

## EURODOMES FOR ROAD SALT STORAGE

1. EuroDome buildings are **specifically designed** and built **to store bulk rock salt** for road treatment. The roof is constructed from stressed skin timber panels, timber being accepted as the ideal material for guaranteeing long term low maintenance storage. The roof sits on a reinforced concrete ringbeam wall, which is maintained under the entrance doorway. The ringbeam itself is laid directly on top of a level asphalt pad.

2. The building **profile follows the natural shape of stored bulk materials** and coupled with the timber panel construction results in buildings of **exceptional strength**. Continuity of the building structure between the timber roof and the retaining wall, and the retaining wall and the asphalt floor is such that **leaching is completely contained**. The building shape and the vents at the top of the building create a natural chimney effect so that the **salt is kept in prime condition** for spreading. There is, of course, **no condensation** within timber buildings.

3. The **elevation** of the EuroDome, and hence its height, **can be varied to suit planning requirements** but the ideal is to maintain sufficient headroom inside the building to allow delivery lorries to tip inside in dry conditions. Environmental contamination can result from tipping salt outside the building and then moving it inside using a front-end loader. Alternatively, an inloading conveyor can be very simply accommodated, but should be considered with caution for Council Depot use.

4. The retaining walls are designed to withstand vehicle impact and the concrete has 50mm cover, **C40/50** concrete being used to cast in-situ. The internal surfaces of the walls are treated with two coats of a 50:50 mixture of linseed oil and mineral spirit **to seal the concrete effectively against salt attack**.

5. The panelled roof is first covered with a 0.75 kg/m<sup>2</sup> membrane, and then asphalt shingles, at a weight of approx. 11.5 kg/m<sup>2</sup> are laid over the top. The pattern of laying is such that the cover **is at least a double thickness of shingle**. There are twelve colours of shingle available, and a colour or combination of colours can be chosen **to suit the surrounding environment**. Sample panels were submitted for test to Warrington Fire Research Centre, their Report No. 144005 of 31 January 2005 refers, and results obtained for the External Fire Exposure of the roof of Category "EXT.S.AA" as defined in BS 476: Part 3: 2004.

6. It is normal to construct the buildings directly on top of an asphalt pad because the foundation wall is designed as a **continuous beam obviating the need for footings**. If annual swell or settlement cycles occur they will cause uniform movements. The pad thickness will vary with the design loads of the building and the load bearing properties of the ground on which it is laid.

7. Water run-off from the building is normally channelled by means of a simple drain around the periphery of the asphalt pad, which feeds the existing site drainage system, although guttering may be fitted if required.

8. Planning reaction indicates that the EuroDome **is preferred to conventional designs**. Four Planning Approvals have been obtained in UK National Park areas and the buildings completed. In Northern Ireland, where one depot site is very exposed to public view, only positive comment has been received. When a site visit is not a possibility, Dome UK has a scale model that is available for meetings or presentations.

9. Standard EuroDome sizes are such that the stored road salt capacity can **range between 250 and 18,000 tonnes**. When the EuroDome concept is modified to the **Barrel design the maximum capacity is limitless** and dependent only upon site restrictions for length.

10. British Standards Institution publication BS6399:1995 PART 2, stipulates wind load design requirements for the UK and Northern Ireland. The calculations for a 30m diameter EuroDome building have been verified by a Government authority as being suitable for the most severe loads imposed by **wind speeds of 52m/sec**. All models of EuroDome are now covered by a LANTAC System Approval Certificate, which greatly simplifies compliance for Building Regulations in England and Wales.

11. In cases where the entrance to the building will face the prevailing wind and is in a high wind factor area, or for security reasons if vehicles or machinery are stored within the buildings, doors have been supplied. There is a wide range of design alternatives which include heavy duty plastic curtains (power operated or manual), timber panels, fabricated gate type, etc.

12. The earliest EuroDomes have now been operating in Wales for over sixteen years and more than **115 EuroDomes have now been constructed in the UK and Ireland**. There are **more than 3000 in the USA and Canada**, primarily used for the storage of Road Salt, and which have been supplied for **more than forty years**.

13. References for some of the earliest buildings clearly show that any **deterioration** of the buildings in this normally hazardous environment has been **minimal to non-existent**.

14. The vast majority of EuroDomes have galvanised fasteners, which are judged, in view of the long term reports and references, to be more than adequate. Stainless steel or Aluminium Bronze may be specified and provided at the appropriate additional cost.

15. All EuroDomes can be funded using a Lease. The specific design of lease may depend upon the view taken by Authorities' external auditors. In Scotland it is possible to use an Operating Lease for the standard design of building. The lease period may be extended for a period of up to twenty years.

**DOME (UK) LIMITED**  
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