



METHODOLOGY

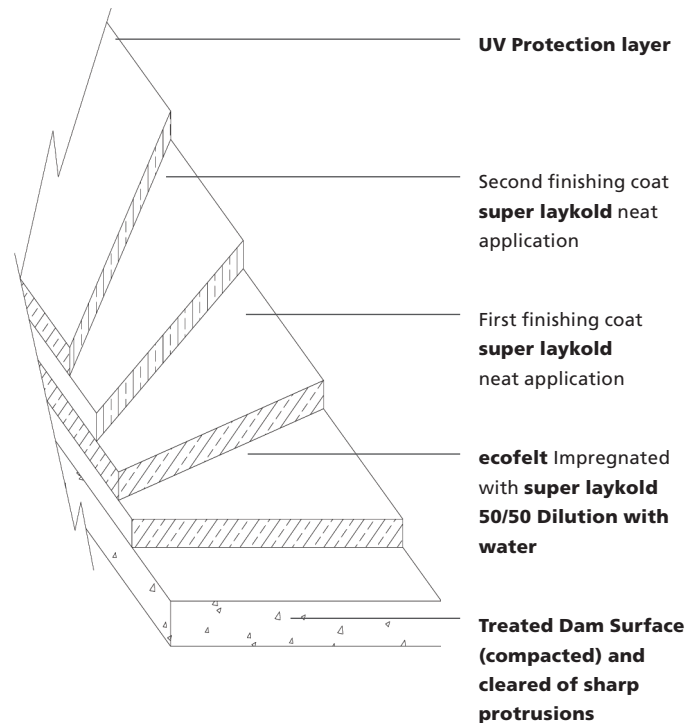
super laykold

DAM LINING SYSTEM

DESCRIPTION

super laykold Dam Lining System will help to minimise water loss on dams. The system consists of a rubberised-bitumen emulsion impregnated onto **ecofelt**, a non-woven needle punched polypropylene membrane. The system can be U.V. protected by a Slurry Seal or **silvakote** depending on the desired finish.

Once laid in the correct manner, this water loss reducing system will give a puncture resistant, high strength layer (see diagrammatic sketch below). The **super laykold Dam Lining System**, as well as being used on compacted embankments, can also be used on many other surfaces including concrete lined walls, concrete screeds and various other types of natural materials.



FEATURES	BENEFITS
Rubberised bitumen emulsion	<ul style="list-style-type: none"> Tough, waterproof product, Highflexible Low material cost Will not taint water
Reinforced with quality membrane	<ul style="list-style-type: none"> High puncture resistance Good tensile strengths Strong joint formation Excellent U.V. resistance Conforms readily to substrate
Simplistic installation	<ul style="list-style-type: none"> No expensive plant required Can use unskilled labour Strong joints easily formed Simple controls ensure quality Low labour costs
Ease of maintenance	<ul style="list-style-type: none"> No specialist repair men required Low labour costs
U.V. protection easily effected	<ul style="list-style-type: none"> Longer service life Numerous U.V. Protection Options available

IMPORTANT POINTS TO NOTE

1. It is important to note that the minimisation of water loss using the system depends entirely on the correct laying procedures being followed.
2. It is recommended that all bitumen impregnated **ecofelt** dams should have a perimeter fence to prevent the access of hoofed animals.

Frequent traffic by hoofed animals could lead to mechanical damage and seepage occurring. If the dam is required for livestock drinking water, it would be preferable to transfer the water to concrete troughs.

Construction

The SABS Code of Practice for flexible Membranes (No. 10.25 1976) gives useful hints in the construction of earth dam and installation of membranes.

4. Depth

Specifying Authorities recommend a maximum dam height of approximately 5 meters as a rule of thumb.

5. Water Table

It is important that the dam be located/constructed above the existing ground water table. Perched water tables are easily formed and the resulting drawdown effect can have a negative influence on membrane joints. Thus the installation of a toe drain would be recommended for each application.

3. Vegetation

All vegetation should be removed and weed killer applied to area before construction of the dam. The decomposition of vegetation once the dam is in place will lead to the formation of gas under the membrane.

4. Embankments

Maximum slopes of embankments should not exceed 1 : 2.5. This will allow easy preparation of the slopes for the membrane system.

5. Preparation of Floor

Optimum compaction should be imparted to the floor and embankments of the dam. Generally a smooth surface needs to be attained.

6. Dam Inlet and Spillways

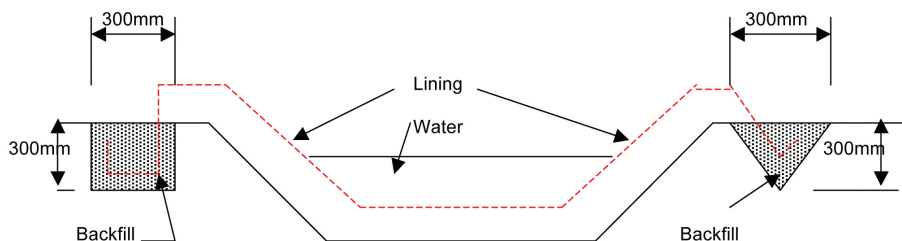
Care should be taken to ensure protection of inlets and spillways of dams. Water flow at these points can cause scour and erosion.

7. Toe Drainage

Due to the rapid drawdown effect, which can easily occur with fluctuating dam levels it is important that a sub-surface toe drain be constructed, to ensure that positive water pressure behind the joints of the lining is controlled.

8. Perimeter Anchor Trenches

It is imperative that anchor trenches are constructed around the perimeter to ensure that no slippage of the lining occurs down the side-slopes. During flood conditions this anchor trench will assist in the prevention of damage caused to the liner by overtopping. (See sketch for details).



INSTALLATION SPECIFICATIONS

Compacted Soil or Sand Dams

super laykold Dam Lining System; this application consists of a special rubberised bitumen emulsion used together with **ecofelt** non-woven needle punched polypropylene continuous filament membrane.

1. Do a final inspection of the treated compacted soil surface. Large protrusions such as rocks and sticks should already have been removed. Water pressure can cause damage to the lining when stretched over these protrusions.
2. Place one end of the **ecofelt** roll in the anchor trench furry side down, backfill with excavated material and compact well:
 - Unroll the **ecofelt** down the embankment at right angles to the trench and onto the dam floor for a few meters. This operation should continue slightly ahead of the **super laykold Dam Lining** rubberised bitumen application.
 - Overlaps – (150 – 300mm)

Both end and side flaps should be treated as follows:

- Apply a liberal coat of 1.0 – 1.5 liter/m² onto the unrolled **ecofelt** at a width of 150 – 300mm.
 - Immediately unroll the adjoining roll onto the coated overlap and ensure good contact by brooming the surface.
 - Lay the **ecofelt** in manageable areas with overlaps completed, before commencing with the first saturation coat.
- Dilute **super laykold Dam Lining** 1:1 with water in a suitable container.
 - Using soft brooms impregnate the **ecofelt** by dipping and brooming the emulsion into the membrane.
 - ensure application at approximately 2.5 to 3.0 liters/m² for the **ecofelt**.

- Allow to dry for 4 – 5 hours (depending on prevailing weather conditions)

Note: never attempt to shortcut the application by pouring the super laykold Dam Lining directly onto the ecofelt and then trying to spread the material.

3. Apply two seal coats of undiluted **super laykold Dam Lining** at right angles to each other using broom as before allowing 3-4 hours between coats at approximately 1 liters/m² per coat.

This may be achieved by applying a known volume of undiluted material to a pre-measured area i.e. 10 liters should cover 10m².

4. All exposed **super laykold** surfaces, once they are dry, should be protected from U.V. breakdown by over-coating these surfaces with **silvakote** following a curing period of 2 days.

IMPORTANT NOTE

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FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical data sheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals Limited** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

