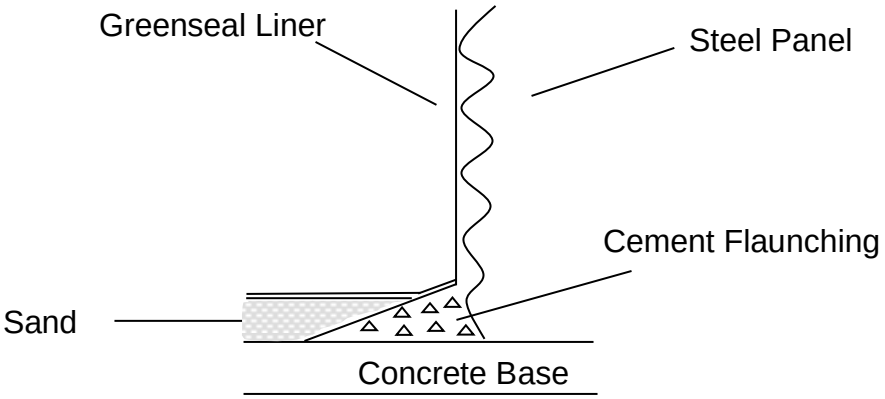
Check List for Warranty

A GORDON LOW ten year warranty will only be valid for this Greenseal EPDM rubber tank liner provided all the items on this checklist have been completed in accordance with our enclosed instruction leaflet.

(Extra copies are available on request for the address given below)

1. All bolt heads are inside the tank, nuts on outside, washers on both sides.
2. Upper rings of steel overlapping outside lower ones to shed rain.
3. 75mm (3”) cement fillet placed around the inside circumference of steel side/base.
4. 50mm (2”) depth of soft sand spread over base area.
5. Greenseal rubber liner fitted without folds or wrinkles.
6. Liner checked for wind displacement after 75mm (3”) of water has flooded the base area.
7. Both diameters of split capping fitted.
8. 200-300mm (8” – 12”) overlap of liner outside tank, 500-600mm for 4 ring high tanks.
9. Wire collar and wire strainer fitted to hold liner overlap in position.
10. Anchor brackets properly fitted with anchor bolts tightened securely.
11. Take-off unit fitted in accordance with instruction drawing.
12. Bolts for ballcock (if fitted) must not pierce Greenseal liner on inside of tank.
13. Steel is circular and level and securely bolted to a concrete plinth.
14. The liner is installed so that it does not stretch when filled.

Water Tank Profile



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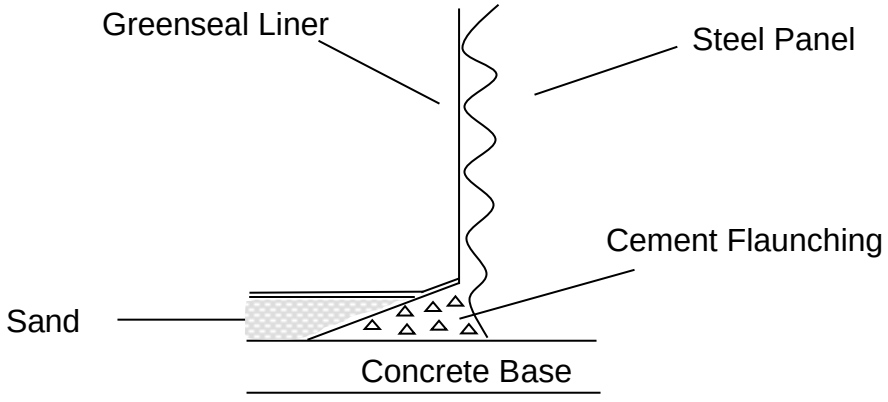
This Greenseal tank liner was manufactured at our Wyboston Factory

Welded by: _____ Checked by: _____ Date: ____/____/____

WT No. _____

Water Tank Profile



Installation Instructions

Water Tank Kit Checklist

1. The Steel sheets for the tank wall are banded together. These should be kept under cover until separated for building. Each sheet is letter coded for thickness and one will have a hole drilled in it for a take-off unit (if ordered).
2. Box containing nuts, bolts, washers & parabolts.
3. Coil of wire for liner collar and wire tensioner.
4. Greenseal rubber waterproof liner.
5. Two lengths of split capping one at 12mm (½") Ø & one at 25mm (1") Ø.
6. Emergency repair kit for liner.
7. Set of split capping locking clips.

Note: Comprehensive stress calculations for our range of tanks have been professionally carried out for us by external consultants for wind loadings up to 90 mph. The steel thicknesses shown below and the cement flaunching around the inner circumference of the base are integral to these calculations. A thin gauge top sheet placed in the base ring can be potentially disastrous!

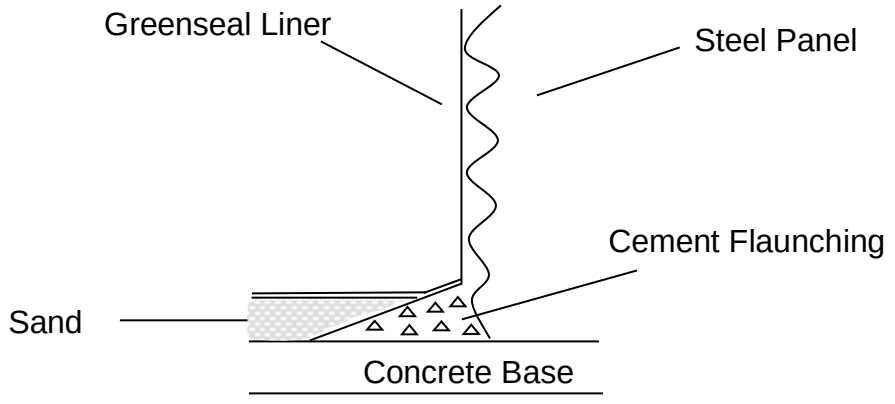
Concrete Base

In order to comply with Ministry of Agriculture and EEC requirements it is necessary to erect the tank on a concrete base which must be a minimum of 100mm (4") thick. Dependant on local ground conditions and the size of the tank it may be necessary to insert steel reinforcements into the concrete. If you are unsure seek the advice of a qualified civil engineer. The base slab must have a relatively smooth surface and extend at least 30cm (1") beyond the outside diameter of the tank. All sharp projections must be removed and the slab swept clear of loose rubble, stones etc.

Erecting the Steel Walls

A 75mm high flaunching of cement must be provided around the inside circumference of the tank base to ensure retention of the sand and the rubber liner. It is essential to then spread 50mm of fine builders sand over the concrete base (see diagram below). Failure to provide the cement flaunching and the 50mm sand layer will invalidate our warranty.

Water Tank Profile



First find the centre of the concrete base and mark out a precise circle with chalk to the diameter of the tank. Tip and spread the sand over the base area and provide enough cement powder for the 75mm flaunching mix needed later. Then place the Greenseal liner, still packed, in the centre of the base. Sort out the steel tank panels to determine the different thicknesses. Code letters are used to identify the various gauges, see the table below. Following the chalk line, loosely bolt the bottom layer of sheets together; use a screwdriver to line up the bolt holes. Bolt heads must be inside the tank. If you are fitting a take off unit, place the pre-drilled panel for the outlet fitting in its correct location and place one steel, and one rubber washer next to the drilled hole. The take off unit is fitted last and one steel and one rubber washer are located between the rubber liner and the steel wall.

Tank Sizes & Steel Sheet Gauges (and thicknesses)

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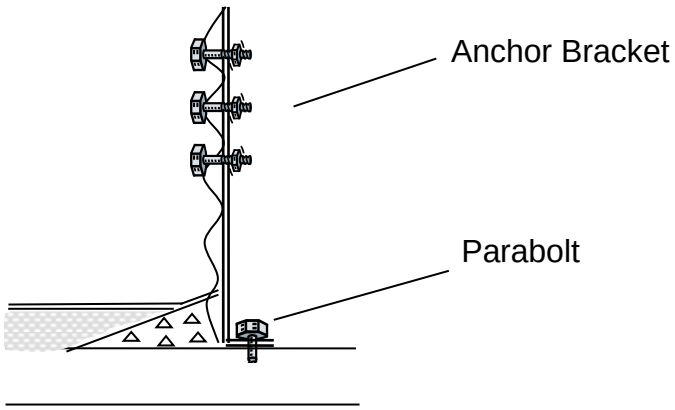
NOTE: EACH STEEL PANEL IS CLEARLY MARKED WITH A CODE LETTER OR ITS THICKNESS. WHERE THE TANKS ARE HIGHLIGHTED ABOVE, THE LOWER RINGS ARE A THICKER GAUGE.

Work in a clockwise direction, placing each consecutive sheet on the inside of the proceeding one to complete the circle. All bolt heads must be inside the tank and washers outside. Fix the anchor brackets provided on the outside of the tank, one at each vertical end joint in the steel wall, using the long bolts and spacers provided.

Second, Third and Fourth Rings of Steel Sheets

EACH NEW RING IS FITTED OUTSIDE THE RING BELOW TO SHED RAIN. Proceed as for the base ring and ensure the correct steel gauge is used. Stagger vertical joints and ensure all bolts are tightened when the erection is complete. Drill into the concrete base and secure the anchor bracket feet with the fixing bolts provided.

Anchor Bracket Detail



Before Fitting the Rubber Liner

1. CHECK that each steel ring has the correct gauge letter code as shown on the previous chart.
2. CHECK that there are bolts in every punched hole except the top and bottom single line of transverse holes.
3. CHECK that all bolt heads are inside the tank and that all burrs are removed to give a smooth surface.
4. CHECK for damaged corners and/or distorted edges of the corrugated sheets. These must be carefully straightened back to their original profiles to prevent puncture damage to the liner.

Quantities for Cement Flaunching and Sand Bed

1. Make a 5:1 cement mix and place the 75mm flaunching around the inside circumference of the tank wall.
2. Spread a 50mm layer of sand evenly across the base area.

TANK DIAMETER	SAND FOR BASE	CEMENT FOR 75MM FLAUNCHING	
FEET/METRES	**CUBIC METRES**	**BARROW LOADS**	**BUCKETS FULL (9 LTRS)**
9'1" / 2.77m	0.30	2	6
12'1" / 3.69m	0.50	4	8
15'1" / 4.60m	0.90	6	10
18'2" / 5.53m	1.20	9	12
21'2" / 6.45m	1.60	12	14
24'2" / 7.38m	2.10	15	16
30'3" / 9.22m	3.30	24	20
36'3" / 11.10m	5.00	34	24

Fitting the Greenseal Rubber Liner

1. Fit the small diameter (12.5mm) split capping around the top of the steelwork.

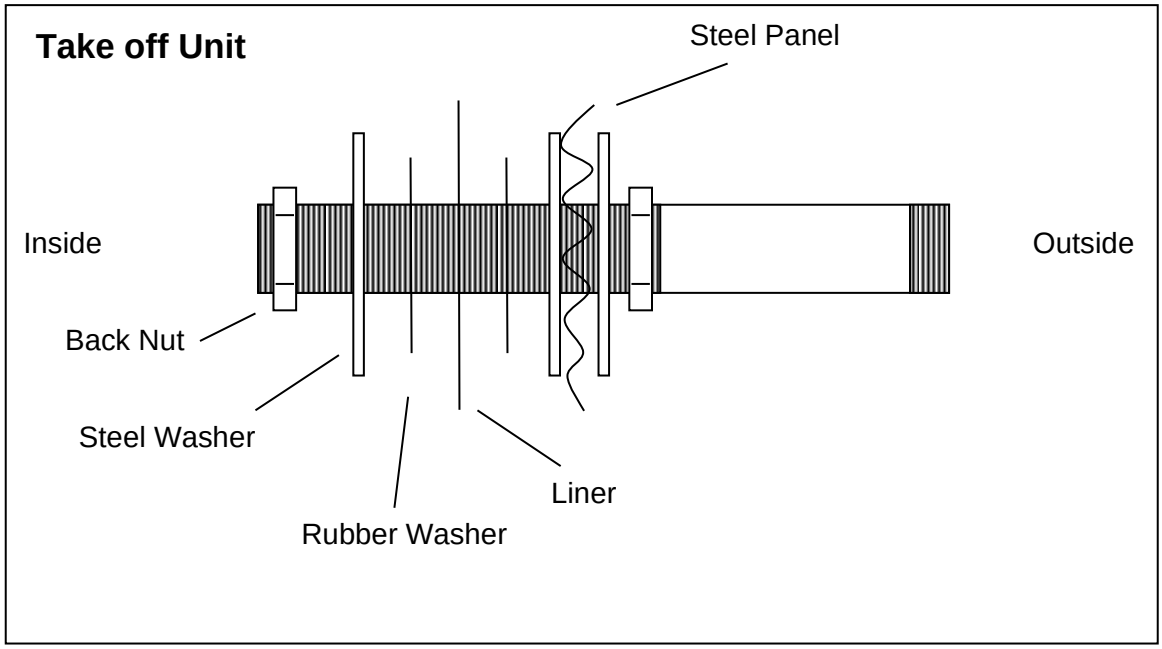
2. Roll out the liner and lay it out so that the base to wall circumference seam is touching the steel work all round. The vertical side will then be laying flat on the base. Cut some 25cm lengths of the outer (25mm) capping as temporary clips. The man inside the tank then passes up the edge of the liner to the outside man on the ladder who pulls the liner up until he has approximately 30cm of liner hanging down the outside of the tank and he then secures it with the 25cm pieces of outer capping.

3. The inside man should check that the liner base seam fits tightly with no bridging into the corner of the cement fillets. Move around to the next vertical steel joint and repeat until the liner is hung. This operation will probably have introduced vertical or diagonal creasing in the liner wall. It is now a simple matter to adjust the liner wall height to remove the creases. Note: it is important that the vertical wall is not under tension therefore allow a little slack to avoid stretching. When you are happy that the liner is correctly installed, fit the outer split capping. The outside flap should be even all round; if it is not you have got an oval tank.

4. Included in the kit is a length of wire and a tensioner. This is used to secure the external liner overhang. This wire collar should be tightly strained just below the split capping. Slip something behind the tensioner to prevent cutting into the liner while tightening.

Fitting the Take Off Unit

When the liner is properly hung, the take off unit can be fitted. Tap out the circle of rubber on the end of the pipe so it is a tight fit. Use some Boss White on the threads of the outlet to prevent water creeping out. The washers and nuts should be positioned as shown in the diagram below. Tighten the inside nut by hand as far as necessary and, with the inside nut held stationary by a spanner, complete the tightening on the OUSIDE nut. Take care not to rotate the threaded pipe as this will distort and tear the liner.

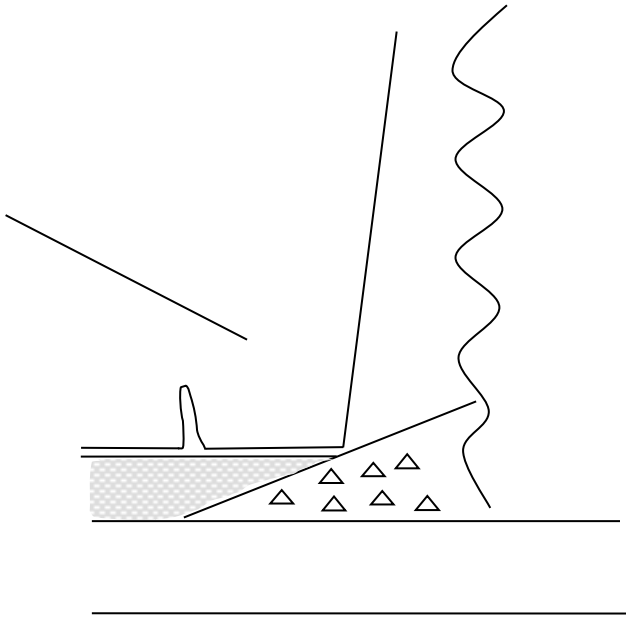

Take off Unit
Steel Panel
Inside
Outside
Back Nut
Steel Washer
Liner
Rubber Washer

LOOK

Even if the tank has been left over the lunch hour a gust of wind may have moved the wall-to-base seam of the liner away from the tank side. This will not show up from a cursory inspection and it is essential that the erector gets inside the tank to check that the liner is properly positioned by feeling the steel through the liner while the first 75-100mm of water is run in. 150mm of water on the base will lock the liner in position and wind is then not able to disarrange it. Failure to position the liner correctly will cause dangerous bridging as illustrated below.

Rubber liner incorrectly fitted with badly creased base

Liner displaced from tank wall



Dangerous Bridging