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 handing 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

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.