DEVELOPMENT OF SELF COMPACTING CONCRETE BY USING MICROCLINE POWDER

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Abstract : Self-compacting concrete, also referred to as self-consolidating concrete, is able to flow and consolidate under its own weight and is de-aerated almost completely while flowing in the formwork. It is cohesive enough to fill the spaces of almost any size and shape without segregation or bleeding. This makes SCC particularly useful wherever placing is difficult, such as in heavily-reinforced concrete members or in complicated work forms.

This research study reports the potential use of Microcline powder as a replacement for cement in concrete. Based on value of optimum percentage it will be decided to replace cement by Microcline powder in concrete and improvement in fresh properties of self compacting concrete and mechanical properties in M30 & M40 grade.

***IndexTerms* - Compressive strength, Spilt Tensile strength, Self compacting concrete, Microcline powder**

I. INTRODUCTION

Self – compacting concrete (SCC) is a fluid mixture, which is suitable for placing difficult conditions and also in congested reinforcement, without vibration. In principle, a self – compacting or self – consolidating concrete must have a fluidity that allows self – compaction without external energy remain homogeneous in a form during and after the placing process and flow easily through reinforcement.

Filling ability:- The ability of SCC to flow under its own weight into and fill completely all spaces within difficult formwork such as reinforcement.

Passing ability:- The ability of SCC to flow through openings approaching the size of the mix coarse aggregate, such as the spaces between steel reinforcing bars, without segregation.

Resistance to segregation:- The ability of SCC to remain homogeneous during transport, placing, and after placement.

II. LITERATURE REVIEW

"Investigation of brucite-fiber-reinforced concrete"

The particle size characteristics of the brucite fibers, the density of the concrete and the viscosity of the fiber / pressure reducer suspension were also measured. The results show that proper addition of brucite fibers to concrete can improve mechanical properties, especially flexural strength. In the test, the optimum amount was about 0.5% by weight of the concrete. As the dose of brucite fiber increases in concrete, the flowability and density of concrete decrease. The performance of concrete strength is a collective interaction of fiber reinforcement and density reduction. The aspect ratio and surface area of brucite fibers are important factors in the workability and mechanical properties of fiber concrete. Larger aspect ratios and smaller surface areas help reinforce. Fiber suspension Water reducing agents with low viscosity are advantageous for improving the workability and strength of brucite fiber concrete.

After adding brucite fibers, the impact strength of concrete increased by 17% from 7d and 10% from 28d, respectively. This indicates that brucite fibers can reinforce the dynamic mechanical properties of concrete. Conservativeness depends on the opposite trend. The reason is that the fiber has a large surface area and strong absorption capacity. As the use of brucite fibers increases, more water is absorbed, resulting in reduced fluidity and increased concrete retention. Conservativeness depends on the opposite trend. The reason is that the fiber has a large surface area and strong absorption capacity. As the use of brucite fibers increases, more water is absorbed, resulting in reduced fluidity and increased concrete retention.

The change in the dose versus compression strength and flexural strength of brucite fibers varies in a similar manner. When brucite fibers were added, the strength initially increased and then decreased. When the amount of brucite reaches 1.5 wt%, the compressive strengths of 7d and 28d are close to the compressive strength of unreinforced strength, and so are the flexural strength of 7d. The only exception is a flexural strength of 28d, which is about 24% higher than the original. The optimum dose was about 0.5 wt.% And the compressive strength and bending strength were increased by about 13% and 41% at 28d, about 10% and 38% at 7d, respectively

Appropriate addition of brucite fibers can increase the compressive strength, flexural strength and impact strength, as well as the corrosion resistance of the concrete, especially flexural strength. In the test, the optimum dose was about 0.5% by weight of the concrete. Increasing the dosage of brucite fiber decreases the fluidity and density of the concrete, while brucite fiber has a large surface area and strong absorption capacity, thus increasing water retention. This controls the density of the fibers by controlling the fluidity. The performance of concrete strength is the collective interaction of fibers.

The aspect ratio and surface area of brucite fibers are important factors in the workability and mechanical properties of fiber concrete. Larger aspect ratios and smaller surface areas help reinforce. Water reducers can affect the workability and strength of fiber concrete systems. By comparison, the low fiber suspension viscosity is advantageous for improving the workability and strength of the brucite fiber concrete.

"Mechanical Property of Brucite Fiber Reinforced Composite Material"

The mechanism by which fibers can reinforce concrete has been discussed. The results showed that the diameter of the brucite fibers changed from micrometer scale to nanometer size depending on the decentralization of the reducer. Brucite fibers can exhibit high tensile strength in concrete and can improve the mechanical properties of cement motar and concrete. The lifetime of the composite material reinforced with bruce fibers can be extended by the addition of brucite fibers.

Brucite fibers may or may not function in concrete depending on their existing shape and bonding conditions. It is difficult to ensure that the brucite fibers are homogeneously dispersed and that they combine well with concrete when they are synthesized directly. Therefore, the bruxite fiber must undergo a dispersing process in which the dispersing agent is required to have excellent compatibility with the components of the concrete and does not destroy the performance of the concrete.

The surface of the brucite fibers exhibits negative charge characteristics in the suspension of the starch agent and becomes more negative when the concentration of the starch agent increases. Longer grade brucite fibers have much higher bit and suspension viscosities than short ones. Under conditions of unchanged fiber content, the flexural strength of the concrete moves up and approaches the saturated state with an increase in the dosage of the decelerator and the degree of fiber beating. The diameter of the brucite fiber changes from micrometer scale to nanometer dimension depending on the dispersing action of the reducer.

Studies of brucite fiber reinforced cement mortar have shown that the use of brucite fibers can increase compressive and flexural strength within 2 wt%. When bruceite fibers were excessive, more water was needed. The strength of the brucite-fiber-reinforced cement mortar was reduced due to the loosening of the structure.

When the amount of brucite reached 1.2 wt%, the bending became the maximum. Compared with general cement mortar, flexion was increased by 22.6%, 21.7% and 27.2%, respectively. When the brucite content exceeds 1.2% by weight, it is remarkable that the bending strength is obviously reduced. If the brucite content exceeds 2.5 wt%, the bending strength of the brucite fiber reinforced cement mortar is lower than that of the general cement mortar. When the amount of brucite exceeds 5% by weight, the bending strength decreases slowly. From a comparison of brucite fiber reinforced concrete, it is clear that the addition of brucite fibers increases the compressive strength and flexural strength of the concrete. This situation is similar to brucite fiber reinforced mortar.

Hajime Okamura : Okamura proposed a new type of concrete that could be compacted into every corner of the formwork with its own weight. In 1986, he started a research project on

the fluidity and workability of this special type of concrete, later called self-compacting concrete. The self-formability of this concrete can be greatly influenced by the properties and mixing ratio of the material. In his study, Okamura fixed the solid content to 50% of the solid volume and the fine aggregate content to 40% of the mortar volume, so it was easy to self-shape by adjusting the ratio of water to cement. Dose only. A model formwork consisting of two sections (towers) perpendicular to both ends of the horizontal valley was used by Professor Okamura to observe how well the self-compacting concrete can penetrate obstacles.

The water - cement ratio was between 0.4 and 0.6 depending on the properties of the cement. The microcontamination dosage and final water-cement ratio were determined to ensure self-formability and were subsequently evaluated using the U-type test.

"Characterization of Composite Materials Based on Cement-Ceramic Powder Blended Binder"

Fine ceramic powder belongs to pozzolanic material. The use of pozzolanic materials lowers the production costs of blending binders and lowers CO2 emissions, as the demand for energy required for Portland clinker production is low. In this paper, ceramic powders were used in cement - based mortar compositions in amounts of 8, 16, 24, 32, and 40 mass% of cement. The chemical composition of the ceramic powder is analyzed by X-ray fluorescence and X-ray diffraction analysis. The particle size distribution of ceramics is confirmed by the laser diffraction law. Basic physical and mechanical properties are determined experimentally for 28 days for cured mortar samples. The results show that ceramic powder can replace some Portland cement to replace the composition of cementitious composites and reduce the negative environmental impact of production.

Potential use problems of waste ceramics in cement based composite production are studied. In Europe, the amount of waste generated at different stages of production in the ceramic industry amounts to 3 to 7% of global production, which means millions of tons of reclaimed clay. Interest in pozzolanic mixtures of calcined clay using calcium hydrates has recently been shown by researchers dealing with the production of new hydroponic materials for the masonry and concrete industries. Some of the ceramic products that are formed in the burning Ilrite-group mineral and have the appropriate size may become active pozzolanas. For this reason, waste ceramic materials are less expensive than natural zeolites as supplementary binders in mortars and concrete, but are likely to be nearly equivalent alternatives. Waste
ceramics have a great potential to be used as a replacement for partial cement or natural aggregates in view of ceramic chemical composition, heat treatment and fineness.

Experimental testing of the possible use of waste ceramic powders from brick grinding with partial Portland cement replenishment in blend binders provided information on the basic physical and mechanical parameters of the composite mortar tested according to the amount of cement substitution. Application of a ceramic powder in an amount of 8% by weight resulted in a best SAI of higher than ~ 102%. However, other tested blends provide satisfactory mechanical strength that can be used, for example, for the production of low strength composites, plastics, and the like.

"Quality of fine materials from crushed rocks in sustainable concrete production"

Crushed rocks are generally thinner and more irregular than natural aggregates. Crushed rocks also produce finer materials. Fillers can be used with high tanning agents to expand concrete pastes and can be used to lower cement consumption. To optimize the use of fillers, you must evaluate the quality of the fillers. There are several ways to evaluate fillers. This article compares and evaluates several methods for material properties and behavior of mortar and paste tests. This analysis shows the importance of understanding the effects of flakes and the properties of the finest fractions below 10 μm.

Similar to the test described above, the composition of the micro-mortar is based on a basic recipe for a house-building concrete with a w / c of 0.57. 13.3, and one with 26.1% by volume of particles passing through a 250 [mu] m sieve were analyzed. The results show that as the amount of fine material increases, the importance of quality increases. Some aggregates, such as K18, K6 and K9, have similar effects to natural aggregates, while K4, K8, K10 and K1 give bad rheology when added in large amounts. In general, all samples giving bad rheology contain large amounts of free mica in the microfraction. Sample K8 contains sericite in the ultra fine particle filler fraction (described below). Sericite is a fine muscovite formed by the hot water or weathering of K-feldspar. Good rheological properties were observed when sericite was washed out of the aggregate K8.

Shredded aggregates require more paste due to their irregular and flaky form. Grinded aggregate generally contains more filler than natural aggregate. The filler part is used with cement and water a part of paste. In order to increase the paste fraction, fillers should be prepared in good quality. The quality of the filler is the result of combining the filler's classification with the shape and surface of the filler particles. The filler particles slowly dissolve in the concrete pore solution, but this does not affect the fresh concrete and will probably not show an expansive alkaline silica reaction

In most cases, the filler contains free minerals that reflect the composition of the ground rock. For example, granite rocks that are more limestone than limestone are known to give piercing aggregates. One of the biggest problems is flaky particles. Particularly, 40 to 60 60 80 130 100 110 120 130 140 0,454 0,399 Slurry flow (mm) Particle volume concentration N1 N2 B-VSI L-VSI E-CC E-VSI SK -VSI S-VSI D-VSI ST- fountain. Free mica is more difficult to "cube" because it is bent rather than crumbly. The micas appear to come from the size they have on the rock. Mika generally should be avoided. A special problem is weathering or hydrothermal treatment products. Frost metamorphism or keratinization of K feldspar can accumulate in the ultrafine fraction. It is released in the amount of superfiller in crushing process.

Subramanian and Chattopadhyay : The authors wanted to determine what the Okamura developed and the other rough and fine aggregate content. The coarse aggregate content varied with water powder (cement, fly ash and slag) ratios of 50%, 48% and 46% of the solid powder. The U-tube test was repeated for various water-to-powder ratios from 0.3 to 0.7 in steps of 0.10. Based on these experiments, it was found that self-compactibility could be achieved when Okamura tried to limit aggregate content to 46% instead of 50%. In the next series of experiments, the coarse aggregate content was fixed at 46% and the sand content of the mortar portion varied from 36% to 44% by 2% on a solid volume basis. In other words, the moisture-to-powder ratio varied from 0.3 to 0.7 and a sand content of 42% was selected based on the U-tube test. Several specimens were cast using a mixture ratio developed by the two investigators to show the need to use a viscosity modifier and an incompatibility agent to reduce flaking and bleeding. No viscosity-modifying agents were used in this test. They cast 19 specimens and they did not use vibration or other compression methods as a heavily reinforced slab of 2400x600x80 mm.

However, careful qualitative observations indicated a need for fine tuning within a narrow range to eliminate bleeding and coarse aggregate sedimentation.

At the same time, it was difficult to obtain a mixture that was fluid but not blood. It can be concluded that this may result in a slight change in the moisture content or the particle size of the agglomerates in a mixture with improper flowability or that the coarse aggregates tend to separate. It is therefore necessary to add a viscosity modifier to the concrete mixture.

Rahul Dubey, Pardeep Kumar :

In this study, the dosage of Superprize for the compressive strength of concrete was studied. Class 43 Portland cement, silica fume, and fly ash were used. Six test mixtures were prepared and the superplasticizer varied from 2% to 12%. All workability tests were performed according to EFNARC.

Observation of the SCC blend reveals that the initial and final strength of the concrete is increased over conventional concrete at 2% of the super-hard plasticizer. At 4% dosage of Sp in concrete, the curing time increases but the strength is insignificant. Below 8% and below 10%, the increase in compressive strength due to aging was further reduced. This trend of compressive strength and curing time indicates the presence of increased SP without adequate hydration of the cement.

Andrease Leeman, Frank Winnefeld : The authors studied the influence of various viscosity modifiers on the fluidity of fluidity and self-compacting concrete, the initial hydration of cement paste and its impact on concrete development.

In this study inorganic micro silica, neon silica slurry and organic VMA were used. The addition of vma at a constant water to binder ratio results in a decrease in mortar flow and an increase in flow time. A certain amount of superplasticizer mixture with VMA requires a higher moisture binder ratio to maintain flow properties as a reference mixture without VMA.

When comparing the compressive strengths during the day, concrete without any admixtures and mixtures with mineral silica and quartz silica slurry show the highest values. After 28 days the value of all mixtures except concrete reaches very low strength and is similar without any mixture.

Umar and AL-Tamini : The authors prepared three test mixtures and one control mixture with the same water / powder ratio and different ingredients with different flow properties. The control mixture is considered to compare the strength of SCC with the strength of ordinary concrete. Flowability was varied by varying the dosage of VMA in different SCC mixtures. Nine cubes were cast from each SCC mix and control mix to obtain the compressive strength of the SCC at the curing step after 3 days, 7 days, and 28 days of curing. The results

show a small change in the VMA variation of SCC characteristics such as fluidity, throughput, stability and separation resistance. It was also found better by adding VMA bending strength and compressive strength.

Liu Kaiping, Cheng Hewei, Zhou jing'en : The authors studied the effect of brucite fiber grade and examined the dosage for bending strength, compressive strength, impact strength, sulphate corrosion resistance and water integrity. Other speed reducers have been tested. The optimum amount in the test was about 0.5% of the concrete weight. Increasing the amount of brucite fibers in concrete reduces the fluidity and density of the concrete. The performance of concrete strength is a group interaction of fiber reinforcement and density reduction. After the test results it is clear that the proper addition of the brucite system. By comparison, the low fiber suspension viscosity is advantageous for improving the workability and strength of the brucite fiber concrete.

Md Nor Atan, Hanizam Awang : This study investigates the compressive strength and bending strength of self - compacted concrete with log - shells mixed separately and with other types of mineral additives as partially compacted cement substitutes. The additive was paired with rice flour and contained limestone powder, pulverized fuel ash and silica fume. The mixed design was based on a rational method in which the solid components were fixed, and the water and microfine content were adjusted to produce optimum viscosity and fluidity. All mixes are designed to achieve a SF1 rated slump flow of 520 mm and _ 700 mm conformance standards. According to the test results, 15% of the cement using raw rice bran produced 40 grade concrete. It has been found that 30% and 45% of the cement replenishment of the raw rice bran, which is a mixture of limestone powder, limestone powder and silica fume, shows compressive strength and improved bending strength similar to those of ordinary concrete.

Prof. Kishor S. Sable, Prof. Madhuri K. Rathi : The authors have found that self-compacting concrete (SCC) offers several economic and technical advantages. The use of steel fibers extends that possibility. Because fly ash is not highly reactive, it can reduce the heat of hydration by replacing some of the cement with flyash. Therefore, studies have been conducted to compare mechanical properties such as shear and torsional strength of SCC and NCC with and without fiber of differing aspect ratio. Compare NCC and SCC. In the SCC, a marginal improvement in all properties is observed. The results show that the concrete with HK 80 type steel fiber provides better performance in terms of strength compared to all other types of fibers and both types of concrete, at an optimum volume fraction, i.e. 2.5%.

Self-Compacting Concrete - Procedure for Mix Design

Self-compacting concrete is a fluid mixture suitable for placing in structures with congested reinforcement without vibration. Self-compacting concrete development must ensure a good balance between deformability and stability. Also, compactibility is affected by the characteristics of materials and the mix proportions; it becomes necessary to evolve a procedure for mix design of SCC. The paper presents an experimental procedure for the design of self-compacting concrete mixes. The test results for acceptance characteristics of self-compacting concrete such as slump flow; J-ring, V-funnel and L-Box are presented. Further, compressive strength at the ages of 7, 28, and 90 days was also determined and results are included here.

The slump flow test is used to assess the horizontal free flow of SCC in the absence of obstructions. On lifting the slump cone, filled with concrete, the concrete flows. The average diameter of the concrete circle is a measure for the filling ability of the concrete. The time T_{50cm} is a secondary indication of flow. It measures the time taken in seconds from the instant the cone is lifted to the instant when horizontal flow reaches diameter of 500mm.

The flowability of the fresh concrete can be tested with the V-funnel test, whereby the flow time is measured, figure 2.The funnel is filled with about 12 litres of concrete and the time taken for it to flow through the apparatus is measured. Further, T_{5min} is also measured with V-funnel, which indicates the tendency for segregation, wherein the funnel can be refilled with concrete and left for 5 minutes to settle. If the concrete shows segregation, the flow time will increase significantly. According to Khayat and Manai, a funnel test flow time less than 6s is recommended for a concrete to qualify for an SCC [9].

The passing ability is determined using the L- box test [10] as shown in Fig 3. The vertical section of the L-Box is filled with concrete, and then the gate lifted to let the concrete flow into the horizontal section. The height of the concrete at the end of the horizontal section is expressed as a proportion of that remaining in the vertical section (H2/H1). This is an indication of passing ability. The specified requisite is the ratio between the heights of the concrete at each end or blocking ratio to be ≥ 0.8.

At the water/powder ratio of 1.180 to 1.215, slump flow test, V-funnel test and L-box test results were found to be satisfactory, i.e. passing ability, filling ability and segregation resistance are well within the limits.

SCC could be developed without using VMA as was done in this study.

The SCC1 to SCC5 mixes can be easily used as medium strength SCC mixes, which are useful for most of the constructions; the proportions for SCC3 mix satisfying all the properties of Self-Compacting Concrete can be easily used for the development of medium strength self-compacting and for further study.

By using the OPC 43 grade, normal strength of 25 MPa to 33 MPa at 28-days was obtained, keeping the cement content around 350 kg/m^3 to 414 kg/m^3. As SCC technology is now being adopted in many countries throughout the world, in absence of suitable standardized test methods it is necessary to examine the existing test methods and identify or, when necessary to develop test methods suitable for acceptance as International Standards. Such test methods have to be capable of a rapid and reliable assessment of key properties of fresh SCC on a construction site. At the same time, testing equipment should be reliable, easily portable and inexpensive. A single operator should carry out the test procedure and the test results have to be interpreted with a minimum of training. In addition, the results have to be defined and specify different SCC mixes. One primary application of these test methods would be in verification of compliance on sites and in concrete production plants, if self-compacting concrete is to be manufactured in large quantities.

Utilization of Waste Marble Powder in Self-Compacting Concrete

Self Compacting Concrete is also known as Self-Consolidating Concrete or High-Performance Concrete or Super-Workable Concrete. SCC has been developed for the use in situations where vibration is difficult and reinforcing steel is highly congested as in the case of typical pre-stressed beam.

Self-Compacting concrete (SCC) technology is based on increasing amount of fine material like marble powder, fly ash, lime stone filler, etc., without changing the water content compares to the conventional concrete. The self-compacting or super-workable concrete or also referred to as self consolidating concrete is a highly flowable or selflevelling cohesive concrete that can spread readily into low viscous place through and around dense reinforcement under its own weight. It adequately fills formwork without segregation or bleeding, and without any significant vibrations. SCC mix has low yield stress and an increased plastic viscosity. This mix requires minimal force to initiate flow but also have adequate cohesion to resist aggregate segregation and excessive bleeding. It is estimated that SCC may result in up to 40% faster construction than using normal concrete and the elastic modulus and shrinkage of SCC didn't differ significantly from the corresponding properties of normal concrete.

Marble cutting industry produces large amount of wastes in the powder form. Marble powder is one of the waste produces in marble industry. While cutting marble, slurry is formed which replaces fine aggregate. It is obtained during the processes of dressing, cutting and polishing. The marble waste during quarrying by mechanized processes can be estimated at 30% to 40% of the total production. The waste generated during the quarrying operation is mainly in the form of rock fragments. The marble waste generated during the processing of marble like dressing, cutting and polishing processes. The slurry generated during processing can be estimated at about 10% of the total stone quarried and during polishing processes5% to 7%.

The Waste marble powder can be utilized in concrete in different ways. Waste marble powder can be used as filler in concrete and helps to reduce the total void content in concrete. Waste marble powder can be used as an admixture in concrete, so that the strength can be altered.

Marble wastage are able for improving the fresh and hardened properties of self compacting concrete (SCC). Marble powder has some cementitious properties. As per the previous studies, it concludes that use of waste marble powder as the replacement of fine aggregate as well as cement had a good prospective

III. Material Used

Table:- 1 material used

Ingredient Used	**Key features**
Cement	53 grade Ordinary Portland Cement.
Fine aggregate	River sand conforming to zone II of IS:383.
Coarse aggregate	Crushed, angular graded coarse aggregate of 12.5 mm nominal maximum size as per IS:383.
Water	Lab tap wate.
Super plasticizer	High-range water reducer, also known as super plasticizer.
VMA(Viscosity Modifying Agent)	The common application of VMA is to produce non-dispersible underwater concrete and SCC.
Microcline powder	It is a one types of feldspar powder. Use for high workability of concrete.

IV. RESULTS AND DISCUSSION

Table:-2 result of fresh property of SCC of M30 Grade

Sr no.	Mix Proportion	Slump flow	L-Box	V-Funnel
1	SCC	725	0.92	12
2	4% M.C.	735	0.93	11
3	8% M.C.	755	0.93	10
4	12% M.C.	760	0.94	10
5	16%M.C.	780	0.94	9

Table:-3 result of fresh property of SCC of M40 Grade

Sr no.	Mix Proportion	Slump flow	L-Box	V-Funnel
1	SCC	725	0.92	12
2	4% M.C.	735	0.93	11
3	8% M.C.	755	0.93	10
4	12% M.C.	760	0.94	10
5	16%M.C.	780	0.94	9

Table:-4 result of Compressive strength of SCC of M30 Grade

M30)average compressive strength after			
	3 DAY	**7 DAY**	**28 DAY**
SCC	15.65	24.79	41.14
4%M.C.	14.21	22.52	37.45
8%M.C.	14.21	23.64	38.53
12%M.C.	13.26	26.84	44.66
16%M.C.	13.15	30.38	37.29

Table:-5 result of Compressive strength of SCC of M40 Grade

M40average compressive strength after			
	3 DAY	**7 DAY**	**28 DAY**
SCC	21.25	30.76	52.26
4%M.C.	20.07	28.82	43.26
8%M.C.	19.43	30.71	45.84
12%M.C.	19.05	33.20	56.06

16%M.C.	18.40	28.65	47.39

Table:-6 Split Tensile Strength Results for M30 Grade

Sr.no.	Mix	At 28Day(N/MM2)
1	SCC	3.37
2	4% M.C.	3.62
3	8%M.C.	3.9
4	12%M.C.	4.14
5	16%M.C.	4.08

Table:-7 Split Tensile Strength Results for M40 Grade

Sr.no.	Mix	At 28Day(N/MM2)
1	SCC	3.87
2	4% M.C.	4.13
3	8%M.C.	4.55
4	12%M.C.	4.94
5	16%M.C.	4.89

Table:-8 SEA Water Attack Result (Strength Loss):-

	28 DAY
SCC	3.08
12%M.C.	2.48

Table:-9 ACID Water Attack Result (Strength loss):-

	28 DAY
SCC	3.17
12%M.C.	2.08

V. CONCLUSION

The percentage of microcline powder in the mix will affects the workability Mechanical characteristic of SCC.
When dosage of microcline increased the flow will increase.
Compressive strength & Split tensile strength of 12% dosage of microcline powder at 28 day is higher.
By adding 16% microcline powder flow is maximum for M30 & M40.

Future scope

SCC is blended with binary mix, one can add ternary mix with addition to replace natural material used in concrete and check chemical properties of concrete.
Microscopic structure may analyze, X-ray diffraction may check out.
By improving properties of microcline powder one can get higher strength, by controlled burn.
More properties like modulus of elasticity may find out, along with chemical analysis of concrete.

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