



# FEM

European Materials Handling  
Federation

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Product Group/  
**MEWP**  
mobile elevating work platforms  
Subgroup elevating equipment



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## **Guideline /**

# **GUIDANCE ON SAFETY ON/AROUND A VEHICLE LOADING AREA**

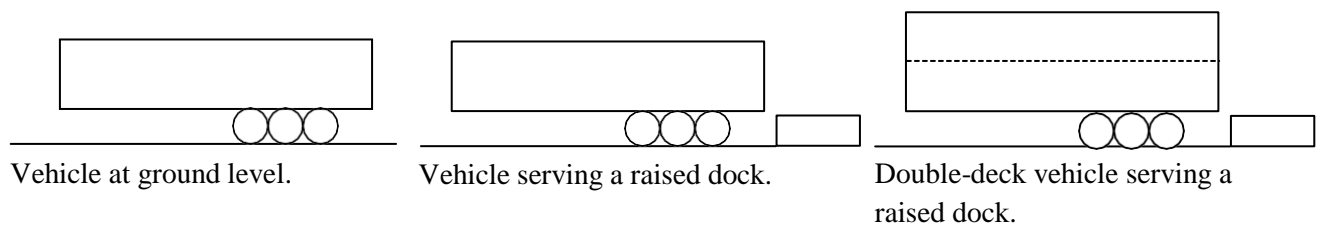
## **INDEX**

<b>Section</b>		<b>Page</b>
<b>1</b>	<b>WHAT IS A LOADING/UNLOADING AREA ?</b>	<b>3</b>
<b>2</b>	<b>INTENTION OF THIS GUIDELINE</b>	<b>3</b>
<b>3</b>	<b>KEY HAZARDS AND POSSIBLE SOLUTIONS</b>	<b>4</b>
<b>4</b>	<b>INTERLOCKED SYSTEMS</b>	<b>14</b>
<b>5</b>	<b>DIRECTIVES, STANDARDS &amp; GUIDELINES APPLICABLE TO LOADING/UNLOADING AREAS</b>	<b>14</b>
<b>6</b>	<b>ADDITIONAL REQUIREMENTS AND RECOMMENDATIONS</b>	<b>15</b>
	<b>APPENDIX 1</b>	<b>16</b>
	<b>APPENDIX 2</b>	<b>16</b>

## 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, directives and guidance documents 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.

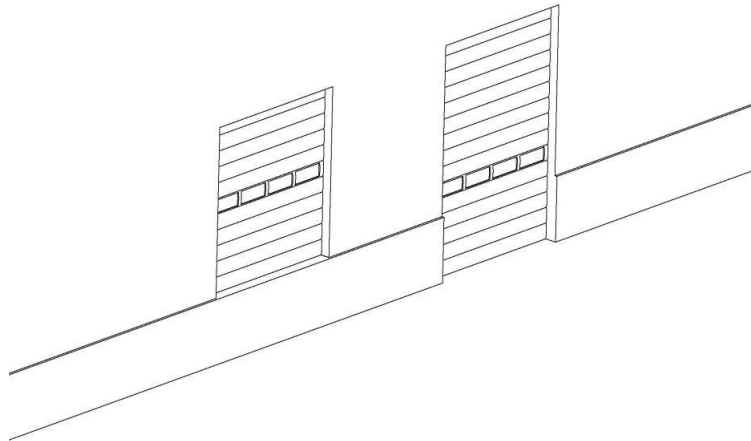
Note that this document does not include specific details relating to the operation/maintenance of equipment.

### 3 Key Hazards and Possible Solutions:

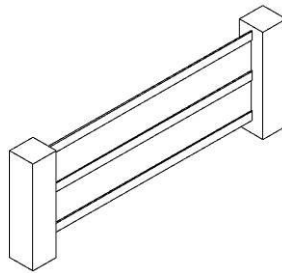
- 3.1 Height variation between loading dock and ground level. Potential for people and/or machinery to fall.

Possible Solutions:

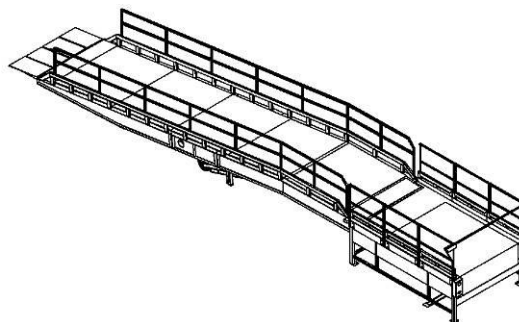
- Doors to close the opening when bay not in use, with the option of being interlocked with vehicle sensors to prevent door opening when no vehicle is present.



- 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.



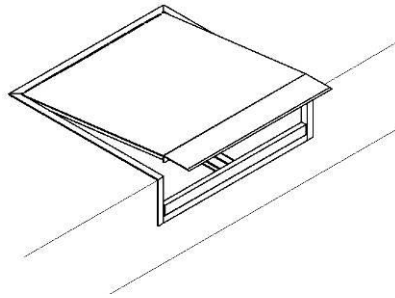
- Handrails & gates on modular docks / loading ramp.



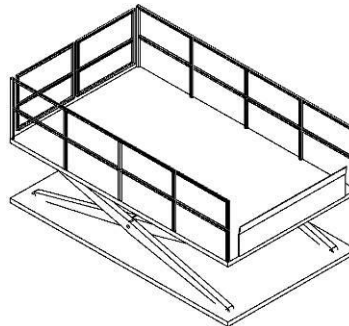
3.2 Height variation, and horizontal gap between loading dock and vehicle deck. Risk of falling between the two whilst moving product/people to/from vehicle.

Possible Solutions:

- Electro-Hydraulic Dock Leveller  
BS EN 1398:2009 – Dock levellers — Safety requirements  
FEM Guidance Document FEM 11.003 - Dock leveller selection



- Scissor Lift table  
BS EN 1570-1:2011+A1:2014– Safety requirements for lifting tables. Lifting tables serving up to two fixed landings

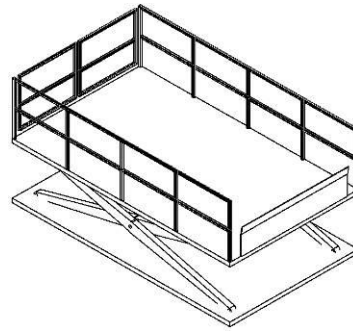


- Handrails if width of bridging method does not fully cover the opening.

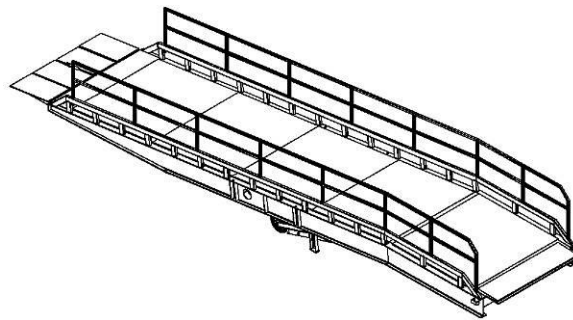
### 3.3 Loading / Unloading from ground level. Height variation causes risk of falling between the two whilst moving product/people to/from vehicle.

Possible Solutions:

- Scissor Lift table  
BS EN 1570-1:2011+A1:2014– Safety requirements for lifting tables. Lifting tables serving up to two fixed landings



- Mobile Yardramp  
BS EN 1398:2009 – Dock Levellers – Safety Requirements  
FEM Guidance Document FEM 11.003 - Dock leveller selection



### 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.

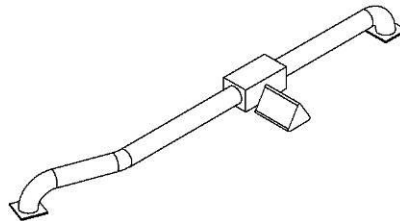
Possible Solutions:

- 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.  
2014/30/EU - Electromagnetic Compatibility Directive  
2014/35/EU - 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.

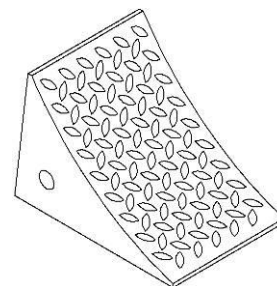
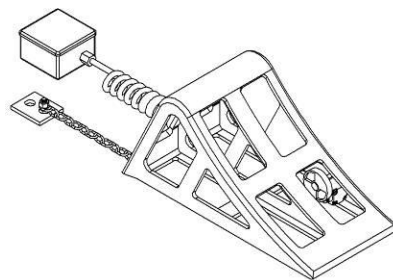
3.6 Loading apparatus becomes unintentionally separated from vehicle bed with personnel/equipment inside due to creep.

Possible Solutions:

- Wheel lock  
FEM Guidance Document FEM 11.005 - Vehicle restraining devices: safety and performance



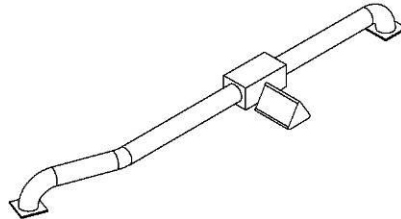
- Wheel chocks  
– Manual to prevent movement, or electrically interlocked to warn of moved vehicle.  
FEM Guidance Document FEM 11.005 - Vehicle restraining devices: safety and performance



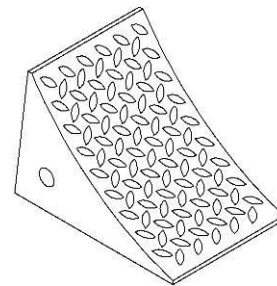
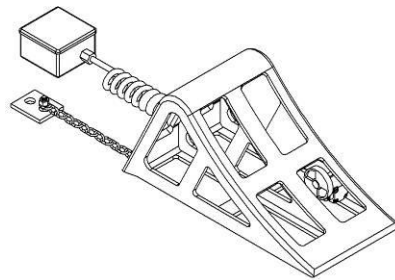
3.7 Loading apparatus becomes unintentionally separated from vehicle bed with personnel/equipment inside due to unintentional drive-off.

Possible Solutions:

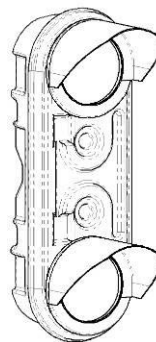
- Wheel lock  
FEM Guidance Document FEM 11.005 - Vehicle restraining devices: safety and performance



- 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.  
FEM Guidance Document FEM 11.005 - Vehicle restraining devices: safety and performance

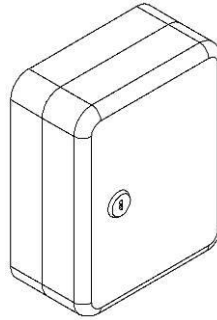


- Traffic light system - traffic lights to mimic what is on outside lights – ensures workers within the warehouse know what is happening outside.

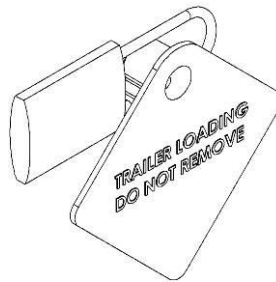




- Removal of drivers key into a secure area – not to be released until loading operation is completed. This solution can be further improved by interlocking with loading bay equipment, e.g. door/leveller will not operate until keys are locked away, and keys cannot be removed until door/leveller is closed/parked.



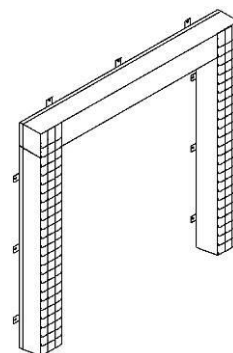
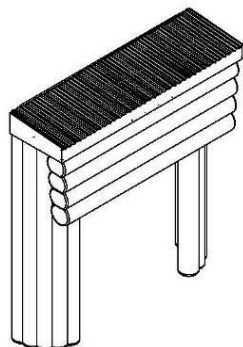
- Air hose locks on trailers without tug units attached – not to be released until loading operation is completed.



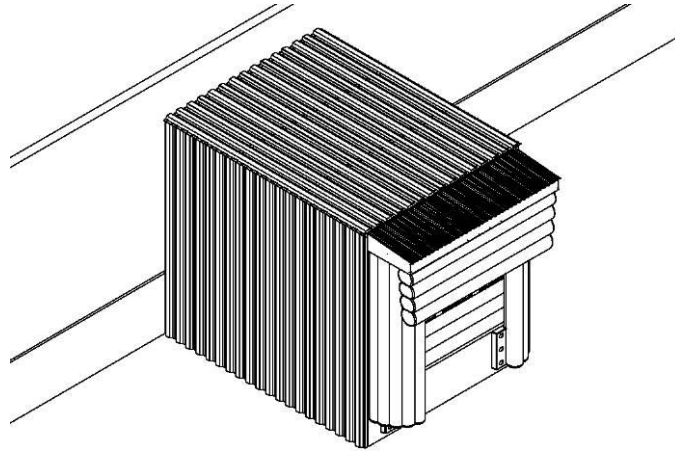
### 3.8 Degradation of stock due to temperature variations caused by ineffective sealing, specifically within the food industry operating cold/chill stores

Possible Solutions:

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



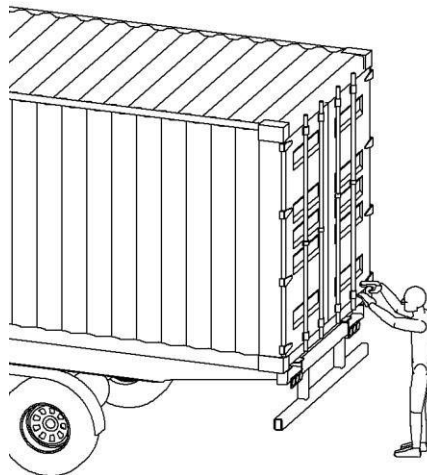
- Dock house / Dock Pod



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

Possible Solutions:

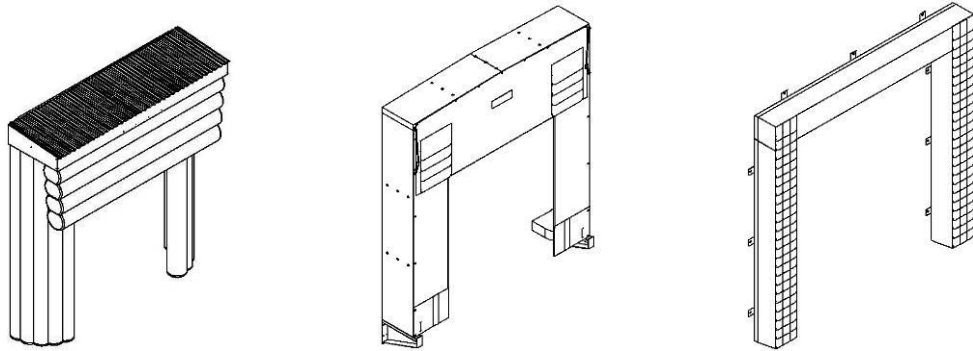
- Ensure a safe system of work is in place and adhered to. This should include, but not be limited to:
  - Ensure operatives are stood well back when opening doors.
  - Never open doors if they are facing downhill.



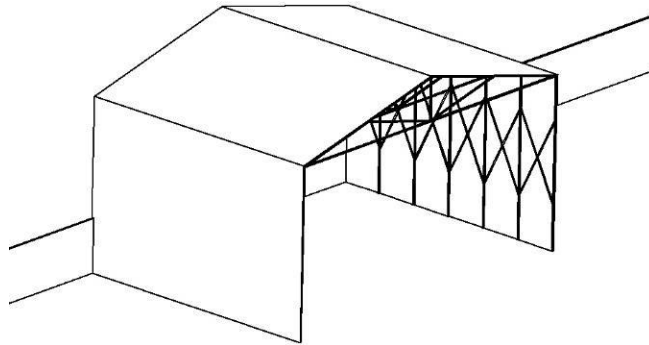
### 3.9 Slippage due to water ingress

Possible Solutions:

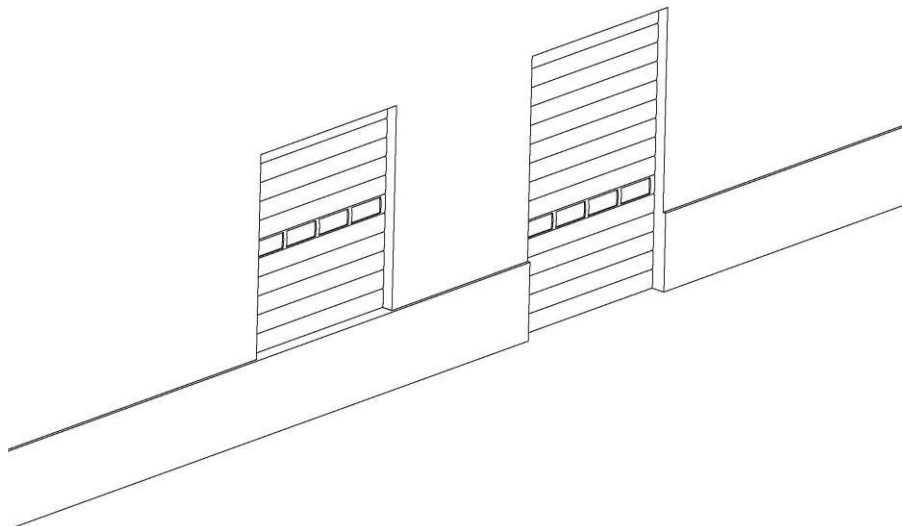
- Inflatable Dock Seal / Dock Shelter / Foam Dock Pad Seal



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



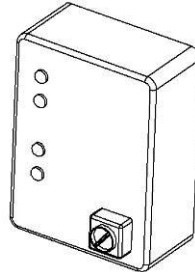
Fast acting doors



### 3.10 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.

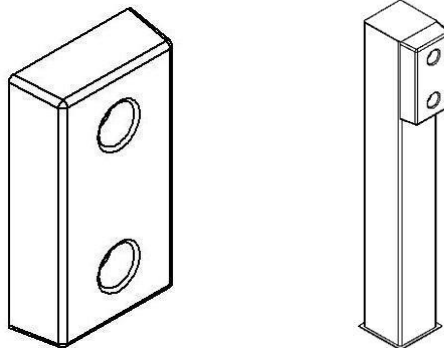


- Guarding in place
- Maintenance by competent persons only
- Safety sensors / stops on high speed doors.
- Relevant safety precautions when maintaining equipment by competent persons.

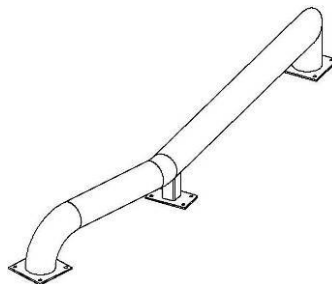
### 3.11 Damage to building as a result of impact

Possible Solutions:

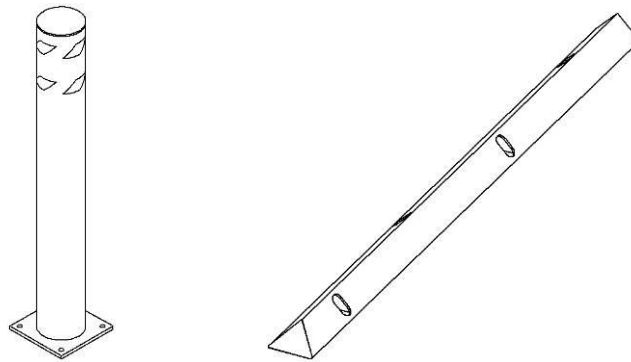
- Dock bumpers (on building or fitted to stand alone bumper supports) that provide sufficient impact absorption



- 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

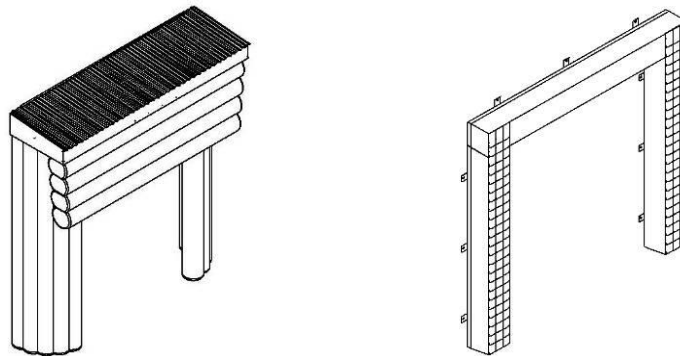


- Use of appropriate safety signs, in visible locations.

### 3.12 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 as 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
- 2009/104/EC – Use of Work Equipment Directive
- 2004/108/EC - Electromagnetic Compatibility Directive

Standards:

- BS EN 1398:2009 – Dock Leveller - Safety requirements
- BS EN 1570-1:2011+A1:2014– Safety requirements for lifting tables. Lifting tables serving up to two fixed landings

Guidelines:

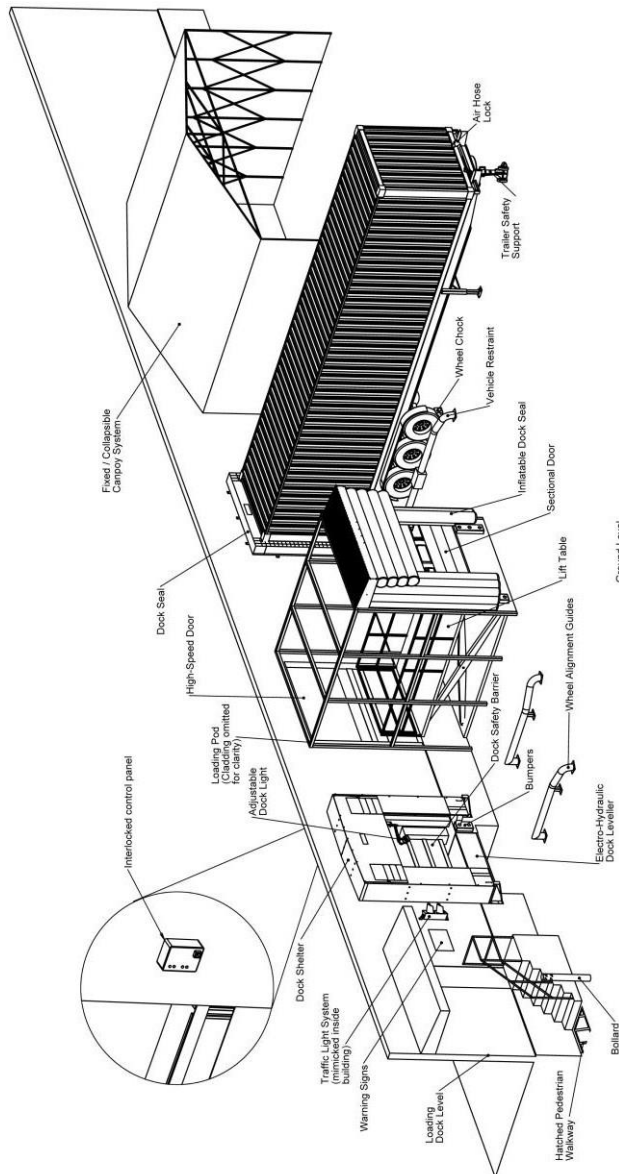
- FEM Guidance Document FEM 11.001 – Thorough examination of Lift Tables
- FEM Guidance Document FEM 11.002 – Thorough examination of Dock Levellers
- FEM Guidance Document FEM 11.004 – Guidance on Dock Leveller Selection
- FEM Guidance Document FEM 11.005 – Vehicle Restraining Devices – Safety and Performance
- FEM Guidance Document FEM 11.006 – Ways to save energy in a Vehicle Loading Dock Area
- FEM Guidance Document FEM 11.007 – Standards Summary

## **6 Additional Requirements and Recommendations:**

General solutions applicable at all times:

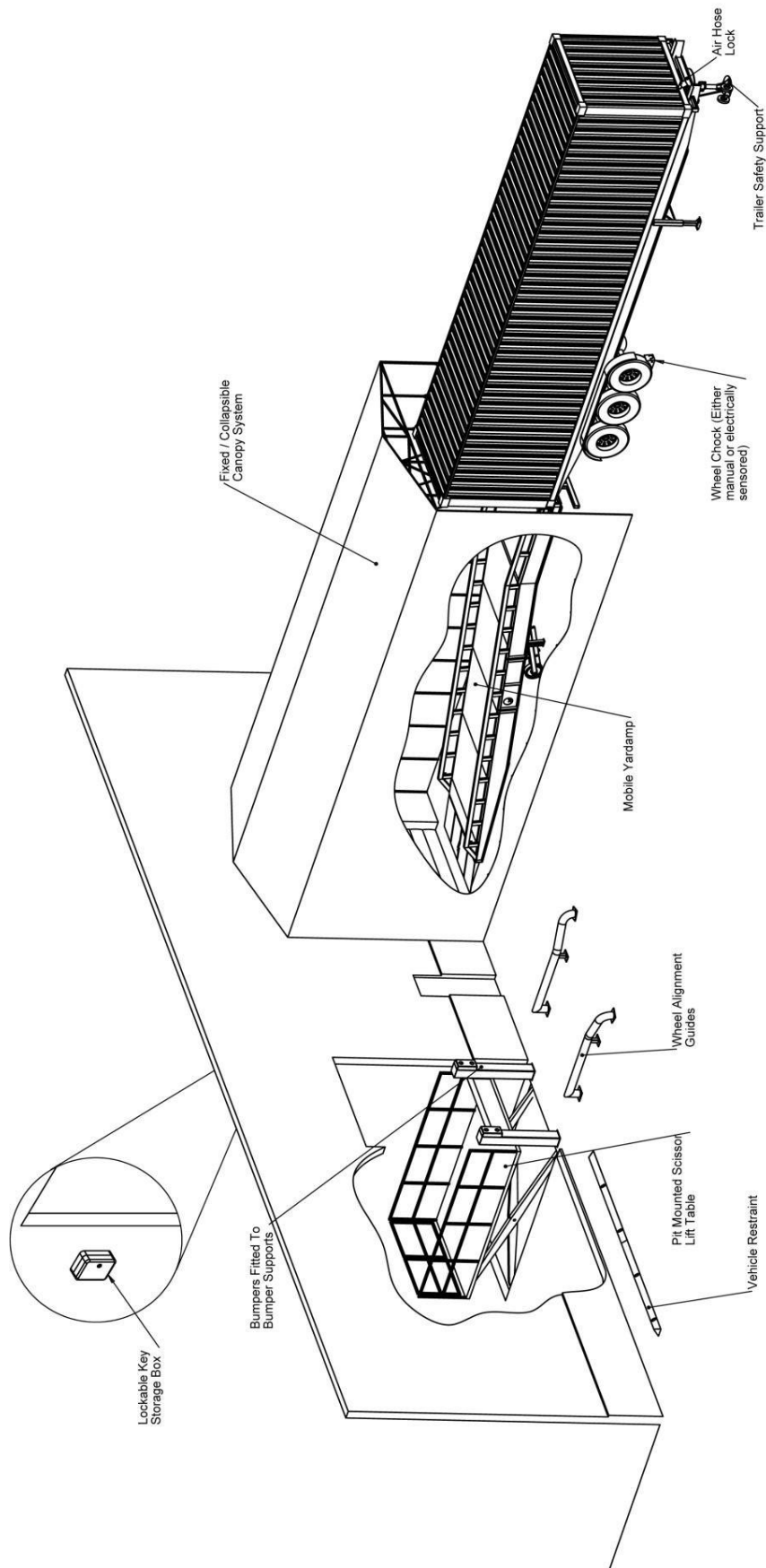
- Ensure correct information is available to staff at all times regarding Operating Procedures / Safe Systems of Work.
- Correct training of personnel including refresher courses as necessary/legally defined.
- Supervision of staff at all times by a suitably qualified person.
- Risk Assessment to be 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
- Be aware that regulations and recommendations may be different in some countries

## Appendix 1:





## Appendix 2:



The recommendations and advice contained in this Guidance Note are based on specifications, procedures and other information that have been collected from the FEM from its members. They represent what is, as far as FEM is aware, the best available data at the time of publication on the instruction and use of the equipment concerned in the general conditions described and are intended to provide guidance for such use.

The suitability of this Guidance Note must be determined by the judgement of the person applying it in accordance with the conditions in which use is envisaged and subject to all relevant statutory requirements.

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