

## Normal Scope of Competence

**Normal** steel construction activities that steelwork contractors should be competent to undertake with their own personnel.

1. Slinging, handling, lifting and positioning steelwork.
  - Steelwork includes fabricated hot rolled and cold-formed steel sections.
2. Aligning, levelling and plumbing steel frames.
3. Securing and bolting up steelwork.
4. Operating the necessary mobile elevating work platforms [MEWPs]
5. Setting out.
6. Acting as a banksman.
7. Caring for and use of lifting tackle:
  - Purpose-made lifting tackle, such as lifting beams and bracings to stabilise frameworks during rearing and lifting, may need to have their capacity proof tested.
8. Use of jacks.
9. Welding and cutting:
  - The use of burning equipment and welding equipment (with or without pre-heat) is "hot work" and particular fire precautions are always needed.
  - The Commentary on the NSSSBC lists factors to be considered when undertaking site welding, of which the six listed below relate to safe practice:
    - Floor by floor completion to give good working areas.
    - Use of light easily erected working platforms.
    - Protection from inclement weather.
    - Careful detailing to ensure downhand welding.
    - Use of details and techniques to avoid the necessity for excessive pre-heating.
    - Provision of temporary means of support and stability until welding is complete.
10. Drilling or reaming using power tools:
  - The use of power tools operated by electricity should follow the advice given in the HSE's PM series of guidance notes.
11. Installing HSFG bolts:
  - If preloaded bolts - previously termed HSFG bolts - are used, there is a possibility for the bolt to break during tightening and for part of the bolt to shoot off (eg when the threads are in poor condition). Personnel should be careful not to stand in line with the bolts or in areas where the parts could fall.
12. Painting:
  - Site treatment can include site blasting as well as site painting. Additional precautions, such as the regular examination of air receivers, may be needed when using equipment powered by compressed air.
  - Additional precautions may be needed where paint coatings are heated by burning or welding operations.
13. Erection of metalwork items such as catwalks or metal flooring
  - The erection of all metalwork items - including railings, balustrades, stairs, walkways, ladders, catwalks, steel flooring of open-mesh or plate - may involve the need to manhandle items.
14. Placing precast flooring:
  - Whilst it is a normal steel construction activity to install precast planks on steel frameworks, the erection of precast concrete frameworks generally is not.
  - The placing of precast planks may result in large point loads, and precautions are needed to ensure that the local and general stability of the part-erected framework is not jeopardised.
  - The sequence of placing the planks needs to be carefully planned to preserve access for lifting and positioning subsequent items.
15. Drilling concrete.
16. Installing expanding/chemical anchors.
17. Guiding site visitors.
18. Refurbishment work:
  - The retention of elements of the existing building usually interferes with the provision of craneage for lifting and positioning operations. Hence there is a greater likelihood of manual handling for positioning.
  - Construction hoists are commonly provided for vertical lifts, and it can be hazardous if long components need to be moved in hoists.

- The route selected for lateral movement needs to take account of the strength of the existing structure and its stability under surge induced by braking the movement of heavy components.
19. Work on a contoured site:
- Dangers associated with operating cranes over contoured ground - especially for crawler cranes travelling under load - are described in CIRIA's *Crane stability on site*.
  - The same precautions apply to the operation of MEWPs over contoured ground.
20. Work on city centre sites:
- Erection in city centres usually takes place on sites that are of a very restricted size, and public access is usually very close - sometimes being through part of the site plan zone. The customary designation of a "sterile zone" - accessible only to the steel contractor's personnel during erection - is often impossible, and site workers can be working underneath other workers. Hence risk, being the potential harm from hazards, increases.
  - It is more common for nets and fan scaffolds to be used on such sites. See BS 8093 *Code of practice for the use of safety nets, containment nets and sheets on constructional works*, BS EN 1263-2 *Safety Nets: Safety requirements for the erection of safety nets*.
  - The proximity of the public and adjacent buildings can also affect choice of craneage, limitations on noise, and permitted hours of working.
21. Connecting to an existing structure:
- There are stability considerations for the designer to consider if connections are needed between a new structure and an existing one, and these determine the safe sequence of work.
  - The site may be traversed by members of the "public" - in the form of the client's personnel working on the site or in the adjacent building. This affects the potential for hazards to cause harm.