

ACE USA Risk Control Services
Crane Outrigger Pads

All Terrain and Mobile Cranes are designed to use their outriggers and outrigger floats to achieve their maximum lifting capacity. Secondary crane pads called blocking or cribbing, provides additional support for the crane and its load. The ground pressure developed by a crane on its outrigger floats can be very high. There may be times when only one outrigger float is taking the majority of the weight of the crane and its load. Since the outrigger float is relatively small in area, it can generate significant pressure on the ground surface.

Generally, if the area in which the crane is to be set-up is firm, level and well compacted a secondary crane pad would not be required. However, many soils and locations on a jobsite cannot withstand these high pressures under a float without failure of the soil. This failure or ground movement under a pad greatly increases the potential for a crane accident. To reduce this exposure, pads or blocking is used to distribute the load over a larger area, thereby reducing the ground pressures exerted on the soil.

The minimum requirements when operating an All Terrain or Mobile Crane with its outriggers extended on firm, stable soil is to utilize the manufacturers outrigger floats. Proactive safety management standards require that All Terrain and Mobile Cranes utilize secondary crane pads on every set-up. This requirement improves upon the minimum industry standards. All contractors should be required to follow this standard.

This requirement is very similar to the standard hardhat ruling, where everyone wears a hardhat while on the project. Even though the industry minimum standard is that a hardhat is required only when an overhead hazard exists.

Developed Ground Pressure example:

Using a typical 65 Ton RT Crane. With outriggers fully extended. Assume the crane's capacity is 65 Tons or 130,000 pounds.

Outrigger size and float size	Developed Ground Pressure* in TSF (Tons per square foot)
3' diameter Outrigger Float Only	9.2 TSF
3'x3' Outrigger Float Only	7.25 TSF
With Outrigger Float and a 4'x4' Pad	4.1 TSF
With Outrigger Float and a 5'x5' Pad	2.6 TSF

* Assumes the maximum load on a single outrigger = 130,000 lbs.

The use of secondary outrigger pads significantly reduces the soil pressure and the potential for a crane accident.

The information contained herein is not intended as a substitute for advice from a safety expert or legal counsel you may retain for your own purposes. It is not intended to supplant any legal duty you may have to provide a safe operation, product, workplace or premises.