

# Before Steel Goes Up: Site Layout and Written Notification

Federal OSHA 29 CFR 1926 Subpart R, primary reference 1926.752

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## WHY THIS TALK MATTERS

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Every steel erection collapse investigation starts in the same place, and it is not the moment the column went over. It starts weeks earlier with concrete that was not cured, anchor rods that were field modified without engineering, a laydown yard that turned to mud, or an erector who started because the schedule said to start.

Subpart R is unusual among OSHA construction standards because it puts specific duties on the controlling contractor before our crew is allowed to set the first piece. Those duties exist to protect this crew. Knowing what we are owed before we start is part of the job.

## WHAT THE STANDARD SAYS

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### Approval to begin steel erection, 1926.752(a)

The controlling contractor must provide the steel erector written notification that the concrete in the footings, piers and walls and the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method of field cured samples, either:

*"75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection."*

The controlling contractor must also provide written notification that any repairs, replacements and modifications to the anchor bolts were conducted in accordance with 1926.755(b).

### Commencement of steel erection, 1926.752(b)

A steel erection contractor shall not erect steel unless it has received that written notification. Verbal approval from a superintendent is not the notification the standard describes.

### Site layout, 1926.752(c)

The controlling contractor is responsible for ensuring, before steel erection begins, that the following are provided and maintained:

- Adequate access roads into and through the site for the safe delivery and movement of derricks, cranes, trucks, other necessary equipment, and the material to be erected, and means and methods for pedestrian and vehicular control.
- A firm, properly graded, drained area, readily accessible to the work with adequate space for the safe storage of materials and the safe operation of the erector's equipment.

Verify the current text of 1926.752 and 1926.755(b) before citing either section in a report, notification letter, or client document.

## WHAT THIS LOOKS LIKE IN THE FIELD

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### Paperwork we should have in hand before the first pick

- Written concrete and mortar strength notification from the controlling contractor, referencing the ASTM field cured sample results.
  - Written notification covering any anchor rod repair, replacement, or modification.
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- Documentation from a qualified person or the project structural engineer where anchor rods were altered.
- Site specific erection plan and sequence, where one is required or used.

### **Conditions we should be walking before the first pick**

- Access roads that will carry a loaded crane and steel trucks in the weather we are actually going to get, not the weather on the day of the walk.
- Crane setup areas that are firm, graded, and drained, with underground utilities, vaults, and backfilled trenches identified.
- A laydown yard sized and located so steel can be shaken out and rigged without double handling into tight spots.
- Overhead power line locations and clearance distances established before any boom swings.
- Pedestrian and vehicular routing that keeps other trades out from under the load path.

### **WHY CONCRETE STRENGTH IS THE LINE WE DO NOT CROSS**

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A column is only as good as what it is anchored to. If the footing or pier has not reached the strength the design assumed, the anchor rods can pull, the pier can cone out, and the column comes over with a connector on it. The failure is not gradual and there is usually no warning.

Anchor rods are the second half of the same problem. Rods that were bent back into position, burned and rewelded, or relocated in the field without engineering approval change the capacity of that connection in ways nobody can eyeball. That is why the standard ties repairs to 1926.755(b) and requires it in writing.

If the notification is not there, we do not start. That is not a preference, it is what 1926.752(b) requires of us as the erector.

### **SCENARIO FOR DISCUSSION**

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The crane is on site, the first load of steel is scheduled for the morning, and the general contractor's superintendent tells the foreman the piers were poured eight days ago and are good to go. There is no written notification and no break test results. Two piers on the east side have anchor rods that are visibly out of position, and a laborer mentions they were straightened with a torch and a cheater bar last week.

- What does 1926.752 require the erector to have before starting?
- What does the torch and cheater bar comment change about those two piers?
- Who has authority on this crew to hold the start, and who do they call?
- How do we document the hold so the delay does not come back on us?

### **WHAT WE ARE DOING TODAY**

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1. Confirm the written concrete and mortar strength notification is on site and filed with the project documents.
  2. Confirm written notification covering any anchor rod repairs, replacements, or modifications.
  3. Walk the access roads, crane pads, and laydown area with the foreman and note anything that is not firm, graded, and drained.
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4. Identify overhead power lines and establish clearance before any boom goes up.
5. Report missing documentation or unsuitable ground conditions to the foreman and the controlling contractor in writing before the first pick.

## DISCUSSION QUESTIONS

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6. What two written notifications does 1926.752(a) require from the controlling contractor?
7. What is the concrete strength threshold stated in the standard?
8. Who is responsible for access roads and the storage and equipment operation area?
9. Can we start on verbal approval from a superintendent? Why not?
10. What would you do if you saw anchor rods that had been field modified?

# Safety Meeting Sign-Off Sheet

Date: \_\_\_\_\_

Job Name: \_\_\_\_\_

Competent Person Name: \_\_\_\_\_

Competent Person Signature: \_\_\_\_\_

Topic: **Before Steel Goes Up: Site Layout and Written Notification**

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