CLAIMS

1. A building product comprising calcium sulphate dihydrate particles bound by an organic binder, the building product being a self-supporting body; in which the calcium sulphate dihydrate particles satisfy at least one of the following two conditions:

(i) 90wt% of the calcium sulphate dihydrate particles have a particle size in the range of 1μm to 3mm; and/or

(ii) the calcium sulphate dihydrate particles each have a longest dimension and a lateral dimension, the lateral dimension corresponding to the maximum breadth of the particle about the axis defined by the longest dimension, and the calcium sulphate dihydrate particles have a low aspect ratio such that for at least 75% of the calcium sulphate dihydrate particles, the value of the lateral dimension is at least 20% of the value of the longest dimension.

2. A building product according to Claim 1, in which the calcium sulphate dihydrate particles each have a longest dimension and a lateral dimension, the lateral dimension corresponding to the maximum breadth of the particle about the axis defined by the longest dimension, and the calcium sulphate dihydrate particles have a low aspect ratio such that for at least 75% of the calcium sulphate dihydrate particles, the value of the lateral dimension is at least 40% of the value of the longest dimension.

3. A building product according to Claim 1 or Claim 2, in which the binder is a vegetable-derived organic binder that is optionally modified through cross-linking.

4. A building product according to Claim 3, in which the binder comprises one or more of the following: soy and/or a derivative of soy; starch and/or a starch derivative.

5. A building product according to any preceding claim, in which the binder is present in an amount of 0.5-30wt% of the product.

6. A building product according to any preceding claim, in which the calcium sulphate dihydrate particles are present in an amount of 50-90wt% of the product.

7 A building product according to any preceding claim, having a density in the range 250-1600 kg/m^3.

8. A building product according to any preceding claim, further comprising an inorganic binder, the inorganic binder optionally comprising a cementitious material.

9. A building product according to Claim 8, in which the inorganic binder is present in an amount of up to 20wt%.

10. A method of manufacturing a gypsum-based product, comprising the steps of:

providing a quantity of particles of calcium sulphate dihydrate;

providing an organic binder for binding the particles of calcium sulphate dihydrate together;

mixing the calcium sulphate dihydrate and the binder; and

allowing the mixture of calcium sulphate dihydrate and binder to cure to provide a building product that is a self-supporting body.

11. A method of manufacture according to Claim 10, in which the binder is provided in powder form, and the binder optionally comprises water.

12. A method of manufacture according to Claim 10 or 11, further comprising the step of providing a filler material for mixing with the calcium sulphate dihydrate and the binder.

13. A method of manufacture according to Claim 10, 11 or 12, further comprising the step of adding a stabilised foam to the mixture of calcium sulphate dihydrate and binder.

CLAIMS

1. A building product comprising calcium sulphate dihydrate particles bound by an organic binder, the building product being a self-supporting body; in which the calcium sulphate dihydrate particles each have a longest dimension and a lateral dimension, the lateral dimension corresponding to the maximum breadth of the particle about the axis defined by the longest dimension, and the calcium sulphate dihydrate particles have a low aspect ratio such that for at least 75% of the calcium sulphate dihydrate particles, the value of the lateral dimension is at least 20% of the value of the longest dimension.

2. A building product according to Claim 1, in which the calcium sulphate dihydrate particles each have a longest dimension and a lateral dimension, the lateral dimension corresponding to the maximum breadth of the particle about the axis defined by the longest dimension, and the calcium sulphate dihydrate particles have a low aspect ratio such that for at least 75% of the calcium sulphate dihydrate particles, the value of the lateral dimension is at least 40% of the value of the longest dimension.

3. A building product according to Claim 1 or Claim 2, in which the binder is a vegetable-derived organic binder that is optionally modified through cross-linking.

4. A building product according to Claim 3, in which the binder comprises one or more of the following: soy and/or a derivative of soy; starch and/or a starch derivative.

5. A building product according to any preceding claim, in which the binder is present in an amount of 0.5-30wt% of the product.

6. A building product according to any preceding claim, in which the calcium sulphate dihydrate particles are present in an amount of 50-90wt% of the product.

7 A building product according to any preceding claim, having a density in the range 250-1600 kg/m^3.

8. A building product according to any preceding claim, further comprising an inorganic binder, the inorganic binder optionally comprising a cementitious material.

9. A building product according to Claim 8, in which the inorganic binder is present in an amount of up to 20wt%.

10. A building product according to any preceding claim, in which 90 wt% of the calcium sulphate dihydrate particles have a particle size in the range of 1 μm to 3 mm.

11. A method of manufacturing a gypsum-based product, comprising the steps of:

providing a quantity of particles of calcium sulphate dihydrate;

providing an organic binder for binding the particles of calcium sulphate dihydrate together;

mixing the calcium sulphate dihydrate and the binder; and

allowing the mixture of calcium sulphate dihydrate and binder to cure to provide a building product that is a self-supporting body.

12. A method of manufacture according to Claim 11, in which the binder is provided in powder form, and the binder optionally comprises water.

13. A method of manufacture according to Claim 11 or 12, further comprising the step of providing a filler material for mixing with the calcium sulphate dihydrate and the binder.

14. A method of manufacture according to Claim 11, 12 or 13, further comprising the step of adding a stabilised foam to the mixture of calcium sulphate dihydrate and binder.