REVIEW ON MARBLE DUST POWDER UTILIZATIONIN IN CONCRETE

Ruchi Chandrakar
Assistant. Professor, Dept. of Civil Engineering, Kalinga University, Nava Raipur, C.G, India
Email- ruchi.chandrakar@kalingauniversity.ac.in

Abstract

Progression appertaining to a substantial innovation is diminishing utilization appertaining to regular and energy an assets, and lessens natural contamination by modern waste. Marble is economically handled by being cut, cleaned and utilized for an enriching purposes. Marbles are produced within stone handling plant which contaminate climate and influence people straightforwardly or by an implication. Marble is mechanically handled by being cut, cleaned and utilized for enlivening reason and within aforementioned manner, monetarily variable. During cutting interaction, twenty to thirty percent appertaining to marble block becomes squander marble powder. Since, it prompts serious natural issue, consequently, utilization appertaining to squander marble powder within substantial creation in the process of fractional substitution appertaining to concrete or into be added in the process of an admixture. Figure fiber was additionally added into increment compressive strength appertaining to cement. Aforementioned substantial is more conditions cordial and will give more life into concrete. Pozzalanic substantial utilizing marble dust powder show that aforementioned substantial gives better compressive strength and expands solidness appertaining to concrete. Comprising every one appertaining to outcomes, recommendation "marble squander can be utilized within creation appertaining to cement" was examined within detail way.

Keyword-concrete, eco power marble, strength, economical

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Introduction

Marble is transformative stone, coming about because appertaining to change appertaining to unadulterated lime stone. Aforementioned study incorporates utilization appertaining to marble powdering the process of an incomplete substitution appertaining to concrete or fine total. Ventures within India produce bunches appertaining to squander which might be helpful within fractional substitution appertaining to multitude appertaining to unrefined components because appertaining to their various properties.in the process of marble powders contain weighty metals which make H_2O ill-suited for use. Because appertaining to presence appertaining to high oxide calcium content, which is establishing property, marble can be utilized in the process of within fractional substitution appertaining to concrete within concrete sand blend. Within aforementioned task work, gather squander marble powder from business and research its impacts on concrete sand blend within various extents and furthermore analyze compressive concrete sand blend, usefulness and strength. Principal objective appertaining to aforementioned study is into foster valuable substantial blends utilizing squander marble powder in the process of halfway substitution appertaining to concrete and sand. Diminishing squander materials and contributing for what's within store. Figure fiber are utilized within substantial in the process of an admixture, Figure goes about in the process of "auxiliary support" within substantial which builds protection from influence/scraped spot, captures breaks and significantly works on nature appertaining to development within walls, tank, establishments, streets and pre-projected items like lines, blocks, tiles, sewer vent covers, and that's just beginning. New age fiber utilized within different huge modern applications like paper, lead corrosive battery, concrete items and development. Figure fiber additionally increments compressive strength

and solidness appertaining to cement and make substantial more ecological amicable and will give more life into concrete. Amounts appertaining to figure fiber are one, two and three present appertaining to weight appertaining to concrete. Within aforementioned review, properties appertaining to solidified concrete created squander marble powder utilized admixture or fine/coarse total within substantial were analyzed within nitty gritty way. Furthermore, it was resolved that chance appertaining to use appertaining to these loss within substantial in the process of admixture material or total impacted emphatically on solidified properties appertaining to cement.

Writing survey

Ulubeylia et al (2015) [1] was explored that impact appertaining to various utilization areas appertaining to squander marble on solidified concrete, within aforementioned specific situation, (1) compressive, flexural, and parting rigidity, (2) modulus appertaining to versatility, (3) ultrasonic heartbeat speed, (4) Schmidt surface hardness, and within conclusion (5) sorptivity coefficient/porosity appertaining to solidified cement, were analyzed. Looked at every one appertaining to outcomes, recommendation "the marble squander can be utilized within development appertaining to cement" subsequently, utilization appertaining to squander marble powder within (1) ordinary substantial blend, (2) self-compacting substantial blend, and (3) polymer substantial blend, was uncovered. Subsequently, creator observed that utilization appertaining to squander marble within regular substantial blending the process of an admixture material or total is appropriate in the process of it can work on certain properties appertaining to solidified cement. Nonetheless, utilization appertaining to squander marble within oneself compacting and polymer substantial blends in the process of an admixture material or total isn't impacted emphatically amidst regards into solidified properties appertaining to cement.

Jain et.al (2016) [2] has been involved different squander materials in the process of fractional substitution appertaining to concrete or fine total or coarse total. Ventures within India produce loads appertaining to squander which might be helpful within halfway substitution appertaining to relative multitude appertaining to unrefined components because appertaining to their various properties so thus we concentrated in the process of numerous valuable examination papers within aforementioned field and attempting into improve amidst locally accessible squander material so it tends into be demonstrated practical too. Research within aforementioned field and positive outcomes are pivotal into proceed amidst all improvements amidst least harm into general climate and acquiring all foundations for administrations and comfort which are wanted into get.

While creation appertaining to concrete CO2 is discharged out. Substitution appertaining to concrete by pozzalanic material named Ground Granulated Impact Heater Slag, which is side-effect or byproduct appertaining to steel producing enterprises. Ground Granulated Impact Heater Slag go about in the process of cost decreasing fixing and furthermore increment numerous mechanical properties appertaining to cement. Glass filaments appertaining to 12mm size were likewise added into increment both compressive and elasticity appertaining to cement. Aforementioned substantial is more conditions cordial and will give more life into concrete. Into keep up amidst functionality for lower water/concrete proportion and into keep up amidst impact appertaining to admixture added, Super plasticizer is added by experimentation technique. Mechanical properties appertaining to pozzalanic substantial utilizing GGBFS show that aforementioned substantial gives better compressive strength and expands sturdiness appertaining to cement. Glass fiber additionally increments mechanical properties like compressive strength, flexural strength and split rigidity appertaining to cement. Test has been led on substantial utilizing strengthening admixture. compressive strength appertaining to 0.2% fiber content is most extreme at twenty-eight days relieving, twenty-eight days parting malleable and flexural strength likewise increments around five% at zero point two % fiber content into that appertaining to ordinary concrete and Further on off chance that fiber rate expands, it was seen an extraordinary

misfortune within strength, was examined by Priya et.al (2015) [3].

The squander MDP going through 90 microns, has been utilized for examining appertaining to solidified substantial properties. Besides, impact appertaining to various rate substitution appertaining to MDP on compressive strength, parting elasticity (Roundabout rigidity) and flexural strength has been seen by Ranjan Kumar et.al (2015) [4], within aforementioned undertaking, impact appertaining to MDP within concrete on strength is introduced. Five substantial combinations containing zero, five, ten, and twenty present MDP in the process of concrete substitution by weight premise has been arranged. Water/concrete proportion (0.43) was kept consistent, within every one appertaining to substantial blends. Compressive strength, split rigidity and flexural strength appertaining to substantial combinations has been acquired at seven and twenty days. Consequences appertaining to research facility work showed that supplanting appertaining to concrete amidst MDP increment up into ten present for compressive strength, and up into fifteen present for split rigidity and flexural strength appertaining to cement.

Sharma et.al (2015) [5] examined that, marble powder makes ecological issues yet because appertaining to presence appertaining to high oxide calcium content, which has establishing property, marble can be utilized in the process of within fractional substitution appertaining to concrete within concrete sand blend. Within aforementioned review, squander marble powder was gathered from business and explored its impacts on concrete sand blend within various extent and furthermore thought about compressive, split elastic and flexure strength appertaining to concrete sand blend, usefulness and toughness. Primary target appertaining to aforementioned study is into foster helpful substantial blends utilizing squander marble powder in the process of fractional substitution appertaining to concrete and sand. She saw that as, when concrete is supplanted amidst marble powder up into ten present weights high strength concrete was accomplished. Substitution appertaining to concrete and sand by marble powder up into ten % expands compressive strength however above ten percent substance appertaining to marble powder diminishes compressive strength.

An examination has been led on Occasional Exploration by Pawar et.al (2014) [6], Meaning appertaining to Halfway supplanting appertaining to Concrete amidst Squander Marble Powder. impact appertaining to utilizing marble powder in the process of constituents appertaining to fines within mortar or cement by somewhat diminishing amounts appertaining to concrete has been concentrated on in the process of far in the process of relative compressive, tractable in the process of welling the process of flexural qualities. Fractional substitution appertaining to concrete by differing level appertaining to marble powder uncovers that expanded squander marble powder (WMP) proportion bring about expanded strength appertaining to mortar and cement. Passing on squander materials into climate straightforwardly can cause ecological issue. Consequently outcome, Compressive strength appertaining to Cement are expanded amidst expansion appertaining to squander marble Powder up to twelve % supplant by weight appertaining to concrete and further any expansion appertaining to WMP compressive strength diminishes. Elasticity appertaining to Cement are expanded amidst expansion appertaining to squander marble powder up into twelve point five % supplant by weight appertaining to concrete and further any expansion appertaining to WMP Rigidity diminishes. Subsequently creator figured out ideal rate for supplanting appertaining to MDP amidst concrete and it is practically twelve point five % concrete for both compressive and elasticity.

Aforementioned study was pointed toward using squander marble powder development industry itself in the process of fine total within concrete, supplanting regular sand. Substitution is done into some degree and completely within extent zero, twenty-five, fifty and hundred percent and its impact on properties appertaining to cement were examined by Sakalkale et.al (2014) [7] and found out ideal rate for supplanting appertaining to sand amidst marble powder within concrete is practically half.

Aditya et.al (2014) [8] made material advancement result appertaining to harmless

into ecosystem amidst somewhat low costs without compromising quality. Reason for research is into find organization appertaining to blended utilize squander marble tile that creates most ideal strength. Trial strategy utilized within aforementioned review into test fundamental material and test physical and mechanical properties appertaining to substantial rooftop tiles (twisting burdens, H_2O retention and protection from H_2O drainage)in the process of per ISO 0096 : 2007 amidst eight varieties within material creation. Substantial tile amidst marble squander produces lighter weight three point six % - twelve point six %. Supplanting PC amidst marble powder by twenty % qualify flexural strength, H_2O assimilation (not more than ten %) and there is no drainage within somewhere around twenty hours ± 5 minutes. Synthesis tile marble substantial involving squandering the process of substitute for waterway sand PC and respectable and qualified SNI 0096:2007 is creation appertaining to 0.8 PC : 0.2 SL : 1 Ps : 2 PSL and structure 0.8 PC : 0.2 SL: 3 PSL . While most ideal is 0.8 sythesis PC: 0.2 SL : 1 Ps : 2 PSL, Which produces Flexure 1141 N.

Rishi et.al (2014) [9] saw that blend appertaining to marble dust and different fixings has modulus or compressive strength higher than alone for 7 days and 28 days separately. Utilization appertaining to high extent appertaining to marble dust expands strength appertaining to concrete glue. aforementioned study shows trial examinations on substitution appertaining to concrete and sand both into some degree and joined amidst squander marble powder/squander marble granules within which, by halfway substitution appertaining to concrete and sand, compressive, flexure and split-rigidity get expanded up into specific rate yet get diminished amidst consolidated substitution appertaining to blend appertaining to concrete and sand. That's what creator got, somewhat it is attainable into supplant fine total and concrete by squander marble powder for further developing strength qualities appertaining to cement however strength get diminished when supplant fine total and concrete consolidated by squander marble powder by 20%, within aforementioned way mix against concrete and sand can't be supplanted. ideal dose appertaining to substitution by WMP is viewed in the process of ten % against sanding the process of aforementioned blend invigorated greatest Flexural and Split Elastic at 28 days.

The expansion appertaining to UHPFRC appertaining to either short discrete filaments or persistent long strands into concrete based lattice. At point when UHPFRC contrasted and elite execution concrete (HPC), UHPFRC shows prevalent properties amidst regards into compressive way appertaining to behaving, malleable way appertaining to behaving, functionality, sturdiness, pliability and strength, was noticed by Hamdy et.al (2013) [10]. UHPFRC has remarkable mechanical and transport properties including an exceptionally high rigidity, strain solidifying, and thickness prompting an extremely low porousness and was done on twelve ultra-superior execution built up cement footers amidst 100 mm × 200 mm cross segment, 1600 mm all out length into track down impacts appertaining to including steel filaments flexural conduct appertaining to UHPC radiates. Significant boundaries remembered for aforementioned exploration were how much inside steel support and volume part appertaining to filaments. experimental outcomes showed that adding steel strands into UHPC radiates prompted an expansion within both burden conveying limit and flexural malleability, likewise substantial strain ranges into high level appertaining to extreme worth making most appertaining to better properties appertaining to UHPFRC, Moreover adding steel fiber into UHPC bars can change break designs, defer break appearance and control break development within substantial example. That's what he found, expanding volume part appertaining to fiber into two% for UHPC radiates amidst inside steel proportion 1.33% and into 3% for UHPC radiates amidst inward steel proportion 2.83% and 5.36%, disappointment happens within elastic zone following presence appertaining to one full scale break at mid-range within focal zone appertaining to steady second. Aforementioned large scale break happens when lower level appertaining to support fizzles. For aforementioned situation, substantial strain arrives at high level appertaining to its definitive worth, making most appertaining to better properties appertaining to UHPC.

Review has been directed by Sounthararajan et.al (2013) [11] on Impact appertaining to Lime Content within MDP for Delivering High Strength Concrete. It was tracked down that MDP up into 10% by weight appertaining to concrete was examined for solidified substantial properties. Moreover, impact appertaining to various rate substitutions appertaining to MDP on compressive strength, parting elasticity and flexural strength was assessed. It tends into be noticed that impact appertaining to fine into coarse total proportion and concrete into add up into total proportion affected improvement within strength properties. An extraordinary expansion within compressive strength appertaining to 46.80 MPa at 7 days for 10% substitution appertaining to MDP within concrete substance was noted and furthermore showed superior mechanical property contrasted amidst controlled concrete.

Gadge et.al (2013) [12] examined that, Concrete creation is consuming critical measure appertaining to regular assets, that has carried tensions into lessen concrete utilization by utilization appertaining to beneficial materials. Accessibility appertaining to mineral admixtures checked opening appertaining to another time for planning substantial blend appertaining to increasingly high strength. GROUND GRANULATED Impact Heater SLAG (GGBS) is another mineral admixture, whose potential isn't completely used. Besides just restricted examinations have been done within India on utilization appertaining to slag for improvement appertaining to high strength concrete amidst expansion appertaining to steel filaments. Review centers around compressive strength execution appertaining to mixed cement containing different level appertaining to slag and steel fibrin the process of an incomplete substitution appertaining to OPC. Concrete within concrete is supplanted likewise amidst level appertaining to 10 %, 20%, 30%, and 40% by weight appertaining to slag and 0.5%, 1%, 1.5%, 2% by weight appertaining to steel fiber. Substantial 3D shapes are tried at age appertaining to 3, 7, and 28 days appertaining to restoring. At last, strength execution appertaining to slag mixed fiber built up concrete is contrasted and exhibition appertaining to customary cement. From trial examinations, it has been seen that, ideal substitution appertaining to Ground Granulated Impact Heater Slag Powder into concrete and steel fiber without changing lot appertaining to compressive strength is 20 % and 1.5 % individually for M20, M30&M40 grade resp.

Shirulea et.al (2012) [13] was found that leaving appertaining to squander materials into climate straightforwardly can cause natural issue. Subsequently reuse appertaining to squander material has been stressed. Squander can be utilized into deliver new items or can be utilized in the process of admixtures so normal assets are utilized all more effectively and climate is shielded from squander stores. There are few reuse and reusing answers for aforementioned modern side-effect, both at trial stage and within reasonable applications. These modern squanders are unloaded within close by land and regular ripeness appertaining to dirt is ruined. Physical, compound and mechanical properties appertaining to squander are examined. Amidst consideration appertaining to Marble powder up to 10% underlying strength gain within concrete is high

Examined mechanical properties and completed research center outcomes on substantial examples containing diatomite and WMP in the process of halfway substitution appertaining to concrete within concrete by Ergun et.al (2011) [14]. research facility work basically comprises appertaining to portrayal appertaining to crude and squander materials, readiness appertaining to substantial examples amidst diatomite and WMP within various proportions by weighting the process of trade for concrete and super plasticizing admixture into diminish H_2O interest and pressure and flexural trial appertaining to examples. Test results showed that substantial examples containing 10% diatomite, 5% WPM and 5% WPM +10% diatomite swap by weight for concrete had best compressive and flexural strength and supplanting appertaining to concrete amidst diatomite and WMP independently and together utilizing super plasticizing admixture could be used into work on mechanical properties appertaining to traditional substantial blends.

The impact appertaining to utilizing marble powder and granules in the process of constituents appertaining to fines within mortar or cement by into some extent lessening amounts appertaining to concrete in the process of well in the process of other traditional fines

has been concentrated on regarding overall functionality and compressive in the process of well in the process of flexural strength by Rai et.al (2011) [15]. Halfway substitution appertaining to concrete and normal fine totals by differing level appertaining to marble powder and marble granules uncovers that expanded squander marble powder or squander marble granule proportion bring about expanded functionality and compressive qualities appertaining to mortar and cement.

Marble has been utilized in the process of structure material particularly within castles and landmarks for very long time. Anyway utilization is restricted in the process of stone blocks within wall or curves or in the process of covering pieces within walls, rooftops or floors, leaving its wastage at quarry or at estimating business for most part unattended for use within structure business itself in the process of filler or plasticizer within mortar or cement. outcome is that mass which is 40% appertaining to absolute marble quarried has reached in the process of high in the process of great many tons. aforementioned gigantic unattended mass appertaining to marble squander comprising appertaining to extremely fine particles is today one appertaining to natural issues all over planet was researched by Corinaldesi V et.al (2010) [16].

Conclusions

1. Put forward basic step for limiting development cost amidst purposes appertaining to marble powder which is inexpensively and openly accessible.
2. We can likewise stop natural contamination by concrete creation which is fundamental fixing within development appertaining to structural designing field.
3. MDP concrete in the process of an acoustic structure.
4. The compound assault on MDP substantial design.
5. The strength appertaining to MDP concrete in the process of submerged design.
6. Earthquake impact on MDP substantial design for minimal expense building.
7. MDP concrete amidst plasticizer for higher grade appertaining to cement.
8. Study appertaining to MDP concrete shifting H_2O concrete proportion.
9. Only essential investigation appertaining to purpose appertaining to MDP within substantial creation is explored; subsequently, further examination is expected on investigation appertaining to strength appertaining to cement made by MDP mixed concrete.
10. Further review should be possible for deciding diversions and toughness appertaining to cement containing MDP.
11. Further concentrate on drainage attributes appertaining to MDP concrete.
12. In future flexural strength appertaining to shaft might be seen by expanding measures appertaining to bar.
13. The qualities strength appertaining to cement can be contemplated amidst control blend appertaining to MDP and glass powder.
14. To review way appertaining to behaving appertaining to MDP concrete under biaxial and multiaxial stresses.
15. To review variables influencing dry shrinkage and creep appertaining to MDP concrete.

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