

ATTACHMENT

- The process of taking lumajang sand



- The process of cleaning eggshell waste from the dirt that sticks to the eggshells, aims to make the mortar mixed with eggshell powder there is no more dirt involved in making mortar mixed with eggshell powder.



- The process of drying the eggshells, aims to remove water from cleaning the eggshells and when weighing only the eggshell powder is weighed, there is no water at all. The following is the result of the drying process.



- Furthermore, the process of crushing eggshells into eggshell powder, because eggshells are added as cement, so eggshells must be crushed into eggshell powder and pass sieve no 200., along with the process and results.



- Tools and materials for making mixed mortar, namely, molds for test objects with side lengths of 5x5x5 cm made of 55 HRB water-resistant steel, blenders for mixing/mixing the ingredients for making mortar, a rojokan for making rojokans when tracing and printing test objects, a brush for making objects non-stick test when opening the mould, scales to weigh the ingredients for making mortar.





- The process for making mortar is, The first step is to put $\frac{1}{3}$ of the sand, cement and eggshell powder into the prepared container and mix all the ingredients. The second step is to do the same as the first step three times, then add the water that has been weighed into the sand mixture. , cement, and egg shell powder and mix with a machine tool for ± 10 minutes.





- The process of testing mortar consistency by inserting 1/2 part and then cornered and after that put everything in and shaken again. Finally do the lifting simultaneously and measure the diameter. Here are the results of the consistency test.





- The process of molding the mortar is by inserting 1/2 of it and then shaking it and after that, put it all in and shake it again. Wait for one day and open the mold carefully so that the newly dried mortar is not damaged. After that, weigh the mortar weight to calculate the wet unit weight and dry unit weight in the mortar. After weighing, soak according to the planned age. Furthermore, for the absorption after soaking, put it in the oven for one day and after that do the weighing to calculate the absorption. For ages 7 days, 14 days, and 28 days that have been soaked in water are weighed again to calculate the unit weight.



- In the process of carrying out the compressive strength test of the mixed mortar test object, first prepare the cell phone to record the needle on the dial, then place the mortar and adjust the mortar to a parallel angle so that when the compressive strength test will get the maximum compressive strength. The following are the results of the compressive strength test on the mortar.





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LAPORAN HASIL UJI
LSUM.LHU.E.193.2023

Customers : Feriansyah Maulana A. - UNTAG
Contact Customer : 08883063468/ Email : feriqwerty123@gmail.com
Methods : IKM.E.1
Test Equipment : XRF
Received Date : 21 Maret 2023
Order Number : LSUM.P.274.2023

SPECIMEN DESCRIPTION

Condition of Samples : Sampel serbuk putih dalam plastik
Sample Code : E 189
Material Name : Serbuk cangkang telur
Measurement time : 24 Maret 2023

OPERATOR, ANALYZER & SUPERVISOR

Analyzer : Mailinda A.H., S.Si
Supervisor : Dr. Robi Kurniawan M.Si.

RESULTS


Remark:

Compound	Compound
S	SO ₃
Ca*	CaO
Fe	Fe ₂ O ₃
Co	Co ₃ O ₄
Cu	CuO
Mo	MoO ₃
Lu	Lu ₂ O ₃

-Hasil pengujian juga diminta dalam bentuk unsur maupun oksida
-Hasil analisa hanya berlaku untuk sampel yang diuji
*Dibawah parameter terakreditasi.

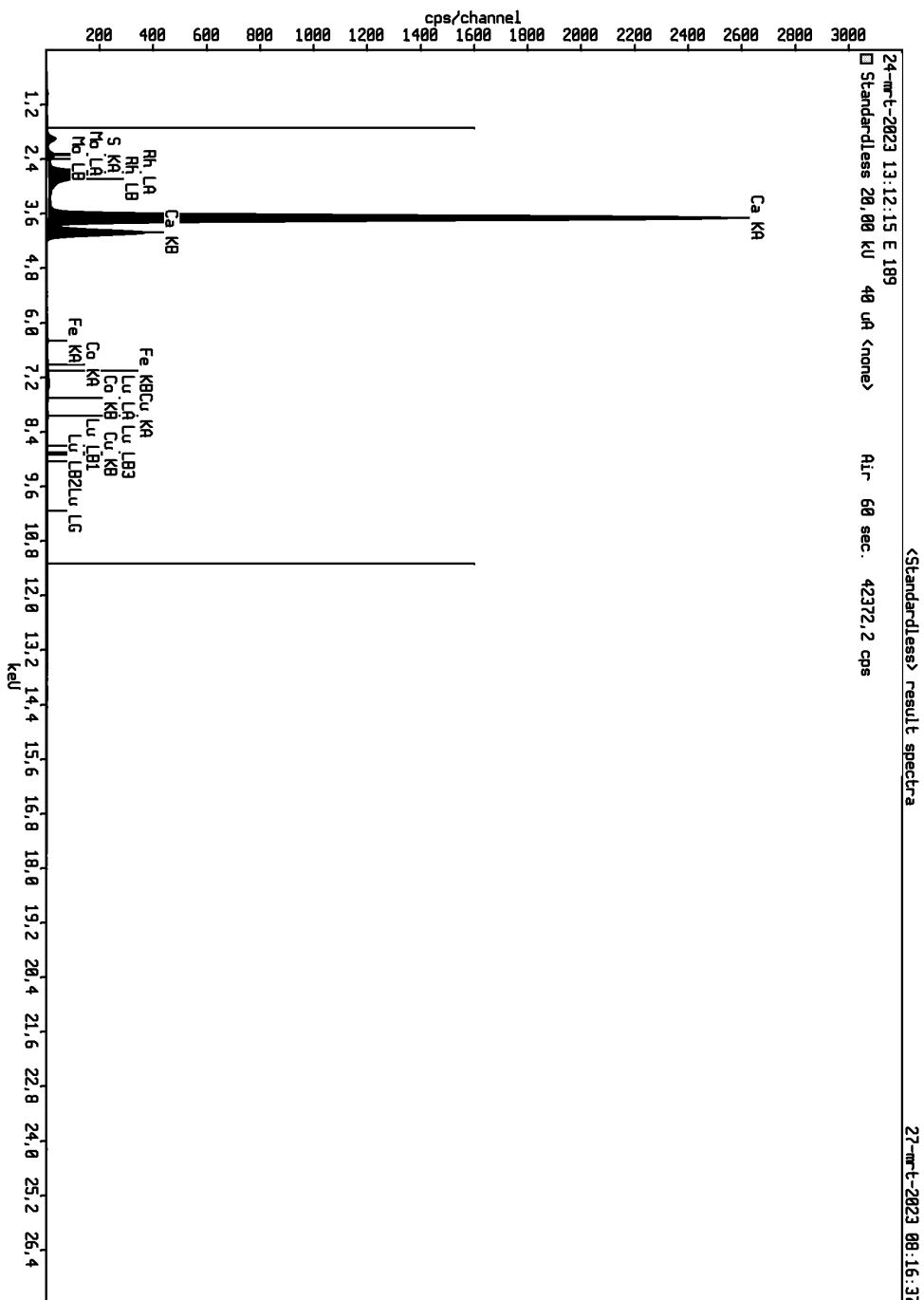
Malang, 28 Maret 2023

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27-mrt-2023 08:16:15

Sample results

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Sample ident
E 189

Application	<Standardless>
Sequence	1 of 1
Measurement time	24-mrt-2023 13:12:15
Position	11

Compound	S	Ca	Fe	Co	Cu	Mo	Lu
Conc	0,47	98,94	0,080	0,11	0,055	0,2	0,16
Unit	%	%	%	%	%	%	%

Sample results

Sample ident	
E 189	

Application	<Standardless>
Sequence	1 of 1
Measurement time	24-mrt-2023 13:12:15
Position	11

Compound	SO3	CaO	Fe2O3	Co3O4	CuO	MoO3	Lu2O3
Conc	1,1	98,50	0,077	0,099	0,046	0,10	0,12
Unit	%	%	%	%	%	%	%