



DRY BUILDING FINISHING MIXTURES OF GYPSUM IN THE CONSTRUCTION OF RESIDENTIAL AND PUBLIC BUILDINGS IN UZBEKISTAN

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ANNOTATION

This article expresses the properties and structure of gypsum in the construction of residential or non-residential buildings, both internal and external finishing works of structures. In this aspect, building materials and products based on gypsum binders are promising. The economical aspects of gypsum in construction and the practicality of ego exploitation.

KEY WORDS: *production, economical aspects, gypsum, plastering gypsum, economical aspects, waterproof gypsum, plasticity.*

INTRODUCTION

One of the most important problems of the building materials industry is the development of domestic production of efficient building materials based on harmonious and balanced activities in relation to the environment, saving material and fuel and energy resources, maximizing the use of local and technogenic raw materials.

In this aspect, building materials and products based on gypsum binders (GW) are promising. Gypsum binders and materials based on them have a number of valuable qualities. The production of gypsum binders is non-toxic, characterized by low specific consumption of fuel and energy (approximately 4-5 times less compared to cement production). Gypsum materials have good heat and sound insulation properties, fire and fire safety, relatively low density, decorative properties.

In addition, the use of gypsum materials for interior decoration provides a favorable indoor climate due to the ability of the material to "breathe", easily absorb and release moisture. Research into the development of waterproof gypsum binders has broadened their potential applications. A new generation of binders based on gypsum binders have been developed, characterized by reduced water demand and high performance properties.

OBJECTIVES

Despite the undoubted advantages of gypsum materials and products over materials based on other binders, the scale of their use in Russia is

currently significantly inferior to products based on cement.

Gypsum mixes are divided into five parts:

- Plaster plaster mixes
- Putty gypsum mixtures
- Dry gypsum mixes (assembly)
- Floor dry gypsum mixes (leveling)
- Raw materials

PLASTERING GYPSUM MIXTURES

Plaster mixtures are mortar mixtures of non-water-resistant gypsum binders of B- or a-modifications, anhydrite or their mixtures, coarse-grained aggregate with a fraction of not more than 2.5 mm and special chemical additives for various purposes. Such mixtures are intended for rough leveling of surfaces by single-layer plastering of walls and ceilings with various types of surfaces (concrete, brickwork, cellular concrete, other rough and corrugated surfaces).

The most famous types of gypsum plaster mixes include: ROTBAND, GOLDBAND, GIPSPUTZ HP 100, MASHI-NENPUTZ MP 75, AKUSTIKPUTZ, TEPLON, SILIN, FARVEST-Gips, GYPSUM WHITE, GYPSUM GRAY, etc. CONS.

PUTTY GYPSUM MIXTURES

Putty mixtures are dispersed mixtures of non-water resistant gypsum binders B- or a-modifications, anhydrite or waterproof gypsum binders (gypsum-cement-pozzolanic or composite

gypsum binders), fine and finely dispersed fillers and chemical additives for targeted purposes. Picture 1.



Picture 1. Putty gypsum mixtures.

Such mixtures are intended for thin and final leveling of walls and ceilings surfaces; for final preparation of concrete and plastered surfaces for painting or wallpapering; for facing and restoration work. They are used for sealing longitudinal and transverse joints between gypsum boards and gypsum plasterboard during interior finishing work, as well as seams during installation of gypsum tongue-and-groove plates. They have good adhesion to various materials and practically do not shrink. The advantage of gypsum fillers is their quick hardening, which allows further finishing work after several hours of hardening.

DRY GYPSUM MIXES (assembly)

Mounting mixtures are mortar mixtures of non-waterproof gypsum binders of p- and a-modifications or waterproof gypsum binders (gypsum-cement-no-pozzolanic or composite

gypsum binders) with a specially selected complex of chemical additives.

Such mixtures are used when installing internal partitions from gypsum groove of ridge plates; when lining internal surfaces with gypsum plasterboard and gypsum-fibrous sheets, as well as when constructing bases for floors made of gypsum fibrous plates.

FLOOR DRY GYPSUM MIXES (leveling).

Dry mixtures for flooring are mortar mixtures of non-water resistant gypsum binders a-modification, anhydrite, estrich-gypsum or waterproof gypsum binders (gypsum-cement-pozzolanic or composite gypsum binders) and a special set of chemical additives to increase the plasticity of the solution while reducing the water content. Figure-2.



Figure-2. Gypsum binders for dry works.

The most famous types of gypsum mixes intended for floor foundations are ATLAS SAM 200 mixes, Alfa-Pol S self-leveling compound, Fast-hardening floor (Prospectors), SV-210 floor mix (Bolars), etc.

Dry mixes for self-leveling floors are known as self-leveling compounds: Flisestrich FE 80, Flisestrich FE 50, Flisestrich FE 25, which are produced by KNAUF enterprises. The hardened mortars from these mixtures have high strength and practically do not shrink.

RAW MATERIALS

For the manufacture of SGS, the following basic materials and additives are used: gypsum binders of the G4-G7 grades according to GOST 125-79 (for plaster and putty mixtures in the production of finishing work):

high-strength gypsum grade not lower than I 3 in accordance with GOST 125-79 (for high-strength putties and compositions for installation work, as well as in compositions for self-leveling floor screeds); waterproof gypsum binders according



to TU 21-0284757-1-90 (for dry gypsum mixes used in rooms with wet and wet operation, as well as for floor mixes); anhydrite binders (from natural raw materials and industrial waste) according to TU21-0284747-1-90 (for plaster mixes and leveling mixes for flooring);

hydrated lime according to GOST 9179-77 (sieve residue 02 up to 0.2% by weight). Moisture up to 0.5% by weight (in plaster and self-leveling mixtures for flooring). Following the example of the Russian GOST system.

METHODOLOGY

Fillers and fillers have a great influence on the properties of GHS. The choice of aggregate grain size is determined by the type of gypsum mixture: quartz and limestone sands are used with a fineness of up to 0.8 - 1.0 mm. When selecting aggregates, special attention is paid to the granulometric composition: there should be approximately the same ratio of aggregate fractions.

For a neutral medium of a gypsum solution, citric acid, sodium citrate, polyphosphates, protein hydrolysates, gelatins - CMC (sodium carboxymethylcellulose salt), animal adhesives, and a lignosulfonate mixture can be effective set retarders. However, it should be borne in mind, for example, that retardan, being an active retarder for the setting of gypsum, is very well suited for putty compounds. At the same time, it is not effective enough for plastering compounds, because gives a short period between the beginning and the end of setting, which is undesirable in the production of plastering works.

For gypsum solutions with an alkaline medium, tartaric acid, as well as a retarder based on tartaric acid and plastretard, are effective set retarders.

For a weakly acidic environment, for example, in plaster solutions based on a gypsum binder from phosphogypsum, hydrated lime and sodium polyphosphate are used as setting retarders.

It should be noted that in dry gypsum mixtures, set retarders are used along with modifying additives. These retarders, as a rule, have not only a retarding effect on the hydration of gypsum binders, i.e. lengthen the setting time of gypsum solutions from several hours to a day, but to some extent reduce the strength indicators of the hardened gypsum solutions.

RESULTS

Thus, a more detailed study of the issues of assessing the quality of fine aggregate for dry building mixtures is necessary, since in modern regulatory documents there are no recommendations for choosing the granulometric composition of sand depending on the purpose of the mortar. With the rapid modernization of the cities of the Republic, new high-quality construction of buildings and

structures is going on day after day. Quality gypsum mixes and their economics in construction are in need of practice.

REFERENCES

1. P.P. Budnikov, N.E. Levin *Anhydrite and gypsum cement // Tr. State Expert institute of silicates. 1924. -V. 14. - 31s.*
2. <http://uralzsm.ru/Spravochnik/Gipsovye-suxie-smesi>
3. Marupov, A., & Axmedov, B. (2020). *GENERAL CHARACTERISTICS OF ZONES WITH SPECIAL CONDITIONS FOR USING THE TERRITORY OF THE CITY OF FERGANA. Collection of Science Works ΛΟΓΟΣ, 7-10.*
4. Marupov, A. (2020). *Improvement of innovative mechanism for rational use of natural and land resources in uzbekistan. Collection of Science Works ΛΟΓΟΣ, 100-101.*