ELEMENTIS

A global specialty chemicals company

Application Leaflet

BENTONE® LT & RHEOLATE® 255

Efficient adjustment of rheology and preventing of water whitening

Key Benefits

- Optimum workability
- Minimization of water whitening

Introduction

Mosaic rendering are modern decorative in thin layer applied renders, which combine outstanding elegance with practicability and are suitable for interior as well as exterior use.

Typical areas of application are corridors with high traffic, school halls, healthcare rooms, offices staircases and room with public access.

The systems themselves are emulsion based filled with coloured quartz or natural stone of various particles sizes.

The present technical leaflet is visualizing the effect of rheology modifiers BENTONE® LT and RHEOLATE® 255 in comparison to a standard cellulose ether in order to improve the workability of the material by trowel application. Also the effect on the water whitening and stability of the system is being monitored.

BENTONE® LT

Composition	Organically modified special smectite clay
Appearance	Creamy white, finely devided soft powder
Specfic gravity, [g/ml]	1.95
Active solids, [%]	100

RHEOLATE® 255

Appearance	Translucent off-white to white liquid
Composition	Nonionic associative thickener (NiSAT)
Specfic gravity, [g/ml]	1.03
Active solids, [%]	25

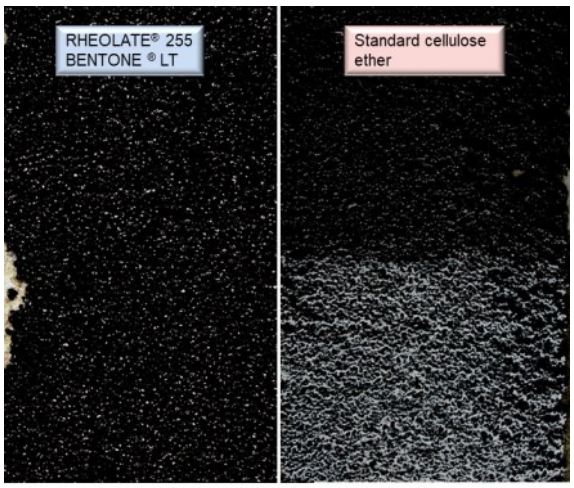
The use of a combination of the Hectorite clay based BENTONE® LT and the NiSAT thickener RHEOLATE® 255 as a full replacement for other standard rheology modifiers, e.g. cellulose ether, resulted in optimum workability, similar sag control and excellent storage stability.

Sample	Workability	Sag as of a layer thickness [mm]	Viscosity stability [%]
BENTONE® LT RHEOLATE® 255	Easy to apply; slightly sticky	8	+4.7
Cellulose ether	Solvent	7	+43.3

Result table: Application and stability

All tested samples were adjusted to equal flow table value of approximately 17 cm.

However, one of the main benefits is the significantly reduced tendency of the cured material to water whitening.



For this test a system filled with black quartz was chosen due to the typically strong sensitivity to this effect after exposure to high humidity conditions.

It can be seen that the system with the BENTONE® LT and RHEOLATE® 255 combination is less prone to water whitening than with cellulose ether.

Appendix

Test formulation

Raw material	Concentration [%] Standard	Modified
Water	7.99	7.87
Cellulose ether	0.15	--
BENTONE® LT	--	0.21
RHEOLATE® 255	--	0.06
Defoamer	0.21	0.21
Preservative	0.28	0.28
Pure acrylic binder emulsion	21.37	21.37
Coloured quartz 1.2 - 1.8 mm	70.00	70.00
Total	100.00	100.00

Test methods

Viscosity adjustment/Flow table value

Adjusted as flow table value (DIN 18555, Part 2). The lower the diameter measured the higher the viscosity.

Viscosity stability

Comparison of Brookfield viscosity (RVT/Helipath spindle D/5 rpm) directly and 1 week storage at 50°C.

Sag control

Maximum film thickness achievable without sagging after application by wedge blade (0 – 3 cm).

Workability

Samples applied by trowel on plasterboards. Stickiness on the tool and force required were compared.

Whitening

Applied at 3 mm on fibre cement slabs. After curing immersed for two hours in water. Whitening was determined visually.

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