time. Finally, the appearance of black dots as the topcoat wears was determined to be cosmetically unacceptable. Ground rubber roofing, although derived from a different polymer than tires, is designed for weathering not wear, and was dismissed for many of the same reasons as ground tire rubber.

Development of SoftSand Rubber

Clearly the table was set for the development of a rubber compound that would enhance rather than detract from the performance of an elastomeric urethane coating. The field conditions were known. The relative short-comings of the other non-skid additives were also known. This information was fed to an experienced rubber chemist who proposed several compounds (a given rubber formula will have over a dozen components). From these, SoftSand Rubber was chosen as the best overall compound to serve as the elastomeric particle in their elastomeric coatings.

Commercial Introduction of SoftSand Rubber

Field trials with SoftSand Rubber began shortly thereafter. Within the first six months of application, promising signs were already being noticed - no loose granules on the deck or in the gutters and no pop-outs in heavy traffic areas for starters. After a few years, it became clear that SoftSand rubber was performing as designed. An additional benefit to this system was also noticed - using SoftSand Rubber particles made the coating feel a lot softer, which was especially appreciated with bare feet. The decision was made to quietly introduce SoftSand rubber particles as a more comfortable alternative to sand for pedestrian and light duty traffic applications.

Head to Head Competition with Sand

Experienced contractors quickly recognized the benefits of this new, elastomeric system for non-skid coatings and wanted to use it on more demanding applications such as ramps and turn areas. Since these areas comprise a small percentage of the total deck, it was felt that SoftSand particles could be used in these limited areas despite its higher material cost. Sand would still be used on the other areas to reduce cost. Fortunately, the field trials of SoftSand rubber were continuing to perform well, giving the coating company confidence that they could allow this. They amended their warranty policy to include heavy duty traffic areas with SoftSand Rubber.

Paradigm Shift

Years of using hard sand to create a weakened, urethane composite coating created a mindset that viewed the base coat as the "money" or waterproofing layer protected by what amounted to an ablative topcoat. Hard sand particles encapsulated in the urethane top coat (never allowed in the base coat) would eventually pop-out and begin to act as an abrasive medium on the coating. The solution was essentially more sand which required more urethane. This mindset is evident in the "broadcast to excess" method, where sand particles were broadcast into the applied coating (mid coat) until it was no longer visible. Excess particles were then removed after the coating cured. For heavy duty applications, this process would be repeated before the application of a final topcoat. Sand broadcast rates as high as 50 lbs per 100 square feet were common.

SoftSand rubber particles created a paradigm shift in this industry. Initially, they were used as a direct replacement for hard sand. They were mixed into the coating and rolled out or broadcast in the same method as sand. Once the superior performance of the elastomeric composite structure was recognized, it quickly became clear that this mindset could change. The assumption that a SoftSand system was more expensive would change with it.

Performance and Cost Optimization

First, the broadcast rates for SoftSand were dramatically reduced. Realizing that the coating and particle were now reinforcing each other and wearing as one, the rates were significantly reduced compared to sand. The concept of a "controlled broadcast" was introduced with targets in the range of 5 to 10 lbs per 100 square feet, down almost a factor of 10 when compared to sand.

This made SoftSand more economical and for some applications, such as patios and balconies on high rises, it was considered a savings to use SoftSand rubber over sand simply due to the weight savings. Later, when it became clear that a single mid coat with SoftSand particles would outperform a double mid-coat with sand for heavy duty applications, it became clear that SoftSand particles represented a savings over sand. The savings were realized on both materials — one less mid-coat, and labor — one less coating layer to install. The improved performance of the deck coating was an additional source of savings realized through reduced complaints, recoats and warranty claims.

Since then, other refinements have taken place. Confident in the performance of the elastomeric composite, the manufacturer began to look at other optimizations. The concept emerged that broadcasting rubber particles is akin to broadcasting the mid coat — this composite is formed by a liquid elastomer (coating) and a solid elastomer (particle). The ratio between these two was varied with interesting results. Along the way, it was discovered that reducing the thickness of the mid-coat to a few mils virtually eliminated particle stacking, which was visible in cross sections of the cured coating. This in turn meant that even fewer particles were required to create an evenly textured surface. Controlled broadcast rates in the range of 1-3 lbs per 100 square feet were tested with these thinner midcoats. This represented a dramatic shift in approach from the use of traditional sand particles. Efforts were also begun to test other paradigms, including the prohibition against putting the aggregate directly into the base coat.

About SoftSand Rubber

SoftSand particles are rubber granules that offer a softer alternative to sand and other hard materials when used in non-skid applications. SoftSand rubber particles will help provide a comfortable, skid resistant surface, and will work in most urethane, epoxy, and acrylic coatings. SoftSand rubber particles can also be blended together, and used with paints to provide truly unique, functional and decorative coatings.

SoftSand rubber particles can be used in the same manner as sand and other commonly available skid resistant additives. These rubber particles are an excellent alternative to traditional sand as they do not contain free crystalline silica. They also weighs less than sand so they won't settle as quickly when pre-mixed with paints. The particles can be either mixed directly into the paint, or they can be sprinkled onto the wet paint, after it has been applied.