



UK Steel



Best Practice Document for the **Safe Delivery and Unloading of Steel Products**

Guidance notes for companies
and individuals involved in the
delivery and unloading of steel
Issue 2: February 2014

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This document is based on joint work by NASS (the National Association of Steel Service Centres) and UK Steel (representing the steel producers and steel converters in UK). The Health and Safety Executive (HSE) and Wolverhampton City Council (representing Local Authorities in the Local Authority Partnership Scheme with NASS) were consulted during the preparation of this guidance. The information and guidance within the document represents best practice which may go further than the minimum you need to do to comply with the law. The document updates and supersedes the information in HSE guidance 'Safe Unloading of Steel Products' (INDG 313).

1. Foreword

This document offers practical safety advice to everyone involved in the delivery and unloading of steel, and will be particularly useful for steel mills, stockholders and steel users 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.

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

- Falls from height
- Crush injuries

- Slips and trips
- Trapped fingers

Everyone involved in the loading of steel, its delivery and unloading vehicles must take precautions to reduce the risk of accidents happening. This document 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. Such delays can be avoided through proper planning, communication and cooperation between supplier and customer.

2. Planning for Safe Delivery

"Safe delivery" means proper control of the risks to the health and safety of persons who might be put at risk by the delivery process. It is the joint responsibility of the supplier, contract haulier (where the supplier is not the haulier) and customer. Deliveries must be properly planned, with the supplier and customer agreeing in advance the management arrangements, plant, equipment and systems of work to ensure safe delivery. In many cases this agreement can be documented as a **written Delivery Plan**, which, where necessary, can include specific plans for loading. 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. In the non-ideal case where it is not possible to produce a delivery plan the driver should be issued with a delivery plan checklist that will enable him to carry out an in situ assessment of the risks involved and the appropriate action to be taken (see example Appendix 1). This in situ assessment needs to be retained by the driver and signed off by the receiving party.

3. Fundamentals of Delivery Planning

Delivery planning begins with a proper assessment of the associated hazards/risks by the customer. The customer or receiver of the goods should carry out an analysis of reported accidents and significant risks associated with steel deliveries, in terms of the main causes of injury which are described in the body of this document.

When a customer places an order with a supplier, a supply agreement is entered into. Ideally this agreement should make it absolutely clear to both parties where their safety responsibilities begin and end. In all cases, the control of risk and avoidance of accidents will necessarily involve full co-operation between all parties involved in the supply process i.e. supplier, customer and haulier. The supplier should ensure that a competent person (such as a suitably trained transport manager, transport supervisor or driver) prepares a Delivery Plan, which ensures that all hazards identified by the customer are known to the driver. The format for a written Delivery Plan should be left to individual suppliers.

For the purposes of planning for safe delivery, the 'Supply' process is taken to comprise four stages:

- Order placement by the customer
- Loading
- Transportation
- Delivery

The Delivery Plan should not only be based on the types of steel, (i.e. plate, rod, bar, tube, coil, sheet etc.), dimensions, weight and properties of material ordered, but also take account of the following information obtained from/agreed with the customer:

- delivery address;
- any limitations on delivery times;
- any specific requirements for off-loading need to be specified in the delivery plan e.g. SWL of lifting equipment at the customer site, load arrangement to enable access for the lifting equipment
- site access;
 - transport restrictions (maximum size of vehicles, if articulated vehicles are acceptable etc.);
 - route to unloading facilities
 - site-specific hazards and risks to be aware of such as speed limits, reversing constraints, danger areas;
 - instructions to be followed by the driver upon arrival at the delivery point;
 - roles and responsibilities of vehicle driver in respect of the delivery process, e.g. unshooting, load checking, unloading, assistance with securing lifting equipment to the load;
 - the need to wear high visibility clothing and personal protective equipment (PPE) see below for minimum mandatory PPE requirements;

Hard hat with chin strap

Ear and Eye protection

Safety gloves

Safety footwear

High visibility vest

Plus any other PPE specifically stated in the delivery plan

- details of person(s) responsible for supervising and for unloading the vehicle, and the supervision arrangements for the driver when at the customers site;
- load configuration on the vehicle and unloading sequence; this is especially important when undertaking multi-drop loads (see Appendix 2);
- if the delivery driver is required to participate in the unloading operation;
- if assisting unloading is part of the driver's responsibilities, the arrangements for safe delivery will include:
 1. setting up of an exclusion zone round the vehicle prior to and during unloading;
 2. arrangements for safe access to the vehicle/load;
 3. lifting/handling plant and equipment (including attachments) to be used;
 4. the capacity of the lifting equipment on site to be used for off-loading the specific order;
 5. arrangements for safe lifting/unloading of material;

6. specific requirements for safe slinging or handling of the load;

7. any manual handling requirements;

- if unloading is not part of the driver's responsibilities, the details of a refuge or safe location from which to view the unloading operations
- if there are any other special requirements.

This information, along with details of the material to be delivered, can be recorded by the sales team of the supplier. Often this information will need to be provided only once, i.e. the first time steel is supplied to a particular customer. In particular the customer and the supplier should agree the point at which the goods will become the customer's responsibility in terms of safety. If no point of transfer of responsibility for safety is agreed at the time of order placement, it will be assumed that the delivery is completed when the delivery vehicle has arrived at the delivery address, has been parked and is presented for unloading. The supplier needs to advise the haulier of the point of transfer of safety responsibility.

When the supplier and the customer have agreed on the equipment and systems that will be used to ensure the load is delivered safely, it can be documented as a **Written**



Delivery Plan. An adequate Written Delivery Plan is a practical way of demonstrating that a suitable and sufficient assessment of all the risks has been carried out, involving the close co-operation of all those with legal responsibilities e.g. suppliers, customers and, where appropriate, contract hauliers.

Consideration at an early stage of the precautions outlined in this document should

avoid problems on site later. Both parties must keep each other informed of any significant changes that may introduce new risks. For example, customers must inform suppliers of the breakdown or lack of availability of unloading equipment, whilst suppliers need to inform the customers if an alternative size or type of vehicle is being used for the delivery, so that the Delivery Plan can be revised if necessary.

4. Loading and Load Security

Loads must be built and secured sufficiently to allow the lorry driver to safely perform emergency braking or emergency evasive manoeuvres, if the need arises, without the risk of the steel coming off the vehicle or coming through the headboard. The forces involved and the method of calculating the restraint is set out in the European Standard EN 12195. Practical guidance on the securing of steel products for safe transport by road is set out in section 8 of the Department for Transport's Code of Practice "Safety of Loads on Vehicles"; the Health & Safety Laboratory's "Transport Safety – An Operator's Guide to Safe Loading and Transport"; and the European "Best Practice Guidelines on Cargo Securing for Road Transport"¹. More detailed Load Restraint Guidelines² for steel products have been produced by Tata Steel in Europe, an example of which can

be seen in Appendix 2.

It is essential that the vehicle planned to transport a load should be suitable for the job and designed to ensure that the load can be transported safely given the nature of normal road conditions. The vehicle dimensions and structural integrity (including that of the headboard) should be of adequate design. In the case of headboards these should be rated in line with EN 12642. Furthermore, safety equipment such as straps, chains, lashing points, load "retention posts" (when transporting coil), or "side posts" (when transporting sections, tubes and other long products) must be capable of restraining the load. If webbing straps are used to secure steel products, the use of proper edge protection is essential to prevent the straps from being cut by the steel.





A picture of material safely loaded up to the headboard and secured with webbing straps and suitable edge protection.

Note: if this product was oiled, it would also need straps to prevent it sliding backwards.

*Photo courtesy of
TATA Steels Europe*

It is the responsibility of the loaders to check that the trailer is loaded correctly and the driver to ensure it is adequately secured and safe for transportation as per the delivery plan. It is also the driver's responsibility to decide if the load is safe to be taken on the public highway, and to check the security of the load en-route if necessary.

It is strongly recommended that steps are taken to ascertain the competency of the party transporting the load, to ensure that appropriate training of the driver has been undertaken in the safe securing of the load and that the relevant insurances are in place. The compulsory driver CPC can be used to train drivers specifically for the safe loading and securing of steel products. It is recommended that drivers working with these products attend such courses. Vehicles must be loaded in such a way that they can be safely unloaded at a customer's premises, as well as meeting any requirements for safe transport on the public highway.

The information provided by the customer at the time of order acceptance will assist planning of the loading arrangements. Determination of the sequence of loading and the load configuration is likely to require close co-operation between the supplier, haulier and customer to ensure stock can be safely unloaded at the delivery address. Packaging and banding needs to be of sufficient quality and specification so that the packaged product is capable of safe transportation. The consideration of safety should take account of the possibility of movement sideways, forwards and backwards. Certain types of material (for example oily products) may need special consideration i.e. secondary headboards, bespoke dunnage, load restraint systems e.g. load choker (Appendix 3).



4.1 PROJECTING LOADS

Where loads are carried which extend forward over the cab or rearwards from the load bed of a vehicle, extra care should be taken to ensure that it is adequately secured and correctly marked in accordance with "Constructions and Use of Vehicles Regulations". The use of Marker boards is a specific legal requirement, dependant on the length of the projection, and you should ensure that any projection is clearly visible to other road users and pedestrians. If you are uncertain about these requirements you should check the guidance provided by the Department of Transport or transport related associations such as the Freight Transport Association (FTA) or the Road Haulage Association (RHA).

When long lengths are carried over the cab particular attention should be paid to the weight of the material overhead. Overhead loads affect the handling of the vehicle by raising the centre of gravity

which in turn can affect the cornering and braking characteristics of the truck. Also, some forward projecting loads can be obscured from the drivers vision and drivers can and do forget that they are carrying a forward facing projection. Therefore, when drivers are carrying such loads, they should be extra vigilant and cautious when approaching corners, roundabouts, junctions etc. so that the vehicle does not become unstable and out of control. Also, that a forward projecting load is not sticking out into the road when stopped at a junction which may be struck by a passing vehicle.

For these reasons, if carrying overhead or projecting loads as part of a multi drop load, wherever it is possible to do so, they should be delivered and off loaded at the very earliest opportunity. Precautions that must be taken when transporting projecting loads are illustrated in Appendix 4.

5. Loading/Unloading Site Specific Considerations

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. The following should be considered:

- pedestrians in the unloading area (people should be kept clear unless they are immediately involved in the unloading operation and are in a safe place).



Clearly identify NO GO areas for pedestrians



The use of barriers to delineate the unloading exclusion zone is recommended



Clearly identify GO areas for pedestrians

- the suitability of the ground for the vehicle and load stability (for example whether the ground is flat and firm). Where vehicles can only be parked on a slope, the parking brakes should be applied and the vehicle left in gear and if appropriate wheel chocks should be used.
- any obstructions in the unloading area (including parked cars, overhead cables and pipes).
- 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.

If the driver is to be involved with the unloading operation the ultimate decision as to proceed is theirs.

Photo's courtesy of TATA Steels Europe



6. General Precautions to be taken when Loading and Unloading

The driver is required to inspect the load before unloading begins, in order to ensure that it has not moved in transit. The load should be inspected from the ground if possible. In addition, a check should be made that any supporting dunnage has not moved or been damaged, as this may make the material unstable or likely to fall when the restraining straps are removed. In addition where trucks or trailers have drop down sides the load must be checked to ensure it is secured before lowering them.

If, on inspection, it is found that the load has moved or become unstable in some way during transportation, unloading should not take place until a safe method of removing the load has been determined by staff who are competent to make such a decision. Access to the vehicle may be dangerous in these circumstances as the load could move unexpectedly. It may be necessary to take the vehicle slowly and under constant supervision to another location on the site where there is sufficient load-handling equipment to remove it safely. Do not allow unstable loads to 'tip' or fall onto the ground unless it has been decided by a competent person that this is the only safe option for removing the load. In this case an extended appropriate exclusion zone has to be established. The vehicle must not be taken back

onto a public road until the load has been made safe. If a load is found to be unstable when the vehicle is on a public highway, an exclusion zone should be established around the vehicle. It is recommended that the police should be informed and a suitable course of action agreed with them.

It is preferable to eliminate the need for reversing vehicles for loading and unloading (e.g. by the use of one-way systems) and particular attention should be paid to this aspect when sites are being redeveloped or new sites created. Where reversing is unavoidable, the risks should be reduced by a combination of controls appropriate to the circumstances of the site. It is good practice for vehicles to be fitted with suitable reversing aids such as CCTV and reversing alarms emitting audible warnings. It is accepted that such devices are not currently fitted on all vehicles used for the delivery of steel products, although it is the longer term aim to encourage use of on-board CCTV or other rearward hazard alerting devices.

People should stay clear of reversing areas. You should only consider the use of a banksman where there is no other way to control reversing risks. The banksman should be used to guide the driver and to prevent access of pedestrians into the zone where reversing is taking place. The banksman should be properly

trained in, and use of, the hand signals detailed in the Health and Safety (Safety Signs and Signals) Regulations 1996 or similar defined signals. Banksman and drivers should clearly agree the system of signalling before the driver starts to manoeuvre the vehicle. The banksman needs to be visible to the driver at all times, and should wear high visibility clothing such as a reflective vest. The driver should be instructed to stop immediately if the banksman disappears from view. It is important that the banksman should stand in a safe position where he can guide the reversing vehicle without coming into contact with it.^{2 3}

When the vehicle is in the correct position for loading/unloading the vehicle handbrake must be applied. Numerous fatalities have occurred from run-away vehicles when loading and unloading steel products and it is recommended that all vehicles should be fitted with hand-brake alarms as they can be a useful addition to safety. However, if they fail they usually do so to danger and should not be relied on as the primary means of safety for handbrake use. Where fitted, they should be checked for faults at regular intervals.

During unloading:

- ensure the vehicle brakes have been applied before unloading begins;
- keep secondary load restraints (such as side posts) in position during unloading;
- keep the material under control at all times and do not allow it to roll off the vehicle;
- don't tie the load to an object to drag it off by moving the vehicle;
- don't 'bar off' the loads (see later comments on Manual unloading – section 7.4)

If the load becomes unstable in some way during unloading, unloading should stop immediately and the relevant competent person should be informed. Access to the vehicle may be dangerous in these circumstances as the load could move unexpectedly and a larger exclusion zone should be imposed around the vehicle. A decision to recommence unloading should only be made by staff who are competent to make such a decision. In all cases where unloading cannot be done safely, it may be necessary to leave the load on the vehicle until safe unloading conditions can be provided.

Where drivers and (un)loaders have to gain access to the load carrying platform of the vehicle, a suitable means of access which facilitates three points of contact should be provided, preferably fixed to the vehicle (see examples



6. General Precautions to be taken when Loading and Unloading ...continued

in Appendix 5). It should be of sound construction, properly maintained and securely fixed, (and ideally slope inwards towards the top), with horizontal rungs that provide plenty of foothold be mandatory. Suitable fall prevention and or restraint systems should be employed to prevent or mitigate falls from height (see examples in Appendix 6).

The following need careful consideration:

- The need for people to go up onto the load carrying platform of vehicles should be minimised. It is recognised that the elimination of the need for access onto the vehicle or trailer may only be possible in limited cases, for example when offloading coils of strip or when steel has been loaded on pallets;
- Only those people who need access to the vehicle for unloading should be allowed onto it. No one should be present on the bed of the vehicle or trailer when loading or unloading is taking place, or if the load is being redistributed. If this cannot be avoided (due to physical constraints at the loading/unloading point) then a thorough risk assessment must be carried out, appropriate control measures identified and a safe system of work developed and followed.
- The Delivery Plan should aim to minimise the amount of time

that anyone is on the vehicle;

- Where people have to climb onto a vehicle or trailer, access should be via a well constructed ladder fixed to the vehicle, or by steps, or a loading gantry provided by the site operator;
- No one should ever jump onto or off a vehicle;
- The load carrying platform of the vehicle should always be inspected to ensure that it is safe to walk on, that there are no holes in it that may lead to tripping, and that it is not slippery (e.g. due to water, oil, grease or ice);
- Fall restraint devices designed to reduce the risk of falls from vehicles, built in edge protection on trailers i.e. handrails of sufficient height or mobile access platforms, should be used where reasonably practicable.

If the driver is not required to take part in the unloading operation, or if he has partly assisted with unloading by attaching slings to the steel products and has returned to ground level, then he should move to a safe location whilst the unloading operation is completed. This location may be a position where he can observe the unloading operation from a safe distance. He should not remain in the vehicle cab nor return to it whilst unloading operations are taking place.

7. Operation and Control of Lifting Equipment During the Unloading Operation

Loading and unloading will normally involve lifting and/or manual handling operations. These must be planned and adequately supervised by the employer of the person carrying out the work, in accordance with the requirements of the Lifting Operations & Lifting Equipment Regulations ("LOLER")^{5 6} and/or the Manual Handling Operations Regulations.

7.1 OVERHEAD/MOBILE CRANES

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

- The person who is responsible for the lifting operation and control of the lifting Equipment (as identified in the delivery plan) must ensure that the lifting operation can be carried out safely before work starts.
- Select and use lifting equipment and lifting accessories (tackle) which are suitable for the task. In particular, do not exceed their safe working load;
- A safe exclusion zone should be established around the vehicle and lifting equipment, prior to commencing the operation;
- Drivers or anyone else attaching lifting accessories to material ('slinging') must under no

circumstances be present on the bed of the vehicle or trailer when loading or unloading is taking place, or if the load is being redistributed.

- Do not use the banding wire or straps to lift the 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 dunnage i.e. even sized hardwood timbers so that there is sufficient clearance to get a sling or chains around and under it (or the forks of a fork-lift truck under it) when unloading;
- Workers operating the crane should have been trained in its safe use and safe slinging techniques (see Further Reading, for details of relevant guidance and British Standard BS7121 – Code of practice for the safe use of cranes).

7.2 VEHICLE-MOUNTED CRANES

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.

7.3 FORK-LIFT TRUCKS AND SIDE-LOADERS

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 and over rough ground. Material such as small bars and sections may need to be bundled to prevent the load from shifting or falling off the forks. Attachments such as sideshift forks and load clamps can allow long items to be handled safely. Fork-lift truck and side-loader drivers must be trained and competent. As well as being trained in the operation of trucks/loaders 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 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 a side-loader is being used, the load on it must be at rest on the platform of the sideloader before the vehicle is moved. When fork-lift trucks or side-loaders 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.

It may be necessary for ancillary lifting equipment to be used when unloading with fork lift trucks – see further guidance in HSG 246^{3 4}.

7.4 MANUAL UNLOADING

Manual unloading operations which involve a risk of workers being injured must be avoided where it is reasonably practicable to do so. The unloading task should be mechanised and in most cases, manual handling of loads can be avoided. 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^{4 5}.

7.5 BARRING OFF

This activity must not be undertaken under any circumstances as there is a high risk of serious injury to persons on delivery vehicles and to other persons in the vicinity of the vehicle. Historically, barring-off (using levers such as metal bars, to physically lever stock off a delivery

vehicle when small quantities are delivered, or when suitable equipment for off-loading larger items was unavailable) has been carried out but this is not a safe method of offloading. Barring-off has led to numerous serious and fatal accidents. Operators cannot fully control the procedure and are at risk of crushing particularly when unexpected stock movement occurs on the vehicle. Fatal incidents have also occurred when the operator falls from the vehicle due to loss of balance in the barring-off process. Other persons are at fatal injury risk when the stock falls from the vehicle and crushes or strikes them. Other injury risks come from manual handlings issues.

7.6 FEEDBACK AND REVIEW ON THE DELIVERY PLAN/PROCESS

It is important to obtain good feedback from drivers who visit a specific customer site on a regular basis. If these feedback reports raise concerns about unsafe aspects of the delivery or unloading operations, then a discussion should be held with the management of the customer's works which may lead to a low-key visit to the customer site to review the concerns. The outcome of these discussions should be reported to the drivers involved and should be reflected in changes to the Delivery Plan.



8. LEGAL REQUIREMENTS

Employers have duties under the Health and Safety at Work 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 Work at Height Regulations 2005 apply to all work at height where there is a risk of a fall liable to cause personal injury. The Regulations place duties on employers, the self-employed, and any person that controls the work of others. The Regulations include requirements to avoid work at height where possible. Where work at height is carried out, falls should be prevented if possible, or if not, the effect of falls should be minimised.

The Regulations require that: the risks from work at height are assessed; all work at height is properly planned and organised; those involved in work at height are competent; appropriate work equipment is selected and used

and that equipment for work at height is properly inspected and maintained. The Regulations also provide a simple hierarchy for managing and selecting equipment for work at height.

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 as unloading of steel, 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.

The Road Traffic Act 1991 states that a person is guilty of an offence if he uses, or causes, or permits another to use a motor vehicle or trailer on a road when the weight, position or distribution of the load, or the manner in which it is secured involves a danger of injury to any person. The law makes it clear that everyone in the supply chain has a role to play in the safe loading and restraint of all cargo.

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6. Safe use of lifting equipment, Lifting Operations and Lifting Equipment Regulations 1998 Approved Code of Practice and guidance (<http://www.hse.gov.uk/pubns/priced/l113.pdf>)

Further Reading

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2. Health and safety made simple - The basics for your business (<http://www.hse.gov.uk/simple-health-safety/index.htm>)
3. Work at Height Regulations 2005 (<http://www.hse.gov.uk/falls/regulations.htm>)
4. Code of practice for the safe use of cranes (<http://shop.bsigroup.com/ProductDetail/?pid=00000000030258065>)
5. Rider-operated lift trucks-Operator training and safe use (<http://www.hse.gov.uk/pubns/priced/l117.pdf>)
6. Code of Practice: Safety of loads on vehicles (<http://www.tsoshop.co.uk/bookstore.asp?FO=1159997&ProductID=9780115525476&Action=Book&CLICKID=002259>)
7. BS 7121-4:2010 Code of practice for safe use of cranes - Lorry loaders (<http://shop.bsigroup.com/ProductDetail/?pid=00000000030082940>)
8. BS 7121-2:1991 Code of practice for safe use of cranes Inspection, testing and examination (<http://shop.bsigroup.com/ProductDetail/?pid=00000000000253331>)
9. BS 7121-3:2000 Code of practice for safe use of cranes - Mobile crane (<http://shop.bsigroup.com/ProductDetail/?pid=00000000030015892>)
10. <http://www.hsl.gov.uk/hsl-shop/transport-publications/transport-safety---an-operator%27s-guide-to-safe-loading-and-transport.aspx>
11. <http://www.wahsa.org.uk/technical-guidance/>



Appendix 1

DELIVERY PLAN CHECK LIST:

Where no delivery plan is available the driver is to use the following checklist to help ascertain if the load can be delivered and unloaded safely with minimum risk to those involved.

PPE Requirements needed by the Driver:

- | | | | | |
|--------------------|-----|--------------------------|----|--------------------------|
| Hard Hat | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Chin strap | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Hi Vis garments | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Safety Footwear | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Hearing Protection | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Eye Protection | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Gloves | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
| Arms/legs covered? | YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |

Other, please specify

Arrival Information: This information should be available on the delivery documents if not the driver needs to ascertain the following at the site office/weighbridge before proceeding to the unloading area.

Who/where should the delivery driver report to on arrival?

Is a site safety briefing required? YES NO

Are there any facilities for parking of vehicles on site? YES NO

If Yes to above, for how long can vehicles be parked?

What is the site speed limit?

Inside buildings MPH

Outside areas MPH

Do any one way systems operate on site? YES NO

If Yes, please provide details:

Is the delivery point **INDOORS** or **OUTDOORS** - *please circle as applicable.*

Is reversing required? YES NO

If Yes, who provides the banksman?

How can they be contacted (if applicable)?

Are there multiple discharge points? YES NO

If Yes the driver to ensure he is provided with details for all of them.

What is the method of off loading e.g. overhead gantry, FLT etc

What is the SWL of the off loading equipment? Tonnes

Is the driver required to assist with the off loading operation?
YES NO

Where should the driver be positioned during off loading?

What is the method of access/egress to trailer beds e.g. mobile steps, platform etc.

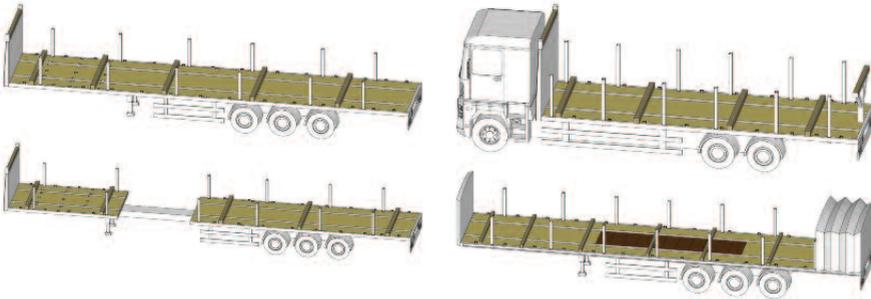


LOAD CONFIGURATION GUIDELINE *(Courtesy of TATA Steels Europe)***Multi-product loads****1. Introduction**

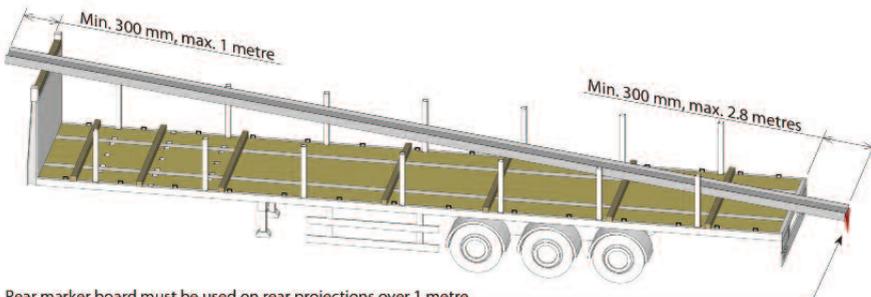
This guideline presents the basic principles which are to be adhered to when configuring multi-product loads.

2. Essential trailer/rigid requirements

- Headboard must be 1.5 metres high or greater than material.
- Trailer deck must be in good condition and free from holes.
- Minimum of 6 pairs of side pins at least 1 metre in height.
- Base dunnage must be 150 mm square timbers minimum.
- All gantries must have fixed timbers 100 mm square minimum.
- Well boards of coil carrier trailers must be fitted and in good condition.

**3. Loading overhead**

X Overhead material is NOT permitted when trailer is extended.

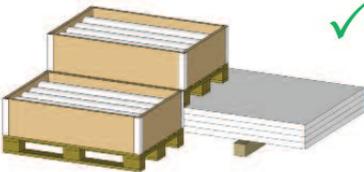
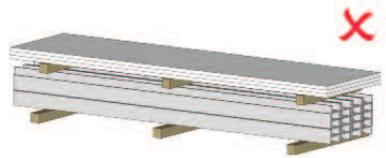


Rear marker board must be used on rear projections over 1 metre

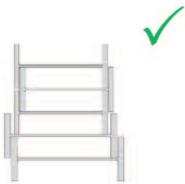
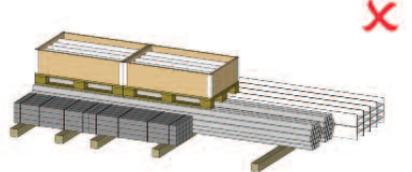
4. Loading standards



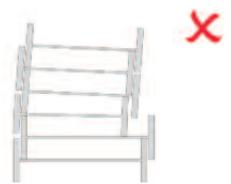
Light sheet and plate to be loaded first, onto base timbers.



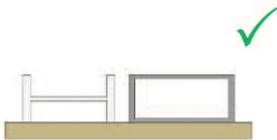
Pallets may only be placed directly on the trailer deck, or on top of plates if appropriate. Consider use of anti-slip matting beneath plastic wrapped pallets.



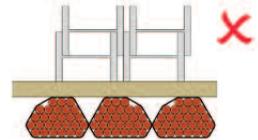
Loading narrow on top of wide sections is preferable. If customer cannot off-load in this configuration, narrow sections need to be timbered up.



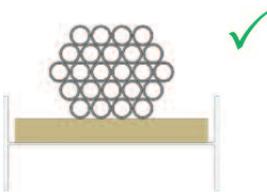
Stacking sections with different flange sizes can lead to unstable stacks.



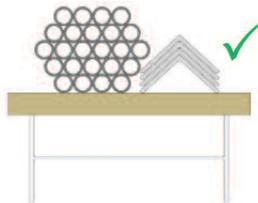
Rectangular material must be stacked flat.



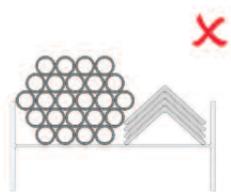
Do not load on top of round material.



Overhead crane offload.

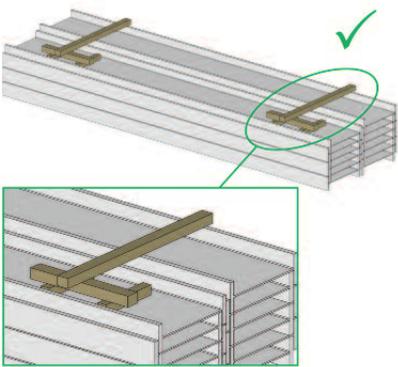


Forklift and sideloader offload.

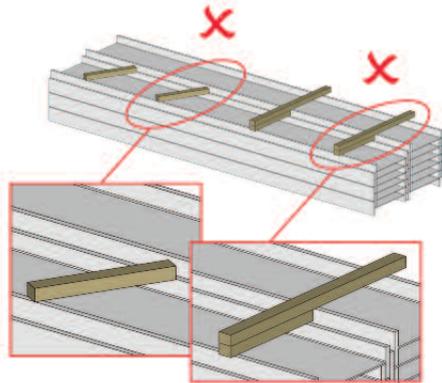


No access for slings or tines.

5. Dunnage requirements
5.1 Creating levels with timbers



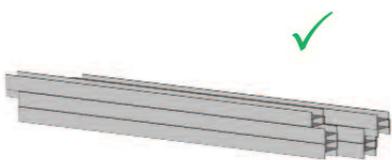
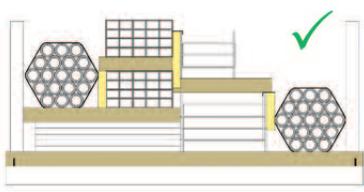
When creating levels using timbers for the next layer of product, always create a grille.



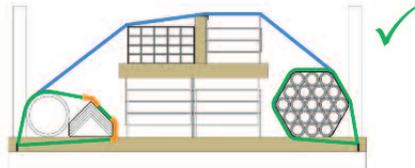
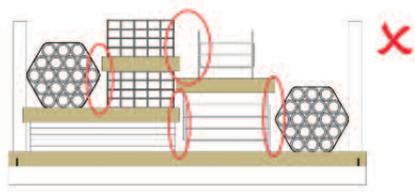
Double stacking of timbers and balancing the corners of a timber on the flanges of a beam is a dangerous practice. In an emergency braking situation, the product on top will not be adequately supported.

5.2 Chain gaps

- No uncontrolled gaps between product. Gaps between product can close up during transport, resulting in a loss in tension in the restraints.
- Where loading or unloading requirements stipulate a gap between product, then these must be controlled by implementing vertical dunnage. See TIS-0007 for possible solutions.
- Vertical dunnage must be secure within the load to prevent it coming loose in transit.



Stagger and launch can aid unloading requirements without the need to leave gaps.



Small bundles of material can be loaded to the side pins and restrained using opposing loops.



LOAD RESTRAINT GUIDELINE

Multi-product loads

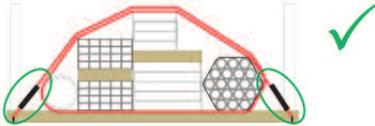
1. Introduction

This guideline presents the restraint requirements which are to be adhered to when securing multi-product loads.

2. Essential restraint requirements

2.1 Primary restraints

- A minimum of 6 chains is required for a full load.
- All material must be secured at 2 points minimum.
- Chains must be minimum Grade 8 and be compliant with EN 12195-3:2001. See TIS-0004.
- Where belly-wraps are applied, 2 tensioners are required. See TIS-0001.



One tensioner each side of a belly-wrap

Minimum 6-off



2.2 Additional restraints

- Webbing straps may only be used when the load configuration requires a greater number of lashings than the 6 chains.
- Webbing straps may be used to secure small packs of material that are not restrained by the 6 chains.
- Webbing straps are preferably used on parts of the load which are blocked.
- Do not mix and match chains and webbing straps on the same part of the load, unless that part of the load is blocked.
- Webbing straps must be minimum LC 2000 daN and be compliant with EN 12195-2:2001. See TIS-0003.
- Webbing straps must be protected from abrasive surfaces and sharp edges. See TIS-0005.

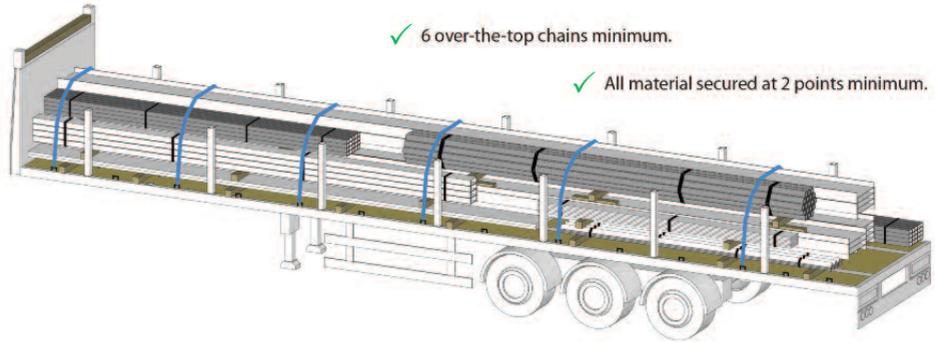


2.3 Severe Winter Weather advisory periods

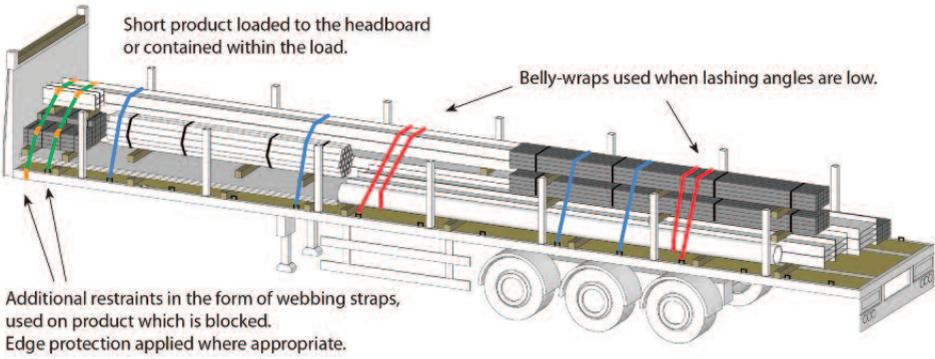
- Additional restraint is required during Severe Winter Weather advisory periods.

3. Sample loads and restraining solutions

Pyramid load with good lashing angles on all parts of the load

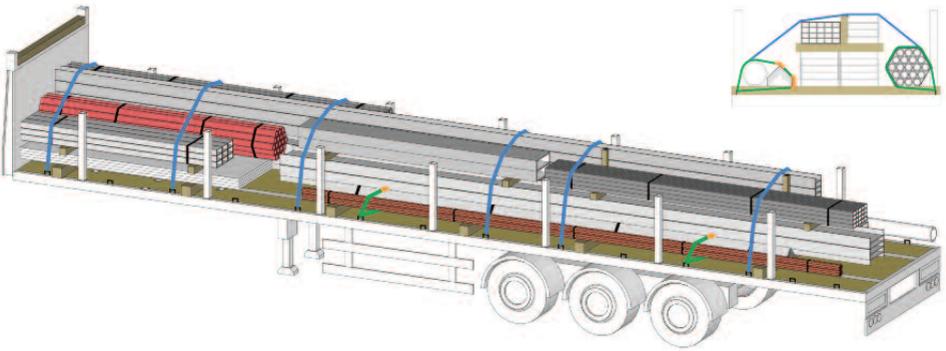


Load requiring additional restraints



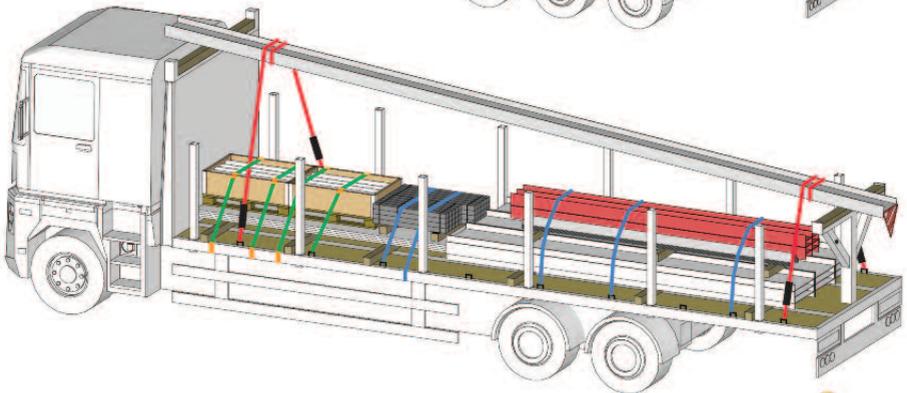
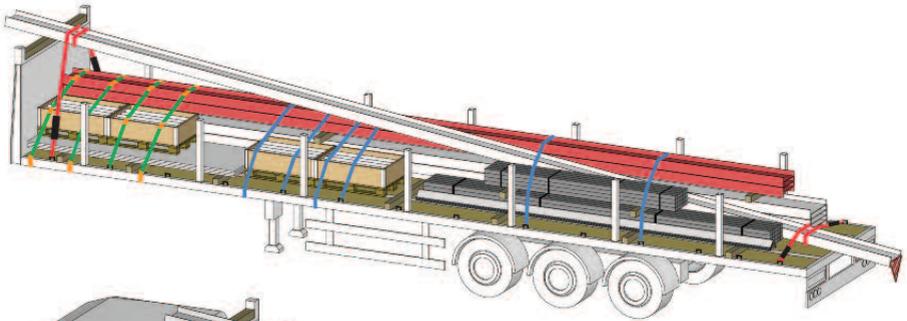
Using looped lashings to control chain gaps

Small bundles of material can be loaded to the side pins and restrained using looped lashings.



4. Sample overhead loads and restraining solutions

- Items that are loaded overhead are to be belly-wrapped at each end, as close to the gantries as possible.
- 2 tensioners are required for all belly-wraps.



- For added security, direct lashings may be applied around the rear of the overhanging items.
- Consider use of a purpose-made head pocket around the rear end of the product.



5. Guidance for transport planning of sheeted product

- Sheeted material must be first drop, or delivered on its own.
- Painted material should not be sheeted.
- Challenge every sheeted request from customer.
- Where possible, deliver sheeted product on a Slidaflex trailer.

Where sheeting of product is required:

- Restraints are to be applied prior to sheeting the load.
- Sheeting to be carried out from the ground. Where possible, driver should seek assistance when handling sheets.



LOAD CHOKER

Restraining awkward and heavy loads such as loose bars or loose packs of steel on a lorry bed is a perennial problem, with the health and safety of the driver and other road users the main concern. By using simple yet efficient devices such as Load Choker, these risks are significantly reduced.

Load Choker works by wrapping individual bars or packs independently to maintain tension and 'choke' the load to prevent movement in all directions. The amount of tension placed on the load restraining chain or strap is doubled due to the 2 to 1 mechanical advantage achieved by the 'pulley' effect of the load choker.



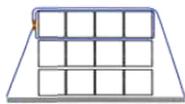
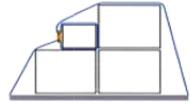
Even greater tension is then applied to the load restraining chain or strap as the load tries to move, increasing the choking effect as the chain or strap becomes shorter. Additionally, the load is pulled down into the lorry bed by the increased tension in the load restraining chain or strap, thereby increasing the coefficient of friction between the load and the lorry bed and decreasing the likelihood of the load moving.

The load choker also enables even tension to be applied throughout the length of the load restraining chain or strap from the anchor point to the ratchet assembly. This overcomes the age old problem associated with 'belly wrapping' when chain links bind on the corners of the load or vehicle chassis and cause the chain to be tight on one side of the load and loose on the other. Load choker enables odd or difficult shaped loads to be securely restrained as shown in the diagrams.



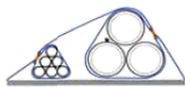
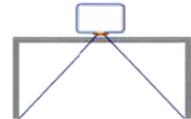
< Load Choker is the latest innovation in load restraints. The 2:1 leverage pulls the load together, restricting movement in all directions.

> Load Choker restrains loads that are near impossible to secure. Products of differing shapes and sizes can be quickly and effectively restrained with fewer straps or chains.

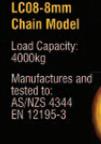


< Top layers can be securely belly wrapped to stop the center of load shifting forward under braking. There is no need to pyramid stack, therefore maximizing payloads.

> Loads on trade racks and machinery can also be secured faster and safer than conventional methods.



< Different size and different shaped products are easily and safely secured with fewer straps or chains saving time and eliminating safety concerns.

 <p>LS50-50mm Strap Model Load Capacity: 2500kg Manufactures and tested to: AS/NZS 4380 EN 12195-2</p>	 <p>LC08-8mm Chain Model Load Capacity: 4000kg Manufactures and tested to: AS/NZS 4344 EN 12195-3</p>
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Load Chokers are available from: www.loadchokeruk.co.uk

Appendix 4

PRECAUTIONS THAT MUST BE USED WHEN TRANSPORTING PROJECTING LOADS

Courtesy of Barrett Steels

Projecting loads - Forwards

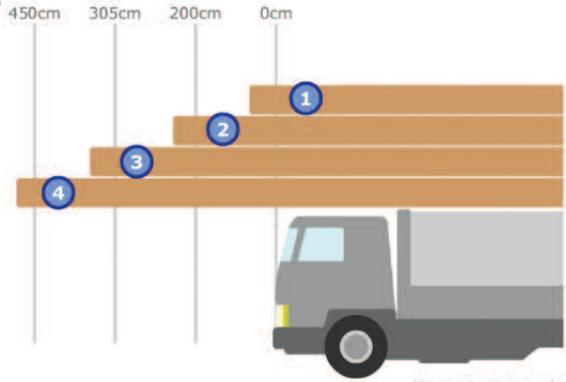


Diagram not to scale

1 200cm or less	2 Over 200cm	3 Over 305cm	4 Over 450cm
Action to be taken			
No Action Needed	End/Side Markers Carry an Attendant	End/Side Markers Carry an Attendant 2 Days Police Notice	End/Side Markers Carry an Attendant 2 Days Police Notice Additional Side Markers

Projecting loads - Backwards

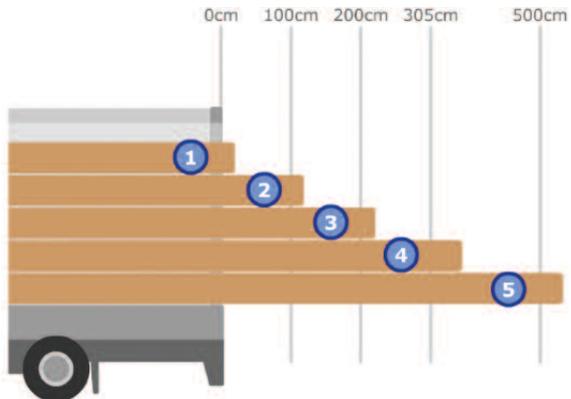


Diagram not to scale

1 100cm or less	2 Over 100cm	3 Over 200cm	4 Over 305cm	5 Over 500cm
Action to be taken				
No Action Needed	Make Load Clearly Visible	End Marker Boards	End/Side Markers Carry an Attendant 2 Days Police Notice	End/Side Markers Carry an Attendant 2 Days Police Notice Additional Side Markers

METHODS OF GAINING SAFE ACCESS TO THE LOAD CARRYING PLATFORM

Portable access platforms



Photo courtesy of TATA Steels Europe



Fixed access platform



Photo courtesy of TATA Steels Europe

Half height portable access platform – enables driver/loader to work around the trailer without having to get on it



Rear access steps and platform built into the trailer body



Photo courtesy of Building Products

Appendix 6

FALL PREVENTION AND OR RESTRAINT SYSTEMS THAT CAN BE EMPLOYED TO PREVENT OR MITIGATE FALLS FROM HEIGHT

Inflatable fall protection



Photo courtesy of Bull Products Ltd.

Fall Arrest Harness



Photo courtesy of Bi-Line Ltd.

Lorry with side rail protection allowing driver safe access to trailer bed



Photo courtesy of Acenta

UK Steel



Best Practice Document for the **Safe Delivery and Unloading of Steel Products**

Broadway House,
Tothill Street,
London,
SW1H 9NQ.

1st Floor, The Citadel,
190 Corporation Street,
Birmingham,
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