TOOLBOX TALK · CRANES & RIGGING

Crane Setup and Ground Conditions

About 9 minutes to deliver

Most crane accidents are decided before the hook ever moves, by what is underneath the outriggers.

A crane is only as stable as the few square feet under each outrigger pad. Get that wrong and the machine goes over, and nothing that happens afterwards on the hook matters.

WHAT THE STANDARD REQUIRES

1926.1402(b): the equipment must not be assembled or used unless ground conditions are firm, drained and graded enough that — with supporting materials if needed — the manufacturer's specifications for support and levelness are met.

Two things follow that most people miss:

- The controlling entity has to tell you about hazards beneath the setup area that it knows about and you would not: voids, tanks, utilities, backfill.
- If the ground cannot meet it, setup stops. This is not a judgement call for the operator to work round with an extra mat.

WHAT IS UNDER THERE

- Fresh backfill and trench lines. A crane parked over a recently backfilled service run is parked over a void. This is a leading cause of overturns.
- Basements, vaults, septic tanks, culverts, underground parking. A slab that carries traffic will not carry an outrigger point load.
- Slopes and edges. Never set up within the influence line of an excavation — as a rule of thumb, keep back at least as far from the edge as the trench is deep, and get an engineer's answer for anything close.
- Rain. Ground that was firm on Monday is not the same ground on Thursday. Re-check after weather.

MATS AND PADS

- Full outrigger extension unless the load chart has a figure for the intermediate position you are actually using — and you are reading that figure, not assuming it.
- Pads and mats spread the load. Sized for the ground bearing pressure, not for what fits in the truck.
- Level within the manufacturer's tolerance, usually about one percent. A crane a degree out of level loses capacity fast as the boom goes out.
- Tyres off the ground where the manufacturer requires it.

AROUND THE MACHINE

- Barricade the swing radius. The counterweight crushes anyone caught between it and a wall, a stack or another machine — and 1926.1424 requires that area to be controlled.
- Nobody under the boom or the load.
- The load chart is for this machine, this configuration, this radius. Capacity falls off sharply as the radius grows, and the number people remember is always the one at the shortest radius.

ASK THE CREW

- What is under the setup area, and who told us?
- Has anything been backfilled or excavated near where the crane goes?
- Is the swing radius barricaded, and who walks through there?

29 CFR 1926.1402 · 29 CFR 1926.1404 · 29 CFR 1926.1417

v2026-09-08 · https://training.mignasafetysolutions.com/toolbox-talks/crane-setup-and-ground-conditions

ATTENDANCE RECORD

Crane Setup and Ground Conditions

About 9 minutes to deliver · 29 CFR 1926.1402 · 29 CFR 1926.1404 · 29 CFR 1926.1417

Date _____ **Job / site** _____

Delivered by _____ **Company** _____

#	Print name	Signature	Date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

I delivered this talk and determined it was suitable for this crew and this work.

Form supplied by Migna Safety Solutions · v2026-09-08 · https://training.mignasafetysolutions.com/toolbox-talks/crane-setup-and-ground-conditions