

PRO-SEAL®

ECCO®

Saves up to 30% to 70% on road build costs.

Building green, durable, cost efficient roads.

Pro-SealECCO® has designed developed and tested our alternate concrete formula, using site soil in place. to create a semi-structural material, with psi's that are able to reach greater than 7,800 psi.

Pro-Seal SealECCO® non-structural stabilization materials psi are designed from 50 psi to greater than 1,275 psi based upon client site needs.

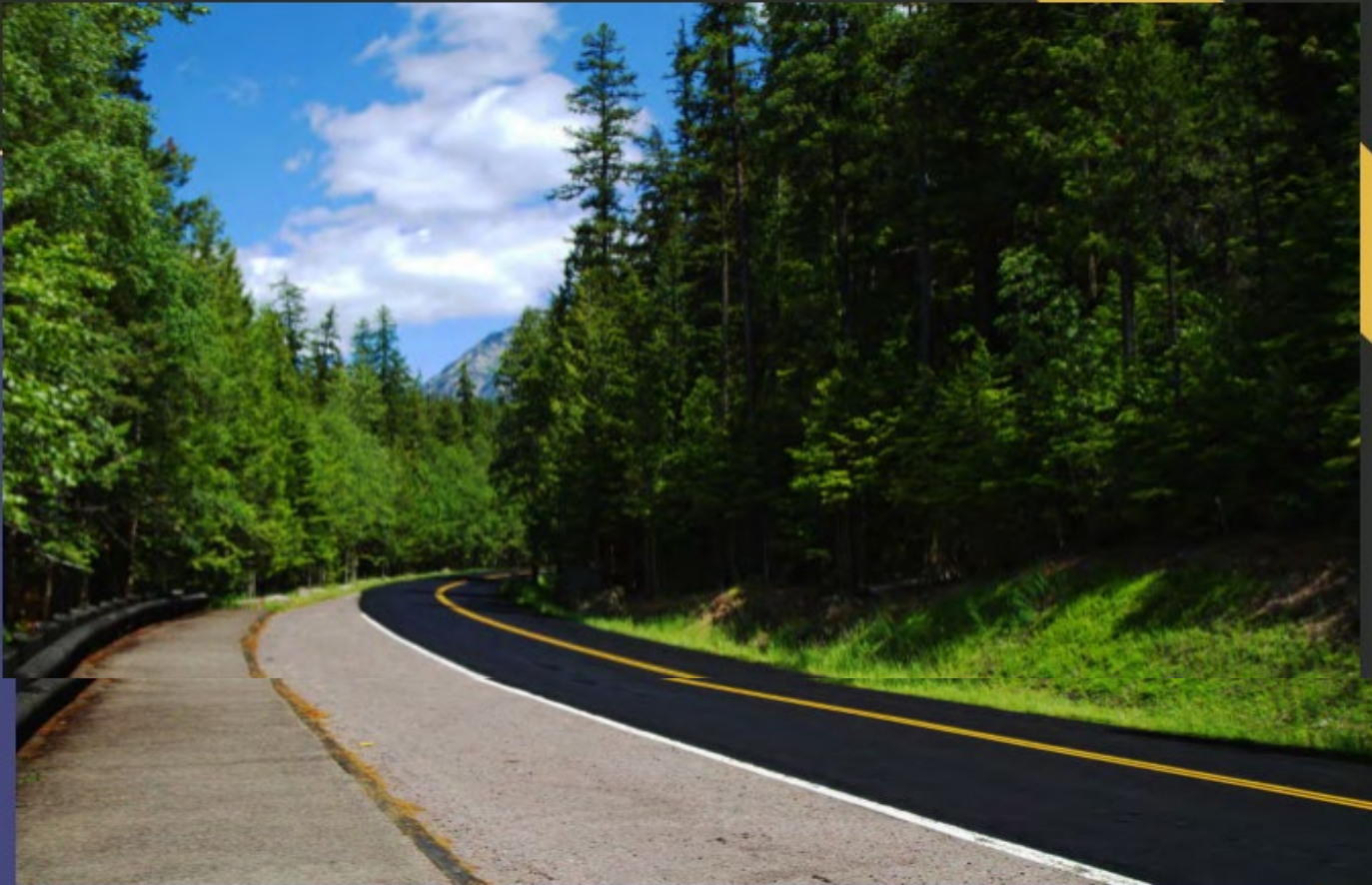


Pro-Seal Products Materials Are:

- ESG Guidelines Compliant
- GO Green Certified
- Red Line Certified
- Leads Compliant
- NSF Certified
- USFDA Compliant
- USEPA Compliant



ECCO is a world wide road construction system that has been available in the market place since 1997. ECCO has been installing the Bed-R.O.C. and Top-R.O.C. system for more than 14 years as the "GREEN" soil stabilization system of choice. ECCO has unique specialized background in new construction and re-construction of transportation surfaces and road preparation. The ECCO System facilitates most traffic roads. Further, ECCO System accommodates building parking lots, light airstrips and foundations.





Bed-R.O.C. is a liquid integrated polycarbon/ polycarbonate polymer that works with specific types of soils described in our classification chart.

When Bed-R.O.C. is used in road construction or re-construction, the ECCO road system eliminates the need for costly excavation and heavy hauling of expensive road base materials. Further ECCO road systems eliminate the need for re-excavation of roads by recycling existing road materials.

Both processes create tremendous cost savings whether building a new road or replacing an existing road.

ECCO Bed-R.O.C. and Top-R.O.C. prevent the cracking from the under-side of the road and reduce or stop pot-holing in roads. The ECCO road system may be traveled on directly or covered with chip and seal, asphalt, concrete or other traffic surfaces.



Top-R.O.C. prevents cracking on the road surface, and seals the surface to control dust and erosion, shedding water away to the sides of the road.

The full-depth base stabilization of in situ materials increases the load bearing strength of all types of soils, penetrates and binds loose aggregate in the treated base to form a solid, water resistant, water shedding, traffic bearing surface.

There is no need to shut down traffic during construction as the ECCO road system is ready for traffic upon installation.





The ECCO Bed-R.O.C. and TopR.O.C. road system, correctly installed, are extremely durable and provide longevity, requiring little to no base course maintenance.

10 years after construction:

The right side of the road was constructed with ECCO Bed-R.O.C. and Top-R.O.C. System. The left side was constructed using other materials and shows pot holes and heavy maintenances.

Notice: No maintenance other than a seal coat on the ECCO Road System side is required!



With Bed-R.O.C. and Top-R.O.C., you will have beautiful roads for a beautiful drive.

Soil Types

Soil Type with ECCO Soil Stabilization Solution

Classification Groups	Well graded Gravel or Gravel Sand mixture . Little to no fines.	Poorly graded Gravels or Gravel Sand mix, little or no fines	Silty Gravels, (gravel, sand, silt) mixtures	Clay Gravel, Gravel Sand, Clay mixtures	Well Graded Sands or Gravelly Sands little or no fines	Poorly Graded Sands or Gravelly Sands little or no fines	Silty Sand , Sands and Silt Mixtures	Clay, Sand, Silt Mixtures	Inorganic Silts and very fine Sands , Rock Flower, Silt, or Clay Fine Sands or Clay Silts with Slight Plasticity	Inorganic Clays of Low to medium Plasticity, Gravelly Clays, Sand Clays, and Lean Clays	Organic Silts and Organic Clays of Low Plasticity	Organic Silts Micaceous or Diatomaceous Fine Sandy or Silty Soils and Elastic Silts	Inorganic Clays of high Plasticity, Fat clays	Organic Clays of Medium to High Plasticity, Organic silts	Peat and other Highly organic Soils
Unified Group Soil's Symbol	GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	PT
AASHTO Group Classification	A-1a	A-1-a	A-1-b	A-1-b	A-1-b	A-1-b or A-3	A-2-4 or A-2-5	A-2-6 or A-2-7	A-4	A-6	A-4	A--6	A-7-6	A-7-5	A-8
Dry application Recommended additives	BedR.O.C., TopR.O.C., NanoCrete														
	May require surface dusting with lime , kiln dust or fly ash prior to top TopR.O.C.			May require surface dusting with lime , kiln dust or fly ash prior to top TopR.O.C. May require Flyash mixed with NanoCrete				May Require Flyash mix with NanoCrete					pH Driven		
Wet Application Recommended additives	BedR.O.C., TopR.O.C., XXWCrete														
	May require surface dusting with portland cement prior to TopR.O.C.			May require surface dusting with lime prior to top TopR.O.C. May require Flyash and/or Lime mixed with XXWCrete				May require Lime Mix with XXWCrete					pH Driven		

ECCO Soil Stabilization System
Pro-Seal Products Inc.



... rapid build temporary or permanent access roads and ...

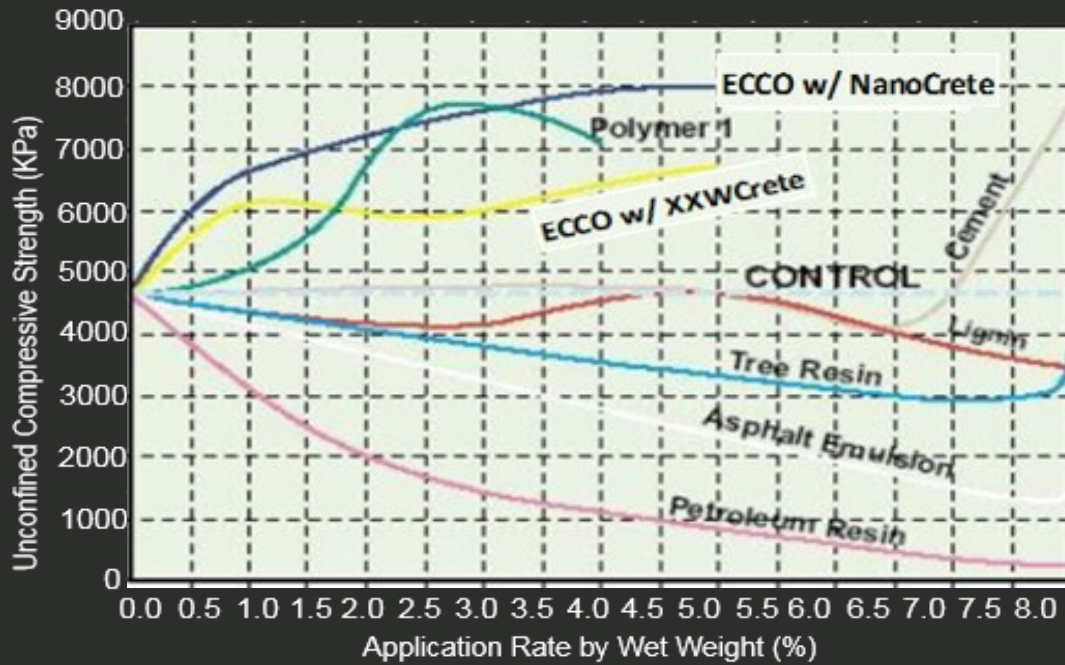


From short or long term rapid dust control with Pro-Seal Products *DustBuster*® System to ...

... rapid stabilized road base for concrete, asphalt, chip and seal, or other traffic wear cover.

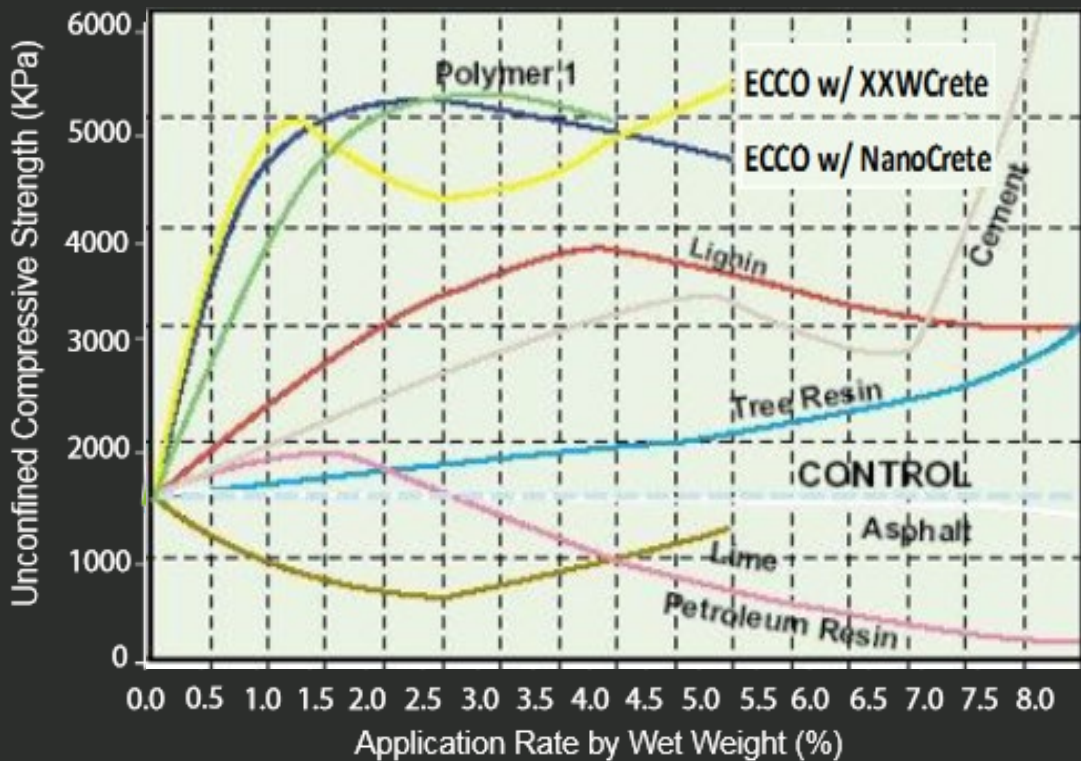
DRY

Unconfined Compressive Strength Test Data
 U.S. Army Corps of Engineers, CEERD-GM-A
 Stabilization of Silty Sand With Traditional and Nontraditional Additives



WET

Unconfined Compressive Strength Test Data
 U.S. Army Corps of Engineers, CEERD-GM-A
 Stabilization of Silty Sand With Traditional and Nontraditional Additives



Full Depth



STEP ONE: Additives / Solution



STEP TWO: Re-claim new road or recycle existing road to depth.



STEP THREE: Vibrated

BENEFITS

Saves time (up to 60%)

- Reduced trucking/dumping
- Existing materials used
- Not weather dependent

Saves money (up to 50%)

- Existing asphalt and/or concrete is recycled
- Less trucking
- Less stone and asphalt
- No fabric required
- Eliminates costly emergency repairs

Highest Quality

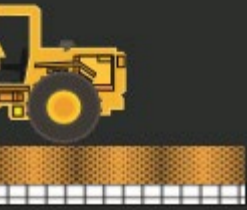
(Durability, life cycle, lower cost)

- Durability, lower life cycle, better economies of scale
- Structural integrity
- CBR
- Impervious to water
- Laboratory tested



From nature's jungle
we've got

Reclamation



Steel Drum
Compacting



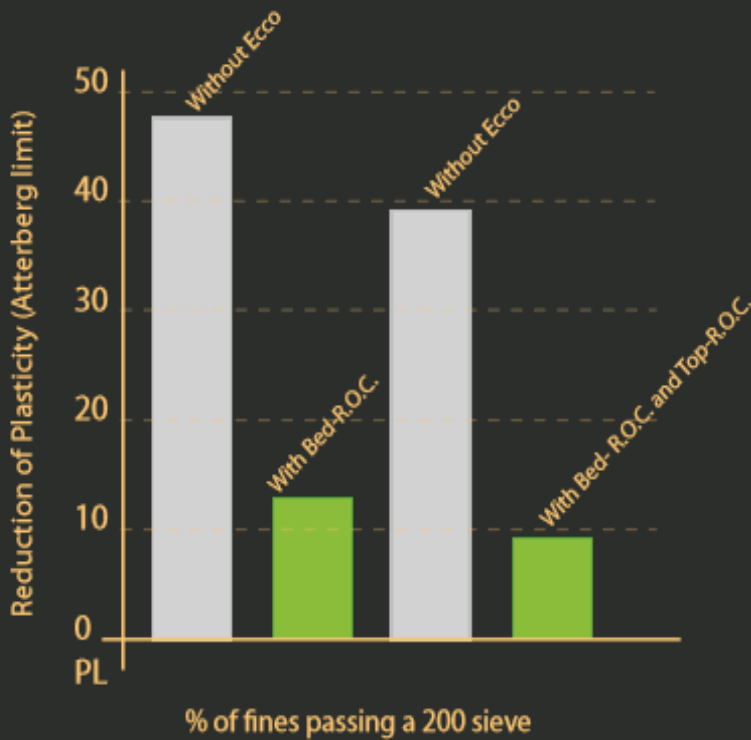
STEP FOUR: Grading and
grooming



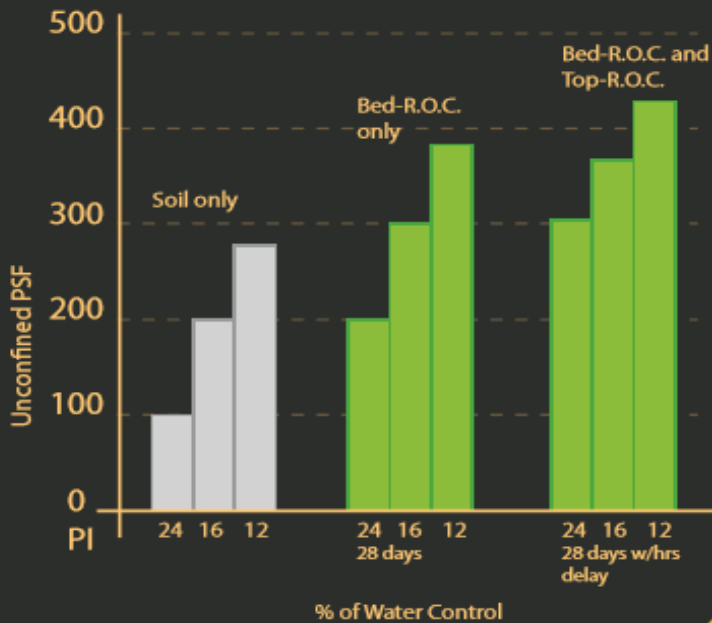
STEP FIVE: Pneumatic
compactor




to the concrete jungle,
your roads covered.



Test	Method	Result									
		% Fly ASH Added	Soil Only			Bed-R.O.C. Only			Bed-R.O.C. Top-R.O.C.		
ASTM 698	Atterberg Limit Determinations Soil	10	LL	PL	PI	LL	PL	PI	LL	PL	PI
			85	29	56	80	39	41	28	21	7
AST D4318-98	Atterberg Limit Determination Red Clay/Salty	10	Red silty Clay			Bed R.O.C.			Bed-R.O.C. Top-R.O.C.		
			LL	PL	PI	LL	PL	PI	LL	PL	PI
			51	23	28	41	16	14	22	16	3
Definition	LL = Liquid Limit PL = Plastic Limit PI = Plastic Index										



Test	Number	Result
Accelerator or Water reducing agent	C4 G4 A	Acceleration reduction time
	B	Water reduced by 100%
Fed-spec	Sec 40 Parts 400-424	Environmentally stable
T.S.C.A	Toxic substances control act	Non Corrosive environmentally SAFE
ORRLAB	Environmental evaluation test 5-14-91	Safe for agricultural soil stabilization

SAND/SILT	
Condition	Unconfined change in compressive strength
Dry	+50%
Wet	+20%
Test by:	 ERDC Engineer Research and level center.

ECCO System Technology “is approved by FEMA as a mitigation road way protection method”.

Walton County Florida has installed more than 200 miles of asphalt road with ECCO System Technology without failure of the base.





Road Surface

40 cm /16 inches.
Depth of reaction

Cavity



Cost maintenance	
Condition	one mile 10 years
Standard Road Bed Preparation	<ul style="list-style-type: none"> • Pot Hole Repair • Hot Patching • Sectional Wash out replacement • Seal coat
Ecco System Bed-R.O.C. Top-R.O.C. Road Bed Preparation	Seal coat (only)
Test by:	

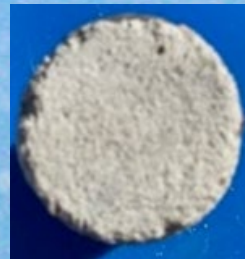
SUBMERGED ROAD TEST	
Condition	Submerged Flood Test
Standard Road Bed Preparation	100% Loss
Ecco System Bed-R.O.C. Top-R.O.C. Road Bed Preparation	Minor Erosion Minor Cracking No material Loss or damage
Test by:	 Fema Test Inspection

ECCO[®]

Soil stabilization and rapid road base system

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Pro-Seal SealECCO[®] non-structural stabilization materials psi are designed from 50 psi to greater than 1,275 psi based upon client site needs.



Building Green,
a better road,
a better life.



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