New version of claims:

1. A gypsum-containing construction material compound, comprising gypsum, optionally one or more polymers, optionally one or more aggregates, and optionally one or more admixtures, characterized in that the gypsum-containing construction material compound comprises one or more cements and metakaolin.

2. The gypsum-containing construction material compound as claimed in claim 1, characterized in that the gypsum is selected from the group encompassing α- or β-hemihydrate ($CaSO_4 \cdot 1/2\ H_2O$), dihydrate, anhydrite, or the calcium sulfate obtained during flue gas desulfurization (FGD gypsum).

3. The gypsum-containing construction material compound as claimed in claim 1 or 2, characterized in that the polymers are based on polymers of one or more ethylenically unsaturated monomers selected from the group encompassing vinyl esters, (meth)acrylic esters, vinylaromatics, olefins, 1,3-dienes, and vinyl halides, and optionally further monomers copolymerizable therewith.

4. The gypsum-containing construction material compound of claim 1 to 3, characterized in that the aggregates are selected from the group encompassing lime hydrate and inert fillers, such as silica sand, finely ground quartz, finely ground limestone, calcium carbonate, dolomite, clay, chalk, white lime hydrate, talc, mica, rubber granules, aluminum silicates, corundum, basalt, or carbides.

5. The gypsum-containing construction material compound as claimed in claim 1 to 4, characterized in that 5 to 90 wt% of gypsum, 0.5 to 20 wt% of metakaolin, 0.5 to 30 wt% of cement, 0.5 to 50 wt% of polymer, 0 to 80 wt% of aggregates, and 0 to 5 wt% of admixtures are present, the

figures in wt% being based on the dry weight of the gypsum-containing construction material compound and adding up in total to 100 wt%.

6. The gypsum-containing construction material compound as claimed in claim 1 to 5, characterized in that the weight ratio of cement to metakaolin is 1:4 to 4:1.

7. The gypsum-containing construction material compound as claimed in claim 1 to 6, characterized in that the total amount of gypsum and aggregates is 50 to 98 wt%, based on the dry weight of the gypsum-containing construction material compound.

8. The gypsum-containing construction material compound as claimed in claim 1 to 7, characterized in that one or more admixtures are selected from the group of organosilicon compounds encompassing silanes, polymethylhydrogensiloxanes, siloxane resins, polysilanes, organosilanols, disiloxanes, oligosiloxanes, polysiloxanes, and organosiliconates, it being possible for the organosilicon compounds to be present optionally immobilized on a support or encapsulated in an encapsulating material.

9. The use of the gypsum-containing construction material compound from claim 1 to 8 as gypsum mortar, more particularly as coating material or construction adhesive.

10. The use of the gypsum-containing construction material compound from claim 1 to 9 as adhesive mortar, bedding mortar, tile adhesive, filling compound, self-leveling compound, plaster, render, joint filler, or jointing compound, or for producing gypsum boards, gypsum molds, or stucco work.

Claims:

1. A gypsum-containing construction material compound, comprising gypsum, optionally one or more polymers, optionally one or more aggregates, and optionally one or more admixtures, characterized in that the gypsum-containing construction material compound comprises one or more cements and one or more pozzolans.

2. The gypsum-containing construction material compound as claimed in claim 1, characterized in that the gypsum is selected from the group encompassing α- or β-hemihydrate ($CaSO_4 \cdot 1/2\ H_2O$), dihydrate, anhydrite, or the calcium sulfate obtained during flue gas desulfurization (FGD gypsum).

3. The gypsum-containing construction material compound as claimed in claim 1 or 2, characterized in that the pozzolans are selected from the group encompassing kaolin, microsilica, diatomaceous earth, flyash, finely ground trass, ground blast-furnace slag, finely ground glass, precipitated silica, and fumed silica.

4. The gypsum-containing construction material compound as claimed in claim 1 to 3, characterized in that the polymers are based on polymers of one or more ethylenically unsaturated monomers selected from the group encompassing vinyl esters, (meth)acrylic esters, vinylaromatics, olefins, 1,3-dienes, and vinyl halides, and optionally further monomers copolymerizable therewith.

5. The gypsum-containing construction material compound of claim 1 to 4, characterized in that the aggregates are selected from the group encompassing lime hydrate and inert fillers, such as silica sand, finely ground quartz, finely ground limestone, calcium carbonate, dolomite, clay, chalk, white lime hydrate, talc, mica, rubber granules, hard fillers, or carbides.

6. The gypsum-containing construction material compound as claimed in claim 1 to 5, characterized in that 5 to 90 wt% of gypsum, 0.5 to 20 wt% of pozzolans, 0.5 to 30 wt% of cement, 0.5 to 50 wt% of polymer, 0 to 80 wt% of aggregates, and 0 to 5 wt% of admixtures are present, the figures in wt% being based on the dry weight of the gypsum-containing construction material compound and adding up in total to 100 wt%.

7. The gypsum-containing construction material compound as claimed in claim 1 to 6, characterized in that the weight ratio of cement to pozzolans is 1:4 to 4:1.

8. The gypsum-containing construction material compound as claimed in claim 1 to 7, characterized in that the total amount of gypsum and aggregates is 50 to 98 wt%, based on the dry weight of the gypsum-containing construction material compound.

9. The gypsum-containing construction material compound as claimed in claim 1 to 8, characterized in that one or more admixtures are selected from the group of organosilicon compounds encompassing silanes, polymethylhydrogensiloxanes, siloxane resins, polysilanes, organosilanols, disiloxanes, oligosiloxanes, polysiloxanes, and organosiliconates, it being possible for the organosilicon compounds to be present optionally immobilized on a support or encapsulated in an encapsulating material.

10. The use of the gypsum-containing construction material compound from claim 1 to 9 as gypsum mortar, more particularly as coating material or construction adhesive.

11. The use of the gypsum-containing construction material compound from claim 1 to 10 as adhesive mortar, bedding mortar, tile adhesive, filling compound, self-leveling

compound, plaster, render, joint filler, or jointing compound, or for producing gypsum boards, gypsum molds, or stucco work.

The invention claimed is:

1. A gypsum-containing construction material compound, comprising:

30 to 75 wt% of gypsum,

1 to 10 wt% of metakaolin,

1 to 10 wt% of cement,

1 to 10 wt% of at least one polymer,

10 to 60 wt% of aggregates,

0 to 5 wt% of hydrophobizing additives, and

0 to 10 wt% of admixtures,

wherein the figures in wt% are based on a dry weight of the gypsum-containing construction material compound and add up in total to 100 wt% and the at least one polymer is a member selected from the group consisting of: (a) vinyl ester homopolymers, (b) vinyl ester copolymers comprising one or more vinyl ester units and one or more monomer units selected from the group consisting of olefins, vinylaromatics, vinyl halides, acrylic esters, methacrylic esters, monoesters of fumaric acid, monoesters of maleic acid, diesters of fumaric acid and diesters of maleic acid, (c) homopolymers of vinyl halogen compounds, and (d) copolymers of vinyl halogen compounds comprising at least one monomer unit selected from the group consisting of vinyl esters, olefins, methacrylic esters and acrylic esters.

2. The gypsum-containing construction material compound as claimed in claim 1, wherein the gypsum is selected from the group consisting of α- or β-hemihydrate ($CaSO_4 \cdot ½ H_2O$), dihydrate, anhydrite, and a calcium sulfate obtained during flue gas desulfurization (FGD gypsum).

3. The gypsum-containing construction material compound of claim 1, wherein the aggregates are selected from the group consisting of lime hydrate, silica sand, ground quartz, ground limestone, calcium carbonate, dolomite, clay, chalk, white lime hydrate, talc, mica, rubber granules, fillers, and carbides.

4. The gypsum-containing construction material compound as claimed in claim 1, wherein a weight ratio of cement to metakaolin is 1:2 to 2:1.

5. The gypsum-containing construction material compound as claimed in claim 1, wherein a total amount of gypsum and aggregates is 60 to 95 wt%, based on a dry weight of the gypsum-containing construction material compound.

6. The gypsum-containing construction material compound as claimed in claim 1, wherein one or more admixtures comprise organosilicon compounds selected from the group consisting of silanes, polymethylhydrogensiloxanes, siloxane resins, polysilanes, organosilanols, disiloxanes, oligosiloxanes, polysiloxanes, and organosiliconates, it being possible for the organosilicon compounds to be present optionally immobilized on a support or encapsulated in an encapsulating material.

7. The gypsum-containing construction material compound as claimed in claim 1, which is a gypsum mortar.

8. The gypsum-containing construction material compound as claimed in claim 1, which is a member selected from the group consisting of a adhesive mortar, a bedding mortar, a tile adhesive, a filling compound, a self-leveling compound, a plaster, render, joint filler, jointing compound, a gypsum board component, a gypsum mold component, or stucco component.

9. The gypsum-containing construction material compound of claim 1, wherein the metakaolin is the only pozzolan in the compound.

10. The gypsum-containing construction material compound of claim 1, consisting of

30 to 75 wt% of the gypsum,

1 to 10 wt% of the metakaolin,

1 to 10 wt% of the cement,

1 to 10 wt% of the at least one polymer,

10 to 60 wt% of the aggregates,

0 to 5 wt% of the hydrophobizing additives, and

0 to 10 wt% of the admixtures.

11. The gypsum-containing construction material compound of claim 2, wherein the aggregates are selected from the group consisting of lime hydrate, silica sand, ground quartz, ground limestone, calcium carbonate, dolomite, clay, chalk, white lime hydrate, talc, mica, rubber granules, fillers, and carbides.

12. The gypsum-containing construction material compound as claimed in claim 11, wherein a weight ratio of cement to metakolin is 1:2 to 2:1.

13. The gypsum-containing construction material compound as claimed in claim 12, wherein a total amount of gypsum and aggregates is 60 to 95 wt%, based on a dry weight of the gypsum-containing construction material compound.

14. The gypsum-containing construction material compound as claimed in claim 13, wherein one or more admixtures comprise organosilicon compounds selected from the group consisting of silanes, polymethylhydrogensiloxanes, siloxane resins, polysilanes, organosilanols, disiloxanes, oligosiloxanes, polysiloxanes, and organosiliconates, it being possible for the organosilicon compounds to be present optionally immobilized on a support or encapsulated in an encapsulating material.

15. The gypsum-containing construction material compound as claimed in claim 14, which is a gypsum mortar.

16. The gypsum-containing construction material compound as claimed in claim 14, which is a member selected from the group consisting of an adhesive mortar, a bedding mortar, a tile adhesive, a filling compound, a self-leveling compound, a plaster, a render, a joint filler, a jointing compound, a gypsum board component, a gypsum mold component, and a stucco component.