FLEXIROCKS®

SAFER SURFACING®

TPV RUBBER GRANULES POLYURATHANE BINDER UNDERLAYMENT INSTALLATION BASICS

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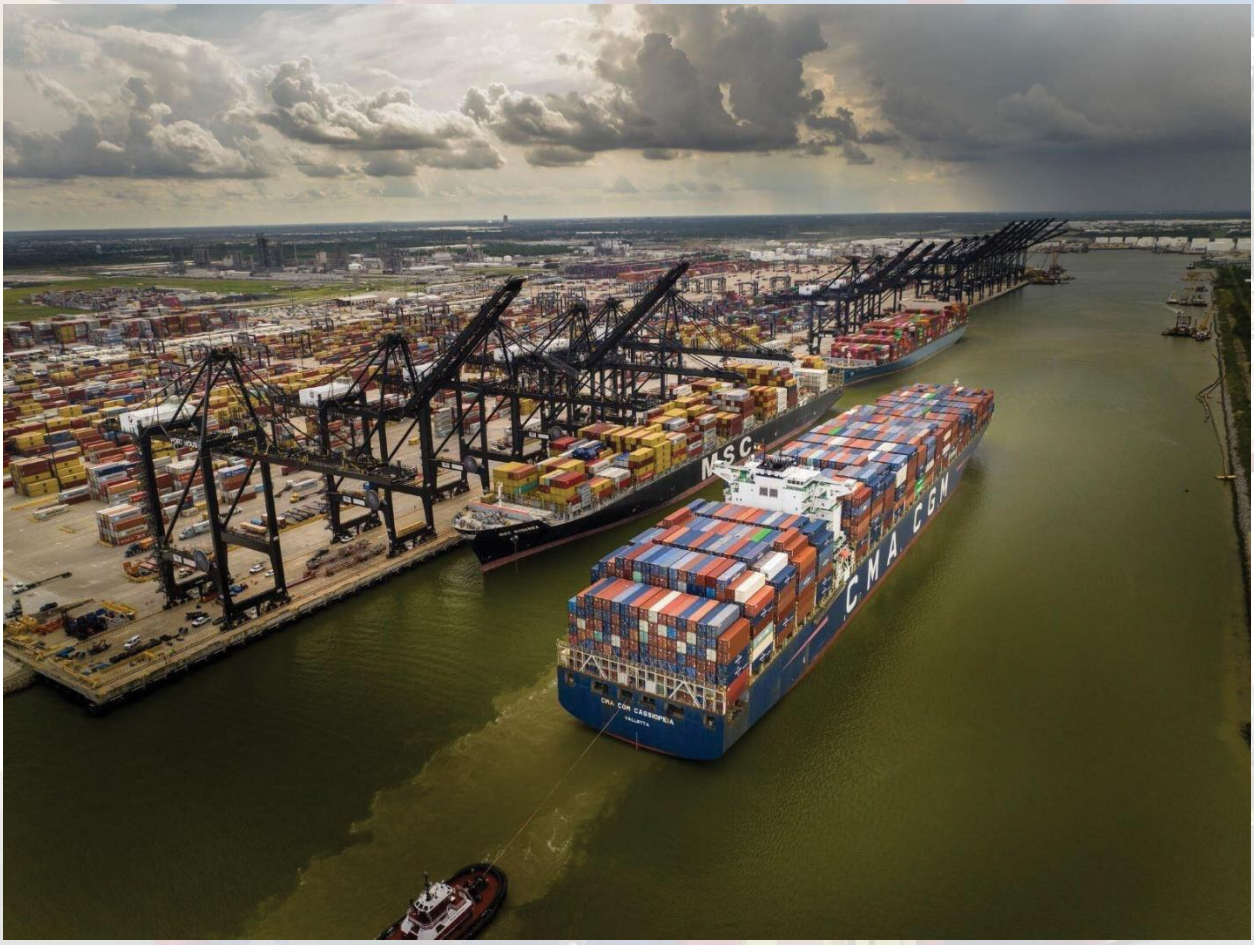
Houston, TX USA

https://flexirocks.com
https://playgroundbuffings.com

ABOUT US

Our story begins in 2021. We started out troweling residential pool decks, pathways, patios, and progressed into commercial playgrounds in Houston, TX. After working with different suppliers to source the rubber, resin, and buffings throughout the United States, we soon realized that there was an opportunity to become distributors ourselves in the Gulf Coast. Being one of the only rubber distributors located in a port city, it gave us tremendous strategic advantages over our competitors which has allowed us to be one of the largest distributors within the industry.



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APPLICATIONS

GYMS

WALKWAYS

PLAYGROUNDS

POOL DECKS

SPLASHPADS

PATIOS

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TPV RUBBER GRANULES

We have partnered with Layflex as our TPV rubber granule supplier. With more than 30 years of experience in rubber manufacturing, they produce a high quality TPV that is durable, resilient, resistant, eco-friendly, and elastic. Ideal for both indoor and outdoor applications.

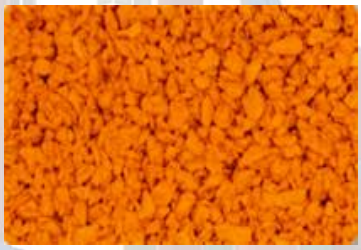
COLOR OPTIONS

MUSTARD YELLOW
RAL 1011

BROWN
RAL 8025

BRIGHT RED
RAL 3020

BEIGE
RAL 1015

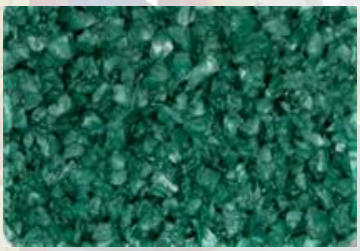


ORANGE
RAL 2008

BRIGHT GREEN
RAL 6018

YELLOW
RAL 1018

RED
RAL 3016



MEDIUM GREEN
RAL 6026

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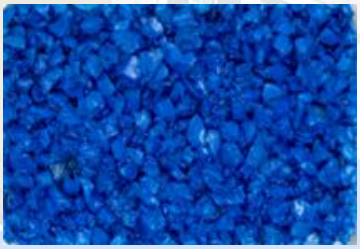


MEDIUM BLUE
RAL 5010

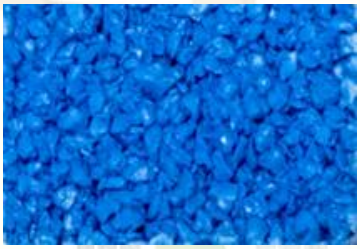
PURPLE
RAL 4005

WHITE
RAL 9010

LIGHT BLUE
RAL 5012

LIGHT GRAY
RAL 7035

BLACK
RAL 9005



SKY BLUE
RAL 5015

MEDIUM GRAY
RAL 7037

TURQUOISE
RAL 5018

DARK GRAY
RAL 7043

We do our best to ensure that our photos are as true to color as possible, but due to photographic lighting sources, inconsistencies of various monitor settings, we cannot guarantee that the TPV colored rubber granules you see accurately portrays the true color of the product.

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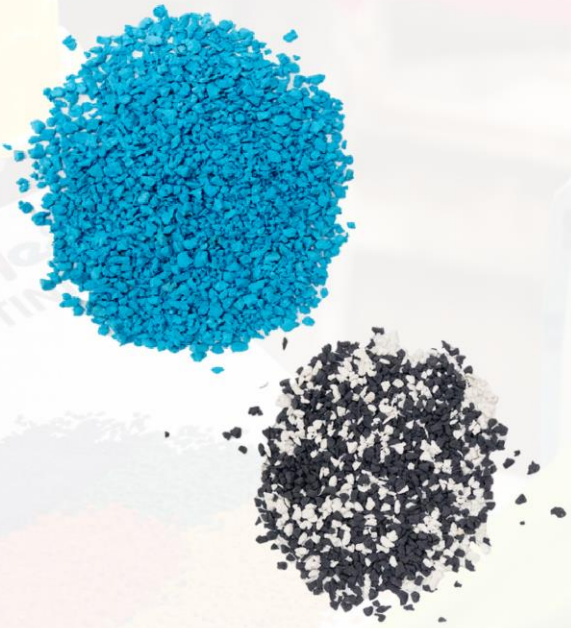
TECHNICAL DATA

TPV GRANULES

TPV is a blend of thermoplastic and elastomeric rubber, offering good flexibility.



Typical Properties

TPV Appearance Angular granules
Polymer content: %25
Density: 1.55 g/cm³ (± 0.05)
Hardness Shore: A 65°A (± 5)
Tensile Strength >5.0 Mpa
Elongation @ break >550-650%
Particle size 1.0 – 4.0 mm
0.5 – 2.5 mm
0.5 – 2.0 mm
0.5 – 1.5 mm

Typical Particle Size Distribution for 1.0 – 4.0 mm

Over 3.35mm – 5%
2.5mm – 3.35mm 49%
2.0mm – 2.5mm – 21%
1.7mm – 2.0mm – 12%
1.0mm – 1.7mm – 12.5%
Less than 1.0mm – 0.5%

WIDE RANGE OF COLOURS!

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POLYURETHANE BINDER

We supply US manufactured aliphatic and aromatic resins. Our resins are available in different cure time variations based on the installer's local climate (as noted in the number ranges next to the resin's name) to achieve a sufficient work time. Whether it is a basic aromatic used for mixing buffings, aliphatic for UV resistance, or aliphatic with chlorine resistance (CR), we have a resin to suit your specific needs.

Sold in 5 gallon pails (45 pounds) or in 55 gallon drums (450 pounds)

AROMATIC

Regular 80-90+*

Regular 70-80

Regular 60-70

Regular 50-60

ALIPHATIC - UV

Pro UV Slow*

Pro UV

ALIPHATIC – UV & CR

Pro UV CR Slow*

Pro UV CR

Pro UV CR Fast

**Designed for high heat and high humidity environments to slow cure rate and increase work time*

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UNDERLAYMENT

Sourced domestically and abroad, we offer various shapes and sizes of underlayment to suit different purposes and installer preferences. All derived from used tires, rubber buffings, crumb rubber and our rubber pellets are a byproduct of retreading tires.

BUFFINGS

Commonly used in pour in place applications, rubber buffings are a perfect way to achieve the desired thickness for different fall hazards. Inexpensive and easy to use, buffings are a great material to repurpose material destined for the landfill.

Sold in 50 pound bags or super sacks.

CRUMB RUBBER

This size rubber granule blends well when mixed with different colors of TPV to give an otherwise dull black surface pop with color. This is also a cheaper alternative than using 100% TPV rubber granules as this is a recycled tire crumb rubber.

Sold in 55 pound bags.

RUBBER PELLETS

An alternative to rubber buffings, rubber pellets are IPEMA certified and require only 8% binder by weight to pellets. Manufactured from rubber powder the availability can be guaranteed to help you ensure a reliable production schedule.

Sold in 26.5 pound bags

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INSTALLATION BASICS

SURFACE PREPARATION

STEP 1

“Green" or *newly poured* concrete must be left to cure for a minimum of 30 days after being poured. The surface must be free of loose debris and dry before rubber surfacing is applied.

The moisture from the newly poured concrete must fully evaporate before the surface can be laid. If there is moisture still present in the concrete it will cause the resin to cure faster and results in a higher risk of de-lamination.

Even if a drying accelerator is used it can cause the rubber surfacing to cure too quickly and cause improper bonding.

You must always wait 30 days after concrete has been poured to apply Rubber surfacing.

EXISTING CONCRETE & OTHER MASONRY SURFACES

Ensure all loose substrate has been removed. This includes loose aggregate, oils, glues, paints or concrete seal coatings.

Some chemicals react poorly with the resin and cause a weak bond between the rubber and the substrate. Taking the time in the beginning to ensure that your substrate is free from foreign materials will ensure that you have a strong and smooth bond the first time.

Pressure washing or scarifying may be needed for some jobs to remove foreign materials.

TILES OR GLAZED SUBSTRATES

When installing rubber surfacing on top on glazed substrate you first must remove the glazed surface or coating.

It is recommended to do a test patch in a small, hidden area of the substrate to see if the product will adhere before beginning the full installation. If the rubber does not stick, it is likely that the glazed coating is still present.

CARPET

Rubber surfacing cannot be installed on top of carpet. All carpet, glue and other components must be removed before installation.

JOINTS, BORDERS & EDGES

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As rubber surfacing is designed to expand and contract up to 40% expansion joints must be cleaned and ground prior to installing the rubber surface.

A key joint necessary to finish the surface when troweled to a completed edge. Key joints are cut using an angle grinder at 45º to a 3/8" depth.

A border material such as aluminum or plastic angle (3/8" profile) is adequate protection for leading or wearing edge.

PREPARING EDGES & COPING

Tape off any areas that may come in contact with resin, these include: coping, pool stairs, concrete surrounds, and any other edges that should remain the same after installation.

MIXING WITH MORTAR MIXER (4-GALLON)

STEP 2

When mixing with a paddle mortar mixer or a low speed drill, pour 1/2 55lbs bag (18L) of rubber granules in the mixer and 2 liters of resin into an approx 14 gallon mixer bucket (tractor supply if needed). Mix the rubber and resin for 1 – 2 minutes, ensuring to properly coat every rubber granule with resin. Do not exceed 3 minutes of mixing. Over mixing occurs when pressure builds up in the mixer causing the resin to cure prematurely.

Once the rubber is fully coated with resin it must be troweled within 15 minutes. If the mixture if left to sit untouched for longer than 15 minutes it can begin to cure and will have to be discarded. Each installation time will vary depending on individual installers experience and skill. It is important for the designated mixer to monitor the troweler(s) progress and time the mixes accordingly. This is especially important nearing the end of installations to reduce the amount of excess rubber waste.

MIXING COLORS

Some installations may require two or more colors to be combined to create a custom colored surface.

Bucket Mixing

This process consists of marking off a 18 liter (5-gallon) buckets using tape to the appropriate ratios for each color. Then the buckets are labeled with their correct color names. The mixer then uses the marked bucket as measuring guides to pour each of the necessary colors into the mixer and adding resin.

Bucket mixing allows for the mixing station to remain clean, which is why it is the recommended way to mix colors.

SANITATION

During the mixing process, every third mix the bucket must be cleared using a margin trowel. This is done by scraping the stuck rubber off the edges and sides of the bucket. This rubber can remain in the mixer and be mixed in with the next batch.

After the mixing is done, it is vitally important to clean the mixer with a brush and Xylene as a solvent. This eliminates rubber and resin from curing inside the bowl. The excess rubber can be made into samples or discarded as waste.

WARNING!

Mixing time and capacity can change depending on the type of mortar mixer used. Ensure to read all instructions and manuals before beginning mixing.

PRIMING THE SURFACE

STEP 3

The substrate must be properly primed before installing rubber surfacing. Primer the substrate with a very light application of resin using any 3/8” nap roller.

Priming is done in approximately 20 square feet at a time. As the primer will soak into the substrate, it is important to work in sections when completing a job to not allow the primer to soak completely into the substrate before the rubber granules are poured.

Do a test patch before priming the substrate to test how long the primer is soaking into the substrate. Apply the primer to a small section of the substrate and wait 10 minutes. If the primer is soaking into the substrate too quickly it can result in de-lamination. If this occurs decrease the size of the section being primed at one time to ensure that the rubber can be

troweled before the primer is absorbed. Applying another coat of primer is recommended in situations where the substrate is quickly absorbing the primer.

Primer is applied to all substrates and contacting edges. Use a paint brush to cover all edges of the installation area with primer. This includes concrete pathways, manhole covers, and other contacting edges. Then use a roller to apply a layer of primer to the rest of the selected substrate area.

Priming can also be done in smaller sections so that the trowelers are not kneeling in primer during installation. Although this process is cleaner, it is often more time consuming for beginners.

USE TAPE TO PROTECT BOARDERS. PRIMER AND RESIN STAIN ALL MATERIALS THEY TOUCH. BEWARE OF WALKING THROUGH PRIMED SECTIONS.

APPLICATION

STEP 4

Start with an area no larger than 20 square feet. Pour 1/3 of the rubber and resin mixture directly onto the primed substrate. Starting from one end press out the rubber evenly and firmly. Trowel forward with the trowel at a 1mm angel (almost flat) to ensure the rubber does not catch the trowel. The pull the trowel back to you at a 15º angel, applying pressure to spread the granules level. These motions will be repeated until the slightest resistance is felt. Between these motions it may be required to use Xylene as a solvent if the rubber granules are sticking to the trowel.

DIESEL FUEL IS NOT RECOMMENDED AS A SOLVENT AND WILL AFFECT THE CURE RATE AND PERFORMANCE AND CURE RATE OF THE RESIN.

When satisfied with the surface, clean the trowel a last time using solvent. Then go over the area for a last time to give it a shiny, even, smooth finish.

Look from several different view points to ensure no uneven areas or trowel marks are present. The mixer is also responsible for looking for any imperfections that the troweler(s) may not see during installation. The mixer should survey the site between mixes looking for imperfections on the surface. Clean the mixer bucket at least every third mix to ensure dried rubber does not accumulate and blemish new batches.

Take photos of your installation to identify shadows in the surface. These are often open spots that will need to be closed before proceeding.

Trowel marks, mistakes and thin spots are easier to fix during installation rather than after. Rubber surfacing cannot be shaved or sanded to fix imperfections. All imperfections that are visible after installation must be cut out and new rubber applied.

MULTI-DAY INSTALLATIONS

For installations lasting longer than one day the placement of the cold joint must be decided prior to beginning installation.

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The narrowest place in the installation is best place as it is less visible when smaller. Once the cold joint spot is reached, leave a straight edge at full thickness and trowel tightly to make sure the rubber is closed. On the next day of installation, cut back 1/4-1" rubber as this is where you will begin troweling from. A screwdriver may also be used to break away some of the rubber from the cured edge to create a more seamless bond. This may be necessary for installations where the cold joint is large or in a noticeable place.

Prime the newly cut edge with a brush before troweling new rubber up to it to ensure a strong bond.

Avoid cold joints if possible and become proficient at blending them when they occur. If more than one solid color is being used during installation it is best to put the cold joint between the colors.

VERTICAL APPLICATIONS

Stairs, risers, curbs and coping are all examples of the need for vertical work. These applications are usually done first before any flat work has begun.

Using resin, add silica powder, 1-cup at a time until a thick, peanut butter like substance is made, this is typically a 1:1 ratio. This substance is commonly referred to as the mixing matrix. Mix small quantities at a time as the mixing matrix cures quickly, especially in warm temperatures.

Wear a long rubber chemical glove and spread a thin, even layer of the matrix onto the vertical surface. If mixing matrix is spread too thick it can show through the dried rubber and create blotchy effect called blowback.

After spreading 2 - 3 feet of matrix begin troweling the rubber, starting from the bottom of the vertical. Lift and spread the rubber in a upwards motion, applying pressure to ensure the rubber adheres to the mixture. Rubber can be applied with hand or by trowel, but must be closed using the trowel.

For each new vertical area that is being done, overlap the mixture by 1/4 - 1/2" and trowel until blended.

Do not apply mixing matrix in areas that will take longer than 10 minutes to complete as the matrix will begin to cure within 10 minutes. If the rubber is not adhering to the vertical surface, it is likely the matrix has cured and the process will have to be done again.

SITE CLEAN UP SECURING THE SITE

STEP 6

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Rubber surfacing cures in 24-48 hours depending on different environmental factors. Although this curing time is low compared to alternatives, the surface must still be protected for at least 24 hours after installation.

People or animals may inadvertently walk through the installation before it has cured. Warning clients of such possibilities and providing adequate barriers will help decrease the chances of this occurring.

For installations that occur in public spaces, additional security may be required. It is best to consult with your client about their own specific security needs.

TOOLS FOR CLEANING THE SURFACE

- TSP
- Strong bristle hand brush
- Hose with sprayer
- Power washer (optional)

A LIGHT CLEAN

The surface may be cleaned regularly using normal soap and water. This removes all foreign surface matter.

It is recommended to leave a small amount of the same rubber used for the surfacing with the client as the color shades vary per batch. This can be used for any future repairs.

INSIDE CLEANING

Use a steam cleaner or carpet cleaning to achieve a deep clean for indoor surfaces.

For daily cleaning, the surface can be vacuumed.

WARNING!

Do not acid wash the rubber surface. The acid will burn the surface, resulting it a brownish color is cannot be corrected.

REPAIRS

Repairs may have to made due to granule loss, de lamination, blowback, blemishes, footprints, or trowel marks. Repairs also may need to be made to the substrate, like a pool liner.

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To complete a repair you will need:

Utility knife

Chisel

Hammer

Required amount of product for repair

With the utility knife, cut around the area to be removed. Using the hammer and chisel, break away the damaged area from the substrate and surrounding surface. When removing the damaged area some of the substrate may be removed too. If this occurs extra rubber can be filled in to level out the surface.

Once the damaged area is removed, prime the surface and edges and install the new section. When the area is uniform, allow to dry.

The colors may not match due to the different UV exposure each surface has. It may take up to 3 months for the new rubber to become the same color as the pre-installed surface.

Ensure your client protects this area in the future.

If the surface is older (5-10 years), it is recommended to fix repairs by putting a design in the surface as the colors may not match due to the dying process of the rubber.

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