

**ESSENTIAL
STANDARD
no.20**

Management of Temporary Works



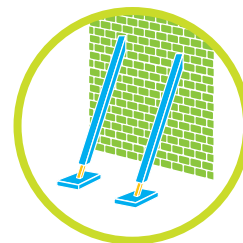
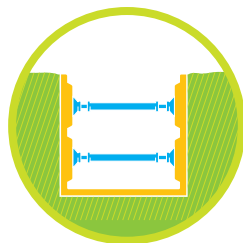
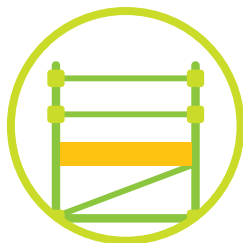
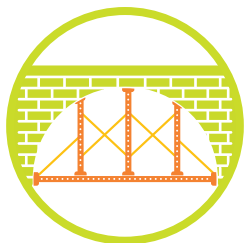
KEY MESSAGES

- All temporary works must be classified according to risk.
- All temporary works must be designed and planned by a competent person.
- Temporary works designs must be checked by a competent person (to ensure they are safe and suitable), but not by the original designer (depending on risk).
- Ensure that construction and dismantling of temporary works is supervised by a competent person.
- Develop and implement risk assessments and safe systems of work for the construction, use and dismantling of temporary works.
- Ensure that personnel involved with the construction, use and dismantling of temporary works have adequate information, instruction and training.
- Refer proposed temporary works alterations to a competent designer before making changes.
- Only use standard trench support systems that meet the designs set out by a competent person and that meet the conditions set out in the design.

1. Introduction

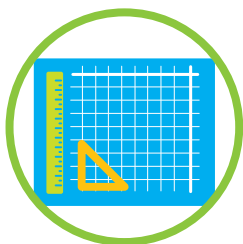
Temporary Works are “engineered solutions” used to support or protect an existing structure or the permanent works during construction, or to support an item of plant or equipment, or to support the vertical sides/slopes of an excavation during construction operations or to provide access to otherwise inaccessible areas. Amongst other things they include, false-work, form-work, scaffolds, special crossings, cofferdams and trench supports.

The risks associated with temporary works cannot be overstated. Failures in design, inadequate and unsafe construction, and unsafe procedures for dismantling them have, over the years, cost thousands of lives. This essential standard sets out the minimum procedural requirements to be followed to ensure that all temporary works are suitable and safe.



2. Classification

The Temporary Works Designer must assess the risks associated with all temporary works in order to classify it. The assessment must consider the risks at the time of the temporary works are commissioned, and must also be reviewed periodically for any changes. The lists below are not exhaustive and must be interpreted according to each temporary works and their surrounding conditions. For example, a 2.5m deep excavation in running sands may be recorded as a class 2, but should actually be recorded as a class 1 due to the increased risk caused by the adverse ground conditions.



All temporary works must be designed with the design being subject to checking and approval.

3. Class 1 Temporary Works



Class 1 temporary works have the highest risk and must be designed by a trained and competent person. An independent competent designer must also be appointed as the design checker.

These temporary works are typically classified as Class 1:

- All site signboards, hoarding and fencing above 2m
- Demolition method statements
- Working platforms (crane mats) for cranes and piling rigs
- Open cut excavations deeper than 6m (engineering and geotechnical advice should be sought for excavations over 3m deep)
- Ground support schemes deeper than 3m, including sheet piling and proprietary support systems
- All ground support schemes in poor ground conditions
- Trenchless construction including headings, thrust bores, mini tunnels (including launch and reception pits)
- Permanent ground support systems (contiguous, secant, diaphragm walls) in temporary conditions
- Cofferdams
- Dewatering and ground water control other than sump pumping
- Marine works or works over water (rivers, tidal estuaries, harbours, etc.)
- All tower crane bases
- Façade retention schemes
- Structural refurbishment (propping and needling)
- Jacking schemes
- Bridge erection schemes (stability checks)
- Complex structural steelwork and precast concrete erection schemes
- Crane lifts for rail gantries, bridge works and structural frames (lift plans crane foundations)
- Edge protection to roof and slabs
- Safety net systems that are not fixed to primary robust members or are of an unusual design
- Formwork (concrete walls) higher than 3m
- All permanent formwork (metal decking)
- All sheeted scaffolding irrespective of height
- Scaffolds that have a top higher than 15m above ground level, and all other designed scaffolds such as cantilever or hanging scaffolds
- Hoist and mast climbers

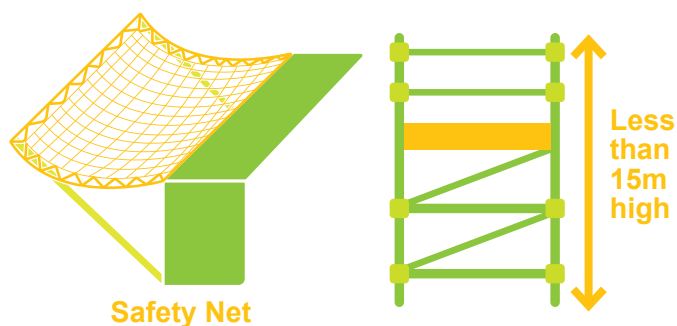
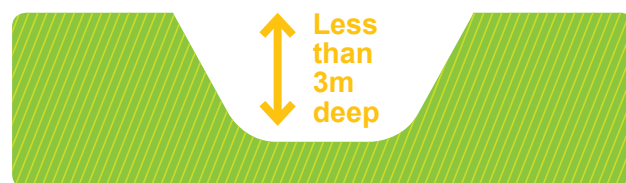
4. Class 2 Temporary Works



Class 2 temporary works have a lower risk than class 1 but they still have risks that you must address and manage. Following an assessment by a competent person where any temporary works is needed, it will fall into this class and must be designed and checked.

These temporary works are typically classified as Class 2:

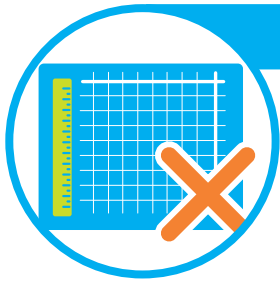
- Fencing and hoarding up to 2m
- Trench excavations up to 3m deep in good ground
- Foundation underpinning not using piles
- Simple un-sheeted scaffolds that has a top less than 15m above the ground
- False work up to 3m high
- Formwork for concrete walls, columns etc. up to 3m high
- Safety net systems installed in accordance with the manufacturer's instructions and which are fixed to robust primary structural members
- Temporary glazing retention
- Shallow trenches in good ground less than 1.2m deep
- Free standing aluminium access towers erected and used in accordance with the manufacturer's instructions
- Internal hoarding systems and temporary partitions not subject to wind, differential air pressure or crowd loading



A temporary works permit must be in place for ALL temporary works.

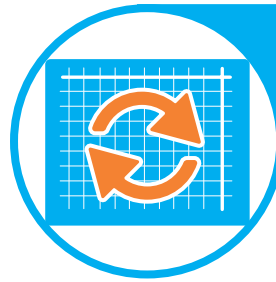
5. Hazards

There are five main causes of incidents involving the collapse of temporary works:



- **Inadequate design:**

The design was unsuitable for the location, the job or the loading.



- **Unauthorised changes in design:**

during construction



- **Poor construction:**

The construction was inadequate, incorrect or carried out by untrained personnel.



- **Changes in the activity:**

The activity that the temporary works was designed for was changed and the works was used for something it wasn't designed for.



- **Dismantling:**

The procedure for dismantling was inadequate or was not followed.

6. Key Roles and Responsibilities

Make sure that the following people have been appointed in writing:



- a competent temporary works designer who prepares or modifies the design of any temporary works.



- a temporary works supervisor who is responsible for supervising the construction of the temporary works, the alteration of the temporary works and the inspection of any temporary works prior to their first use and following any alteration.



- a temporary works coordinator who coordinates activities such as maintaining a register of designs and ensuring that all relevant information for each design is available.

All designs for Class 1 temporary works must be checked by a competent person (other than the designer who was involved in the original design) before it's constructed or altered.

Step 1 – Design Brief and Design



You must put a design brief together in order to commission a temporary works design. It is the starting point for subsequent decisions, design work, calculations and drawings. Include all data relevant to the design. Make sure that you prepare the brief at an early stage to allow enough time for the safest design to be done and checked.



For major works, such as the construction of a deep excavation or a shaft, you need to provide a substantial amount of information in the design brief such as:

- Details of the organisations/teams involved in the design and their responsibilities
- Any requirements to design in accordance with a particular standard or guidance document
- Information on any significant risks
- The programme for the various phases of the design, the design check, any approvals, and procurement and erection of the temporary works
- Requirements for access onto, under or around the temporary works
- Access requirements for construction, maintenance, use and dismantling of the temporary works
- Requirements for public access
- Equipment and materials that are available for constructing the temporary works
- Site investigation data and reports for the areas under and around the foundations of the temporary works such as information on all underground and overhead services
- Limitations on the positioning of temporary works loads over underground services or next to excavations or retaining walls
- Proposals for the protection of the temporary works (including foundations), against disturbance or impact
- Limitations imposed by authorities for working within or next to railways, highways, and water-courses
- Environmental constraints placed on the site, for example, a requirement to limit noise to certain hours of the day
- Details of any obstructions that may influence the position of temporary works
- Any other relevant information

Sufficient time must be given to the designer in order to allow them to prepare the safest possible design.

Step 2 – Design Check



Ensure that the design and calculations for high and medium risk temporary works (class 1) is checked by an independent person. The independent person can be a member of the design organisation/in-house design team, as long as they are not the original designer or were consulted with concerning the design.

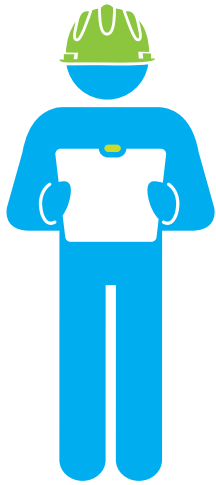


The design check must include the original calculations and include the concept, structural adequacy and its compliance with the original brief. Make sure the design check documents, such as signed drawing and calculations or certificates, are available as evidence of the design checking process. Any alterations to temporary works configurations must be subject to a design check. All interested parties must have access to the register of designs, drawings, calculations or any other relevant documentation.

Step 3 - Supervision and Inspection



Any Class 1 temporary works must be signed off by a competent person other than the Temporary Works Supervisor assigned to the activity.



The person responsible for the Temporary Works must also be the one who communicates and enforces the implementation of the process for the control of temporary works on site to achieve project objectives, maintain health and safety standards, and quality and environmental impacts.

The Temporary Works Supervisor should assist any Temporary Works Coordinator by:

- Supervising the construction of the temporary works to ensure it is built safely in accordance with the agreed design using the design materials
- Confirming with the coordinator that the temporary works meets the design criteria
- Issuing the permit to load and use of the temporary works
- Supervising the use of the temporary works
- Supervising the dismantling of the temporary works

STOP

Remember that the Temporary Works Coordinator and Temporary Works Supervisor have the authority to stop activities involving the temporary works if it is unsafe. To do this they cancel the permit to use/load and immediately prevent further use of the temporary works.

7. Related Essential Standards

To fully understand temporary works safety you should also read the other Essential Standards on specific subjects, for example:



- **Essential Standard 001 - Excavations**



- **Essential Standard 015 – Protecting the public during temporary works**



- **Essential Standard 017 - Scaffolding**



You must also refer to the British Standards: BS5975:2011 Code of practice when you deal with temporary works procedures and false work. If the guidelines have different rules then you should follow the British Standards and seek advice from the temporary works design engineer.