

## DOCK CUBICLES

IN KEEPING WITH THE COLD CHAIN, HACCP & INTERNATIONAL STANDARDS

There is a compelling argument for docking equipment to be located outside the warehouse building parameters.

The principal, but not the only factors in the argument are the need to reduce investment and operating costs and improve service wherever this is possible. Among the most significant costs and certainly the most irritating are those arising from shrinkage and pilferage. The urgent need to eliminate these constantly increasing losses had brought about the introduction of more sophisticated materials handling equipment specially designed to deal with these problems.

Over the past few years there has been noticeable worldwide swing towards external docking equipment and it is important to appreciate the reason for this.



DOCK CUBICLE USING A COMMON ISO WALL PANEL

### 1. New Docking Concept.

All goods, from raw materials to finished products must pass through the dock area at least once and it is now clearly understood that the loading dock is the most critical area of a warehouse for many reasons: security, maximizing of valuable warehouse space, management control, protection of the warehouse environment etc. Improving efficiency at this point can greatly reduce operating costs and boost profits.

### 2. Development of New Equipment

A recently designed and developed external dock cubicle follows the modern principle of keeping all docking equipment outside the warehouse building. It is an independent and freestanding unit that forms a lock between the buildings and trucks/trailers while loading or unloading.

This new design affords total control over security, temperature, environmental conditions and access (DSS.16)

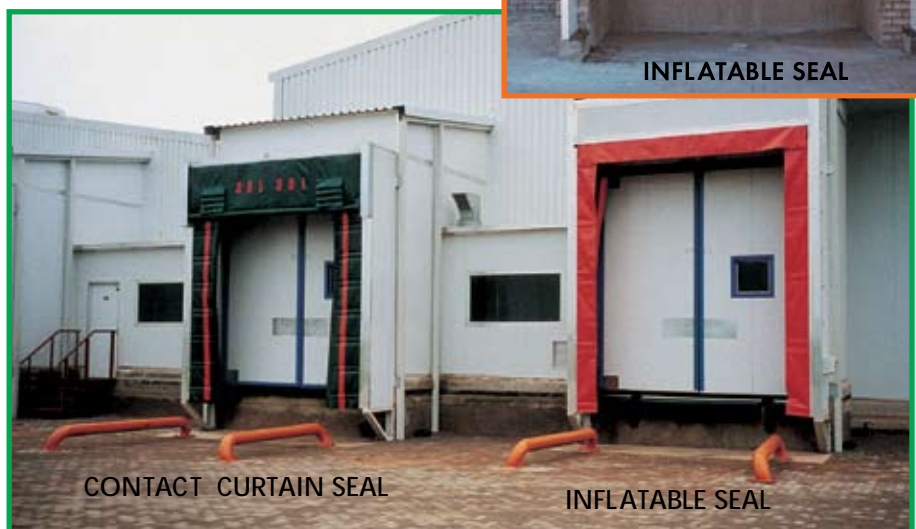
Dock cubicles are used when existing loading docks have oversized door openings or projections away from the building, which may prohibit the use of door seals. Where full access door openings are required for large loads or pieces of equipment, a cubicle is recommended. They are in most cases, larger than actual door openings and project outwards from the wall. When a truck backs into the cubicle, contact curtain or inflatable seals wrap around the truck. Only then must the two rear truck doors open. (Ref. DSS16) These contact panels use spring steel inserts to press the panels firmly against all sides of the truck to form a seal.

### 3. Space Saving.

The usual docking equipment protrudes 3m into the warehouse from the outside perimeter wall. A further aisle of between 3m and 5m depending on the equipment used is required for racking or stacking the product. This is valuable space, which can be used more productively if the docking equipment is situated outside the warehouse as in a docking cubicle (DE.27).



INFLATABLE SEAL



CONTACT CURTAIN SEAL

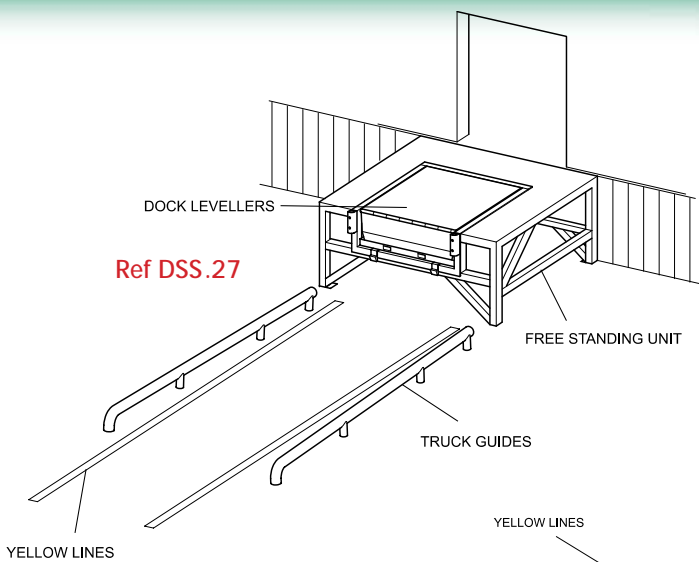
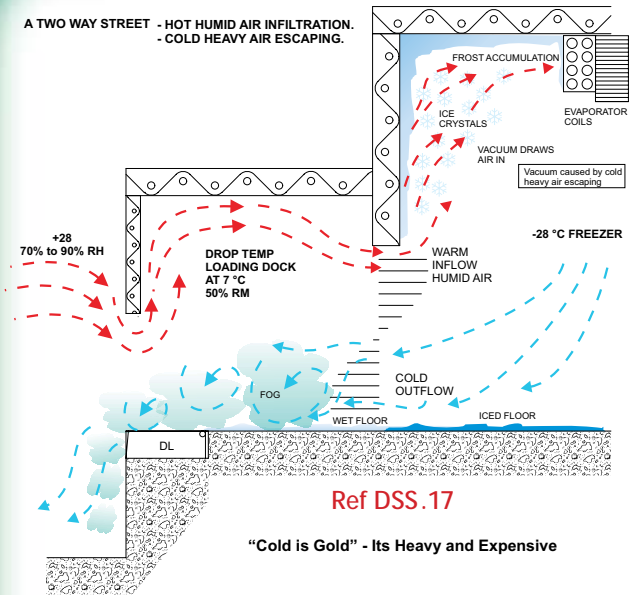
INFLATABLE SEAL



**D.D.L. EQUIPMENT Pty LTD**

P.O. Box 210, Strathavon, 2031  
Tel : +27 11 443-4233  
Fax : +27 11 882-4569  
E-Mail : ddl@icon.co.za  
Web Site : www.ddl.co.za  
Cell : 083 653 3872

"The Bridge That Links The Total Materials Handling Systems Together"



**4. That Extra Warehouse Space**

The Dock Cubicle area and the truck/trailer floor must be considered as additional warehouse space, with the flow of materials from the warehouse across the Dock Cubicle to the truck or trailer floor.

**5. Saving in Building Costs**

With all the loading dock equipment located outside of the warehouse, the perimeter wall can be built as a continuous wall without spaces or cavities for docking equipment. The same goes for the warehouse concrete floor, which can be cast continuously. These changes produce considerable saving in time, labour and costs.

**6. Fewer Docks Initially**

The change to an external loading system means that in a new warehouse design, extra dock and door openings need not be provided to allow for future expansions of the business. The dock cubicle can be installed when required as an add-on to the existing building.

**7. Overhead lean-to or Cantilevered Canopy**

The costly 4m to 6m cavity steel structures commonly found protruding from the outer edge and installing Dock Cubicles can eliminate the full length of many existing warehouses. The Dock Cubicle as the name implies, is the iso-panel structure to which the sealing systems is attached.

**8. Environmental Control**

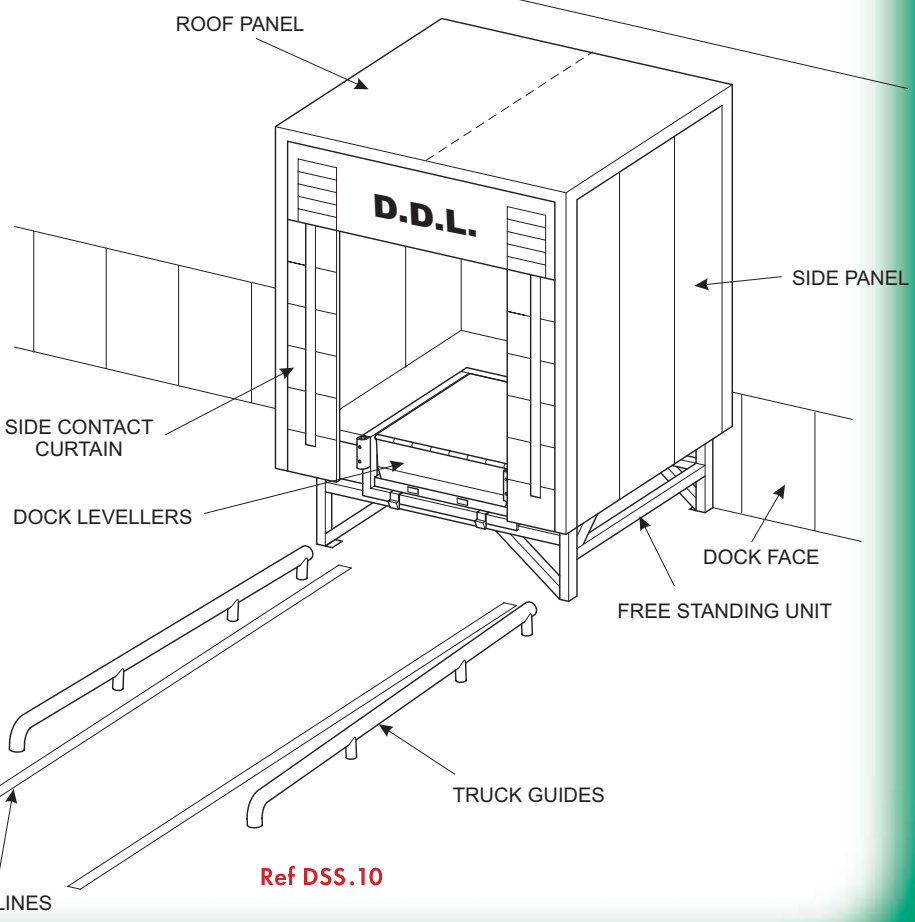
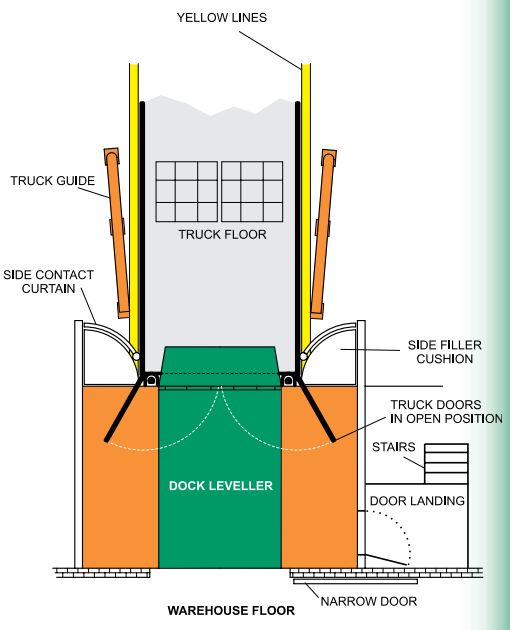
As the dock cubicle seals wraps around the outside of the truck or trailer, enveloping the vehicle body, any rain, wind, dust, sleet or even snow are unable to effect foods handling

through the cubicle between the warehouse and road vehicle.

**9. Temperature Conservation**

One of the greatest areas of heat loss in a building is the loading dock area. Once the door is opened to receive goods, a dramatic heat loss can occur. Modern loading dock cubicles prevent the expensive temperature loss.

In a warehouse it is important to control temperatures below ambient summer temperatures and dock cubicles are effective in preventing ingress of over-warm air as they are in avoiding heat losses from the warehouse.



# CHILLER FREEZER & COLD ROOMS

## AIR INFILTRATION EFFECTS AT THE LOADING DOCK DOOR

### 10. Cold Room Warehouse

The dock cubicle is designed for use with cold room warehouses. It is fully insulated with isotherm panels making it an efficient environment air lock between warehouse and truck as noted in sections 8 and 9 above.

A vital feature is that the warehouse door fully closes and seals properly on the inside of the warehouse and on to the floor, not on top of the dock leveller through which cold would escape. The warehouse cold room can also be smaller, to reduce the temperature.

### HACCP Compliance

The Hazard Analysis Critical Control Point (HACCP) system is a preventative approach to food borne hazards. It is based on the application of scientific principles to food processing and production. HACCP compliancy has become critical in several industries, docking equipment included. The dock cubicle adhere to the HACCP system and are thus further suitable for sensitive conditions / areas.

There are three main components that make up a successful, well designed Deep Freezer or Chiller Cold Room Storage Warehouse.

1. Refrigeration and Air conditioning
2. Cold Room Panel
3. Docking Bay Sealing System

Everyone knows how much it costs to run a refrigeration plant. What is not well known is that a major part of these costs are spent on cooling and preventing the air entering the freezer room from outside. The air enters the room through the doors at the receiving and dispatch bays, but by keeping the doors closed or only opening them when absolutely necessary, large savings can be made. Besides saving costs, freezing up of coils and ice build up on the

products and walls around the entrances can be avoided and product losses and ingress hazards minimised.

Attached herewith is a leaflet developed by DDL Equipment which will explain risk management and preventing the ingress of Hazardous materials (HACCP) into your chiller, freezer and cold rooms at the same time preventing "Cold Chain" losses (Good Guys / Bad Guys syndrome). **See DS.33**

### 1. Tail Lift Cavity under Docking Equipment

The international move towards installation of docking equipment outside, rather than inside the



MEMBER OF SOUTHERN AFRICAN REFRIGERATED DISTRIBUTION ASSOCIATION

GOOD GUYS IN



THE COLD CHAIN

KEEPING THE "COLD" IN

"COLD is GOLD" It's Heavy & Expensive

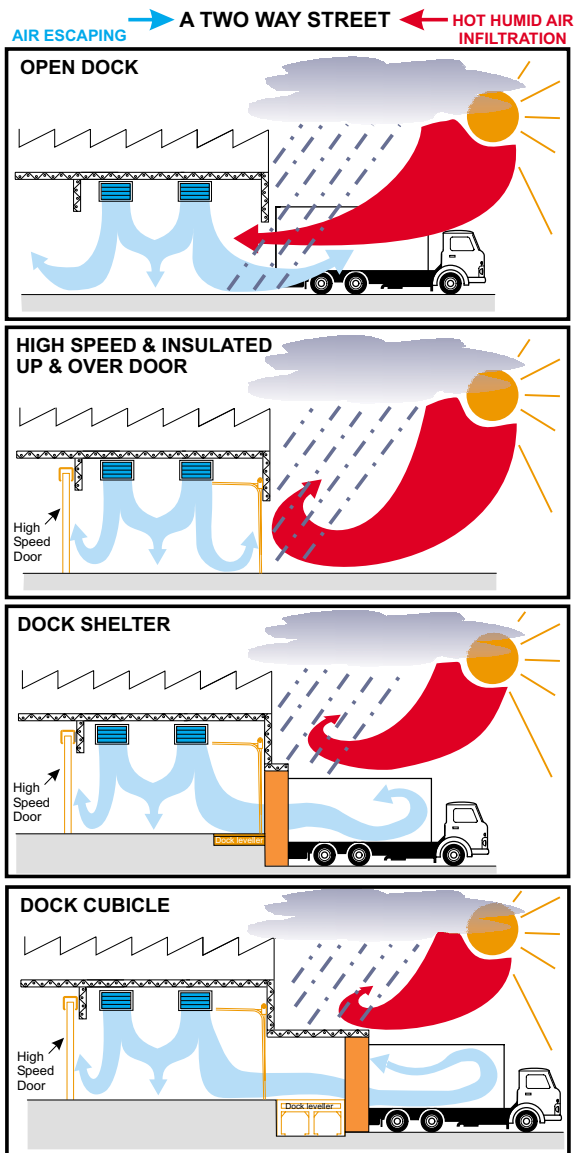
Complete design drawings available on website.

Refer to Drawings:  
Ref: DDS.17 & HSD.1  
Ref: DDS.18 & HSD.2  
Ref: DDS.19 & HSD.3

Also available on our website:  
[www.ddl.co.za](http://www.ddl.co.za)

The Cold Chain Approved and HACCP Compliant Equipment

"FROM FARM TO FORK"

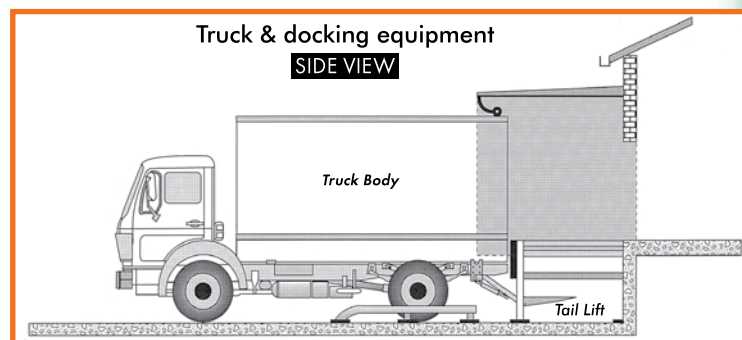


See DS.33

warehouse, is due largely to the increased employment of a tail lift on trucks. The new generation of tail lifts on the cantilever type afford a large platform which doubles, as the trucks rear door is capable of tilting up and down. **See DS.11**

When backing up against the docking equipment to load, a

truck fitted with a tail lift requires a cavity under the dock stand to accommodate the tail lift and to allow the rear of the truck door against the equipment for ease of loading and unloading.



### Risk Management

Preventing stock losses, theft, pilferage, etc

BAD GUYS OUT



H.A.C.C.P

Hazard Analysis Critical Control Point

Preventing the ingress of hazardous materials into:

- Refrigerated truck
- Refrigerated plant
- Refrigerated process area
- Food process area
- Fish Production
- Cut vegetables & fruits
- Supermarkets
- Cold room
- Chiller area
- Abattoirs

Preventing the entry of:

- Hot, humid air
- Rain water
- Dust, leaves
- Insect, bugs, birds etc
- Exhaust fumes
- Contaminated smells/odours
- Rodents, Mice
- Cats
- Cockroaches
- "Creepy Crawlies"



## 12. Security improved

The receiving and dispatch bays of warehouses and supermarkets are notorious for "shrinkage", pilferage and other losses due to the level of activity in these areas

By locating the docking equipment outside of the building it is easier to control the movement and activities of personnel (DSS 16). Drivers and assistants are not allowed into the warehouse. Conversely, warehouse and order-picking staff cannot make contact with the truck crew. All paperwork can be handled in the dock cubicle rather than in the warehouse. Another security aspect is that goods or products cannot be supplied into the dock leveller pit in the warehouse to be collected later - a common occurrence at the present time.

## 13. Truck Separation

By reversing into a dock cubicle, trucks and truck crews are separated from one another during the loading/unloading process. Not allowing access to the rear-loading end of the truck improves control over the product, information and security and eliminates possible collision between truck crew and warehouse staff.

## 14. No Refuse Pit

Dock leveller pits are well known as rubbish collecting areas. All the paper wrappings, string, cardboard and wood accumulate under the dock leveller in the warehouse and are left there until an effort is made to clear the debris. By installing the dock leveller on a freestanding unit in the external dock cubicle, the refuse drops to the ground outside and be swept or hosed away without difficulty.

## 15. Smaller Warehouse Doors

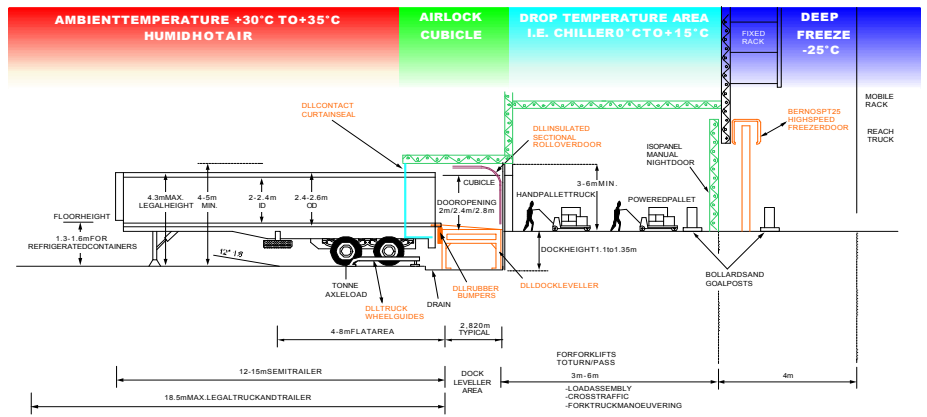
A door of 2.0m to 2.2m wide and up to 2.4m high can be installed to the outer face of the warehouse wall to allow handling equipment to pass through.

## 16. Wider Variation Of Vehicle Sizes

A large variation of both semi-trailer and rigid truck widths and heights can be accommodated by cubicles sealing system around the body i.e. vehicle heights of 3.6m to 4.3m and widths of 2.1m, 2.5m and 2.6m.

## Section Through Typical

## Docking Bay and Dock Cubical



## 17. Truck Doors To Open Into Dock Cubicles

Rear truck doors need only be opened and closed once the truck has reversed up to and into the dock cubicle. The doors can swing open and over the dock levellers (see DE 16). Smaller model of vehicles i.e. bakkies, 3 to 6 ton model trucks with door latches less than 1 350mm from ground level still have to open rear swing doors before entering the cubicle.

At present, trucks generally have to stop before, open the double rear doors left and right before reversing up to the docking doors. The reverse procedure has to be performed when the truck departs. The single, faster operation possible with the dock cubicle improves security, reduces pilferage and facilitates maintenance of warehouse environmental temperature.

## 18. Stairs, Personnel Doors And Hatchways

To provide ease of access for personnel, such as drivers and warehouse managers for paper and document control, stairs and personnel doors can be accommodated in the cubicle design. In addition, or alternatively, hatchways can be provided for documentation control.

The above technical article is based on International Standards of trucks, Road Traffic Act and regulation dock design standards. Along with a number of HACCP compliant Dock Levellers, High Speed Doors, Swing Doors and Insulated Sectional Doors. The Dock Cubicle design and specification drawings are available and can be downloaded from the DDL Equipment website: [www.ddl.co.za](http://www.ddl.co.za)



90° Angle Parking



45° Angle Parking



Cubicle on Steel Free Standing Unit



Goods Hoist



Elevating Dock



Dock Leveller - Mark II



Dock Cushion Seal



Dock Shelter



Inflatable Seal



Nergco High-Speed doors



Dock Cubicle Contact Curtain Seal

- Bernos High Speed Doors
- Dock "D" Rubber Bumpers

- Mini Dock Levellers
- Roll-up & Over Doors

- Scissor Lift Table
- Truck Guides

**DDL Equipment**  
(pty) Ltd.

Tel: (011) 443 4233

Fax: (011) 882 4569

E-mail: [ddl@icon.co.za](mailto:ddl@icon.co.za)

Website: [www.ddl.co.za](http://www.ddl.co.za)

