



SRM

INSTITUTE OF SCIENCE & TECHNOLOGY
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PRODUCT NAME

ORGANIC LIME MORTAR

PATENT NO. 400031

INVENTOR NAME

Dr. R. RAVI

SPECIFICATIONS & TECHNICAL DATA

- Lime mortar composition having improved mechanical, physical and durability properties. The lime mortar composition comprises lime, an aggregate, water, and organic resin
- Involves ancient process for preparation of lime mortar composition.
- The polysaccharide present in the organic resin has moisturizing capacity and undergoes structural modification on reaction with lime to promote better binding of the mortar and enhances the mechanical strength of the lime mortar composition.
- Further, the proteins present in the resin are hydrophobic in nature and can be used to reduce water absorption and to limit the capillary rise of water/salt solutions and thus provides resistance against salt crystallization cycles. The hydrophobic property of resin is effective in preserving the structures from the damaging action of water or salt solutions due to moisture and other weathering agents.

PRODUCT FEATURES

- Use of resin in the lime mortar composition provides a green alternative for the chemicals used as an additive in the conventional lime mortar composition.
- Acts as plasticizers (to modify rheology)
- Water repellents (to minimize the absorption of water), water retainers (to increase the capacity to retain water), and resins (to provide chemical adherence).

PRODUCT HIGHLIGHTS

- Reduced setting time,
- Better adhesion,
- Impermeability
- Improved hardness
- Enhanced mechanical strength,
- Reduced water absorption
- Capable of limiting the capillary rise of water and/or salt and thereby resists salt crystallization cycles.

Fresh state properties

Properties	Value
Initial Setting Time (hours: min)	2:00 to 2:30
Final Setting Time (hours: min)	12:00 to 13:00
Water retention (%)	99 to 99.65
Workability	130 mm spread

Mechanical properties

Properties	Age in Days			
	28	90	180	360
Compressive strength (N/mm2)	4.00 to 4.60	8.00 to 8.35	9.56 to 10.76	11.50 to 12.78
Flexural strength (N/mm2)	0.81to 0.86	1.20 to 1.28	1.36 to 1.46	1.54 to 1.66

Physical characteristics

Properties	Bulk density(g/cm3)	Water absorption (%)	Porosity (%)
Value	1.98	12.91%	5.67%

Durability:
Capillary absorption

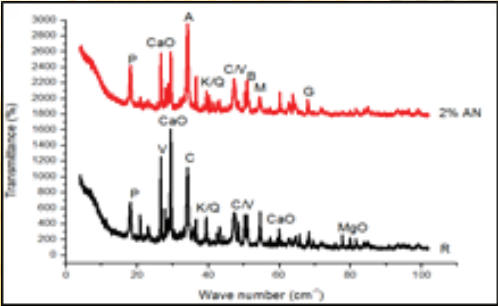
Properties	Capillary Coefficient		
	Water	10%Wt of NaCl	10% Wt of Na2SO4
Value	0.44	0.68	0.73

NaCl salt crystallization cycles

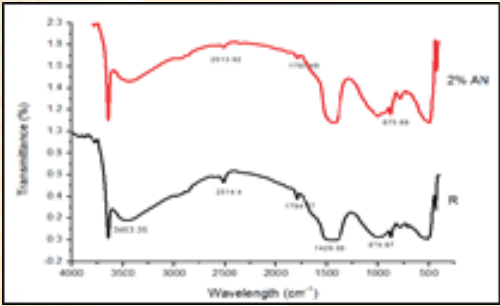
No of Cycles	Reduction in Weight (%)					
	5	10	15	20	25	30
Value	0	0	9	17	29	40

Na2SO4 salt crystallization cycles

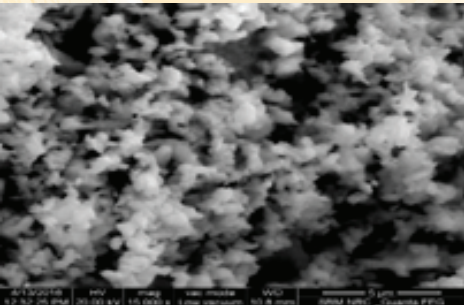
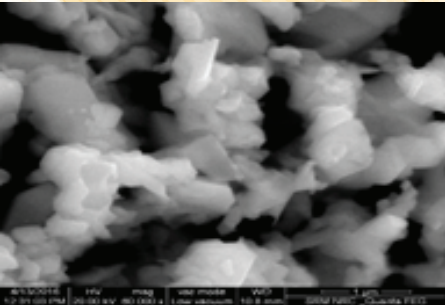
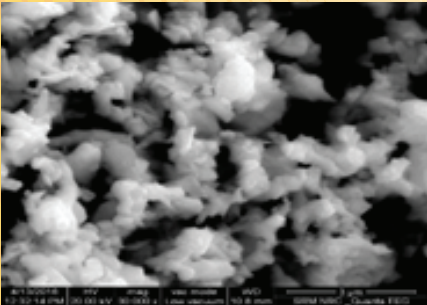
No of Cycles	Reduction in Weight (%)						
	3	6	9	12	15	18	21
Value	0	6	16	23	31	51	58



XRD



FT-IR



SEM

APPLICATIONS OF THE PRODUCT



Weathering course



Temple restoration



Construction of residential building



Restoration of domes

CONTACT DETAILS

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