CLAIMS

What is claimed is:

1. A process for the continuous manufacture of a composition for a building product comprising:

   a) providing a mixer reaction chamber;

   b) continuously feeding into the mixer reaction chamber at least one chemical buffer and the following compounds in specified ranges by weight percent:

MgO :	3.33 to 70.00 %
KH_2PO_4 :	4.67 to 70.00%
stucco hemihydrate ($CaSO_4 \cdot 1/2H_2O$):	10.5 to 90.0 %
and addition of water :	15 to 60 % by weight;

   c) continuously mixing the compounds within said mixing reaction chamber, wherein the $MgO + KH_2PO_4 + CaSO_4 \cdot 1/2H_2O$ react into $KMgPO_4 \cdot 6H_2O$ and $K_2Ca(SO_4)_2 \cdot H_2O$.$KMgPO_4 \cdot 6H_2O$ and $K_2Ca(SO_4)_2 \cdot H_2O$ to produce a slurry; and

   d) withdrawing the slurry from the mixer reaction chamber.

2. The process for the continuous manufacture of a composition according to Claim 1, wherein the specified ranges by weight percent are:

MgO :	10 to 35.0 %
KH_2PO_4 :	40.0 to 65.0 %
stucco hemihydrate ($CaSO_4 \cdot 1/2H_2O$):	25.0 to 50.0 %
and addition of water:	15 to 60 % by weight.

3. The process for the continuous manufacture of a composition according to Claim 1 wherein the ratio of the MgO to the KH_2PO_4 is between 1:1.0 and 1: 3.37.

4. The process for the continuous manufacture of a composition according to Claim 3 wherein the ratio of MgO to KH_2PO_4 is between 1:1.8 and 1:2.2.

5. The process for the continuous manufacture of a composition according to Claim 1, further comprising continuously feeding into the mixer reaction chamber a rate retarding compound, the compound chosen from the group of compounds consisting

of boric acid (H_3BO_3), sulfuric acid (H_2SO_4), and mixtures thereof.

6. The process for the continuous manufacture of a composition according to Claim 5 further comprising continuously feeding into the mixer reaction chamber a defoamer, a dispersant comprising polynapthalene sulfonate and a silicone oil taken from the group consisting of polysiloxane $(C_2H_6OSi)_n$, polydimethylsiloxane $(CH_3[Si(CH_3)_2O]_nSi(CH_3)_3)$, polydimethylsiloxane and poly(methyl hydrogen) siloxane.

7. The process according to Claim 1 wherein the compounds are reacted within the reaction mixer according to the following equation:
$3MgO + 3KH_2PO_4 + 2CaSO_4 \bullet 1/2H_2O + 3H_2O$ ---->
$KMgPO_4 \bullet 6H_2O + K_2Ca(SO_4)_2 \bullet H_2O + Ca^{+2} + 2Mg^{+2} + 2(PO_4)^{-3}$
wherein the reaction occurs in the presence of the compounds selected from a group consisting of sulfuric acid, boric acid, siloxanes, naphthalene sulfonate, or mixtures thereof.

8. A composition for producing a light weight building material comprising, in the following ranges:
Struvite-K ($KMgPO_4 \bullet 6H_2O$): of from 0.1 to 67.0 weight percent;
Syngenite ($K_2Ca(SO_4)_2 \bullet H_2O$): of from 2.5 to 60.0 weight percent; and
with anhydrite gypsum, stucco ($CaSO_4 \bullet 1/2H_2O$), hydrated gypsum ($CaSO_4 \bullet 2H_2O$) making up the remaining material.

9. The composition according to Claim 8, comprising in the following ranges:
$KMgPO_4 \bullet 6H_2O$: of from 15.1 to 37.0 weight percent; and
$K_2Ca(SO_4)_2 \bullet H_2O$: of from 12.5 to 46.0 weight percent; and
with anhydrite gypsum, stucco ($CaSO_4 \bullet 1/2H_2O$), hydrated gypsum ($CaSO_4 \bullet 2H_2O$) amorphous phase products and unreacted raw constituents including MgO making up the remaining material.

10. A building board panel for constructing a wall in a building wherein the composition recited in Claims 8 and 9 are disposed adjacent to one of the faces of the board panel.

11. A building board panel having a composition comprising Struvite-K ($KMgPO_4 \cdot 6H_2O$), Syngenite ($K_2Ca(SO_4)_2 \cdot H_2O$) and stucco ($CaSO_4 \cdot 1/2H_2O$).

12. The building board panel according to one of Claims 10 wherein the amount of Struvite-K ($KMgPO_4 \cdot 6H_2O$) and Syngenite ($K_2Ca(SO_4)_2 \cdot H_2O$) comprising the face of the panel exceeds 10 percent by weight.