ROAD REPAIR with NYLON-CEMENT

by **Thinkenstein** on July 18, 2009

Table of Contents

intro: ROAD REPAIR with NYLON-CEMENT

Nylon-cement is the combination of nylon fishnet and cement. Nylon is resistant to ground chemicals and water. About the only thing that hurts it is sunlight. In combination with cement, the cement protects it from the sunlight. If the cement cracks, the fishnet holds the pieces in place.

I have used the material successfully on floors and walkways, with only a 1/4" thick layer of nylon-cement. This driveway was thicker, about 1/2" thick, but after many years of service vehicle traffic beat it up pretty badly. I am in the process of patching it now with the little fishnet I have left.

I got several tons of discarded netting free from a local tuna factory over the years, I built my whole house with it. Unfortunately, it is no longer available here.

New fishnet is expensive. Ideally, we should somehow process our discarded plastic to make mesh material for plastering.

step 1: Fishnet

Fishnet comes in different size meshes. The green fishnet in the center is what I am using for this project.

step 2: Before

This is the condition of the driveway after many years of use. The rate of deterioration was slow at first, but accelerated. I imagine that the more cement that was missing, the more the remaining cement was unsupported sideways, allowing the fishnet to stretch and more cement to fragment and fall out.

Considering the thickness, about 1/2", I guess I shouldn't complain about the service it has given me; probably at least ten years.

step 3: After

This is the surface of the fresh layer on top of the old. Given that the old layer is a firmer base than the bare dirt underneath it, I would expect the new layer to last at least as long as the first, and probably longer.

step 4: Construction Stages

A regular plastering mix of three parts sand to one part cement is used. To get the fishnet located in the middle of the cement, a layer of cement is first laid down. The netting is then laid down and patted into the first layer of cement. If penetration is not easily achieved with the top coat, some water is used while rubbing it on with rubber gloves. Sufficient thickness is laid down.

To create the rough texture, while still wet a stiff broom is used to leave a ripple pattern. On top of that, droplets of cement are "rained" down by a flicking motion with the gloved hand. That superimposes a crater effect on the ripple pattern.

The first layer of nylon-cement lasted many years. I hope this second layer, given the base layer underneath it, will last even longer.

Unfortunately, I'm running out of fishnet, so I had to do two tracks where the wheels go, instead of the whole width of the road. I will rub some cement on the center area to fill in the cracks and retard weed growth.

Using a minimum amount of material, nylon-cement is a great solution for problems like this.

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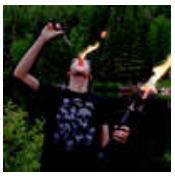

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Comments

14 comments **Add Comment**

j_l_larson says: Aug 6, 2009. 9:47 AM **REPLY**

This is an interesting technique. I am wondering if I could do something like this under my house. Someone suggested I put a layer of plastic down under my house as a vapor barrier, but the underneath of my house is very irregular. I'm having trouble imagining how to get plastic to stay put and conform to all the irregular ground under there. I don't know anything about it, but this looks like a potential solution. I will be mulling it over. Thank you.

Thinkenstein says: Aug 6, 2009. 5:15 PM **REPLY**

You're welcome. I'm not sure it would make a good vapor barrier, though. Cement is porous and humidity can pass through it. Anyway, mull away.

I made some small ponds once. I filled in irregularities with a "concrete" using recycled styrofoam chunks and cement, put down a layer of plaster, a layer of vapor barrier plastic on the fresh plaster (comes in rolls) and another layer of plaster on top of that. The vapor barrier is the plastic. The top plaster protects the plastic. Try not to trap air with the plastic.

j_l_larson says: Aug 7, 2009. 10:50 AM **REPLY**

Hmm. Okay. I wonder how I can get the plastic to stay down. Some people suggested weighting it down with rocks, though that doesn't seem good enough to me. I was considering pinning it down with garden staples, but I hate the idea of disturbing the soil under there. scary.

thanks for the advice

Thinkenstein says: Aug 7, 2009. 5:19 PM **REPLY**

With my ponds, the weight of the top layer of plaster kept the plastic pressed down on the fresh plaster below. With luck, no trapped air. Start in the middle and work out to the edges, pushing the trapped air out as you go. I would avoid the staples, because they would puncture the plastic. If the area is fairly flat, minimizing wrinkles, I see no problem. The top layer of cement lets you walk on it, without hurting the plastic.

cory.smith says: Aug 3, 2009. 8:14 PM **REPLY**

Is there a reason that you don't use any aggregate? It would seem that even coarse grained sand would allow you to make a thicker driveway while adding only a minimum to the cost.

Thinkenstein says: Aug 4, 2009. 4:19 PM **REPLY**

Thicker is better. Thicker also costs more, and means more hauling of materials and mixing for me. Depending on the mesh size, you can sometimes have good penetration with gravel added. This project used pretty fine mesh, because that was what I had left.

foxquarry says: Jul 28, 2009. 4:16 PM **REPLY**

This looks like a cement version of fiberglassing.
Which makes me wonder now, because you can get cement impregnanted with fiberglass that acts as 'rebar'...hmmm.

lemonie says: Jul 19, 2009. 1:29 PM **REPLY**

Interesting. What are you driving up this - would it be prone to rutting without?

L

Thinkenstein says: Jul 19, 2009. 3:14 PM **REPLY**

I drive a jeep. Visitors drive cars. The electrical company drove a humongous truck up it recently and really made a wrinkled mess out of it.

The fishnet and cement will crack and reform themselves if the underlying dirt is soft and sinks. Likewise, roots growing under it can raise bumps. It's a good material, but needs to be thicker, for one thing, to withstand the stress of vehicle use. Of course that means a costlier road.

lemonie says: Jul 19, 2009. 3:24 PM **REPLY**

I see, light use it's good, but humongous trucks are a bit much. I guess it would rut pretty badly if you hadn't laid concrete.

L

Thinkenstein says: Jul 19, 2009. 7:29 PM **REPLY**

You've got it. We get a lot of rain, too. Dirt ruts can get out of control pretty fast. With the nylon-cement there are no ruts, and there is no erosion. It cracks, and weeds grow in the cracks, but at least it can be repaired.

lemonie says: Jul 19, 2009. 11:05 PM **REPLY**

Yes I can see it, thanks for sharpening those images.

L

Thinkenstein says: Jul 20, 2009. 5:17 AM **REPLY**

My pleasure. I hope you find some fishnet to work with, because there are a lot of other things that can be done with this material besides roads.

lemonie says: Jul 20, 2009. 10:49 AM **REPLY**

Next time I'm at the coast I'll be looking.

L