***EUROPEAN JOURNAL OF LIFE SAFETY AND STABILITY** (EJLSS)*
ISSN 2660-9630
www.ejlss.indexedresearch.org Volume 13, 2022 ||

Concrete Products from Waste Materials

Kuldasheva A.
PhD, Wuhan University of technology (China)

Rajabboyev M., Mallayev A.
student of Samarkand State institute of Civil Engineering and Architecture

Abstract: *There are given physic-properties results of waste analysis from polymeric material wastes and using of them in building material industry. the amount of complete residue of the coarse aggregate in the № 5 sieve is A20= 39% <50%, and the modulus of coefficient is Ms = 19.51 <20, so the waste belongs to the group of coarse aggregates.*

Therefore, in terms of its granular composition, sand is considered suitable for concrete preparation, and it is recommended to improve its quality by adding polymeric waste to its granular composition for use in concrete preparation.

Keywords: *Fraction, granularity, density, porosity.*

Date of Submission: 04-12-2021 ***Date of Acceptance: 11-01-2022***

Introduction:

Currently, as a result of a sharp increase in demand for waste raw materials, a large amount of waste is accumulating. Collection and disposal of this waste is not economically efficient.

One of the most pressing issues today is the accumulation and recycling of large amounts of industrial waste. This is because the collection, transportation and disposal of this waste requires large sums of money.

The most effective field of secondary products of the mining industry is the building materials industry. Secondary recycling in the production of non-ferrous building materials are dry and wet enriched wastes generated during the mining and processing of ferrous and non-ferrous metal deposits. waste from concentrators is generated [1,2].

It is known that industrial waste has a negative impact on environmental factors. As a result, the cleanliness of the environment, water, plant development, the activity of living things is disrupted. The largest emitters are energy, metallurgy and mining.

Sources that pollute the environment with various dusts and wastes include enterprises producing construction materials, concentrators, etc., which are part of the mining industry. Technological processes in such enterprises consist of stages such as crushing, saturation and burning of mineral raw materials, which release large amounts of dust and harmful gases into the air, etc.

Polymeric is characterized by the types, physical and mechanical properties, as well as the composition and technical and economic indicators of waste materials generated in the production of construction materials.

Materials:

Fillers based on stone crushing residues. By processing such production wastes, crushed stone, sand and stone flour are obtained. At the same time, production costs are significantly reduced, the possibility of waste disposal is expanded, and x. k.

Waste is mainly treated by dry and wet methods. The dry method consists of steps such as additional crushing, sieving, air purification and fractionation of the mixtures by size. In wet cleaning, unnecessary impurities are cleaned with water in special classifiers, sieved and separated into fractions.

Crushing residues are widely used mainly in road construction, as a fine filler for asphalt concrete mix [3]. Polymeric wastes are used as fine aggregatein decorative mixtures, building pottery, heat-resistant materials, etc. k.

Methods:

The water demand of fine aggregate varies around 0,9 ... 1,0 % depending on the quality of polymeric and depends on the grain content, porosity, etc. will depend. The porosity is higher than that of ordinary natural sands. Such aggregates are an effective as coarse aggregate for concrete. Also, the demand for fractions of 5-10, 10-20, 20-40 mm is high in the production of dry construction mixtures. Their inclusion as a compound improves a number of performance of dry mixes.

Limestone, shell, tuff and pumice-based aggregates from porous rocks are widely used in concrete and reinforced concrete products for industrial and civil construction.

Pebbles and sands obtained by crushing porous rocks have a sharp-edged, rough surface. This ensures that they adhere firmly to the cement stone.

1000 g of polymeric waste from Urgut district of Samarkand region was brought as a sample to study its suitability and properties. Laboratory analyzes were carried out in the laboratory of the department "Technology of building materials, products and structures" to determine the properties of waste.

Physical properties of industrial waste:

№	Name, unit of measurement	Indicator
1	Actual density, g / cm3	1,32
2	Bulk density, g / cm3	0,94
3	Porosity,%	61
4	Humidity,%	8

Results:

Standard 5, 10, 20 and 40 mm sieves were used to determine the granular composition of the sand. In this case, the total amount of residue in the 20 mm and 5 mm sieves was determined [5].

The amount of some residue in the sieve,%.

№	Size of sieve hole, mm					
	70	40	20	10	5	waste
№1	-	44	25	25	4	2
№2	-	43	30	20	6	1

The amount of total residue in the granular composition of the sand is determined by the following formula:

$A_i=a_{70}+a_{40}+a_{20}+a_{10}+a_5+a_{0,315}+a_{0,16}$

here: a_{40}, $a_{20}+...a_i$ – the amount of some residue in the sieves (in%).

Amount of total residue for aggregate,%:

1.

$A_{40}=44$

$A_{20}=44+25=69$;

$A_{10}=44+25+25=94$;

$A_5=44+25+25+4=98$;

$A_w=44+25+25+4+2=100$;

The modulus of size of the waste is determined by the following formula:

$M_й=\frac{A_{40}+A_{20}+A_{10}+A_5+A_w}{100}$

modulus of magnitude for waste:

$M_й=\frac{44+69+94+98+100}{100}$=4,05 and 4,08

$A_{40}=43$

$A_{20}=43+30=73$;

$A_{10}=43+30+20=93$;

$A_5=43+30+20+6=99$;

$A_w=43+30+20+6+1=100$;

Discussion and conclusion:

Based on the above results, the following conclusions can be drawn:

the amount of complete residue of the sand in the № 5 sieve is A0.63 = 39% <50%, and the modulus of coefficient is My = 4.05 and 4.08<5, so the waste belongs to the group of coarse aggregate.

Therefore, in terms of its granular composition, sand is considered suitable for concrete preparation, and it is recommended to improve its quality by adding fine sand to its granular composition for use in concrete preparation.

References:

1. Kuldasheva A., Kuldashev Kh., Saidmuratov B. The use of wollastonite fiber to enhance the mechanical properties of cement compositions JCV 2018=79,77. SJIF 2018=3.993. JFSJJ=7.6. PUBLISHED IN IJPSAT SPECIAL ISSUE SEPTEMBER 2020. JSSN:2509-0119. IJSHT, Spain. 37-45 pp.
2. Kuldasheva A., Kuldashev Kh. Durability characteristics of concrete adixed with wollastonite mineral. EUROPEAN JOURNAL OF LIFE SAFETY AND STABILITY.VOL.5 (2021). 2021-06.01. http://ejlss.indexedresearch.org/index.php/ejlss/index.
3. Kuldasheva A., Kuldashev Kh.; Kuldasheva Z. Wollastonite effective micro-reinforcing as a filler and application in the production of dry mixtures. Weimar Gypsum Conference,

Weimar, 21st International Conference on Building Materials, 22. - 24. September 2021 in Weimar. www.ibausil.de.

4. Kuldashev Kh., Ibragimov Kh., Mannatov B. Protection of seismic-stabilty large-panel buildings. EUROPEAN JOURNAL OF LIFE SAFETY AND STABILITY.VOL.5 (2021). 2021-06.01. http://ejlss.indexedresearch.org/index.php/ejlss/index.

5. Kuldashev Kh. Research of light-weight concrete properties on base wollastonite addition "Middle European Scientific Bulletin". Volume 2, Lssue 1, January 2021. ISSN 2694-9970. Journal Impact Factor IFSIJ: 5,985.