

Reduce your maintenance on clay-based, gravel roads...



Concern for owners is the mitigation of gravel loss from graveled roads and the related maintenance costs.

CBR PLUS Technology reduces gravel consumption on gravel surfaced roads.

- ✓ Save gravel
- ✓ Improve strength
- ✓ **Reduce maintenance by up to 80%**
- ✓ Preserve clay cap
- ✓ **Reduced dust - improve safety**
- ✓ Reduced spring thaw effects
- ✓ Reduced moisture susceptibility
- ✓ Saves maintenance “budgets” and “money”
- ✓ Reduced clay soil plasticity

CBR PLUS Technology locks in gravel, into the road base and so reduces gravel loss, or reduces the need for gravel during initial construction by enabling the use of local soils.

CBR PLUS improves road trafficability in wet weather, helps to reduce dust in dry weather and reduces gravel loss.



Permanently Stable – Water Repellant Road Surfaces.



Water is the number one enemy of roads, as it makes the roads soft. Keeping water out of the roads improves performance.

CBR PLUS Technology uses a unique compound which forms protective, oily layers on the surfaces of soil and clay particles. It reduces ion mobility and ion exchange and at the same time makes the clay material hydrophobic by eliminating the adsorption of water.

The result is a soil in the road base that is much less sensitive to moisture, more workable during construction and can be compacted to a better particle-interlock state by equipment and traffic forces.

Technical Support: The expertise of one of the world's oldest manufacturers of soil modifiers, together with some leading Canadian road technology companies combine to bring you this cost saving technology.

Construction of roads using this technology is simple and requires no special construction methods or equipment. The construction method is similar to conventional practices for rehabilitating roads, namely:

1. Prepare the road by clearing the ditches and pulling shoulders.
2. Scarify the road to a depth of 6 inches.
3. Add the **CBR PLUS** to the water in the spray truck and spread evenly over the scarified area. Add more water if necessary to bring the moisture content of the soil to just above OMC.
4. Mix the scarified layer with the grader or other equipment to ensure that the moisture content is even throughout the layer.
5. Shape and compact the road.
6. Finish rolling the surface with a pneumatic roller.
7. Spray a small amount of clean water onto the finished treated surface once a day for five days.

Construction can be integrated with road owner crews and equipment to help reduce outsourced costs.

CBR PLUS Technology is designed to increase the osmotic and matric suction of typical clay based soils while reducing moisture susceptibility. It is this behavior that increases the strength and stiffness of typical clay based sub-grade soils. At the same time it locks in the gravel to minimize gravel loss...

- ✓ By removing the adsorbed water from the soil it provides higher density and better particle interlock.
- ✓ Better particle interlock means higher internal friction, improved strength and stiffness
- ✓ Reduce clay cap loss or preserves clay cap of roads
- ✓ **CBR PLUS** also causes soils to compact to greater density resulting in less penetration of water.
- ✓ The effect of **CBR PLUS** on clays is permanent.

CBR PLUS is designed to improve the performance of local road grade soils to reduce the amount of gravel required during construction and is suitable for a wide spectrum of clayey materials ranging from clays and silty clays to dirty gravel. The soils must display some cohesive properties. (i.e. contain clays)

Key Benefits:

- ✓ Saves Money
- ✓ Reduces Gravel Loss
- ✓ Reduces Maintenance
- ✓ Preserves gravel (Non-renewable resource)
- ✓ Increases soil's density, strength and stiffness
- ✓ Sheds Water
- ✓ Mitigates the re-adsorption of water into the road over time
- ✓ Controls dust under all weather conditions
- ✓ Improves the trafficability in wet weather
- ✓ Long term treatment – does not have to be repeated yearly
- ✓ Preserves clay caps

In Canada, the counties in Alberta have found that after treatment with **CBR PLUS**, the payback from reduced maintenance costs is less than 18 months.

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