

PLAY SURFACES

The present invention relates to play surfaces and
5 more particularly to surfaces which can provide a
springboard or shock absorbing effect.

Surfaces in play areas require to have a degree of
resiliency so that children can jump and run in safety.
10 Also areas underneath play frames require a shock absorbent
character to cushion falls. Other areas such as sports
areas can also benefit from having a springboard character
giving athletes assistance.

15 It is an object of the present invention to provide a
surface suitable for play which has a shock absorbent
and/or springboard effect. The term play is used
hereinafter to include sports and safety uses.

20 The present invention therefore provides a surface for
play areas including a structure comprising a first layer
of compressible material, a second layer on top of the
first layer the second layer comprising rounded particles
either natural or man made and a third layer on top of the
25 second layer comprising a stiffened surface and including
a geotextile layer separating said second and third layers.

In a preferred embodiment a geotextile layer is
provided between the first and second layers.

30

In a preferred embodiment a fourth layer including
compressible or elasticated material is provided
intermediate between the second and third layers.

35

Preferably a fifth layer on top of the third layer provides a top surface.

- 5 Preferably a well is formed in natural ground by excavation and is lined with water permeable geotextile material, the structure being laid within the well.

10 In a preferred embodiment each of the first, second and fourth layers are separated by geotextile material. This prevents contamination of one layer by the material of the other layer.

15 Preferably the first layer comprises foam, rubber or synthetic fibre forming a compressible layer. The foam may be polyethylene in which case the geotextile material between the first and second layers and the bottom lining of geotextile material is not required. The first layer may alternatively be an organic material such as peat.
20 Such a material will not last as long as a synthetic material, but may be acceptable in some circumstances.

25 In a preferred embodiment the rounded particles comprise man made material, gravel and/or sand with particle sizes between 0.2 to 10 mm diameter.

Preferably the first layer is between 25 and 75 mm thick, the second layer is between 75 to 100 mm thick and the fourth layer is between 25 to 75 mm thick.

The present invention also provides a method of constructing a surface for play areas, the method comprising the steps of excavating a well in natural ground, lining the well with a water permeable geotextile material, depositing a first layer of compressible material in the well, depositing a second layer of rounded particles either man-made or natural on top of the first layer, laying a third layer comprising a stiffened surface on top of the second layer and interposing at least one geotextile layer between the second and third layers or between both the first and second layers and the second and third layers.

Embodiments of the present invention will now be described by way of example with reference to the accompanying drawings in which figures 1 to 4 show the construction of a play surface according to the present invention and figures 2 to 8 show the construction of a modification of the playing surface of figure 4 for laying on top of existing ground.

With reference now to figures 1 to 4 a well, shown generally at 10, is formed either in natural ground by excavation or formed in a surface such as concrete by shuttering. If in natural ground the well is lined with a geotextile layer 12. (If in concrete then the play surface will normally be indoors, or if out of doors then an upper fourth layer comprising a stiffened pad 14 (see

figure 3) will be waterproof to prevent well 10 from filling with water). The geotextile layer 12 overlaps the edge of the well 10 as shown at 121, 122 preferably by 50 mm.

As shown in figure 2 a first layer of compressible material 16 is laid on top of the geotextile 12 (or concrete). The layer is preferably foam, rubber, synthetic fibre or peat and though compressible is of non-compactible material. The layer is preferably between 12 to 75 mm thick.

A first separating geotextile layer 18 is preferably interposed between the first layer 16 and a second layer 20 which comprises sand or gravel preferably of particle size between 0.2 to 10 mm and preferably between 75 to 100 mm thick. In a particular embodiment the particle size is between 3 to 6 mm and preferably the particles are rounded. The layer 18 is upturned in the well as shown at 181, 182 preferably by 75 mm.

A second separating geotextile layer 22 is preferably interposed between the second layer 20 and an optional fourth layer 24 comprising stiffened or elasticated material such as rubber crumb. The second

layer 22 preferably overlaps the edges of the well as shown at 221, 222. The layer 24 may be omitted in certain circumstances where a lesser degree of shock absorbency of the surface is allowable.

The stiff pad 14, forming a third layer, preferably water permeable, lies on top of the optional fourth layer 24 and preferably a fifth layer 26 of artificial grass or similar is laid on top of the fourth layer 24 as shown in figure 4. This layer may be sand filled in known manner.

Preferably the geotextile layers 12, 18 and 22 are 0.5 mm or 1 mm thick, the third layer 14 is 4 mm thick and the fifth layer 26 is 20 mm thick.

With reference now to figures 5 to 8 the reference numerals used in figures 1 to 5 denote similar components. The structure is to be laid over existing ground without excavation of a well. A furrow 30, preferably approximately 100 mm deep, is formed in the ground (which could be concrete or tarmac). The bottom geotextile layer 12 is "let into" the furrow 30 as shown at 123. Layer 16 is laid on top of the geotextile layer

12, the edges 161 of layer 16 being "feathered" as shown forming a wedge shape. Dimension A is preferably 0.5 m (500 mm).

The second geotextile layer 18 is laid on top of layer 16 and also "let into" the furrow 30 as shown at 183.

Layer 20 is then laid on top of layer 18 and is again "feathered" to a wedge shape as indicated at 201. Geotextile layer 22 is laid on top of layer 20 and is "let into" furrow 30 as shown at 203.

The optional layer 24 may be laid on top of layer 22 and "feathered" to form a wedge as shown at 241.

The stiff pad 14 is then laid on top of layer 24 (or layer 20 if layer 24 is not present) and artificial grass layer 26 is laid on top of the pad 14. Both of these are let into furrow 30 as shown at 141 and 261 and then furrow 30 is filled (or sealed with sealant) as shown at 301.

The structure thus formed has a ramped external edge as shown at 262 which allows easy access by users without any deep step being present. The edges are secured in the filled groove 30, 301 and the structure is resistant to damage at the edges.

The central portion therefore provides a safe playing surface which can be laid over, for example, concrete play areas without any substantial excavation.

With all three layers, 16, 20 and 24 the shock absorbency is such that a child could normally fall several metres without severe damage. Without layer 24 the shock absorbency is reduced, but the surface provided is still far safer than concrete or tarmac.

Unlike wood chippings or loose rubber crumb or other loose surfaces the surface provided by this invention will last for many years requiring virtually no maintenance and giving consistent shock absorbency over its whole life.

CLAIMS

1. A surface for play areas including a structure comprising a first layer of compressible material, a second layer on top of the first layer the second layer comprising
5 rounded particles either natural or man made and a third layer on top of the second layer comprising a stiffened surface and including a geotextile layer separating said second and third layers.
2. A surface for play areas as claimed in claim 1
10 including a geotextile layer between the first and second layers.
3. A surface for play areas as claimed in Claim 1 in which the structure also includes a fourth layer including compressible or elasticated material provided intermediate
15 between the second and third layers.
4. A surface for play areas as claimed in Claim 3 in which the structure includes a fifth layer on top of the third layer providing a top surface.
5. A surface for play areas as claimed in any one of
20 Claims 1 to 4 including a well formed in natural ground by excavation the well being lined with water permeable geotextile material, the structure being laid within the well.
6. A surface for play areas as claimed in Claims 3 or 4
25 or 5 in which each of the first, second and fourth layers are separated by geotextile material.
7. A surface for play areas as claimed in any one of Claims 1 to 6 in which the first layer comprises foam, rubber or synthetic fibre forming a compressible layer.



8. A surface for play areas as claimed Claim 7 in which the foam is polyethylene, the geotextile material between the first and second layers and the bottom lining of geotextile material being then not required.

9. A surface for play areas as claimed in any one of Claims 1 to 6 in which the first layer comprises an organic material such as peat.

10. A play surface as claimed in any one of Claims 1 to 9 in which the rounded particles comprise man made material, gravel and/or sand with particle sizes between 0.2 to 10 mm diameter.

11. A play surface as claimed in any one of Claims 3 to 10 in which the first layer is between 25 and 75 mm thick, the second layer is between 75 to 100 mm thick and the fourth layer is between 25 to 75 mm thick.

12. A play surface substantially as described with reference to the accompanying drawings.

13. A method of constructing a surface for play areas, the method comprising the steps of excavating a well in natural ground, lining the well with a water permeable geotextile material, depositing a first layer of compressible material in the well, depositing a second layer of rounded particles either man-made or natural on top of the first layer, laying a third layer comprising a stiffened surface on top of the second layer and interposing at least one geotextile layer between the second and third layers or between both the first and second layers and the second and third layers.



14. A method of constructing a surface for play areas as claimed in Claim 13 in which a fourth layer of compressible or elasticated material is laid on top of the second layer, the third layer being laid on top of the fourth layer.

15. A method of constructing a surface for play areas the method comprising the steps of laying on top of an existing ground surface a first layer of water permeable geotextile material, depositing a second layer of compressible material on top of the first layer, laying a third layer of geotextile material on top of the second layer, depositing on top of the third layer a fourth layer of rounded particles of either natural or man made material and laying a fifth layer comprising a stiffened material on top of the fourth layer.

16. A method of constructing a surface as claimed in Claim 15 including the step of laying a sixth layer of geotextile material and a seventh layer of compressible or elasticated material intermediate between the fourth and fifth layers, the sixth layer being adjacent the fourth layer.

17. A method of constructing a surface as claimed in Claim 15 or Claim 16 in which the edges of the perimeter of the play area are constructed by tapering each of the second, fourth and seventh layers towards the outside edges of the play area to provide a safety ramp edge construction for the play area.

18. A method of constructing a surface as claimed in Claim 17 in which the first, third, fifth and sixth layers are extended beyond the play area and are let into a recess in



the ground the recess then being filled to conceal and anchor the edges of the play area.

19. A method of constructing a surface for play areas
5 substantially as described.



* C L M S *