associated with that workplace. If there is a boiler installation on your premises, you must ensure it remains safe.