

HSEQ Bulletin

Safety advice notice: 47
February 2016



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Ground Conditions and Spreader Pads

Brian Parker discusses ground conditions and spreader pads for MEWPs.

In this month's HSEQ Bulletin we have chosen to discuss 'ground conditions' and 'spreader pads for MEWPs' as some main contractors are unsure about when spreader pads should be used.

Recently one Principle Contractor stipulated that spreader pads should be used at all times, under the outrigger feet of mobile vertical type MEWPs on their site. This is their prerogative, however they then went on to insist that the spreader pads must be supplied by the MEWP hire company, which is where this becomes interesting, as this raises several issues.

Firstly, most T&C's of hire stipulate it is the responsibility of the hirer to supply spreader pads for MEWPs on site. Secondly, hirers must, before selecting any MEWP for work (whether it is wheeled or tracked, designed with outriggers or stabilisers) ensure they make a full assessment of ground conditions to ascertain the risks and whether it is appropriate to use spreader pads. When deciding on the correct machine to reach the intended work task it is important to ask yourself the question... Can the machine actually be positioned in the area you have selected. You must always take into account the point loads imposed by the machine or the dynamic load transmitted to the ground if the MEWP is moving at ground level or at height.

Determining ground suitability can be a very subjective issue. After all at face value the ground may look good and you have seen other vehicles drive over it with no issues. But what you have to take into account with MEWPs is the way in which they transmit their load down through its structure into the ground. Okay, so it may have four wheels and/or outriggers but what is not immediately clear is the point or dynamic loads this may impose on the ground.

Mobile vertical type MEWPs generally transmit their loads evenly downwards, the only variation to this is when the load has been applied to the extending deck when it has been pushed out.

Mobile boom point loads on the other hand can vary as the upper boom structure rotates around the chassis and this can potentially lead to high ground pressures as the boom moves over different wheels. The weight of the machine and the MAXIMUM point loads will GENERALLY be indicated by a decal on the machine chassis. Caution must be applied here as manufacturers use different calculations (KGs/cm², daN, Pounds/cm³ etc...) so you may have to convert and calculate accordingly.

Brian Parker, our Business Development Manager, Technical Support, is the sub group Chairman of IPAF's 'Spread the Load' working group, which is working under the direction of the IPAF UKCC (UK Country Council).

He has now been tasked with updating the IPAF guidance to bring clarity and standardisation to the industry.

His work will also involve ensuring that the guidance also considers wheeled and tracked MEWPs.

Ground Conditions and Spreader Pads

Therefore before the suitability of the ground can be determined, information on the ground on which the MEWP is to stand, must be risk assessed. Ground assessment can be obtained from a number of sources such as:

- A full site inspection
- Ground investigation report for the site
- A comprehensive ground investigation for the MEWPs chosen location
- Either a blanket maximum permissible bearing pressure for the whole site or part of the site where you intend to position the MEWP from a competent source
- Highways authority information for roads
- Owner of premises
- Utility location plans.

Typical ground conditions may include*:

- Surface type – such as poor un-compacted ground, footpath paved areas, tarmac or concrete
- Potential for the surface to degrade - such as wearing or adverse weather effects
- The lay of the land - slopes, gradient or side sloping ground
- Other features such as – buried or surface services, trees, embankments or nearby excavations

*This list is not exhaustive.

These examples are only some of the considerations you must take into account. If the ground is suitable or can be made suitable by being excavated, then back filled with the appropriate aggregate and compacted, then you have to consider what type and size of spreader pad would be required. Clearly this depends on the weight of the machine and the point loads (details which can be supplied by the hire company). Armed with this information, contractors need to approach a supplier of spreader pads to check that they are getting the appropriate size and type – spreader pads can range in size, thickness and shapes (from square to round or rectangular).

To ensure that hirers are adequately resourced they could obtain a range of spreader pads that could meet all their requirements but they must purchase the correct type and from an approved supplier. Don't forget, spreader pads need to be inspected prior to use and makeshift spreader pads should Never be used.

Some confusion also exists around the terminology of the part of the MEWP that is supported by the spreader pads... common names are stabilisers, jack legs and outriggers but did you know that there is no common definition that exists for each type across the various UK, European and ANSI standard groups.

Key points:

- *Make a full assessment of the ground conditions.*
- *Take into account the point loads imposed by the machine and the dynamic load transmitted to the ground if the MEWP is moving at ground level or at height.*
- *Make sure the spreader pad is the appropriate size and type.*
- *Inspect spreader pads before use.*
- *Take into account additional factors such as the weight of the operator, materials and fuel.*

Ground Conditions and Spreader Pads

IPAF has a ready reckoner for truck mounts where you input the weight of the vehicle and it will calculate the size and type of spreader pad that is required. IPAF is now working on extending the ready reckoner so that it also includes all MEWPs, wheeled and tracked machines.

Further points to consider are that machine manufacturers need to standardise the measurement units they use in their manuals and include data for stowed machine travel. When considering the weight of a machine it is also important to take into account additional factors such as the weight of the operator, materials and fuel.

This updated guidance will be available in early 2016 – so watch this space!

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