amounts between about 5% and about 10% by weight of all of the ingredients in the joint compound, excluding the water.

Water is added in amounts selected to produce a joint compound of a desired viscosity. Some embodiments of the invention target a Brabender viscosity of between 200-400 Brabender Units. The measurements are based on using type A probe and 250 cmg torque head.

When preparing a ready-mix joint compound, it is necessary to provide for control microbial growth in the wet medium during storage. One method of reducing microbes is by introducing a biocide that kills on contact to shock the joint compound base. Examples of contact-kill biocides include household bleach (6% aqueous sodium hypochlorite) or chemicals for shock treatment of swimming pools, such as lithium or calcium hypochlorite. Although these additives will kill essentially all microbes present in the joint compound base at the time of manufacture, they will not prevent future microbial growth.

Conventional in-can preservatives, including MERGAL 174 and/or FUNGITROL 158, are used for continuing suppression of microbial growth. They can be used in combination with or in place of the contact-kill treatments. Combinations of preservatives are also contemplated.

The second component of the joint compound system is alum. This component serves to activate the pre-wetted setting type joint compound, restarting the calcium sulfate hemihydrate / water hydration reactions to chemically harden the joint compound. "Alum" means ~~any aluminum sulfate, including aluminum disulfate,~~ a double sulfate, including ~~of~~ a double sulfate of potassium and aluminum and a double sulfate of aluminum and ammonia. Hydrated forms of alum are also contemplated. In some embodiments, aluminum sulfate can be used instead of alum. The amount of activator used can be reduced when alum is used. Alum is used in amounts of about 0.5 grams to about 2 grams, based on 100 grams of ready mixed joint compound.

The ready-mixed cementitious composition of this invention is capable of functioning as a setting type joint compound when a set activator

We claim:

1. A joint compound ~~system~~ composition comprising:
alum;
a calcium-free phosphate set-preventing agent;
water; and
a setting type joint compound base comprising calcium sulfate hemihydrate, wherein said joint compound base has no added calcium carbonate and said calcium sulfate hemihydrate comprises less than about 2% by weight calcium carbonate.

2. The joint compound ~~system~~ composition of claim 1 wherein said calcium sulfate hemihydrate is less than 0.5 % calcium carbonate by weight of calcium sulfate hemihydrate.

3. The joint compound ~~system~~ composition of claim 1 wherein said calcium sulfate hemihydrate is substantially free of calcium carbonate.

4. The joint compound ~~system~~ composition of claim 1 wherein said base further comprises a latex emulsion binder present in an amount ranging from about 1% to about 15% by weight of the base composition prior to adding water.

5. The joint compound ~~system~~ composition of claim 4 where said latex emulsion binder comprises one of the compounds selected from a group of emulsions or spray dried powders consisting of polyvinyl acetate, polyvinyl alcohol, ethylene vinyl acetate, styrene acrylic, styrene butadiene, and mixtures thereof.

6. The joint compound ~~system~~ composition of claim 1 wherein said base further comprises a non-leveling agent present in a range from about 1% to about 10% by weight of the base composition prior to adding water.

7. The joint compound ~~system~~ composition of claim 6 wherein said non-leveling agent is selected from the group consisting of sepiolite, bentonite, montmorillonite, attapulgus clay and mixtures thereof.

8. The joint compound ~~system~~ composition of claim 1 wherein said calcium-free phosphate set preventing agent, said water and said setting type joint compound base are premixed to form a set-inhibited, pre-wetted, setting-type joint compound.

~~9. A joint compound comprising:~~

~~a setting-type joint compound base comprising alum, a calcium-free phosphate set preventing agent, calcium sulfate hemihydrate and water;~~

~~wherein said joint compound base has no added calcium carbonate and said calcium sulfate hemihydrate comprises less than about 2% by weight calcium carbonate.~~

~~10~~9. A method of preparing a joint compound comprising;

obtaining a set-inhibited, pre-wetted, setting-type joint compound base comprising calcium sulfate hemihydrate, water and a calcium-free phosphate set preventing agent, wherein said joint compound base has no added calcium carbonate and said calcium sulfate hemihydrate comprises less than 2% by weight calcium carbonate;

packaging said set-inhibited, pre-wetted, setting-type joint compound base with a separate portion of alum; and

blending said set-inhibited, pre-wetted, setting-type joint compound base and said alum.

10. A joint compound comprising:

a setting-type joint compound base comprising aluminum sulfate, a calcium-free phosphate set preventing agent, calcium sulfate hemihydrate and water;

wherein said joint compound base has no added calcium carbonate and said calcium sulfate hemihydrate comprises from 0% to 2% by weight calcium carbonate.