

(54) Title of the invention : DEVELOPMENT OF BACTERIAL CONCRETE AS SELF HEALING MATERIAL

<p>(51) International classification :E04G0023020000, C04B0111720000, C04B0028040000, G01N0033380000, C04B0014060000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Dr. C. Venkata Siva Rama Prasad Address of Applicant :Associate Professor, Department of Civil Engineering, Malla Reddy Engineering College, Maisammaguda (Post. Via. Kompally), Medchal-Malkajgiri-500100. State: Telangana ? Email ID & Contact Number:cvsrprasad90@gmail.com & 8008707104 Secunderabad - -----</p> <p>2)Malla Reddy Engineering College, 3)Dr. B. Sudharshan Reddy Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p>1)Dr. C. Venkata Siva Rama Prasad Address of Applicant :Associate Professor, Department of Civil Engineering, Malla Reddy Engineering College, Maisammaguda (Post. Via. Kompally), Medchal-Malkajgiri-500100. State: Telangana ? Email ID & Contact Number:cvsrprasad90@gmail.com & 8008707104 Secunderabad - -----</p> <p>2)Dr. B. Sudharshan Reddy Address of Applicant :Professor, Department of Civil Engineering, Malla Reddy Engineering College, Maisammaguda (Post. Via. Kompally), Medchal-Malkajgiri-500100. Email ID & Contact Number:beeramsudharshan2055@gmail.com & 9676076033 State:Telangana Secunderabad -----</p>
---	--

(57) Abstract :

ABSTRACT In the recent past, Bacterial concrete has been emerged as remedial measure of healing cracks in structures like bridges, Reinforced cement concrete Buildings, Reinforced cement concrete Pipes, Canal Lining, Pavement etc. Crack formation is incredibly common occurrence in concrete structure that permits the water and completely different sort of chemical into the concrete through the cracks and reduces their strength and that additionally have an effect on the reinforcement once it reacts with water, carbon dioxide and different chemicals. So, to solve this problem Henk Jonkers introduced bacterial concrete to repair the cracks occurred in the concrete structures. In this study, experimental investigations have been carried out to arresting the cracks in the concrete using bacillus subtilis bacteria and calcium lactate. The selection of bacteria depends on its survival in alkaline environment. Bacillus subtilis bacteria with calcite lactate is used in different percentages such as 5% ,10% and 15% of cement weight for M20 and M40 grade concrete with river sand mixes and crushed stone sand mixes as replacement of fine aggregate were presented. Experimental investigations were carried out to study the effect of bacteria on compressive strength and flexural strength of concrete for all mixes at the ages of 7 days, 14 days, 28 days, 60 days, 90 days, 180 days, 270 days and 365 days of curing. The highest strength for both the flexural strength test and the compressive strength test was achieved at a 10% substitution of bacterial solution in cement.

No. of Pages : 12 No. of Claims : 6