

# SOIL STABILIZATION

**Celvolit® liquid emulsions have been successfully used in field applications for soil stabilization in many parts of the world. The polymers bind the soil particles together, and this enhanced adhesion among the soil particles greatly improves the overall strength of treated soil.**

When our emulsion is used as an additive and incorporated with soil, the polymers also act as an adhesive bridge between particles within the soil. Therefore, after proper processing including compaction, compressive strength of the treated soil is enhanced, resulting in added stabilization. This technique of using emulsion polymers for soil stabilization has been used for a variety of purposes, including road construction in rural areas.

## Usage guidelines

Celvolit® emulsions can be applied using sprayable nozzles, pumps, and tanks, or pre-mixed directly in the field. Typical emulsion application rate is 5–10% diluted in water no more than 24 hours prior to use. Dilution rate is dependent on soil moisture content, and performance is dependent on proper soil compaction. Ensure ambient conditions will allow for film formation and drying.

## Benefits

- Increased unconfined compressive strength
- Fast installation, emulsions are easy to dilute on site and spray-apply
- Energy saving, no heat is required
- Usage of native soil greatly reduces transportation of non-native road paving material to job sites
- Applicable in many remote areas where alternative methods are challenging to use

## Typical applications

- Road paving and base course stabilization



## Recommended Products

Products		Celvolit® VA 20	Celvolit® VA 32	Celvolit® 3068
<b>Characteristics</b>	Chemical base	Vinyl acrylic	Vinyl acrylic	VAE
	MFFT (°C), approx.	10	10	0
	Tg (°C), approx.	20	19	10
	Solids content (%)	54.0–56.0	54.5–56.0	54.0–56.0
	pH value	4.0–6.0	4.0–6.0	4.0–5.5
	Brookfield viscosity (25 °C) (mPa·s)	100–400	700–1450	75–450
	Stabilization	Surfactant	Surfactant	Surfactant
<b>Performance</b>	Ease of handling & on site dilution	●●●	●●	●●●
	Service life expectancy	●●●	●●●	●●
	Water resistance	●●●	●●●	●●●
<b>Applications</b>	Dust control	●●●	●●●	●●●
	Soil stabilization	●●●	●●●	●●
	Erosion control	●●●	●●●	●●●
<b>Benefits</b>		A versatile vinyl acrylic emulsion for soil stabilization; improves compressive strength when applied or topically mixed with native soil, or optimally, both. Easy to dilute on-site and to be applied by using conventional sprayers. Equally effective when used as a polymer binder for dust mitigation.	A surfactant-based vinyl acrylic emulsion for soil stabilization; improves compressive strength of native soil due to suitable combination of hardness and flexibility. Easy to be applied by conventional sprayers.	A surfactant-based VAE emulsion for soil stabilization. Low Tg and MFFT enhance its ability to be used in sub-optimal film formation field conditions. Low as-supplied viscosity allows for easy handling and on-site dilution.

●●● = excellent ●● = very good ● = good  
 ●●● = highly recommended ●● = recommended ● = suitable

## Emulsion Polymers

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