

TECHNOLOGY OF MANUFACTURES THERMAL ISOLATION WITH CHECK POROSITY

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ABSTRACT

Is presented an able technology to produce the concretes thermo isolation from porous granules with porosity controlled. Porosity the granules are caused with help coefficients of participation in the blend for form's sake table of granular of an organic material of guy's sawdust's.

KEYWORDS concretes, thermo refractory, porosity controlled, organic material

1. INTRODUCTION

The researches effectuated in the previous researches emphasized the optimum solutions, for three one types of isolations, from components of the system of thermal isolation and transfer of heat from structure of thermal centrals, for burn combustible of culture, regeneration materials.

The non-conductive basic compliance system anterior experimentalisms are of types silica, with a report between these constitutive of 2.

The porosity concrete thermal isolation is yielded through the introduction in the recipe of manufactured the cellulose, in the shape of sawdust from soft wood (his deal teal) and through the technological process of manufacture and calcinations of this.

The refractoriness determinates previously through analysis on the microscope LEITZ, he corrected in the sense this augmentations through the introduction in the recipe of produced the alum earth, material with an augments the degree of refractoriness.

The configuration of non-conductive basic system is conforms from geometric viewpoint with the prescriptions prompted through the phase of project this.

The resistance non-conductor basic system to the solicitations from exploitation determinate of the act combustible about the membrane between burner is assured through bind mineralogical constitutive material with cement magnesium, and the tirelessness thermo mechanical to the level active surfaces through these cover with a

solution of carbides in silicate of sodium, deposited on these surfaces after solidification through his pulverization brush on.

2. PROCESUL TEHNOLOGIC DE PRELUCRARE

From technological viewpoint for the material realization needs as after the phases of supply with prime substances and material, this reception there his storage is passed to the realization of the process of processing. For this realization rearward is willed operate on two directions.

First of these is format from the many more phases successive. The trituring is first the operation and she is of crack with help a mill material prime in order to is adduced to a proper granulation manufacture concrete for thermal isolate. The minerals are entered the in the breaking machine with jaws. After material crack the by-paths entered the in the ball crusher, figure 1, which continuously trituring to sizes the little more.



Fig. 1. The ball crusher

The respective material is added to the proper compliant granulation of the technology with help planetary mills, figure 2.



Fig. 2. Planetary mills

He succeeds mill the operation of riddle. She is an operation separate the granules else big than limit oneself admitted or separates particles outsiders (impurities).

From the mill, the ground material is entered in recipients of material ground wherefrom loaded the in containers in the sight execution operation of sift, on vibratory site, the figure 3.



Fig.3. Vibratory riddle

Residuum from sift (he who have granulation too big from pass through site) am adduced again through breaking machine and they shall be remilled. The dreg results from installation aspiratory, montage in the aim ecological of the process, you be deposited asunder in his covers containers (stockpots of mass), etiquette with type of residue content. The material sited is collected in containers. The containers are disposed on cart wherefrom am binged to the proper silos ale of the installation of dosage, realization the alimentation of the process. If the material mill granulation of the is of minerals accordingly, and after the tuning mill don't is can obtained the desirable granulation is shall interfere for the verification diameters and number of balls from die this intervention is absolute necessary, the prime matters from sloes be due to corresponds the precautions

from technology, thereto material we reinserted to triturating for the procurement of the granulation foresee the in the technical specifications.

Dosage is an operation specifies and consists in manual or automatically scale of all the necessary components prepares concrete thermo isolate as per manufactured formula. On lots of 5 kg, is necessity for realization of material. In the case which material what in the part from the enclosed silos installation, do be dosage and completed to charge, these shall be scaled and shall be discharged the in the pot of dosage.

The experimentations made emphasized the phenomenon of hygroscopic and strengthen the blend dosage to a period of elder storage of 15 days. In the case, which in consisted the errors of weigh from technical reason, charge dose is suppose to by nonconforming from else enters the in make. The accuracy dosage is very importance. This in the case are shall verified from viewpoint metrological the balances.

The dosage charges is considered accepted the in the moment which in don't they consisted the errors of weigh which his drives to the debarment of the charge. The operation of dosage is done below an absorbent chimney hood, equip with filter with sacs.

He follows one from the technological phases of manufacture of big which importance is one of homogenization and allegation. The homogenization is the operations of blend the prime semi liquids matters capable dry in the sight obtain of a uniform these repartitions in concrete thermo isolation. This operation is done in a homogenizer with balls figure 4 for proxy. 10 min, and that are determinate experimentally.



Fig. 4. Homogenizer with balls

The dry homogenization is the allegation of damp paste done on a mixer of scream Kolergang, figure 5. The allegation is the operation of blend the prime matters homogenized, with solutions connected of different guys and with water, so that to be obtained a paste plasticized and a homogeneous. The damp allegation is done taking into consideration that connection to is delivered graduated the in massively with a regularity of precinct 0,1 Kg. To 4-5 seconds. Thus, avoided the appearance of the phenomenon of coalescent the blend, undesirable phenomenon, due to difficulties on which causes them current in granulation on dish for the procurement concrete thermo isolation.

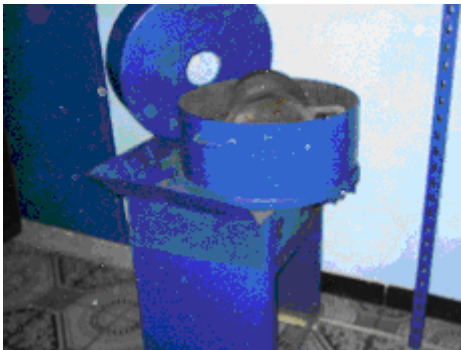


Fig. 5. Mixer type Kolergang

For dry homogenization is prescribed depending on the granulation of prime matters from recipe, of the differences of density among they, of the guy used homogenizer. In the situation of bring difference of density among material ceramic the is the sawdust is big, what fact enforces the experimental determination for homogenization and the verification at least visual homogeneity, for each lot of supply of material bonus. This the times must respected stringently, in the sense as if he is too little don't is obtained the correct homogenization, and if he is too big he appears the phenomenon of segregate components, fact transliterated therefore these burble (non homogenized) an inadequate homogenization drives to the appearance difficulties in temporally, to fool features thermo for conductivity the and of resistant mechanical the granules and default concrete thermo isolate. At large case the homogenization is made experimentally.

The second among these consist in the supply and the check silicate of sodium which liquid after that is recirculation, dozen and then adduced to the operation of allegation. He follows a set of which operations is effectuate after reunion of the two boucles of the material realization. Bonus among these is the granulation. Mass such obtained utilize for the of a realization porous granules with the diameter of 1,5 mm, through method granulation on the dish from figure 6. The sizes of the granules are achieved through adjustment of the distance between the chasers toothed to 2 mm. The granules obtained the dry by-paths, cachinnate and used-up as the unit for the realization concrete thermo isolate.



Fig. 6. Granulator cu talere

He follows the operations of drying and calcinations. The drying is the technological operation of eliminates the water of constitution from the cover concrete thermo isolate optimum temperature experimental determinate is of 18-20° C. The drying is can do the circumambience in balk only that the air flows. Calcinations are the technological operation of eliminates the water of constitution.



Fig. 7. Furnace

The operation of calcinations is considered accordingly if diagram of calcinations certify the observance parameters enforced, the granules have a uniform color, he don't presents fissures and have a behavior to good pressure. The operation of calcinations is accomplished the in the furnace from fig. 7. Is passed then to the own operation of elaborate the special concrete. She is achieved with help of the equipment of homogenization presented the in figure 8. The concrete thus achieved is poured into the model, left to drying enforcement 48 hours and is subdued the in afterwards of a process of calcinations.

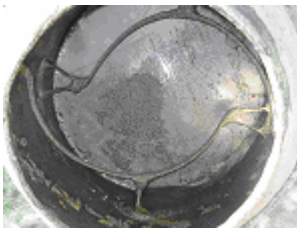


Fig. 8. Homogenization

The auditing ultimate operation consist in the determination of the resistance to pressure enforce dry concrete and calk and of cause this porosity. The determination of the resistance to pressure is accomplished by car of attempt to stretch pressure from figure 9., and the porosity through method planimetrica on probes with help microscopically optic from figure 10.



Fig. 9. Apparatus for tried to stretch and pressure

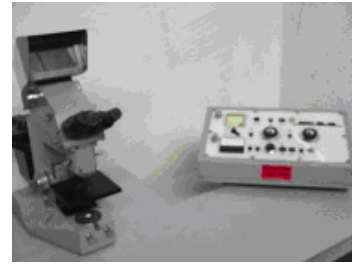


Fig. 10. Optical microscope

The methodology of testing is according to the specific what procedures are shall elaborated with the occasion realization and finalized of experimental model.

3. CONCLUSIONS

The technology were realization in as part as of a contract financed of to Ministerial Education and Research and had as the output the elaboration of the recipe of product and the technology manufactured concrete thermo isolate from constitutive the stations on fuels of culture regenerate.

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