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Scheme Rules - Appendix L Temporary Works Coordinator Training Course (TWCTC)

Site Safety Plus

Temporary Works Coordinator Training Course (TWCTC)

Course Appendix L

1. Introduction

The two-day Temporary works coordinator training course (TWCTC) is designed to assist those on site who have responsibility for managing all forms of temporary works. The course has been designed to give confidence to senior management, and to ensure that those who engage contractors have an assessed standard of knowledge.

The course is supported by a number of organisations, including the Temporary Works forum, CECA, Build UK, HSE and FMB. This enables transferability of the training within the industry.

Temporary works are safety- and business-critical and require careful coordination. An accepted way of achieving this is through the adoption of the management process outlined in BS 5975:2019, which introduces the temporary works coordinator (TWC) as a key figure. This course explains the role and its overall management context.

Temporary works on both smaller and larger sites can be high risk. Therefore, understanding the essentials of good risk and safety management, as outlined in BS 5975:2019, is relevant for projects of all sizes.

This course will give the delegate a thorough knowledge of the temporary works coordinator (TWC) role. However, this does not make a delegate competent by itself. Competence requires other attributes, such as experience.

2. Aims and objectives

This is not a temporary works awareness course. It is only concerned with the process of coordinating temporary works, commonly expressed through the role of the TWC. Attendance does not confer competency as a TWC.

2.1. Aims

To ensure that all those given temporary works coordinating responsibilities understand the:

- need for and duties of a TWC
- roles of others
- use of BS 5975:2019 in relation to the role
- importance of the 4Cs: communication, coordination, co-operation and competence
- need for risk management.

2.2. Objectives

At the end of the course delegates should:

- understand the duties of a TWC and roles of others
- have a detailed knowledge and understanding of BS 5975:2019
- understand how to manage risk
- implement the 4Cs effectively in the workplace.

3. Entry requirements

There are no formal entry requirements. However, delegates should hold, or be about to hold, the role of a TWC.

4. Assessment

Assessment will be by a multiple-choice examination at the end of the course. Delegates will also be expected to interact and participate during the course.

5. Delegate numbers

The minimum number of delegates per course is four. The maximum number of delegates per course is 20. These minimum and maximum delegate numbers are not subject to an appeal.

6. Course duration and attendance

This course is designed to be completed over two consecutive days. Delegates are required to attend both days (14 hours) and to pass the end-of-course assessment to be eligible for certification.

Delegates must attend the days in order and, where they are not on consecutive days, must complete the course within two weeks.

Delegates unable to attend both days due to extenuating circumstances (for example, certificated sickness) will need to enrol on a new course in order to maintain continuity of learning outcomes and attend both days again.

This course will give the delegate a thorough knowledge of the TWC role. However, this does not make a delegate competent by itself. Competence comes from education, training and experience, which should be judged by an appropriate senior individual, usually referred to as the designated individual (DI). Training is considered an essential element of TWC competence.

7. Progression

The natural progression from this course would be to either the Site management safety training scheme (SMSTS) or Director's role for health and safety (DRHS) course, where duties allow.

8. Course publications and materials

It is mandatory for all delegates to have a comprehensive understanding of BS 5975:2019. Ideally, delegates should have a copy of BS 5975; however, their own organisation's procedures and guidance on temporary works may be more suitable for reference during the course.

8.1. Recommended supporting publications

- TWf Information Sheet No. 2 – Temporary works training
  www.twforum.org.uk/viewdocument/twf-information-sheet-no-2-tempo
- TWf Information Sheet No. 6 – The safe management of temporary works
  www.twforum.org.uk/viewdocument/twf-information-sheet-no-6-the-s
- TW17.037: Principles for the management of temporary loads, temporary conditions and temporary works during the construction process
  www.twforum.org.uk/viewdocument/principles-for-the-management-of-te
- TW11.027, Rev F: Competencies of the TWC
  www.twforum.org.uk/viewdocument/competencies-of-the-twc-tw11027

NASC: www.nasc.org.uk/information

- TG20:21: Good practice guidance for tube and fitting scaffolding
- TG9:18: Guide to the design and construction of temporary roofs and buildings

British Standards Institution (BSI): shop.bsigroup.com

- BS 5975:2019: Code of practice for temporary works procedures and the permissible stress design of falsework
- BS 7121: Parts 1 to 14: Code of practice for safe use of cranes

HMSO

- Bragg, SL (1974). Interim report of the Advisory Committee on Falsework. (Final report issued in 1975)

HSE: www.hse.gov.uk

- Managing health and safety in construction. Construction (Design and Management) Regulations 2015. Guidance on Regulations
  www.hse.gov.uk/pubns/priced/l153.pdf
- CIS56: Safe erection, use and dismantling of falsework
  www.hse.gov.uk/pubns/cis56.pdf

Concrete Centre: www.concretecentre.com/Publications-Software.aspx

CONSTRUCT: www.construct.org.uk/publications/guide-safe-use-formwork-falsework

- CSG005: Guide to the safe use of formwork and falsework (2008)

ICE Publishing: www.icevirtuallibrary.com

- Pallett, PF and Filip, R (2018). *Temporary Works: Principles of Design and Construction*. Second edition
- McAleenan, C and Oloke, D (2010). *ICE Manual of Health and Safety in Construction*

CIRIA: www.ciria.org

- C579 (2003). Retention of masonry facades – Best practice guide

Concrete Society: www.concrete.org.uk

- CS030 (2012). Formwork – A guide to good practice. Third edition

8.2. Supplementary information

The roles of the TWC, and the PC's TWC, are explained in the latest version of BS 5975:2019.

Duties of the PC's TWC

The PC's TWC should:

a) coordinate all temporary works activities

b) ensure that a temporary works register is established and maintained

c) ensure that information relevant to the temporary works has been received from the client, principal designer and permanent works designer, as appropriate

d) ensure that a design brief is prepared with consultation within the project team, and that it is both adequate and in accordance with the actual situation on site

e) ensure that any other temporary works in the vicinity are referenced in the design brief

f) ensure that any residual risks identified at the design stage, assumed methods of construction or loading constraints identified by the permanent works designer (PWD) are included in the design brief

g) ensure that the design brief is issued to the temporary works designer (TWD) for a satisfactory temporary works design to be carried out

h) ensure that a design check is carried out by someone who was not involved in the original design

i) where appropriate, ensure that information on the certified temporary works design is made available to other interested parties (for example, the principal designer and/or the PWD) and, where required, to the client

j) register or record the drawings, calculations and other relevant documents relating to the final design

k) ensure that the relevant client and/or third-party approvals, required by the contract, have been received

l) ensure that those responsible for on-site supervision receive all the details of the design, any residual risks, including any limitations, and guidance notes associated with it, and ensure that a specific method statement that details a safe system of work is prepared

m) ensure that an inspection and test plan is prepared, along with appropriate quality control checklist(s), based on the temporary works design output. This is used to verify that the temporary works have been constructed in accordance with the certified design

n) ensure that any proposed changes to materials or construction are checked against the original design and appropriate action taken

o) ensure that checks, inspections and tests are made at appropriate stages

p) advise the designer of any changes or modifications to the scheme or differences to the envisaged conditions (both use and environmental)

q) if inspections reveal discrepancies between the certified and as-constructed temporary works, prevent loading (or unloading) until the discrepancies have been rectified to their satisfaction

r) ensure a permit to load or proceed (bring into use) is issued after a final check, which is satisfactory, by the PC's TWC, TWC or temporary works supervisor (TWS)

s) ensure that all appropriate maintenance is carried out while the temporary works are in use

t) ensure a permit to unload or proceed (take out of use) the temporary works is issued when it has been confirmed that the permanent structure has attained adequate strength and/or stability, by the PC's TWC, TWC or TWS

u) ensure that a documented safe system of work is in place and implemented for the dismantling of any temporary works

v) ensure that any relevant information for the health and safety file is transmitted to the principal designer.

Duties of the PC's TWC in relation to other contractors

The PC's TWC should:

a) receive the contractor's DI's assessment of the capability of the TWS (and the TWC where appointed), including the individual's acceptance of the role

b) ensure that the TWCs and TWSs are operating in accordance with the approved procedures

c) provide copies of all information relevant to the contractor's temporary works design to the contractor's TWC

d) define the interfaces between the contractor's works and those of the PC or other contractors to establish which design briefs should be provided to the PC's TWC for approval before issue to the relevant TWD

e) receive copies of relevant design briefs produced by the contractor's TWC and confirm there are no adverse effects on any other works (including temporary works) that might be planned

f) for relevant designs, receive copies of the design output, design and design check certificates prior to implementing the contractor's temporary works

g) inspect the contractor's temporary works, where necessary.

The PC's TWC should ensure that a contractor's proposals for temporary works do not adversely affect, and are not adversely affected by, other construction works, including other temporary works.

Duties of the TWC

The TWC should:

a) coordinate the temporary works activities of their organisation

b) ensure that the PC's DI has given approval to the contractor to manage and design the temporary works, and to confirm that the organisation has accepted their appointment

c) ensure that the PC's DI has either given approval for the contractor to use their own temporary works procedure, or that the agreed procedure is in use for their temporary works

d) be aware of any limitations in the use of the temporary works for which their organisation is responsible

e) liaise with the PC's TWC to ensure that those involved understand the types and limits of permits and when they have the authority to proceed by releasing the hold points

f) be responsible for providing information to, and receiving information from, the PC's TWC to manage the temporary works schemes for which they are responsible

g) ensure a temporary works register is established and maintained for the temporary works

h) ensure that the register is copied to the PC's TWC at each major update and to an agreed regular timescale

i) ensure that a design brief is prepared with consultation within the project team, is adequate, and is in accordance with the actual situation on site

j) where required, provide copies of any design briefs, submit them to the PC's TWC and receive confirmation that there are no adverse effects on the planned temporary works

k) ensure that all TWDs and design checkers are competent and have been verified by the organisation's DI to carry out designs

l) ensure that any residual risks identified at the design stage, assumed methods of construction or loading constraints identified by the PWD are included in the design brief

m) receive copies of the design output, design and design check certificates before the temporary works are implemented and, where required, provide evidence to the PC's TWC that the design and design checking have been carried out

n) ensure that the relevant client and/or third-party approvals, as required by the contract, have been received from the PC's TWC

o) ensure that a documented safe system of work is in place and implemented for the erection of temporary works

p) ensure that an inspection and test plan is prepared, along with appropriate quality control checklist(s), based on the temporary works design output and used to verify that the temporary works have been constructed in accordance with the certified design

q) ensure that checks, inspections and tests are made at appropriate stages and that the inspection and test plan (at relevant stages) and checklist(s) are signed by the TWC or TWS as appropriate and, where required, the PC's TWC

r) ensure that any changes or modifications to the scheme or differences to the envisaged conditions (both use and environmental) are drawn to the attention of the designer

s) issue a notice to prevent loading (or unloading) if inspections reveal discrepancies between the certified and as-constructed temporary works, until the discrepancies have been rectified to the satisfaction of the PC's TWC and/or TWC

t) ensure that any instructions from the PC's TWC in connection with identified discrepancies in the temporary works have been carried out to rectify the discrepancies to the satisfaction of the PC's TWC

u) ensure that any agreed changes or corrections of faults are correctly carried out on site

v) ensure that all appropriate monitoring and maintenance is carried out while the temporary works are in use

w) ensure a permit to load or proceed (bring into use) after a final check, which is satisfactory, is issued by either the PC's TWC, TWC or TWS

x) ensure that a permit to unload or proceed (take out of use), the temporary works is issued, when it has been confirmed that the permanent structure has attained adequate strength and/or stability, by either the PC's TWC, TWC or TWS

y) register or record the drawings, calculations and other relevant documents relating to the final design of the temporary works and, where required, submit to the PC's TWC

z) ensure that a documented safe system of work is in place and implemented for dismantling any temporary works

aa) ensure that relevant information for the health and safety file is transmitted to the PC's TWC

bb) ensure that any appointed TWS is operating in accordance with the approved procedure.

9. Notes to training providers

Training providers may make minor adjustments to the programme to meet delegate needs so long as the aims and objectives of the course are met. All trainers must adhere to the course notes requirements, which are as follows.

- Trainers will develop detailed notes, case studies and exercises from the outline syllabus, suitably indexed and presented for delegates to take away on completion of the course. It is essential that the underlying theme of proportionate risk management, from a safety- and business-critical perspective, is present throughout the module.

- Notes should expand on and explain the background and, in particular, the role of the TWC as set out in BS 5975, as well as explaining other aspects of the module. Trainers may assume that delegates will bring their own copies of BS 5975.

- Notes should expand on, and correctly explain, in particular, BS 5975 Figure 2(e) ‘Complex projects able to be split into well-defined areas’. Trainers will need to correctly explain the full range of TWCs who could be encountered. From top to bottom in terms of seniority, these are the people in charge of:
    - overseeing all TW on a project (PC lead/senior TWC)
    - an area of the site (PC assistant/deputy TWC)
    - the temporary works needed by a sub-contractor (sub-contractor TWC).
- Notes will form a delegate pack that will be issued on the day the course starts. These should be updated by the trainer, as required, to ensure they are current.
- The notes will be supplemented by hand-outs for exercises.

CITB has a licence with BSI that enables training providers to reproduce up to 20 copies (per provider) of only Section 2, Clause 6(14) of BS 5975:2019, for exclusive use in training material. These copies must be retained by the provider.

Copies of any significant proposed programme changes, if any, must be submitted to CITB prior to course delivery.

9.1. Distribution and format

Notes should be issued at the start of the course and be in hard copy, unless delegates have been notified prior to the course that electronic methods, for example USB sticks, will be used instead. Trainers should be aware that the latter option will require all delegates to have tablets or laptops so that they are not disadvantaged.

9.2. Course notes content

Course notes will not be acceptable if they are:

- copies of slides (slides should follow good practice and contain minimal textual information)
- including only specific company procedures that just say what must be done, without any background. These will not cover the entire course however relevant they are.

The notes are expected to cover the entire course subject matter. For example:

- historical background
- the key Bragg report recommendations
- risk management philosophy
- examples of failure of temporary works
- the 3Ps, 4Cs and ERIC
- contract and statute, and their impact on the TWC.

All the above need explanatory notes to 'tell a story' (and none of these points are contained sufficiently, or at all, within BS 5975:2019). The notes should also include the following.

- The individual duties of the TWC require examples and explanations. Some require particular prominence (for example, supervision and checking), as well as the appointment and roles of others. The notes should also cover how the role fits into typical contractual scenarios.
- Case studies also require written provision.
- Sample forms, examples of completed forms and so on.
- Delegate exercises.
- References and further reading.

This is not an exhaustive listing.

If the course is in-house then the trainer is expected to insert company procedural examples and requirements into the notes, or alternative methods, as agreed with the client.

9.3. Interaction with delegates

It is expected that the course will involve a significant number of exercises and discussions. The exercises should be outlined in the notes.

Examples should be spread across the construction industry as far as reasonable, specifically buildings and civil works, including above- and below-ground temporary works situations.

9.4. The risk management thread

This is a risk management course that happens to concentrate on the role of the TWC in managing the coordination of temporary works to avert their failure. Avoiding failure, from a safety perspective, is the prime aim (and the original concept of the TWC), but avoiding failure from a business or commercial perspective is of almost equal importance. The same processes can be used to achieve both aims and both should be given emphasis. The basis of the risk management process is safety legislation (ERIC) but it can be used for any type of risk.

The course, and notes, should emphasise:

- ERIC
- the 3Ps
- the 4Cs

These are essential tools to the understanding of proportionate qualitative risk management, recognising that the majority of problems lie with the first two Ps – people and process.

9.5. References for trainers

The following background information and advice is suitable for trainers, who can decide whether to draw them to the attention of delegates. They are written largely with reference to permanent works but the principles apply to temporary works.

- Carpenter, J, 'Practical application of risk management', The Structural Engineer, 15 July 2003, pp19–20, www.istructe.org/journal/volumes/volume-81-(published-in-2003)/issue-14
- Carpenter, J, 'A simple approach to the management of risk on civil and structural engineering projects: how to get on with ERIC', *The Structural Engineer*, 7 April 2010, p20 www.istructe.org/journal/volumes/volume-88-(published-in-2010)/issue-7
- CDM guidance for designers: www.citb.co.uk/about-citb/partnerships-and-initiatives/construction-design-and-management-cdm-regulations/cdm-regulations

10. Learning outcomes

Delegates should be able to achieve all the learning outcomes listed below by the end of the course. We have added an estimated delivery time to support you in your course planning.

Module 1 – What are temporary works? (Estimated delivery time 30-60 mins)

1. Describe types of temporary works

Describe the different types of temporary works and temporary works solutions, and the impact of their failure on health and safety on construction sites.

Module 2 – The history of temporary works (Estimated delivery time 60-90 mins)

1. The history of temporary works

Describe the history that set requirements for a series of changes, creating a robust, safety-conscious process for the design, management, installation and removal of temporary works.

2. The consequences of failure

Describe the consequences of failure and the importance of avoiding failure in relation to the 3Ps and 4Cs.

Module 3 – Legal and management procedures of temporary works (Estimated delivery time 60-90 mins)

1. Health and safety law

Describe the purpose of health and safety legislation and the different legislative requirements that must be followed to ensure that it is fulfilled.

2. The Health and Safety at Work etc. Act (HASWA)

State the legal duties of the employer, the self-employed and, to a lesser extent, the employee to promote health and safety awareness and effective standards of safety management by every employer.

3. Construction (Design and Management) Regulations (CDM)

State the CDM Regulations that cover the management of health, safety and welfare on construction projects. Identify what they cover, what they require, what needs to be done and who needs to do it.

Module 4 – Who is involved with temporary works? (Estimated delivery time 180 mins)

1. Stakeholders' and duty holders' responsibilities and accountabilities

Describe the key roles and responsibilities of the primary stakeholders responsible for managing the safe implementation, management and dismantling of temporary works, including the appointment of key roles.

Module 5 – Planning temporary works (Estimated delivery time 180 mins)

1. Management and control of design

Explain the management and control of the design, materials, components and key solutions.

2. Key processes

Describe the key processes that form a safe system of work.

3. Procurement

State the key elements involved in appointing competent organisations, designers and contractors to manage the execution of the works on site.

4. Risk classification

Describe the importance of risk classification and its impact on design and risk management.

Module 6 – Managing construction, erection and dismantling of temporary works (Estimated delivery time 180 mins)

1. Key activities required during the active life of the temporary works

Explain how to manage, coordinate and supervise during the construction, erection and dismantling of temporary works

11. End-of-course examination rules

11.1. Examination details

The examination paper is compulsory and consists of 25 multiple-choice questions selected by CITB.

It forms the basis of assessing whether a delegate has achieved a sufficient level of understanding to be awarded the Temporary works coordinator training course (TWCTC) certificate.

The examination lasts for 30 minutes and must be completed within this time.

The examination is open book.

The examination pass mark is 72%.

The examination paper number will be notified when the course booking is accepted by CITB.

11.2. Re-sits procedure

Where a delegate has achieved 64%–68% in the examination, they may re-sit the examination on the same day or by attending the final day of another course. Subsequent arrangements will be at the delegate's own expense.

The training provider must make the arrangements with the delegate and ensure that the same examination paper is not used twice.

The delegate must re-sit the examination within 90 days of the last day attended.

A fee may be charged to the delegate; however, this is at the discretion of the training provider. If the training provider wishes to recover additional costs from the delegate, this should be agreed in advance.

If the delegate fails their re-sit, they will be required to take the full two-day TWCTC again, or will be offered an alternative course that is considered to better match the delegate's level of knowledge and understanding.

12. Trainer requirements

In addition to the minimum trainer requirements in the Quality Assurance Requirements, trainers must have attended and achieved, and hold a current certificate for this course and meet the criteria below:

- be a member of the Institution of Civil Engineers (AMICE/MICE/FICE) **or**
- be a member of the Institution of Structural Engineers (MIStructE/FIStructE) **or**
- be a member of the Institution of Royal Engineers (InstRE) **and**
- be registered with the Engineering Council at IEng or CEng level **and**
- hold relevant practical and design experience of temporary works (such as falsework, formwork, access and protection)

It is good practice, but not mandatory, for trainers to also hold one or more of the following qualifications.

- NEBOSH National Certificate in Construction Safety and Health.
- Level 4 or 5 NVQ Diploma in Occupational Health and Safety Practice (or SVQ equivalent).*
- A health and safety degree.
- NEBOSH Diploma in Occupational Safety and Health Part 2.
- NEBOSH Diploma in Occupational Safety and Health Units A, B, C and D.
- IOSH Level 6 Diploma in Safety Management (or equivalent).

** Note: The Level 5 NVQ/SVQ in Occupational Health and Safety has replaced the Level 4 within the Qualifications and Credit Framework. Holders of a valid certificate for the Level 4 qualification will be accepted.*

Occupational health and safety competence will also be satisfied by Chartered Membership of ICE, IStructE or IOSH, although specific qualifications, such as ICE Health and Safety Register (Level 1) or equivalent, are encouraged.

13. List of abbreviations

3Ps	people, process, product
4Cs	communication, co-operation, coordination, competence
AP	appointed person
BS	British Standard
CDM	Construction (Design and Management) Regulations
CECA	Civil Engineering Contractors Association
DI	designated individual
DRHS	Director's role for health and safety
ERIC	eliminate, reduce, inform, control
FMB	Federation of Master Builders
HSE	Health and Safety Executive
ICE	Institution of Civil Engineers

IOSH	Institution of Occupational Safety and Health
LOLER	Lifting Operations and Lifting Equipment Regulations

NASC	National Access and Scaffolding Confederation
NEBOSH	National Examination Board in Occupational Safety and Health
PC	principal contractor
PC's TWC	principal contractor's temporary works coordinator
PUWER	Provision and Use of Work Equipment Regulations
PWD	permanent works designer
SCOSS	Standing Committee on Structural Safety
SMSTS	Site management safety training scheme
TWC	temporary works coordinator
TWCTC	Temporary works coordinator training course
TWD	temporary works designer
TWf	Temporary Works forum
TWS	temporary works supervisor
TWSTC	Temporary works supervisor training course
WAH	Work at Height Regulations