

إرشاد فني  
**TECHNICAL GUIDELINE**  
رقم (6) Number

السدود الحاجزة لصهاريج التخزين ومرافق النقل  
**Bunding of Storage Tanks and Transfer  
Facilities**

يونيو - 2011 - June

### ***Introduction:***

Bunding, also called a bund wall, is an important engineering control in facilities where dangerous goods are stored or handled, to protect the land environment from contamination and to limit the spread and risks resulting from spills (either by force or it's chemistry).

The Local Order No. 61/1991 and the Code of Practice for the management of Dangerous Goods requires the adoption of safety precautions against the spillage of dangerous goods in storage and operating facilities.

This Technical Guideline specifies the minimum requirements for the bunding of tanks and handling areas.

### ***Guidelines:***

#### ***1. General requirements***

All storage tanks, drum stores, loading pads and areas, and work locations where dangerous goods are used and transferred must be bunded. These activities must never take place on open ground or on interlocking paving. Bunds shall consist of a base and a wall. The wall may be of a vertical or roll-over design depending on the site requirements.

#### ***2. Bund Construction***

- i. Materials: Floor slabs and bund walls must be impervious and compatible with the liquids to be contained.
- ii. Joints: Concrete bunds should be poured integrally with the slab. When joints are used, they should be sealed with a suitable sealing material.
- iii. Drains: The floor should be graded and drained to the collection pit. A drain from the collection pit is not recommended. However any drains which are provided should also be provided with an isolation valve and operated under control conditions.

#### ***3. Material Segregation***

Where two or more liquids are stored on site,

- i. Separate bunded areas shall be provided where possible for each liquid to maximize collection and re-use of uncontaminated spilled liquid. Incompatible materials shall never share the same bunded area.
- ii. Minimum separation distance for storage vessels containing chemicals belonging to different classes shall be followed.

#### *4. Bund Height*

- i. Tank Storage:  
The gross capacity of the bunded area should be 110% of the capacity of the biggest tank or 25% of the total capacity of all tanks within the bund whichever is greater. Wall type bunds at tank storage facility should be from 0.5 m to 1.5 m high. The distance between tank and bund walls must be at least 1 m. If the bund walls are more than 1 m above floor, provide steps or ladder for quick escape.
- ii. Drums Storage: The gross capacity of a bunded area should be sufficient to hold at least the volume of 25% of the drums to be stored up to 10 Kl plus 10% of any volume in excess thereof.
- iii. Tank Vehicle Loading: The capacity of a bunded area should at least equal to 100% of the largest compartment of any tank vehicle using the filling facility and the maximum quantity capable of being discharged from the filling point with full flow during a period of 2 minutes.

#### *5. Storm water allowance*

The Areas which are required to be bunded or controlled and which are not considered to be under cover, should be provided with a minimum bund height of 150 mm. For example, for outdoor storage, transfer and potentially contaminated areas, the bund should be at least 150 mm high.

#### *6. Fire Water Allowance*

In manufacturing operations provision should be made for containment of fire water within the bunded plant area. For flammable liquids, bund capacity should be increased either by a volume equal to the output from the sprinkler system for a period of at least 20 minutes or to 133% of the net capacity of the largest tank, whichever is greater.

#### *7. Storm Water Control*

Stormwater collected in bunded areas may be contaminated. The treatment and/or disposal of stormwater collected in bunded area should be determined in consultation with Environment Department. The occupier shall obtain the necessary Waste Disposal Permit by applying for the permit using on-line system at DM portal [www.dm.gov.ae/](http://www.dm.gov.ae/) before making any disposal.

#### *8. Maintenance and Operation*

Procedures should be established to ensure that

- i. Additional bunds are provided as needed.
- ii. Bunds are maintained in good condition.
- iii. Spills are cleaned up immediately with necessary equipment and absorbent readily available. Bunded areas should be maintained free of spilt material and contaminants.
- iv. Where filling operations occur, overfill controls should be installed. All valves, filters, sight gauges, vent pipes and other ancillary

- equipments should be situated within the bund and arranged so that discharges are contained.
- v. Collected storm water should be cleared by regular disposal.

#### *9. Spread of contaminants*

Vehicles/persons should not be allowed to spread contaminants out of a bunded area. This can be controlled by having high standard of house keeping.

#### *10. Fire Prevention*

Adequate fire precautions shall be taken against the potential risk of fire. The dangerous goods should be properly placarded with safety signage.

**For further information please visit**  
**[www.dm.gov.ae](http://www.dm.gov.ae)**  
**or call**  
**Environmental Control Section**  
**Tel.: 6066835 / 6066839 Fax: 7033568**

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