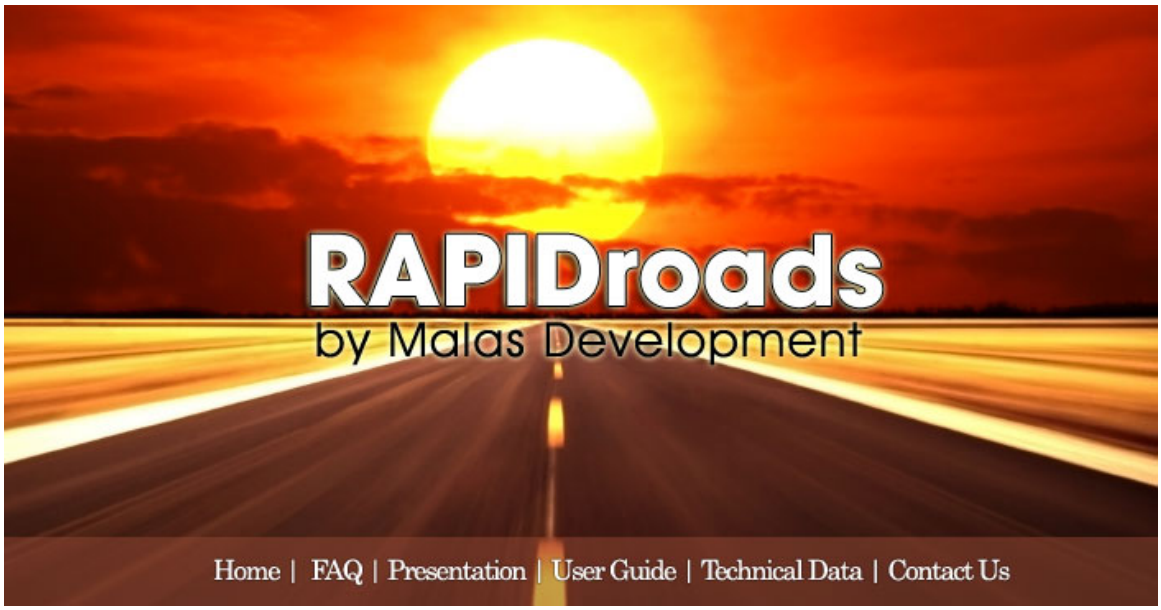

RAPIDroads OVERVIEW

Malas Development is a globally positioned provider of patent pending natural multi-enzyme-based products to the industrial, agricultural and environmental markets. RAPIDroads is a complex non-bacterial concentrated multi-enzymatic formulation that alters the properties of earth materials, providing one of the most cost-effective methods to construct or stabilize roads and road base.

What is RAPIDroads?

RAPIDroads is one of the world's finest products for road stabilization. Although it has been available for the past 8 years on an experimental basis, due to a recent major expansion in manufacturing capacities RAPIDroads is now available to the commercial and industrial marketplace. RAPIDroads, a patent pending concentrated multi-enzyme formulation, alters the properties of earth materials to produce superior road base stabilization compared to all other road treatment materials now in use. Developed and proven through many years of field testing, RAPIDroads provided additional advantages to road builders, communities and the environment by being non-toxic, non-caustic, non-corrosive and totally biodegradable.

When mixed with water and applied prior to compaction, RAPIDroads act upon organic fines contained in the soil through a catalytic bonding

process. Unlike inorganic or petroleum based products which temporarily hold soil materials together, RAPIDroads causes the soil to bond during compaction into a dense permanent base which resists water penetration, weathering and wear. This process takes place in 72 hours under normal summer conditions.

RAPIDroads' Advantage

RAPIDroads lowers to surface tension of water, which promotes fast and thorough penetration, and dispersal of moisture. This action causes hydrated clay particles to be pressed into and to fill the voids throughout the soil, thus forming a tight, dense permanent stratum. The increased lubricity of soil particles allows the designated soil density to be reached with less compaction effort.

RAPIDroads reduces, by as much as 25%, the amount of water required to reach the optimum moisture level of the soil since it promotes rapid saturation and inhibits surface evaporation. The RAPIDroads action increases the soil bearing characteristics by promoting a closer binding of soil particles. This reduces the tendency of the soil to expand after compaction and results in a strong, stable earth layer. By achieving greater bonding density, soil materials resist migration of water. A properly treated RAPIDroads base becomes almost impervious to water penetration and much more resistant to frost heaving.

Road builders can now construct a new road base using existing soil materials without trucking in additional aggregate (if sufficient fines are present). Mixing RAPIDroads with the top 5 or 6 inches of soil will produce a road base that has more strength and less permeability than can be attained with any other treatment. If imported material is needed, less expensive, dirty aggregate is a requirement. The dirty fines are needed to bond the material together. Dirty here means 15% to 20% cohesive fines passing a -200-mesh screen. The best part is it takes only 15 gallons of RAPIDroads to treat one mile of roadway 6 inches deep and 25 feet wide.

New or existing roads treated with RAPIDroads to the recommended depth will retain a tough surface that requires minimal maintenance, often requiring no additional "dressing" for a number of years.

RAPIDroads is sold in a liquid concentrate form. This eliminates the bulk storage, pre-mixing, and handling of large amounts of materials. It will not corrode equipment. RAPIDroads is non-toxic, non-corrosive and non-caustic. It requires no special handling equipment and no special containment procedures as required with toxic and/or corrosive agents. It does not irritate skin tissue and causes no rashes or burns. RAPIDroads contains no combustible materials, is non-explosive and can used near open flames. It is non-gaseous and can be stored in poorly ventilated areas. It will not harm humans, animals, fish or vegetation under normal use and is totally biodegradable.

RAPIDroads Applications

Road Building

RAPIDroads is easy to apply and requires no special equipment or application procedures. It can be used with reclaiming machines or applied with regular road building machines. RAPIDroads should be used with soils that contain approximately 20% cohesive fines. It is mixed with water used for compaction during normal building techniques. A typical application to stabilize a 6-inch existing or new road base is presented as follows:

ROAD BUILDING WITH RAPIDroads

Road construction under optimum conditions should consider the following:

1. Use materials that are structurally sound. Road base materials using RAPIDroads should have a gradation mix (size distribution) that will result in good load bearing values and contain approx. 18% to 30% non-granular fines (-200 mesh size and be cohesive in nature). Many roads have used material outside design standards, however prior to construction field testing was necessary for determining suitability, and upon completion excellent results were obtained. Some clays and “fines” are silty in nature and are not useful for road construction. Also, excessive fines can cause problems as a result of high plasticity and/or low bearing value.

2. Proper moisture must be maintained during compaction. RAPIDroads works best between 2% - 3% below optimum moisture. Do not compact above optimum moisture. Add one gallon of RAPIDroads concentrate to the required amount of water needed to bring 160 cubic yards of material up to optimum moisture (1 liter will treat 30 cubic meters). The amount of

water needed will depend on how wet or dry your material is. A general starting rule for dry material is 1 gallon to 500 gallons water. After applying RAPIDroads to the road "material" additional water can be applied to bring the moisture content closer to the amount needed for proper compaction.

3. Generally, roads should not be compacted in lifts greater than 3". The size and type of compaction equipment, plus the type of material being compacted determine lift thickness. Sufficient compactive effort must be maintained during road construction to obtain maximum density. Less compactive effort will be required using RAPIDroads.

4. The road should be allowed to cure prior to use if possible (and final testing). However, the road can be used sooner if necessary. Drying of the base material will create less plasticity, decreased permeability and greater strength.

STEP 1. Blade or rip the existing road to a minimum depth of six inches and then windrow the loose material. If the road requires greater depth, work the material in the lifts. If additional aggregate is needed, use less expensive material (with more fines). Check the overall gradation of the material to insure it is within the design limits. Overall depth to be treated depends upon designed axle load requirements.

STEP 2. For each 160 cubic yards of the road base material add one gallon of RAPIDroads to the amount of water to obtain optimum moisture. Refer to the worksheet contained in this manual. Spray both the bladed surface and the windrow to obtain optimum moisture. Blend the RAPIDroads treated material using a grader blade, working the soil & aggregate back and forth to blend in the RAPIDroads and water. If the material is too wet, blade dry. If too dry, add water without RAPIDroads to bring the material up to optimum moisture. After thoroughly mixing spread the material to grade. The road can be left in a windrow over night to allow complete moisture absorption. This will result in better compaction with less effort.

STEP 3. Extend and crown the road surface with a blade. If your material dries out on a hot day, spray again with a diluted RAPIDroads mixture. Compact with a compactor such as a sheepsfoot or pneumatic roller. Vibratory rollers may be used for the first and second passes, however further compaction should be done without vibrator action to avoid cracking. Compact 3" or 8 cm lifts (layers) in insure maximum compaction.

After allowing the road surface to dry (cure), it is ready for use. If an asphalt or other surface is desired, better bonding will be achieved by moistening the surface with a diluted application of RAPIDroads and water at one to ten thousand (1:10,000) dilution rate. This surface application may be applied anytime after a three (3) day curing period.

IMPORTANT - DETERMINE APPROX MOISTURE IN SOIL BEFORE STARTING

PROCEDURE

1. Determine (estimate) water to be added to soil then determine capacity of water truck and add RAPIDroads according to dilution rate calculation.
   (estimate water slightly below amount needed).
2. Apply water & RAPIDroads to base material, wetting surfaces evenly.
3. Blend & mix RAPIDroads & water into soil with grader blade or recycler. Several passes may be required using a blade.
4. Observe if road base material has enough moisture for compaction.
   (A hand sample should make a firm ball)
5. If moisture is needed, add plain water and re-blend - do not use more water then is needed.
6. Compact material to maximum density.
7. Repeat the above procedure for the top lift (layer).
8. If the first lift surface is too dry, dampen with a small amount of water.
   Before 2nd lift is extended across the road and is compacted.

SIEVE SIZE		GRADATION (% Passing)	GRADATION LIMITS UPPER	LOWER
1″	100%			
1/2″		85%	89%	81%
NO. 4		62%	66%	58%
NO. 16		48%	52%	44%
NO. 200		24%	30%	18%

RAPIDroads can be used effectively over a wide range of soil gradation mixes (aggregate sizes), as can been seen from the above graph.

To achieve effective stabilization, materials containing approximately 20% cohesive fines (nongranular) have been found a satisfactory target. However, excellent results have been achieved outside this range. Additionally the soil should contain a wide range of material sizes to provide shear strength and internal friction which increases load bearing values.

RAPIDroads has proven useful over a wide range of soil types. This range continues to expand an RAPIDroads is used in more diverse locations throughout the world.

MATERIAL GRADATION - refers to the distribution (% by weight) of the different size of particles within a given soil sample. A sample is described as well-graded if it contains a good, even distribution of particle sizes. If a soil sample is composed of predominantly one size particle, it is said to be poorly graded. In terms of compaction, a well graded soil will compact more easily than one that is poorly graded. Well-graded material allows smaller particles to fill the empty spaces between larger particles, leaving fewer voids after compaction.

ROAD DESIGN

Construction of new & existing roads must consider several design elements, some of which are listed below:

1. *Traffic Loads (wheel weight & frequency of use)*
2. *Available road building materials.*
3. *Topography & sub-base soil conditions (soft or firm).*
4. *Moisture (rain, snow & ground water)*
5. *Long term use and maintenance requirements.*

The attached "General Guidelines for Road Construction" has been graphically depicted to show the required thickness required to support different ranges on wheel loads.

Soft sub-base conditions require greater thickness - in some cases as high as 24 inches (60 cm.). Where the sub-base is firm a minimum thickness of 6 inches (15 cm.) can be used. Roads with truck traffic require greater thickness to support the high wheel loads of 20,000 lbs. to 30,000 lbs (9,000 to 13,000 kilos). Analysis of the sub-base conditions and testing for load bearing capacity may be required to achieve proper design specifications.

Traffic loads and speed also affects the life of the road. In many instances a hard "wearing" surface cover is necessary. High speed traffic increases the mechanical forces applied to the road surface. *To prevent wear a protective cover such as asphalt, concrete or a chip seal coat may be necessary.*

Surface and sub-surface moisture conditions also enter into the equation for a good road design. It is important that the road have **adequate drainage** and that the sub-base and the road base be kept as dry as possible to prevent structural failure. Side drainage channels are important as well as crowning of the road surface to allow water to flow away from the road surface. Where ground water is near the surface it may be necessary to place a rock sub-base or other engineered treatment. It is up to the engineer to evaluate these conditions.

Road building materials also affect the design of a road. The type and properties of the material greatly affect the performance of the road. *Well-graded gravel and soil* give maximum performance. *Cohesive fines* enhance the performance of a road (less rutting and potholes).

There are other factors, which must be considered. Civil Engineers qualified in road construction should be consulted for specific site conditions.

STRENGTH

The load, which the wheel of the vehicle exerts on a gravel surface, spreads out as it passes down through the road base. The angle of force, increasing in width

as it penetrates deeper into to road material is referred to as the internal angle of friction *0.* It varies depending upon the type of material present. The objective in road design is to have sufficient road base thickness to support anticipated wheel loads.

RAPIDroads treated material has increased compressive strength which resists deformation and excessive flexing due to wheel loading**. <u>This stabilization results in an overall stronger road base. It also means less maintenance.</u>**

<u>QUESTIONS RELATING TO THE USE OF RAPIDroads</u>

1. Is there any effect when RAPIDroads is mixed with any other organic material?

RAPIDroads works well with all organic soils. It will increase the bonding of the fines (-200 mesh) and allow greater moisture penetration to facilitate compaction.

2. As time goes on will RAPIDroads reduce or increase it bonding strength? Will the road come out with cracks or become fragile?

RAPIDroads treated soils achieve their greatest strength at the time of compaction and immediate subsequent curing (72 hours drying). Bonding of the soil particles takes place in the presence of moisture and compactive force. This condition will last as long as the material resists external forces. Heavy wheel loads, water, freeze-thaw cycles ultimately have an effect on all roads. RAPIDroads treated soils resists these forces due to the bonded, high density of the road material. The road will resist the detrimental effects of erosion and mechanical forces.

Cracking occurs as a result of two factors: (1) If road material contains a high percent of expansive clays - having a high shrink-swell factor. When the road is completed and dries out some cracking will appear. This reduces the effectiveness of the road stability, however we have seen roads showing this condition that have performed very well - but with reduced life. (2) Soft sub-base may not support the treated base under wheel loads, i.e. expansive clays. The bearing capability of the road is insufficient. This is corrected by increasing the thickness of the road base.

When the Clay fines (minus 200 mesh) exceed 25% or are highly expansive some surface cracking will occur. Generally the crack are superficial, often filling

in with road particles during normal traffic use. Generally this condition is referred to as “Alligator Cracking” and does not significantly affect the stability of the road base.

Rain or other moisture will moderately swell the clay fines and the cracks will close. If the clay material is highly expansive, then the amount of fines should be kept low to reduce the amount of cracking.

Prior to placement of any surface material, RAPIDroads treated soil should be lightly sprayed with a dilute solution of water and RAPIDroads to assist in the bonding of the new surface material (i.e. Asphalt) to the road base. Moisture will close many of the cracks.

Reflective cracks should not migrate upward through the asphalt, unless the clay fines are in the upper range and site conditions see radical sub-surface ground moisture variations.

Proper drainage will reduce ground moisture and keep cracking to a minimum.

3. After compaction, what is the ratio of expansion? Will extreme weather affect the road (hot or cold)?

After compaction, the expansion-contraction ratio will be dependent upon the soil type (percentage of expansive clays) as well as the gradation range (distribution of particle sizes). Well-graded soil (ranging from -200 mesh to 1 inch) is ideal for road building. The -200 mesh fines should be approximately 20%. If the frost level extends below the level of the road some heaving may occur however in the spring to road should settle back to is original elevation without severe damage. Proper road construction including shoulder drainage will minimize the effects of frost. **Good engineering practices should be observed. Hot weather does not affect a road, other than dry dirt surfaces tend to be dusty under high wheel loading. RAPIDroads treated surfaces will reduce the amount of dust.**

4. When the road contains more than 20-30% clay, will the road surface become too slippery and lose traction?

Road constructed with material containing a high clay contact will exhibit slippery surfaces when wet. It is necessary to use as much aggregate as possible to not only increase overall strength of the road and increase traction as well in wet conditions.

In many applications surface treatment is applied as part of the overall design. This provides a wearing surface for traction, moisture protection, and greater overall strength. Cost and availability of materials are the primary factors affecting the type of surface treatment, if any.

RAPIDroads works well with soils that have clay content passing a -200 mesh screen between 18%-30%. This range of fines has been indicated as an acceptable range for road building material.

RAPIDroads has been tested in soil that has a high clay content and found approx. 27% increase in unconfined compressive strength using RAPIDroads. The soil tested was substantial clay with over 95% passing a -200 mesh screen. The clay is classified as “FAT CLAY.”

In road building it is desirable to minimize excessive clay content. Under moist conditions the surface will not have proper surface friction and excessive plasticity may be present.

For example, where a road typically required bimonthly grading activities, and periodic re-gravelling use RAPIDroads to stabilize the road and then placed a thin “chip seal” over the surface. A portion of the road was left bare. Substantial cost saving were obtained and the “bare section of road did not require any maintenance for over 16 months.

5. How long will the roads last when RAPIDroads is used?

RAPIDroads treated roads have been in use for over 9 years. The longevity of a road is a function of several factors:

a. Climate conditions such as temperature ranges and rainfall.
b. Types of soils used in construction.
c. Road design - crowning, drainage & other engineered parameters.
d. Type of vehicular traffic, speed and degree of usage.
e. Wearing surface applied (if any).
f. General maintenance-frequency and quality.

We have seen RAPIDroads treated roads retain their integrity over longer periods than previously experienced by road departments. For example a road in Morocco has been in continual use for over five years, with no maintenance. Other geographic areas have reported substantial reduction in road maintenance by over 50%. RAPIDroads treated road bases last longer.

6. Can temporary roads be constructed using less RAPIDroads?

Temporary roads might be constructed with reduced thickness, providing the wheel loads would not immediately destroy the road. RAPIDroads is usually used at the rate of 1 gal per 160 cu yds of soil material (1 liter per 30 cubiv meters of soil).

7. Is compaction required when using RAPIDroads?

RAPIDroads is used when moisture is applied to soil for compaction. Stability or stabilization occurs when soil particles are in close contact.

Spraying RAPIDroads on the soil without any compaction will not affect a change in erosion. The soils ability to resist erosion is a function of the mineral makeup of the soil and compaction (or density).

8. Will RAPIDroads affect plant life if there is contact?

RAPIDroads is not harmful to plant life in its full range of various applications, i.e. road building.

ASPHALT COVER OVER ECOROADS BASE
"Chip Seal"

General guideline discussion
Refer to qualified oil-asphalt representative
for further information

Either Emulsion (CRS) or (MC) asphalt can be used. The emulsion means it is cut back or diluted with water and is shot at a temperature around 106° F. (71° C.). The MC is cut back with diesel fuel or other petroleum product and shot at temperatures of 250° F. (107° C.). The advantage of one over the other is debatable. Generally speaking the MC will penetrate dirty gravel better than emulsion, but may have a tendency to bleed off more if the balance of oil to gravel is not correct. When using MC, the first coat is thinner, usually MC-800, and the second coat heavier - MC-3000.

When using Emulsion, use the same weight, CRS-2 for both layers. There are also available variation of the CRS-2, some quick dry, some rubberized, and some hard. Check with your supplier to see what is available in your area. Also, when using Emulsion, you need approximately 29% more material to obtain the same amount of asphalt thickness, due to drying where water evaporation reduces the overall weight.

RAPIDroads road surface should be prepared at least three (3) or more days prior to applying the asphalt. The surface should be smooth and dry hard surface. Dress any imperfections prior to applying the asphalt, as they will extend up through the finished surface (a smooth base is essential). *Prior to applying or "shooting" the first layer of oil, dampen the surface with a mist of RAPIDroads treated water diluted 1 gal of RAPIDroads to 10,000 gals. of water. The RAPIDroads mist will help the oil bond to the road surface*. After this dries or looses its sheen, you are ready to apply the oil. Usually approx. .4 to .5 gallons of oil are applied per sq. yd. of surface. Then immediately apply 3/4 inch of 3/4" minus clean gravel and compact with compactor. After the first

layer of oil and gravel is rolled down, you can pull a (non-rotating) drag boom over the surface to smooth out any roughness caused by the chip spreader, truck or roller. This will insure a smooth surface for the second layer. Now the second (final) layer of .35 to .40 gallon per sq. yd. of oil and 1/2 in of 1/2" or 3/8" chips can be laid down and compacted. The gravel chips must be fractured rock to stay in place. Pea-gravel cannot be used. If you have the proper amount of oil, gravel and chips, the oil should penetrate both layers and bond together. If too much oil is used, bleeding will occur. Insufficient oil will not allow proper bonding.

PLEASE NOTE: This is just a guideline. Different oils and gravels react differently. Consult your oil distributor representative for further information and recommendations.

HAUL ROAD STABILIZATION

Mine haul roads are often constructed with native site soils containing a wide gradation of materials. Often there is a high content of fines (-200 mesh) which in the past have caused stabilization problems. RAPIDroads assists in the binding fines together with larger material into a dense well compacted material having a high degree of stabilization, higher tensile strength than non-treated roads. Also, roads treated with RAPIDroads will resist water penetration. Benefits include reduced maintenance and increased utilization of existing site materials.

RAPIDroads provides efficient use of water (easier penetration in the soil-base material), achievement of greater density after compaction, as well as an increase in tensile strength and unconfined, compressive strength. Roads treated with RAPIDroads will also have less dusting than non-treated roads.

FORCES THAT PLAY A ROLE IN ROAD CONSTRUCTION, DESIGN AND MAINTENANCE

MOVEMENT

Aggregate will move under wheel loading. If such movement is not prevented, deformation or rutting of the roadbed structure will result. Consider repeated wheel loading from passing vehicles. The load from the wheel is transmitted to the aggregate or gravel, which transmits the load down to the subgrade. This downward force tends to move the aggregate and subgrade in the downward direction. As the granular material penetrates the soil, the soil is displaced. The displaced soil particles move to the point of least resistance, which is determined by several factors:

Natural restraints imposed by geometry of the road system. The plastic flow

mechanism of the particular soil type.

Frequently, particles move to the point of least resistance - upward into voids or spaces between granular materials. This results in a loss of bearing capacity and the deformation or rut of the surface. With movement of fine soil particles within the aggregate, they add a lubricating effect on the aggregate, which further adds to deformation.

RAPIDroads treated road base, which by design has approx. 20% cohesive fines, is compacted into a dense, high strength material. This minimizes void or air space between the aggregate. The resulting increased the density eliminates movement of soil particles within the road base material. RAPIDroads treated material also binds together the soil particles - creating greater strength.

MOISTURE

Roads experience cycles of moisture penetration. Rain and surface water is driven down into the road base, both by pounding rainfall and gravity. Water is also driven up through the road base by evaporation, transpiration and pumping. The number of cycles depends on the amount of frequency of the precipitation, the amount of heat on the road surface, which draws moisture and aids evaporation, and the number and type of wheel loads. Moisture movement carries smaller grained soil particles, which contaminates the structural integrity of the road base. As previously discussed, this causes rutting and surface deformation.

RAPIDroads treated road base, with increased density and cohesion of smaller soil particles, resists the penetration of moisture and eliminates the ability of soil particles to migrate within the road material. The reduction of moisture decreases the plasticity of the material - reducing road deformation under wheel loads.

STRENGTH

The load, which the wheel of the vehicle exerts on gravel surfaces, spreads out as it passes down through the road base. The angle of force, increasing width as it penetrates deeper into the road material is referred to as the internal angle of friction 0. It varies depending upon the type of material present. The objective in road design is to have sufficient road base thickness to support anticipated wheel loads.

RAPIDroads treated material has increased compressive strength, which resists deformation and excessive flexing due to wheel loading. This stabilization results in an overall stronger road base. It also means less maintenance.

SOIL COMPACTION FUNDAMENTALS

COMPACTION is the process of physically densifying or packing the soil resulting in an increase in weight per unit volume. It is generally accepted that the strength of the soil can be increased by densification. Three important factors affect compaction:

1. **Material Gradation**
2. **Moisture Content**
3. **Compactive Effort**

MATERIAL GRADATION - refers to the distribution (% by weight) of the different sizes of particles within a given soil sample. A sample is described as well-graded if it contains a good, even distribution or particle sizes. If a soil sample is composed or predominantly one size particle, it is said to be poorly graded. In terms of compaction, a well-graded soil will compact more easily than one that is poorly graded. In well-graded material the smaller particles tend to fill the empty spaces between the larger particles, leaving fewer voids after compaction. This is further supplemented by RAPIDroads in the water during compaction.

MOISTURE CONTENT - or the amount of water present in a soil is very important to compaction. Water lubricates soil particles thus helping them slide into the densest position. The wetting action of RAPIDroads further enhances this action during compaction. Water and RAPIDroads enzymes also assist clay particle bonding giving cohesive materials their "sticky" qualities. Proper compaction cannot be achieved in materials that are too wet or too dry. Engineers have determined that it in almost all soil there is an amount of water, called optimum moisture content, at which it is possible to obtain maximum density with a given amount of compactive effort.

COMPACTIVE EFFORT - refers to the methods compactor imparts energy into the soil to achieve compaction. Compactors use one or more types of compactive effort: - Static weight (pressure) such as a drum roller - Kneading action (or manipulation) Sheep foot roller - Impact (or sharp blow), Vibration (or shaking) vibrating roller.

Total RAPIDroads Needed

Example: Metric Standards

You are doing 5000 square meters. If you are doing 20 cm deep this is how you calculate how much product you need to use.

5000 x 0.20 (which is the depth of 10cm) = 1000 cu meters of soil THEN you will need 1 liter of product for every 30 cu meters of soil so: 5000 x 0.20 = 1000 then divide by 30 = 33.33 liters of Leviev ECOroads needed for road.

1 liter of RAPIDroads will treat 30 cu meters of soil
1 gallon of RAPIDroads will treat 160 cu yards of soil
15 gallons of RAPIDroads will treat 1 mile x 24 feet wide x 6 inches deep

Total water needed to mix with RAPIDroads

Good compaction required more experience than other types of excavation work. It is difficult because there are so many type of soil, each needing different compaction techniques. For example, a sandy soil needs much more water than heavy clay before it reaches maximum density. You need to know what the different types need for proper compaction.
After a few years of experience of compacting different types of soil, you will be able to look at a particular soil and know whether it has enough water to compact well. **One quick test is to grab a handful of soil and squeeze it. Soil that crumbles when you open your hand it is too dry. If it holds solid, it should be good. If you can squeeze moisture out of the soil or it feels sticky, it is too wet.**

Water acts as a lubricant and helps the particles of soil slide into place. If too mush water is added, the particles of soil tend to float, lowering the soil density. On the other hand, if the soil is too dry, the particles will not slide into the small voids and the density will be lowered. If soil does not contain the correct amount of water, it won't pass compaction testing no matter how much you roll it. If soil fails the test because it is too wet, it can be rolled again after it dries some. It'll probably pass then. If the soil didn't pass because it was too dry, you'll have to ripe it up again, add more water, and re-roll it.

The simple steps in the RAPIDroads rocess:

Grader blading material into a windrow

Water truck adding RAPIDroads o windrow materials and sub base

Grader mixing RAPIDroads y windrowing the material side to side

Grader spreading material and shaping the road

Compactor, compacting the road

Final shaping of the road

Final compaction of the road

RAPIDroads

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