

Tyre handling workshops

Loading and unloading vans



Photo courtesy of ATS Euromaster Ltd

The problem

Loading and unloading small delivery and fitting vehicles is a common activity. Unloading deliveries can involve a significant amount of lifting and carrying, especially if the vehicle cannot get close to the storage area. Many vehicles do not have suitable ramps and workers have to manually lift out tyres or use a plank as a makeshift ramp. Planks are probably not available outside the depot. Carrying domestic car tyres by hand is a low to moderate risk activity. There is a more serious risk in carrying larger, commercial and agricultural tyres. Potential risks include:

- climbing in and out of the van frequently;
- twisting the body during the lift;
- climbing into and working in spaces with restricted head room.

The solution

Choose vehicles with a low and level load floor. Make sure you can fit handling aids, such as ramps, that can stay in the vehicle and be used away from the depot. A ramp with a slope of 30 degrees or less is recommended. For smaller commercial tyres the worker may be able to stay at ground level and roll the tyre up the ramp. If you handle larger commercial tyres, it is best to use a wide ramp and walk the tyre up. Some large waste tyres can be in a very poor condition and need to be dragged into the vehicle. For this job a wide ramp and sufficient headroom are beneficial.

Smaller vans and pickup trucks can handle the heaviest commercial vehicle tyres using lightweight side or tail lift devices. Some handling arms can also be used for inspection and repair work, because the tyre can be rotated.

Risk assessment

The MAC tool does not cover pushing and pulling tasks. So it is more appropriate to use the risk assessment filter guidelines in HSE's guidance *Manual handling. Manual Handling Operations Regulations 1992 (as amended) Guidance on Regulations L23* (Third edition) HSE Books 2004 ISBN 978 0 7176 2823 0.

Load	The weight of tyres that are rolled ranges from about 25 kg up to 170 kg. These are not lifted or supported. If the tyre falls over, the load lifted to get it upright is up to half the tyre weight.
Frequency	The loading operation is performed daily and only a limited number of the large tyres are loaded each day.
Pushing force	The estimated overall pushing force required for large tyres up to 100 kg will typically be between 28 and 50 kgf on a 30 degree slope, and 17-34 kgf on a 20 degree slope. For the largest tyres, the overall pushing force may be as high as 85 kgf on a 30 degree slope.
Postures	When rolling large tyres, the posture is upright.
Grip on the load	The tyres are clean and dry, the tread on agricultural tyres provides a reasonable grip for pushing.
Floor surface	The warehouse floor is clean and even. However, the ramp may be used, which can be steep or unstable.
Duration	About 10 minutes per van. Warehouse-based workers may be involved intermittently for around 2 hours daily.
Other environmental factors	Loading work is done inside the warehouse. The doors can be closed to maintain warmth in winter. Housekeeping and lighting are good.