



Temporary Works
forum

Promoting best practice in
the construction industry.

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Concerns over substandard or unverifiable material, component and equipment substitutions in temporary works

A number of responses were received from members in reply to the following question:

Have any members raised concerns over contractors sourcing alternative or copy material or equipment? Apart from the very real issue of quality control of cheap imports, the design verification available from reputable suppliers is invalidated if mixed-source materials are used. I think this is a wider issue than just formwork. Some contractors seek cost savings and put lives at serious risk. Management contractors may not be fully policing this issue, relying on paper trails and box ticking. I would be interested to hear other views.

1.0 Introduction

1.1 Members have reported a number of concerns, particularly in relation to proprietary scaffolding, hoists, anchors, bolts, threaded bars, re-use of steel sections and the mixing of temporary works equipment (TWE) from different suppliers. Safety critical items that could lead to catastrophic collapse often include simple fixings/components.

1.2 Risks include:

- serious injury and/or fatalities;
- collapse of temporary works equipment or the structures they support;
- invalid guarantees and insurance;
- damaged reputation.

Cont./...



2.0 General advice

2.1 Temporary Works Designer (TWD)

- 2.1.1 The temporary works design specifications for TWE - and any fixing/ancillaries, etc. - should be complete (e.g. if specifying a grade of structural steel provide a complete reference such as RHS to BS EN 10219 S355J2H, and not simply RHS Grade S355). Ensure that the specification of any product required meets recognised standards and is clear listed on drawings, calculations and/or other project documentation. Also, if a proprietary supplier's product is to be specified ensure that the correct identification reference(s) are provided for these components.
- 2.1.2 Attention is drawn to the general advice given in BS 5975: 2019, Clause 16.1, Material, General considerations.
- 2.1.3 The change of product - and design change control - is important and any changes must be approved by the TWD.
- 2.1.4 If re-used or recycled materials are used a robust certification and testing regime appropriate to the risks involved should be agreed with the TWD. If there are concerns, independent batch and/or material testing by a recognised test house are likely to be necessary.

2.2 Principal Contractor (PC)/Sub-Contractor (SC) Procurement

- 2.2.1 The Designated Individual (DI) is responsible for the procurement of materials in accordance with the TWD's specification (BS 5975: 2019, Clause 9.3.1.2(h)). Any organisational procedures should detail the action necessary where equipment procurement is different to that approved. Care should be exercised during 'value engineering' exercises. Any changes must be approved in writing by the TWD, prior to purchase.
- 2.2.2 Ensure product supply is only from recognised sources, e.g. those accredited, with a quality management system, audited by a recognised company, and with clear and unambiguous product markings, material certificates, factory production control, traceability, etc. Ensure there is evidence of product design and/or testing, including records and/or declarations.
- 2.2.3 Processes must be robust and use reasonable care in establishing that the material certificates are compatible with the specification and that the place of manufacture is known. Any substitutions in terms of a material or component specification must be approved in writing by the TWD. If this is not done then - under the CDM Regulations - the Procurement Department will have assumed the role of 'designer' by making the change.



2.3 Temporary Works Equipment (TWE) Suppliers/Manufacturers

- 2.3.1 All suppliers must have had reasonable checks carried out on their quality systems and should be members of recognised trade bodies, etc.
- 2.3.2 Reputable suppliers will always provide instructions for safe use (including training). This must be sourced prior to purchase.
- 2.3.3 Reputable suppliers will always provide product support. If this is not available, then they should not be used.
- 2.3.4 Ensure that you have any appropriate technical data and access to relevant support, e.g. user guides, technical files. This may include test data.

2.4 On Site Pre-Use Checks:

- 2.4.1 Ensure that the product specified is the product used, e.g. 'goods in' quality checks, marking and identification, etc. Ensure that any product has the appropriate certification, e.g. declaration of conformity and material certificates, and documentation, e.g. user manual.
- 2.4.2 Ensure that products are not mixed (unless the TWD approves in writing).
- 2.4.3 Ensure there is a process for dealing with non-conforming product.
- 2.4.4 Only change a product if the alternative has been approved in writing by the permanent works designer (PWD) and/or TWD. Remember anyone changing the specification takes on the responsibility of the TWD.
- 2.4.5 The PC's Temporary Works Coordinator (TWC) should bring matters of concern to the DI that cannot be adequately resolved at site level. The PC's TWC should ensure that adequate checks have been completed to confirm the proposed temporary works have no adverse effect on the permanent works (BS 5975: 2019, Clauses 11.2.2.8 and .9).

Useful references

- **NASC**, Code of practice for scaffolding products
<https://www.nasc.org.uk/information/product-code-of-practice>
- **SCI**, Protocol for reusing structural steel
<http://www.steel-sci.com/assets/downloads/steel-reuse-protocol-v06.pdf>
- **SCI**, Structural steel reuse – assessment, testing and design principles, P427
https://steel-sci.com/assets/downloads/steel-reuse-event-8th-october-2019/SCI_P427.pdf



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