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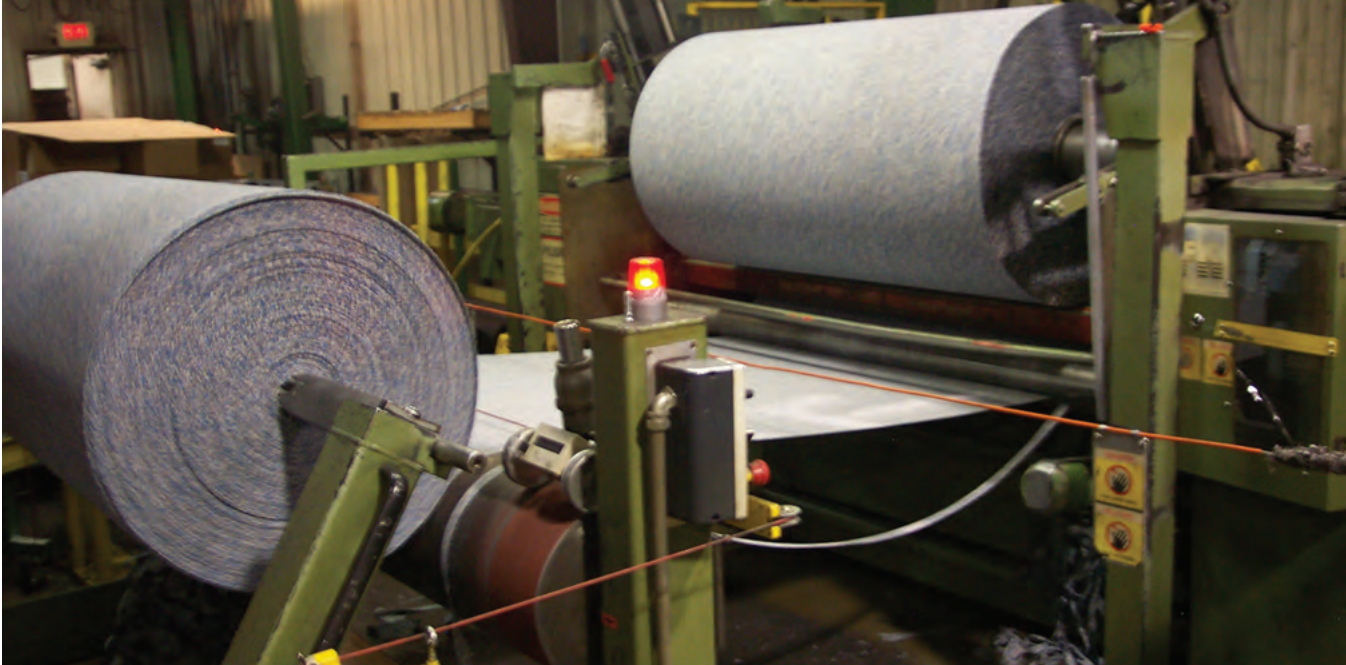
FEATURE

RECYCLED RUBBER FLOORING

— **NOT JUST A GYM FLOOR ANYMORE** by Christopher Capobianco

Although it started as a solid black floor covering for weight rooms, fitness centers, gyms and skating rinks, the category known as “Recycled Rubber” is rapidly growing in popularity for all types of other areas including corporate, retail and educational facilities.

Photo courtesy of Capri Cork Childrens Museum of NH, Dover, NH. ARQ Architects, Kittery, ME. Sean W. Hennessey Photography



A 3000 lb. cylindrical mold of rubber (r) being sheared into a thin layer to become “recycled” sheet rubber flooring. Photo courtesy of Ultimate Systems, LTD.

Technically known as “Bonded Rubber Crumb Floor Coverings”, Recycled Rubber gets its start as the remains of old tires - to be exact the treads of old tires, usually truck tires, and not the entire tire as some people think. When tires get worn, it is possible to “re-tread” or resurface them with new treads. This extends their life and prevents the tire from going into a landfill. Of course, when this is not done properly or on time, you see tire treads by the side of the road or (hopefully not) bouncing down the highway after they release.

This post-consumer waste is ground up and cleaned to remove stones, dirt and metal from the used tires. The tire material (SBR Rubber) is mixed with EPDM, which is a synthetic organic elastomer that has qualities equal to or better than natural virgin rubber. The ground up material is mixed with a small amount of chemical binder, placed in large cylindrical molds and heated to solidify the mixture. The result, as you can see in the accompanying photo, is a giant 3000 pound “log” which is sheared or “peeled” into the desired thickness. The process looks similar to the process of peeling logs from trees to make plywood or other wood veneer products. Marks from this “peeling” process (called skive or knife marks) are an inherent quality of recycled rubber since the blades of the knives go

in a circular motion. For this reason, the material is not always a perfectly smooth product. If the material is to be used as sheet rubber the edges are trimmed and the rolls cut to the desired length. If it is to be tile, the rolled material goes to a die cutting facility to be cut.

Solid black material is 90% post consumer waste from old tires and has been used for many years as flooring for athletic facilities. The next step in the product evolution was to add small amounts of color to the mix, and that mostly black material is still widely used today. The product category has exploded in recent years with the introduction of even more colored rubber into the mix, including “post industrial” scrap rubber and new rubber in various colors. One manufacturer is even using post industrial waste cork left over from the production of cork bottle stoppers. There are so many different options available now that recycled rubber has become a true fashion floor covering, after starting as something that was strictly functional.

Installing recycled rubber is not that different from other resilient flooring products. The material is sold in roll goods and tile, both of which are glued down using a urethane or epoxy adhesive. There are also “interlocking” tiles that can be loose laid or glued down. The same rules we have

mentioned before as far as substrate testing and preparation apply. Inspect the material before starting to spread adhesive. Tiles must be acclimated on the job site and stored flat for at least two days before installing. Rolls should also be acclimated for two days and unrolled and allowed to relax for 24 hours before installing. This will offset any stretching caused by winding the roll at the factory and allow the material to relax and take its normal shape. Most manufacturers say it’s not necessary to trim the edges of recycled rubber roll goods because it’s done at the factory. However, have a look to be sure the edges are clean and straight and trim if necessary to get it that way. This is a “wet lay” installation so installers need to take it slow so the adhesive open time does not expire, allowing the adhesive to “skin over.” Roll the floor with a 100 pound roller after setting into adhesive. Hand roll all seams after the floor has been rolled and use blue masking tape to pull the seams together if there are any gaps. Do not use any other tape as it may leave a residue. Once everything is set, roll with the 100 pound roller a second time to be sure the material is in full contact with the adhesive. Keep traffic off the floor for 12 hours and then the tape, if any, can be removed.

Maintenance of recycled rubber varies depending on the use and the color. It can

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Recycled Rubber Flooring *(continued from page 9)*

be coated with an acrylic floor finish just like other resilient floors, left uncoated or finished with a urethane coating for a “semi-permanent” finish. Floors in sports facilities where spikes or skates will be worn should not be coated at all and in fitness areas with free weights or equipment that will be moved, applying finish is optional since weights dropped on the floor or moving equipment may mar the finish. Like all rubber floors, leaving the floor uncoated takes advantage of the slip resistance characteristics of rubber. This is not to say that floor finish is slippery,

which is not at all true. Today’s acrylic floor finishes have very good slip resistance characteristics. However, rubber by itself with no coating is even more slip resistant. Light colors show a lot more soil so floor finish should be used, as it should when the owner was a more glossy floor. The more I get to learn about the new urethane coatings for resilient flooring the more I like them, especially for recycled rubber. They will last a long time with minimal maintenance other than cleaning. Ultimately, the decision of how to maintain a floor depends on the traffic load and use

of the floor, the color and the gloss level the customer desires.

Recycled rubber continues to grow in popularity, and rightfully so. I have worked with this material more and more in the past few years and it has become one of my favorite floors because of its use of recycled material, its softness under foot, ease of maintenance and durability, not to mention some beautiful colors that make it a great looking floor covering.

Thanks to Capri Cork Flooring for the use of their “Re-Tire” product documents in the preparation of this article.

Proper Sports Floor *(continued from page 13)*

all of these costs should be considered based on an average 30-year life expectancy.

LINOLEUM

This alternative offers versions in both Point and Area elasticity. The Area elastic edition is composed of a moisture membrane, cushioned foam padding, two sheets of 1mm steel and a sport linoleum top surface. The Area elasticity of the floor and the durability of the linoleum allow for a great range of utility from non-traditional sports such as rollerblading to traditional basketball use. Competitive in price with the better wood systems, the advantage of linoleum is that other than routine cleaning it does not require any periodic refinishing or recoating to maintain the performance of the floor. This offers a significant cost savings over wood for its life expectancy of 30 years.

The Point elastic style of the linoleum uses a 6mm elastic sponge pad and a linoleum top surface. This is a double glue system which offers more durability than traditional cushioned vinyl systems. The Point elastic linoleum option is often on par with the cost of most rubber sports floor solutions. Linoleum systems are a good solution over cushioned vinyl systems when rolling loads or residual indentation is a concern. Point linoleum systems do meet DIN and EN friction levels.

CUSHIONED VINYL

These solutions are heterogeneous sports floors featuring a one-piece system of closed

cell sponge backing for Point shock absorption. Less expensive than rubber systems, the cushioned vinyl does not require recoating. However, this system does not offer the durability or life expectancy of linoleum floors.

RUBBER SYSTEMS

Rubber systems are similar to cushioned vinyl in that they are one-piece heterogeneous systems featuring shock absorption layers and a top / play surface layer. Rubbers of different porosities are used for the functions of the different layers. Rubber floors offer durability but do run on the high side of the friction scale. This must be taken into consideration when reviewing what type of sports will be played on the floor.

POLYURETHANE SYSTEMS

Also known as “pour & pad,” these solutions are multi-component systems. The first element is a sponge cushioned pad for Point shock absorption which is covered on-site by a two-part polyurethane coating mix. The final building block is a coating or paint which is applied over the polyurethane to create the play surface. This paint or coating does carry the additional cost of annual or bi-annual repainting. The life expectancy of this sport floor is equal to cushioned vinyl or rubber systems.

POLYPROPYLENE TILES

This “click together” Point elastic system features interlocking polypropylene tiles that are assembled over a shock-absorbing

pad. These systems are most common for outdoor applications. They require little maintenance and run on the lower end of price and performance.

Along with the above options for sports flooring, keep in mind that the elasticity type, Area or Point, may be better suited for certain types of sports. The table below summarizes what type of floor, Area or Point elastic, is best suited for a particular activity:

Activity	Area Elastic	Point Elastic
Basketball	Recommended	OK
Volley Ball	Recommended	OK
Indoor Soccer (Intramural)	Recommended	OK
Inline Skating	Recommended	Not Recommended
Street/Floor Hockey*	Recommended	OK
Running: Recreational	Recommended	OK
Running: Competitive	OK	Recommended

**Activity is not recommended on floor surfaces that are painted/coated.*

Ultimately, the best sport floor solution will be one that meets the use requirements of the facility, meets the safety and performance needs of the application, and provides the best value over the LIFETIME use of the product. Considerable thought should be given to the lifetime cost before selecting the “best” product for your application.