



FEDERATION EUROPEENE DE LA MANUTENTION
Product Group
ELEVATING EQUIPMENT

FEM
11.003

GUIDANCE ON SAFETY ON/AROUND A
VEHICLE LOADING AREA

APRIL 2011

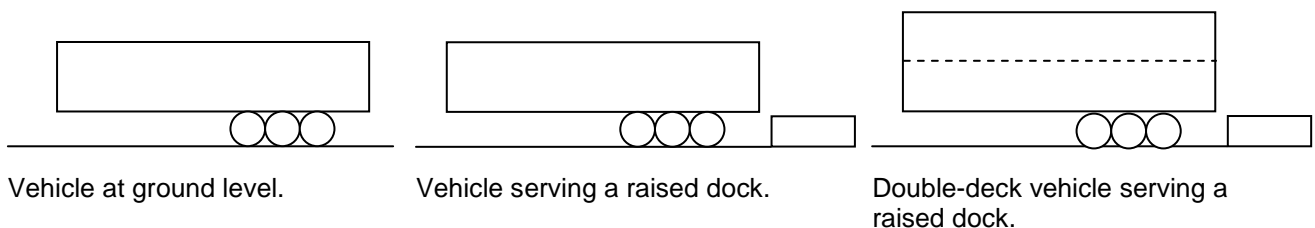
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1 What Is A Loading / Unloading Area?

A loading/unloading area is an area within a building or facility where vehicles are loaded and unloaded, where a height differential exists.

The vehicles are normally loaded/unloaded with either; a dock leveller, scissor lift, bridging plate or loading ramp.



For a more detailed visual representation refer to Appendix 1 & 2.

2 Intention of This Guideline:

To provide users, designers and suppliers with an awareness of the key hazards around the loading/ unloading area, along with a selection of recognised solutions, and the relevant, applicable standards and directives relative to the equipment used in the area.

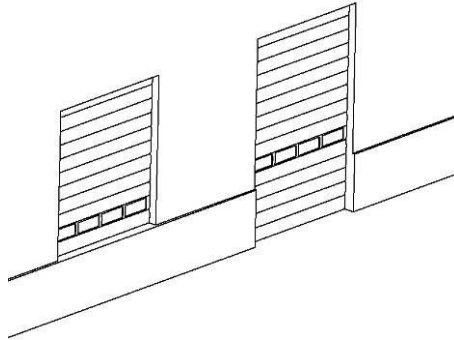
This document is not exhaustive; new products may be released to provide alternative solutions at any time. Note that this document does not include specific details relating to the operation/maintenance of equipment

3 Key Hazards and Possible Solutions:

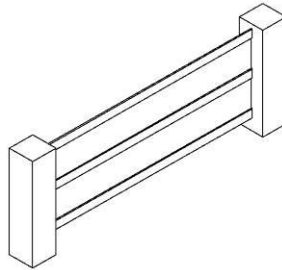
3.1 Height variation between loading dock and ground level. Potential for people and/or machinery to fall.

Possible Solutions:

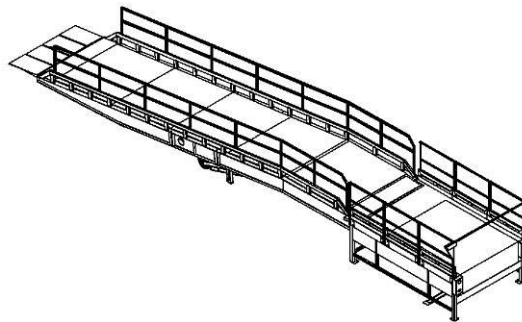
- Doors to close the opening when bay not in use, with the option of being interlocked with vehicle sensors to prevent door opening when no vehicle is present.



- Manual safety barrier/gate across the opening, with the option of being interlocked with vehicle sensors to prevent door opening when no vehicle is present.



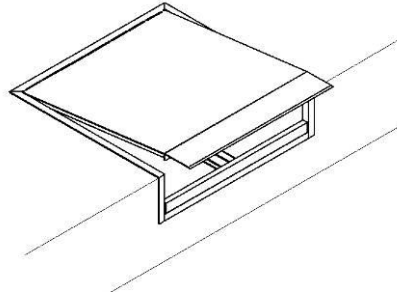
- Handrails & gates on modular docks / loading ramp.



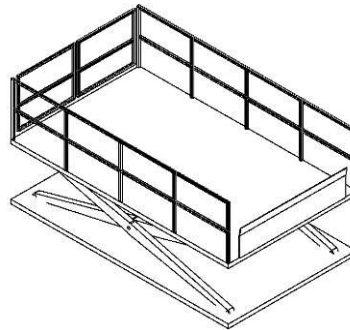
3.2 Height variation, and horizontal gap between loading dock and vehicle deck. Risk of falling between the two whilst moving product/people to/from vehicle.

Possible Solutions:

- Electro-Hydraulic Dock Leveller
BS EN 1398:2009 – Dock levellers — Safety requirements



- Scissor Lift table
BS EN 1570:1999 – Safety requirements for lifting tables

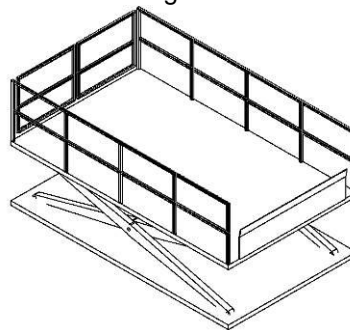


- Handrails if width of bridging method does not fully cover the opening.

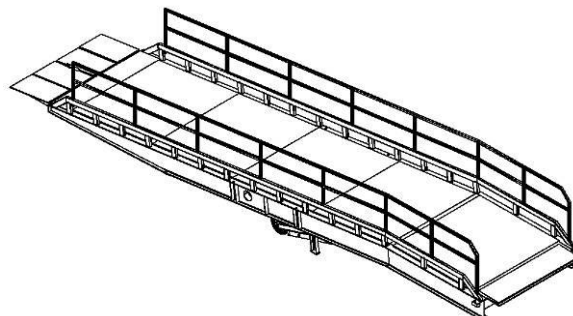
3.3 Loading / Unloading from ground level. Height variation causes risk of falling between the two whilst moving product/people to/from vehicle.

Possible Solutions:

- Scissor Lift table
BS EN 1570:1999 – Safety requirements for lifting tables



- Mobile Yardramp
BS EN 1398:2009 – Dock Levellers – Safety Requirements



3.4 Trapping/Crushing of people from vehicle reversing onto dock

Possible Solutions:

- No personnel on loading bay ground level at any time.
- All vehicles equipped with reversing siren/warning as with vans & buses.
- Communication between vehicle driver and loading dock operatives is vitally important.
- Ensure that personnel inside the building cannot access the outside while vehicles are reversing (use of appropriate interlocks, traffic lights etc.)
- Traffic lights to mimic what is showing on outside lights – ensures workers within the warehouse know what is happening outside.

3.5 Trapping/Crushing of people by materials handling equipment and their loads. Either in the back of the vehicle, or on the loading bay itself.

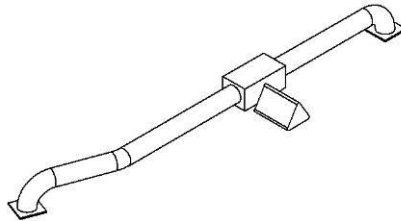
Possible Solutions:

- Selection of correct materials handling equipment for the product to be (un)loaded, including speed limiters, sirens, flashing beacons etc.
- Suitable lighting around the loading bay including dock lights for viewing inside the vehicle.
89/336/EEC - Electromagnetic Compatibility Directive
73/23/EEC - Low Voltage Directive
- Segregation of personnel/vehicles by means of designated walkways and crossing points.
- No personnel in the vehicle at same time as materials handling equipment.
- Only one piece of materials handling equipment in the vehicle at a time.
- Ensure infrastructure is in place to remove the need for a banksman when positioning vehicles onto loading docks by using wheel guides, ground markings, dock bumpers, traffic light systems etc.

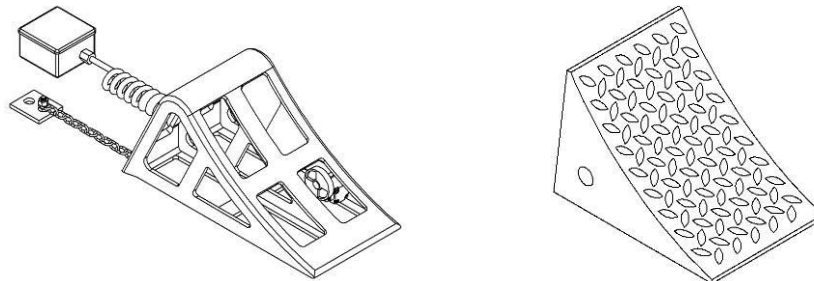
3.6 Loading apparatus becomes unintentionally separated from vehicle bed with personnel/equipment inside due to creep.

Possible Solutions:

- Wheel lock



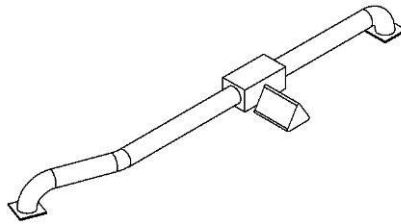
- Wheel chocks
– Manual to prevent movement, or electrically interlocked to warn of moved vehicle.



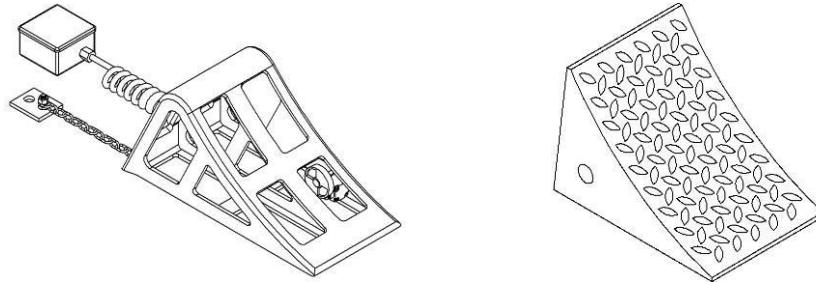
3.7 Loading apparatus becomes unintentionally separated from vehicle bed with personnel/equipment inside due to unintentional drive-off.

Possible Solutions:

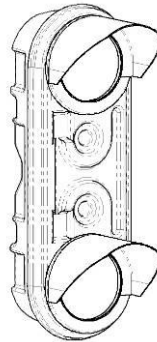
- Wheel lock



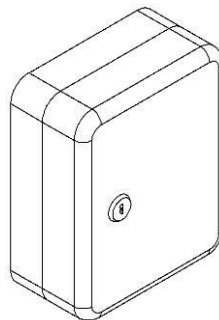
- Wheel chocks (Will not STOP a vehicle, but will make the driver aware)
- Manual to prevent movement, or electrically interlocked to warn of moved vehicle & lock hydraulics on Dock Leveller.



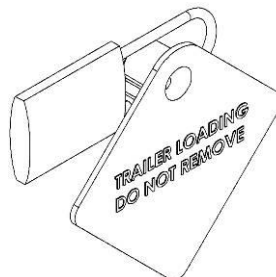
- Traffic light system - traffic lights to mimic what is on outside lights – ensures workers within the warehouse know what is happening outside.



- Removal of drivers key into a secure area – not to be released until loading operation is completed. This solution can be further improved by interlocking with loading bay equipment, e.g. door/leveller will not operate until keys are locked away, and keys cannot be removed until door/leveller is closed/parked.



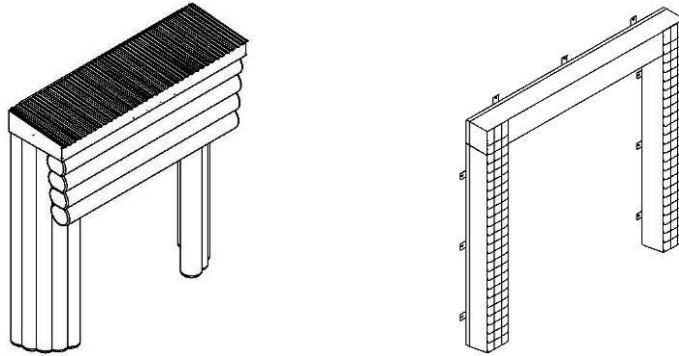
- Air hose locks on trailers without tug units attached – not to be released until loading operation is completed.



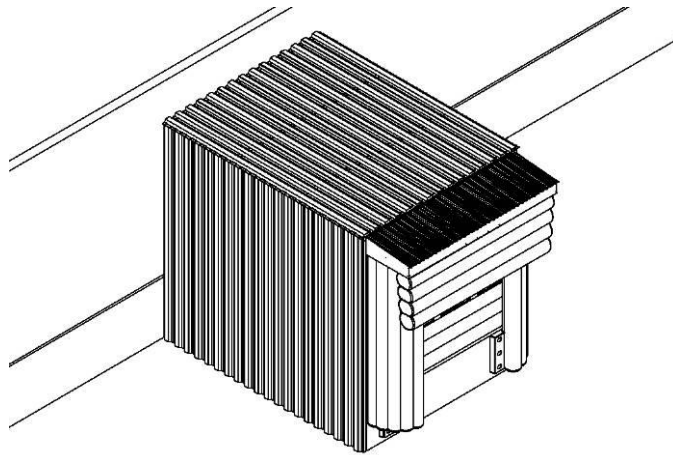
3.8 Degradation of stock due to temperature variations caused by ineffective sealing, specifically within the food industry operating cold/chill stores

Possible Solutions:

- Inflatable Dock Seal / Foam Dock Pad Seal to prevent heat transfer and resultant health hazards.



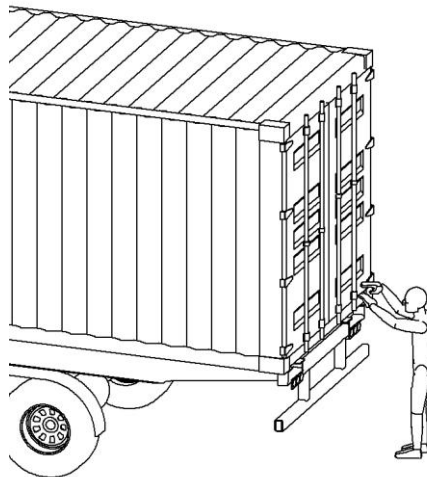
- Dock house



3.9 Goods/debris falling from the vehicle when opening rear doors.

Possible Solutions:

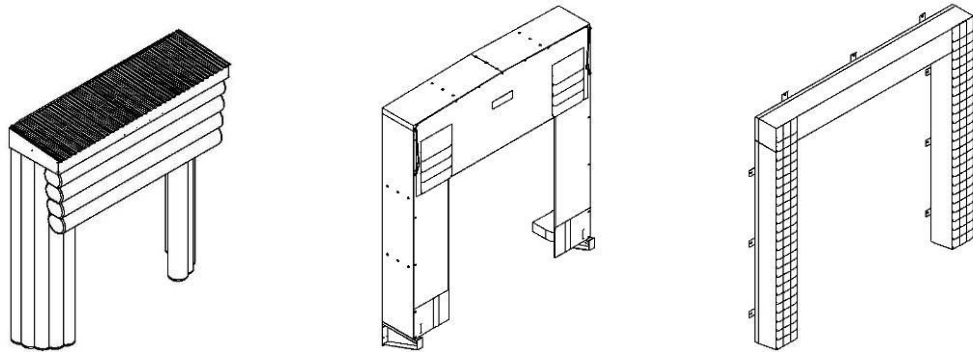
- Ensure a safe system of work is in place and adhered to. This should include, but not be limited to:
 - Ensure operatives are stood well back when opening doors.
 - Never open doors if they are facing downhill.



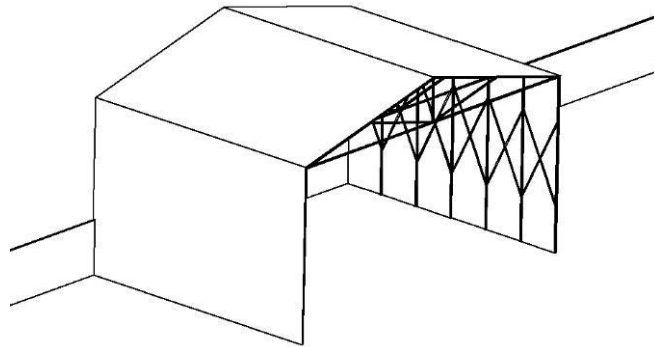
3.10 Slippage due to water ingress

Possible Solutions:

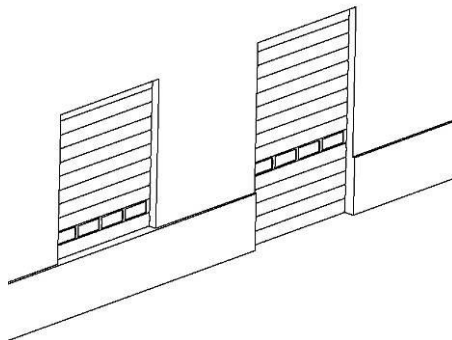
- Inflatable Dock Seal / Dock Shelter / Foam Dock Pad Seal



- Canopy over whole loading bay area (either fixed or collapsible)



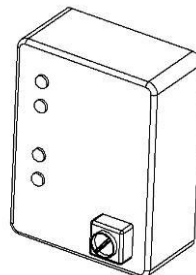
- Fast acting doors



3.11 Trapping of personnel under equipment

Possible Solutions:

- Location of control panels such that operator is away from moving items such as levellers and doors, ideally with two handed operation to prevent finger traps etc.

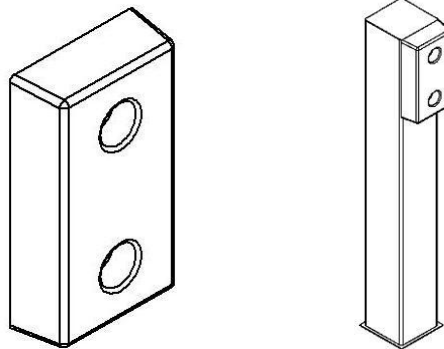


- Guarding in place
- Maintenance by competent persons only
- Safety sensors / stops on high speed doors.
- Relevant safety precautions when maintaining equipment by competent persons.

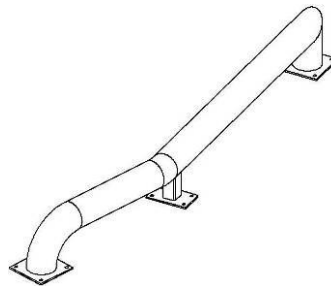
3.12 Damage to building as a result of impact

Possible Solutions:

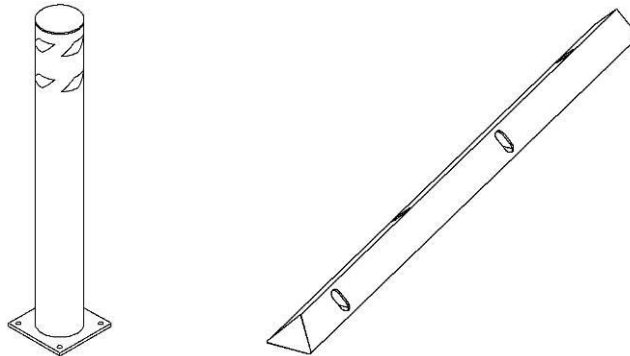
- Dock bumpers (on building or fitted to stand alone bumper supports) that provide sufficient impact absorption



- Ensure ground is free of debris and damage to ensure smooth approach (also includes drainage, and clearing of snow/ice etc)
- Wheel guides to ensure alignment



- Bollards / Vehicles Restraints to prevent damage due to impact by other general traffic

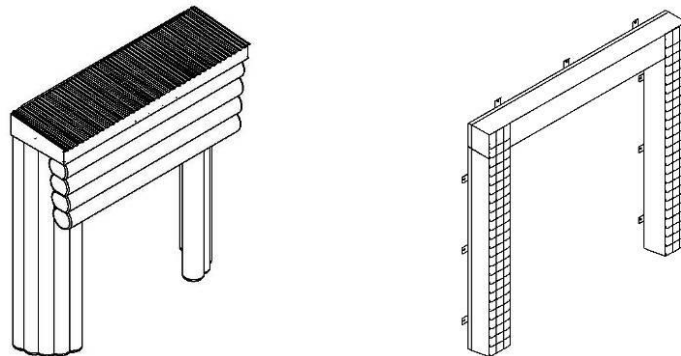


- Use of appropriate safety signs, in visible locations.

3.13 Health effects on personnel due to extreme operating temperatures

Possible Solutions:

- Inflatable Dock Seal or Foam Dock Pad Seal to provide shelter/protection from outside weather.



- Warm insulated clothing to be worn in cold/chilled areas.

4 Interlocked Systems:

The interlocking of loading bay equipment adds a further element of safety, further reducing the chance of human error leading to an accident.

Interlocking can be between only a small number of pieces of equipment, up to a totally integrated system where every step of the process is interlocked to the next.

Methods of interlocking can include:

- Electro-Hydraulic Dock Leveller to only operate only once the door is open.
- Door to only open once the vehicle is parked in position.
- Traffic lights controlled from door / leveller control panel.
- Wheel lock will not release until leveller is 'parked'.
- Air hose lock with key which only powers up the loading equipment once air hose is locked, i.e. vehicle is parked.

It is important to note that integrated systems require a Declaration of Conformity for the whole system, as well one for each individual item.

5 Directives, Standards & Guidelines Applicable to Loading / Unloading Areas:

All solutions must comply, where applicable, with:

Directives:

- 2006/42/EC – Machinery Directive
- 89/655/EEC – Use of Work Equipment Directive
- 2004/108/EC - Electromagnetic Compatibility Directive

Standards:

- BS EN 1398 – Dock Leveller - Safety requirements
- BS EN 1570 - Scissor Lift Table

Guidelines:

- Correct maintenance of all equipment in line with Use of Work Equipment Directive and FEM Thorough Examination Guidelines 11.001 & 11.002

6 Additional Requirements and Recommendations:

General solutions applicable at all times:

- Ensure correct information is available to staff at all times regarding Operating Procedures / Safe Systems of Work.
- Correct training of personnel including refresher courses as necessary/legally defined.
- Supervision of staff at all times by a suitably qualified person.
- Risk Assessment to be available for all operations
- Stands/supports in addition to the forward landing gear of detached trailers when (un)loading to prevent tipping.
- Good house keeping at all times – clear debris regularly to reduce trip and fire hazards.
- Visual inspection of trailer prior to driving in to check for hazards, e.g. condition of the flooring, check for any fallen loads
- Traffic flow, i.e. getting vehicles & equipment to the loading / unloading area safely
- Equipment must only be serviced by competent personnel

