

**LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH**

Judul Jurnal Ilmiah (Artikel) : Addition of Criteria for the Drought Level Vulnerability to the Reservoir Location Priority
 Jumlah Penulis : 3 orang (Dini Mandrianawati, **Dyah Ari Wulandari**, Pranoto Samto Atmojo)
 Status Pengusul : penulis ke-2
 Identitas Jurnal Ilmiah : a. Nama Jurnal : International Journal of Innovative Technology and Exploring Engineering (IJITEE)
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Semarang, 28 Januari 2022

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Experimental Research on Flexural Behaviour of Filler Slab with Activated Carbon

A. Arun, V. Sreevidya, T.P.A. Aravind

Abstract: Concrete is most frequently used composite material. Concrete is the combination of M-Sand, coarse aggregate and binding medium of concrete paste. Next to the water demand which is increased in concrete day by day, in this project we incorporate Activated carbon in Filler slabs. Filler slab is the sustainable concept which reduces unwanted concrete in the tension zone. The main perspective of this project is to study the characteristic behaviour of concrete with activated carbon. Also, to maximize the rate of Compressive strength of the concrete and to Filter air pollutants and to investigate the flexural behaviour of filler slab with activated carbon. Filler slab with Activated carbon in cement greatly increases the sustainability. Compression test and Flexural test were carried out by three different proportion of Activated carbon in cement from these mixes results are obtained. Further morphological arrangements are to be carried out.

Keywords: fine aggregate, coarse aggregate, filler slab, Activated carbon.

I. INTRODUCTION

Filler slab is other stand-in slab establishment technology where a part of concrete in base of slab is supplanted by filler substance [1]. The major principle of filler slab is that, concrete in base half of RCC slab is structurally not required. So, this partition of the concrete mixture is replaced by low cost, light weight filler substance. Activated carbon, which can also be called as activated charcoal, is a type of carbon refined to have small, low-volume pores that increases the surface area thereby having available space that adsorbs unwanted polluted gases or other chemical reactions. Activated is sometimes substituted with active. Here it is used in cement composite to maximize the compressive rate of concrete and to filter the polluted air. The major scope of this project is to utilize the waste material such as Activated carbon as a binder material which helps to increase the mechanical resistance of concrete. Also, the strength of concrete in filler slab at tension zone can be increased by using activated carbon and to incorporate the architectural benefits through structural engineering concepts.

II. LITERATURE REVIEW

Many researchers have done their work in studies on Activated carbon and Filler slab.

Revised Manuscript Received on April 27, 2020.

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To provide a detailed review of the body of literature related to Filler slab and Activated carbon would be too immersing to address in this thesis.

The materials chosen is based on the corresponding references.

Chaocan Zheng in their study of Activated carbon with fly ash cement composites stated that, the weight of Carbon for about 2% and 4% were added initially in a fly ash cement mixer to obtain the exact Activated carbon-fly ash in the form of mixture pastes and mortars. Compressive rate of the composites was then investigated compared to the before obtained rate. After the 28 days of testing done, the obtained compressive strength is the highest quality acquired for 20% fly ash concrete mortars was found to be 4% Activated carbon. Aiswarya proposed about the prospective Benefits of Using Activated Carbon in Cement Composites Experimental research work did on concrete composites containing activated carbon uncovered its potential capacity to improve physical, mechanical and toughness properties of concrete composites. Carbon dark or activated carbon is a black colored at long last isolated petals or powder. Analysts had revealed that 1 to 4 % level of actuated carbon in concrete cement/concrete composite essentially improve its properties [2]. Narayanan Neithalath, K. Ramamurthy, R. Ambalavanan. in they are cost decrease in rooftops/floors has been accomplished through the reception of exchange procedures like filler slab, which works away at the standard of filling a portion of cement in the tension zone with less expensive substitutes. Despite the fact that there are sound hypothetical bases and demonstrated techniques for development, there has been no precise examination of cost-adequacy such a framework can offer for a scope of ranges, forced stacking and bolster condition. This paper examines the subtleties of a cost-viability investigation led on two-way filler slabs with Mangalore design tiles as filler units. The expense and weight decrease that can be offered by such a framework in contrast with the conventional slabs for various parameters as recorded above are brought out [9]. Sukumar.S in his study on SCC is a creative solid that doesn't need any vibration for putting and condensation. It can stream under its weight, totally filling the space and accomplishing full condensation, even within the sight of clogged fortification. The cement that is in the solid state is thick and has same designing characteristics and toughness as conventional reinforced concrete. The fixings utilized in self-compacting cement are equivalent to those utilized in ordinary cement. A significant part of the prepared substance would possess receptive substances like fly debris. self-compacting cement is totally varying from normal cement in that the previous has enormous powdery substance content and minimum coarse sum total.

Agro-Recreational eco-Settlements Network Formation Under the Step-by-Step Service System Conditions

Tetiana Pavlenko, Olena Ovsiienko, Dmytro Ovsiienko, Yulia Kuznetsova

Abstract: *The algorithm of forming a network of agro-recreational eco-settlements in the step-by-step service system conditions is defined in the article. The peculiarities of agro-recreational eco-settlements network formation under the conditions of a step-by-step service system are given the case of certain administrative districts of Poltava region, Ukraine. Depending on the taxonomic structure of the agro-recreational eco-settlements territorial organization, the levels of their functional-planning organization have been formed: agro-recreational eco-locality, agro-recreational eco-center, agro-recreational eco-zone, agro-recreational eco-district, agro-recreational eco-region. On the basis of the algorithm of agro-recreational eco-settlements network formation, the landscape ecological integrity of the agro-recreational eco-settlements and their network was estimated using the landscape ecological integrity index and the dimensions of settlements greening were determined.*

Keywords: *agro-recreational eco-settlement, network, systemic approach, step-by-step service system, landscape ecological integrity index.*

I. INTRODUCTION

Today, in the process of intensive urbanization, there is a tendency to create agro-recreational and recreational entities of different types in settlements. This, in turn, improves the economic situation of the settlement itself (the nomenclature of cultural and service facilities develops, the social infrastructure improves, etc.), and provides the opportunity for a full rest of the residents and visitors. However, in most cases, the creation and development of agro-recreational and recreational entities is not systematic without taking into account the necessary town planning standards. Therefore, there is a need for research and favorable integration of the network of agro-recreational eco-settlements under the conditions of a step-by-step service system.

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II. RESEARCH TIMEFRAMES

Chronological timeframes – from the end of the XIX century. (beginning of more intensive introduction of recreational function in small settlements) till the beginning of the XXI century (present).

Territorial borders – analysis of the current state of eco-settlements and settlements having agro-recreational and recreational function of domestic and foreign experience, the solution of problems is worked out the case of Poltava region settlements, Ukraine.

III. METHODOLOGY

Research methods are components of a general multilevel methodology, which includes the following levels: philosophical, general scientific, specific scientific (town planning), technological (agro-recreational).

The study uses: the basics of the systemic approach, comparative-historical method, method of terminological analysis, method of modeling, etc.

At the town planning level, the structural and functional approach is used. Methods of modeling architectural systems are used.

At the agro-recreational level (technological level), specific methods for the study of agro-recreational eco-settlements are used: the method of assessing the ecological stability of the agro-recreational eco-settlements landscape, the method of trial design by means of the criterion of the agro-recreational eco-settlements network efficiency under the conditions of a step-by-step service system.

IV. RESULT AND DISCUSSION

The analysis of the existing state of settlements with the agro-recreational function in Poltava region [1] (Ukraine) showed that the development and structure level of the settlement infrastructure get behind the permanent population needs, does not meet current standards; the share of the housing stock is located in the sanitary-protection zones of the enterprises; the recreational potential of the settlements is insufficient. In domestic project design practice, the development of recreation facilities was mainly carried out according to typical projects designs, which reduces their attractiveness.