

## **Laird Properm – SUDS**

**Manufactured to BS 1338 : 2003**

**Installed in accordance with BS 7533 -13 : 2009 using materials specified in this standard**

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### **Properm**

The registered name for Laird Brothers SUDS paving product. The product can be supplied in packs for machine lay (ML) as well as standard. Properm can be incorporated in Attenuation or Infiltration systems

### **What is SUDS?**

Sustainable urban drainage system is a solution designed to allow surface water run-off to be stored and filtered, before it is discharged to a water course or drain naturally into the ground.

### **Why is it needed ?**

Increasing urbanisation has increased the risk of sudden flash flooding which conventional drainage systems are unable to cope with resulting in localised flooding and pollution of our rivers and streams. The SUDS System allows heavy rain to infiltrate through permeable block paving (Properm) into a specially designed storage and soakaway trenches, which mimic natural recharge allowing water to dissipate into the ground and removes harmful pollutants.

### **Where can Properm be used?**

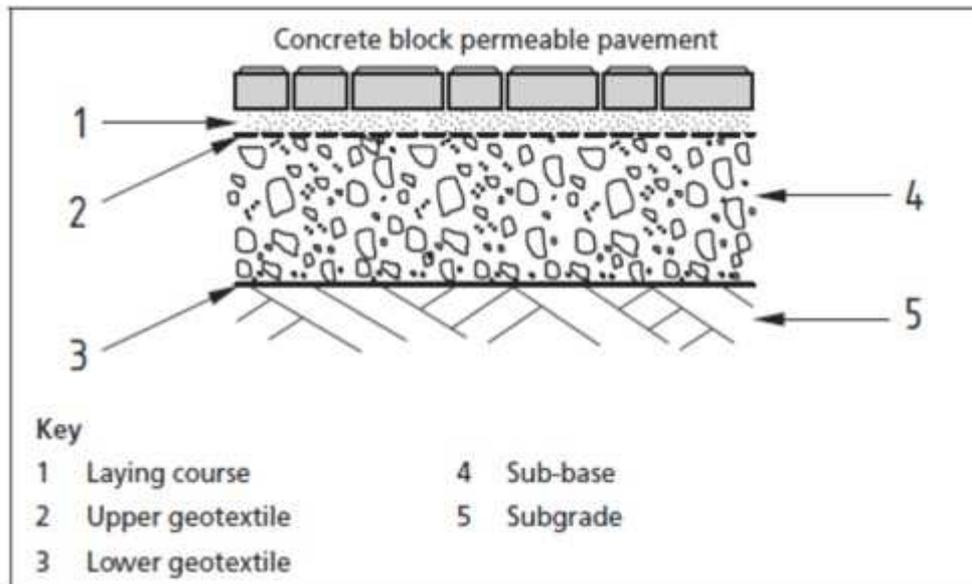
Properm permeable paving is suitable for use on: Car parks, Industrial estates, Retail centres, Pedestrian areas, Domestic drives, Motorway services, Airports, Garages, Lorry parks and other heavy duty applications. The product is 80mm thick which allows use where heavy vehicle traffic is expected

**The following laying recommendations for Properm are based on domestic vehicles and pedestrian traffic.**

The existing sub grade should have a CBR value of 5% or greater and meet the test requirements of the standard permeability test BS7533-13 : 2009 Table 1.

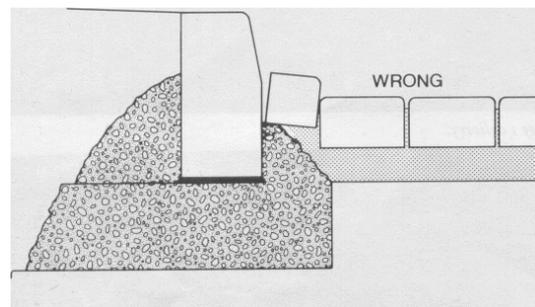
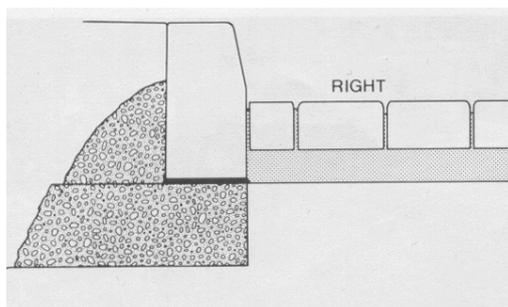
The typical SUDS system make up is shown below :

- 1 A clean angular 2/6.3mm Table A.2 BS 7533-13:2009\*
- 2 Upper geotextile (optional)
- 3 Lower Geotextile (recommended)
- 4 A clean angular 4/20mm Table A.2 BS 7533-13:2009\*
- 5 Sub grade



**Aggregate Properties**

- Fines content : f4
- Flakiness : FL20
- LAA : LA30
- Water absorption : WA242
- MSSV : MS18
- Micro Deval : Mde20



**edge restraint.** Where edgings, channels etc. are required they must be installed in advance and concrete allowed to set before laying sub-base and paving units unless already in existence.

**Geotextile.** It is advised that a suitable geotextile should be placed over the sub grade to act as a filter.

**sub-base material.** Using the 4/20mm sub-base aggregates specified above laid to a typical depth of 250-350mm depending on sub grade.

**Spread sub-base material and compact.** Where necessary street ironwork (manhole covers) must be adjusted to level in accordance with appropriate specifications. Areas surrounding ironwork must be reinstated to correct profile

**Check levels of sub-base to ensure an even bedding layer will be achieved.** At this stage a final check should be made to ensure that an even bedding layer would be achieved. Failure to achieve this will result in an unsatisfactory surface. Drawing the screed board across the screed rails can do this and ensuring the maximum tolerance does not exceed  $\pm 20$ mm.

**Uncompacted method.** Screed bedding layer to a depth of 50mm, the screed board is moved across the bedding layer to ensure correct levels on which to lay. It may be advantageous for an extra operative to walk in front of the screed board raking away excess sand. Low spots must be filled and re-screeded. No tolerance is allowed in this operation.

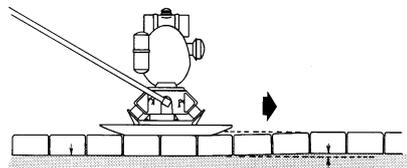
**Laying patterns.** The most adaptable pattern is herringbone since no special blocks are needed round bends, or in hammer heads and junctions - the pattern is simply maintained and helps to prevent 'creep' under traffic, where joints are less likely to open.

#### **Commence laying paving from a restrained edge laying to required pattern**

Each block must be placed firmly against its neighbours, being held slightly above the laying -course so as not to disturb the bedding layer until the block is in its correct place. Any damaged blocks should be rejected. All blocks must be laid so that they fit closely together. If joints begin to open, the blocks should be knocked together with a hide mallet. Care must be taken not to tilt the blocks on the leading edge of the laying face by standing or kneeling on them.

Although cutting need not be undertaken as laying progresses, all cut sections should be placed before compaction and never left until the following day. It is recommended that an extra person undertake cutting. In the case of 200mm x 100mm blocks the trade recommendation is that sections of less than 25% of a whole unit should not be used. For other units it is recommended that cuts be avoided altogether. Cutting should not be performed on the freshly laid area as this may result in contamination of the surface of the blocks, which is difficult to clean off.

**Vibrate paving to finished levels.** Compaction is to be carried out using a vibrating plate. It should be fitted with a rubber or neoprene skirt where recommended by the paving manufacturer to protect delicate surfaces. Men or light equipment can move over the blocks before they have been vibrated. At this stage this may cause an uneven surface, but this will be corrected by the plate vibrator.



**Brushing in.** The 2/6.3mm angular aggregate should be brushed into the gaps between the pavers after an initial light pass with the vibrating plate, **ensure that any excess material is cleaned from the surface of the pavers prior to compaction or trafficking of any kind** to avoid damage to paver surface. Following final compaction brush in more material to completely fill any voids.