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A Review paper on the Effect of meta kaolin on the property on concrete.

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Abstract: The quest for the development of high strength and high performance concretes has increased considerably in recent times because of the demands from the construction industry. Hence cement play a major role in concrete , but on the other hand cement is expensive so we replace cement with the metakaolin and we check changes in the properties of concrete by adding metakaolin.

Introduction: Now a day we are living in a world where everyone want to develop there state, country, etc. We used to change the metakaolin from with the percentage of cement is 5% 10% 15% 20% then we have to check the compressive strength and deformation in concrete field Steel tube. Now we have made the cubes and the cylinders by using M40 grade of concrete. In M40 mix grade we use coarse aggregate, fine aggregate, ordinary Portland cement of great 43, super plasticizer. After curing of 7 days and 24 days we will start our test on the concrete and check the difference in the concrete with without using metakaolin and by using Metakaolin from with a different percentage. We are focus on the heavy structure so we made a design mix of M-40 and use OPC cement grade 43 then conduct the test that is initial setting time and final setting time and normal consistency test, sieve analysis test and specific gravity test on the aggregate.

Literature reviews: This paper is consisting of literature review which provides different idea to use the meta kaolin in the concrete, now we mention the different paper and the result we found.

1. **P. Dinakar, Pradosh K. Sahoo, and G. Sriram(2013)- The article present the investigation on the mechanical properties Of HPC by replacing the weight of cement by meta kaolin percentage of 10%, 15% and 20%. It if found that the tensile splitting strength and modulus of elasticity by about 26% and 5%, compressive strength is 6.7% ,13%, 14.1% and The calculated characteristic length indicates that the high performance concrete with 15% meta kaolin content is the most brittle.**
2. **Oguzhan Kelestemur, Bahar Demirel(2015)- The article present the investigation on the mechanical properties concrete by replacing the weight of Portland cement by meta kaolin percentage of 5%, 10%,15% and 20%. The normal consistency increases about 40% when meta kaolin percentage increases from 0% to 20%, the**

optimum 7 and 28-day compressive strength and flexural strength have been obtained in the range of 10-15 % meta kaolin replacement level.

3. R. M. Ferreira et.al..,(2015)- The article present the investigation on the mechanical properties Of concrete by replacing the weight of cement by meta kaolin percentage of the meta kaolin was replaced by 10%-15% for a water-binder ratios ranging from 0.26 to 0.42. The compressive strength and tensile is almost same but the flexure strength of concrete is depend on the water cement ratio which increase 15% for water cement ratio 0.26 and 0.30 and 20% for water cement ratio 0.34, 0.38 and 0.42.

4. Okan Karahan et.al..,(2012)- - The article present the investigation on the mechanical properties and 15Of concrete by replacing the weight of cement by meta kaolin percentage of 0%, 5%, 10%, The split tensile strength and flexural strength of the meta kaolin concrete (4.62N/mm2 and 3.93N/mm2 respectively) are increased.

5. J.J. Brooks, M.A. Megat johari (2001)- The article present the investigation on the mechanical properties of concrete by replacing the weight of cement by meta kaolin percentage of from 0 to 25% in steps of 5% by weight , mix proportioning was based on 1:2:4 mix ratio. Then the result is found is cement replacement up to 10% with meta kaolin leads to increase in compressive strength, (16.15% to 29.24%).

References:

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2. **Ferreira, R. M., J. P. Castro-Gomes, P. Costa, and R. Malheiro. "Effect of metakaolin on the chloride ingress properties of concrete." KSCE Journal of Civil Engineering 20, no. 4 (2016): 1375-1384.**

3. **Karahan, Okan, Khandaker MA Hossain, Erdogan Ozbay, Mohamed Lachemi, and Emre Sancak. "Effect of metakaolin content on the properties self-consolidating lightweight concrete." Construction and Building Materials 31 (2012): 320-325.**

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5. **Ferreira, R. M., J. P. Castro-Gomes, P. Costa, and R. Malheiro. "Effect of metakaolin on the chloride ingress properties of concrete." KSCE Journal of Civil Engineering 20, no. 4 (2016): 1375-1384.**