



# Safe unloading of steel stock



# Introduction



This leaflet offers practical safety advice to everyone involved in the delivery and unloading of steel stock, and will be particularly useful for stockholders and employers who receive steel at their premises, as well as those delivering it. It highlights the planning that should take place to ensure that steel can be safely unloaded on site, as well as the practical precautions necessary during the unloading procedure.

The information contained in this leaflet is taken from *Load safety*, a guide produced by the National Association of Steel Stockholders (NASS) in conjunction with the Health and Safety Executive (HSE). *Load safety* provides further detailed information for stockholders on the loading, transportation and unloading of steel stock (see *Further reading*, page 9).

## Hazards

Every year people are seriously injured or even killed while unloading steel stock from delivery vehicles. The main types of accidents that occur include:

- falls on and from vehicles (including falls when climbing on and off);
- people being struck by a load during mechanical handling (for example when using a crane or fork-lift truck). This often leads to the victim falling or being crushed between the load and the vehicle;
- people being struck by a load falling from a vehicle or a load moving unexpectedly while on the vehicle;
- people being struck by vehicles in the delivery yard, often during reversing;
- people being injured during manual handling operations (often when a load is too heavy or sharp or otherwise awkward);
- people injuring themselves when jumping off a delivery vehicle.

Everyone involved in unloading vehicles must take precautions to reduce the risk of accidents happening. This leaflet gives details of some of the more common precautions that need to be taken. In particular, unloading should never be carried out unless all the risks have been assessed, even if this results in a delay until it can be done safely. Such delays can be avoided through proper planning, communication and co-operation between supplier and customer.

## Planning for safe unloading

Many of the accidents that occur during delivery of materials at customer premises could be avoided if plans for the unloading operation were made at an early stage, ideally at the time an order is placed.

When taking an order, the supplier should obtain the basic information needed to plan the delivery, such as:

- What lifting equipment is available on site (overhead/mobile cranes, fork-lift trucks etc)?
- What is the capacity of the lifting equipment on site?
- Where will unloading take place?
- What access restrictions apply (maximum size of vehicles etc)?
- Are there any other special requirements?

This information, along with details of the material to be delivered, can be recorded by the sales team on existing forms modified for the purpose. Often this information will need to be provided only once, ie the first time steel is supplied to a particular customer.

The supplier and the customer should agree on the equipment and systems that will be used to ensure the load is delivered safely. In many cases this agreement needs to be documented as a **written delivery plan**, taking into account the types of material being delivered and the facilities available for



unloading it. Consideration at an early stage of the precautions outlined in this leaflet should avoid problems on site later on. Both parties should keep each other informed of any significant changes that may introduce new risks, so that the delivery plan can be revised if necessary.

The supplier and the customer must also ensure that there are adequate means either on site or accompanying the delivery to unload steel safely. The delivery driver should not arrive on site without any knowledge of the conditions to be expected there.

## Safe unloading on site

The delivery plan and any other paperwork sent with the load should be checked by the driver for special delivery instructions given at the time of order. The customer receiving the goods must also be familiar

with the delivery plan and any special conditions that may apply.

The customer should also liaise with the delivery driver throughout the unloading operation. This should always be carried out under the supervision of a competent person who is aware of the hazards present and the necessary precautions, as described in the delivery plan (see *Planning for safe unloading*, page 3). This person should be appointed by the customer and be responsible for managing and supervising the unloading operation. The delivery driver should not be left to make key decisions, for example where to leave the load. The driver should liaise with the customer to resolve any difficulties which are not anticipated in the delivery plan, and which may affect the safe delivery of the load. Where these cannot be resolved, it may be necessary to delay delivery until a safe means of unloading can be provided.

## Site conditions

The area where material is to be unloaded must be suitable for this to be done safely. It should be checked before unloading begins to make sure it is safe to proceed.

Look for hazards such as:

- the suitability of the ground for the vehicle (for example whether it is flat and firm) and load stability;
- any obstructions in the unloading area (including parked cars);
- pedestrians in the unloading area (people should be kept clear unless they are immediately involved in the unloading operation).

The vehicle itself should be checked to make sure that it can access the unloading area safely, taking into account any material which is overhanging the rear of the vehicle or stacked above the cab height. Take particular care when reversing.

## Access to the vehicle

Falls from vehicles can result in serious injuries and fatalities. Even falls of less than one metre can prove fatal. Only those people who need access to the vehicle for unloading should be allowed onto it. In many cases it may be possible to unload the vehicle without anybody getting on. The delivery plan should minimise the amount of time that anyone is on the vehicle.

The load should be inspected from the ground if possible before anyone gains access to the vehicle. Access should normally be via steps, a loading gantry,

or some other built-in means. Otherwise, it should be from the front of the vehicle and around the headboard, never via the sidebars. No one should ever jump onto or off a vehicle. The deck of the vehicle should always be inspected to ensure that it is safe to walk on, and that there are no holes in the bed that may lead to tripping.

## Inspecting the vehicle and load

Inspect the load before unloading begins, to make sure it has not moved in transit. Similarly, check that any supporting timbers have not broken, as this may make the material unstable or likely to fall when the restraining straps are removed.

If the load has moved or become unstable in some way, consider how it can be removed safely. Access to the vehicle may be dangerous in these circumstances as the load could move unexpectedly. It may be necessary to take the vehicle to another location where there is sufficient load-handling equipment to remove it safely. Do not allow unstable loads to 'tip' or fall onto the floor.

## Means of unloading

### Do:

- ensure that the unloading operation has been properly planned in advance, taking full account of relevant load characteristics and site facilities;
- keep the material under control at all times and do not allow it to roll off the vehicle;

- ensure the vehicle brakes have been applied before unloading begins.

### **Don't:**

- tie the load to an object to drag it off the vehicle;
- 'bar off' loads (see *Manual unloading*, pages 7-8).

Where unloading cannot be done safely, it may be necessary to leave the load on the vehicle until safe unloading conditions can be provided. This may mean arranging for lifting equipment to be brought onto site.

### **Overhead/mobile cranes**

Cranes are commonly used to unload material. The following points must be considered as part of your risk assessment when using them:

- Select and use lifting equipment and lifting accessories (tackle) which are suitable for the task. In particular, do not exceed their safe working load;
- Drivers or anyone else attaching lifting accessories to material ('slinging') must be away from the load before it is lifted, preferably off the vehicle. Never stand on a load once it has been attached to lifting equipment;
- Do not use banding wire or straps to sling material;
- Where single-use slings are used to offload material, these must be disposed of, to prevent them being reused;
- The load will often need to be loaded onto suitable timber bearers so that



there is enough clearance to get a sling (or the forks of a fork-lift truck) under it when unloading;

- The person in control of the lifting equipment must ensure that the lifting operation can be carried out safely before work starts;
- Workers operating the crane should have been trained in its safe use and safe slinging techniques (see *Further reading*, page 9, for details of relevant guidance and British Standards).

### ***Vehicle-mounted cranes (lorry loaders)***

These cranes can be of particular use for unloading at a site where no other lifting equipment is available. They should only be operated by a trained and competent person. People who have been trained to use overhead cranes should not assume that this makes them competent to use vehicle-mounted cranes as well. The precautions listed above for overhead cranes also apply to vehicle-mounted types.

### ***Fork-lift trucks***

When using fork-lift trucks for unloading, it is essential to consider not only the lifting capacity of the truck but also the size and spread of the forks and the ground on which the truck is being used. Long items, such as lengths of bar or tube, may fall off if they are not balanced properly on the forks and, in particular, if the forks are too close together. Also, they may fall off the forks if the truck is driven too quickly round corners or over rough ground.

Attachments such as sideshift forks and load clamps can allow long items to be handled safely. Fork-lift truck drivers must be trained and competent. As well as being trained in the operation of trucks and their attachments, drivers should also be competent to handle routinely supplied long items. For non-routine items, a lifting plan, formulated and supervised by a competent person, will probably be necessary.

It may be impossible to get the forks sufficiently under the material in the centre of the delivery vehicle to allow the load to be manipulated safely into a position where it can be lifted. Under these circumstances the load should not be lifted. To avoid this problem, the delivery plan should consider how to position the load on the vehicle, so that it can be unloaded safely.

When fork-lift trucks are being used, the driver of the delivery vehicle must stand away from the load while it is being lifted or manipulated. No one should ever stand on a load to balance it on the forks.

### ***Manual unloading***

Manual unloading operations which involve a risk of workers being injured must be avoided where it is reasonably practicable to do so. In most cases, manual handling of loads can be avoided and will need to be, as most deliveries of steel are too heavy and bulky. If it is not reasonably practicable to avoid manual handling, an assessment of the manual handling operation must be carried out and steps must be taken to reduce the risk of injury to the lowest level reasonably practicable.

Loads that may be suitable for manual unloading (for example small amounts of lightweight material) should be identified as such in the delivery plan. Goods should then only be unloaded manually if this can be done safely. Manual handling

should not be seen as an option merely because no other means of unloading is available. The plan should specify the precautions to be taken to reduce the risk of injury, and should include sufficient instructions for those people doing the work. If the risk assessment shows that a load cannot be unloaded safely by manual means, and there are no alternative ways of unloading, the operation will have to be abandoned and the load returned to the supplier.

**A decision to unload manually should not be taken by workers at the delivery point - it should always be specified in the delivery plan, and then only following a suitable and sufficient assessment identifying the precautions needed to reduce the risk of injury to the lowest level reasonably practicable.**

Employers should refer to the detailed HSE guidance on manual handling (see *Further reading* on page 9).

### ***Barring off***

Barring off is not considered to be a safe means of moving steel. This technique can cause a person to overbalance forwards, or the lever may come loose and the person fall over backwards. In addition, it is impossible to control the movements of the load. Fatal accidents have occurred when people barring off have fallen from the vehicle, sometimes with the load falling on top of them. **Alternative means of**

**unloading to barring off should be sought in all cases.** Proper planning of unloading and good communications between supplier and customer can enable barring off to be avoided.

## **Legal requirements**

Employers have duties under the Health and Safety at Work etc. Act 1974 to ensure, so far as is reasonably practicable, the health and safety at work of their employees and others who are not their employees (such as drivers). Under the Management of Health and Safety at Work Regulations 1999, where two or more employers share a workplace, even on a temporary basis, they must co-operate with each other to make sure that they both comply with their legal duties.

These Regulations also require employers to carry out a risk assessment of the hazards involved and to identify the measures needed to comply with other health and safety legislation.

The Manual Handling Operations Regulations require employers to avoid hazardous manual handling operations if this is reasonably practicable and in all other cases to reduce the risk of injury to the lowest level reasonably practicable .

The Lifting Operations and Lifting Equipment Regulations require employers to ensure that all lifting operations, such

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as unloading of steel stock, are properly planned by a competent person, appropriately supervised, and carried out in a safe manner. Lifting equipment needs to be suitable for the use to which it is being put, properly maintained, marked with its safe working load, and periodically thoroughly examined and inspected.

## Further reading

*Load safety* available from NASS, Gateway House, High Street, Birmingham B4 7SY  
Tel 0121 632 5821

*Safe working with overhead travelling cranes* PM55 HSE Books 1985  
**ISBN 0 11 883524 6**

*Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance* L22 HSE Books 1998  
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*Workplace transport safety* HSG136 HSE Books **ISBN 0 7176 0935 9**

British Standard BS 7121:1989 *Code of practice for safe use of cranes*. Part 1 - General; Part 4 *Lorry loaders*

British Standard BS 5744:1979 *Code of practice for safe use of cranes - Overhead/underhung travelling and Goliath cranes etc*

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## Further information

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**This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

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