Upon Delivery of Product

1. Verify packing slip with product and order.
2. Inspect delivered product thoroughly. Report any discrepancies of original order, product defects, etc. No reimbursement/warranty claim will be given for labor on material installed with visual defects. Any defects– size, color, or otherwise– must be reported to Rubber-Cal, Inc. prior to installation.
3. Store products and adhesives in a clean, dry environment with temperatures between 70° F and 95° F.
4. Read product and sub-floor preparation instructions, warranty and other disclaimers carefully and completely before beginning any installation.

WARNING: DO NOT use recycled rubber products in conjunction with any petroleum-based products. This includes solvents, adhesives or sealants. All substrates (especially new concrete) must be fully cured and properly installed and alkaline vapor emissions tested and found to be at appropriate levels prior to installing rubber products.

Recommended Tools

1. Measuring tape or ruler
2. Metal straight edge
3. Non-retractable utility knife with extra blades
4. White marker, chalk, or chalkline
5. 2" x 4" wood block
6. Cellophane, masking, or packaging tape
7. Rubber mallet
8. "V" notched trowel 1/8" X 1/8" outdoor installations or "V" notched trowel 1/16" X 1/16" indoors installations
9. Mineral spirits and rag
10. Rubber Gloves
11. Commercial grade caulking gun
12. Carpenter's square
13. Paint Roller Frames, Roller Extensions and Fluffy Rollers
14. Paint Roller Trays

Adhesive Options

A - Orcon® DS-PS Double-Sided Sealing Tape

Description: 5" double-sided pressure sensitive tape for loose-lay installations, modular and semi-permanent applications. Double-sided pressure sensitive tape specified for perimeter and seam applications with rubber flooring products.

B - Chemrex® CX-941 Trowel Grade Polyurethane Adhesive

Description: Chemrex® CX-941 is a one component, polyurethane-based trowel-grade, waterproof structural adhesive with vapor reducing characteristics. Its elastomeric properties enable it to move as it expands and contracts. The patented formula is VOC compliant and contains no solvents or water. Chemrex® CX-941 provides excellent initial green strength and outstanding bond strength. It is formulated for indoor and outdoor applications.

Polymer Type:	Polyurethane
Yield:	60 square feet per gallon
Packaging:	2 gallon (7.6 L) pails, 5 gallon (18.95 L) pails
Color:	Light Brown
Viscosity:	Creamy Trowelable
Working Time:	45 - 60 Minutes
Freeze-thaw stability:	Unlimited cycles
Service Temperature:	- 40° F to +150° F or - 40° C to +66° C
Slab Temperature:	+50° F to +100° F or +10° C to +38° C
Shelf Life:	1 year when properly stored
Storage:	Store at 75° F (24° C) and 50% relative humidity. Protect unopened containers from heat and direct sunshine. In cool weather, store containers at room temperature for at least 24 hours before using.
Compliance:	ASTM E84-95B: NFPN, class A and UBC, Class1. USDA compliant for use in meat and poultry areas.

C - Chemrex® CX-22 Gun-Grade Polyurethane Adhesive & Seam Sealant

Description: Chemrex® CX-22 is a polyurethane-based one component, moisture-curing adhesive/sealant. It maintains permanent flexibility with high bond strength providing outstanding durability.

Base:	Synthetic rubber-resin
Viscosity:	2800, +/- 500 ASTM D 2393
Packaging:	300 ML cartridge, Caulking gun or power pump
Color:	Black
Open Time:	20 minutes, +/- 5, depending on the temperature and humidity
Density:	11.5 lbs. per gallon, +/- 0.1, ASTM D 1475
Solids:	80%, +/- 2%
Lap Shear:	
Wet Lumber:	225 PSI, ASTM D 1002
Dry Lumber:	250 PSI, ASTM D 1002
Plywood/Concrete:	140 PSI, ASTM D 1002

Chemrex® CX-22 Specs cont.

Lap Shear:	
Plywood/Drywall:	160 PSI, ASTM D 1002
Plywood/Aluminum:	100 PSI, ASTM D 1002
Service Temperature:	-40° to 200° F, (-40° to 93° C)
Extrudability:	2 seconds, ASTM C 603
Rheology:	No sag, ASTM C 639
Tack-Free Time:	180 to 290 minutes, ASTM C 679
Skin Time:	120 Minutes
Tensile Strength:	275 PSI, +/- 25, ASTM D 412
Elongation, at break:	90%, +/-50, ASTM D 412
Hardness:	40 Shore A, +/-5, ASTM C 661
Movement Capability:	+/- 25%, ASTM C 719
Bond Durability:	+/- 25%, no failure (Glass, Aluminum, Concrete), ASTM C 719
Accelerated Weathering:	No elastomeric property changes after 3000 hours

For Best Performance

- Wear gloves during application; Chemrex® CX-941 and CX-22 are difficult to remove from skin and clothing. If adhesive gets on skin, immediately wipe it off with a dry cloth.
- Do not apply on frozen surfaces or standing water.
- Avoid contact with water or alcohol before use and before complete cure.
- Do not use in areas subject to hydrostatic head pressure.
- Do not use on wet, contaminated, or friable substrates.
- The maximum acceptable floor variation is 3/16" (4.76 mm) in 10 feet (3 m) or 1/8" (3.75 mm) in 6 feet (1.8 m).
- Do not use as a leveling agent.
- Do not set flooring into an adhesive that has a dry skin.
- Proper application is the responsibility of the user.

Health and Safety

Caution

Chemrex® CX-941 contains methylene bisphenyl diisocyanate; Talc; Hydrotreated light petroleum distillate; Polymethylene polyphenol isocyanate; Silica and crystalline quartz.

Risks

May cause skin and eye irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Inhalation of vapors may cause irritation and intoxication with headaches, dizziness and nausea. Ingestion may cause irritation. Reports have associated repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage. Contains crystalline silica. NTP and IARC recognize respirable crystalline silica as a human carcinogen. The exposure to crystalline silica during the normal use of this product will be little or none. **INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.**

Precautions

Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid breathing vapors. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or if used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. **DO NOT take internally.** Keep container closed. Empty container may contain hazardous residues. All label warnings must be observed until container is commercially cleaned or reconditioned.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. **SEEK IMMEDIATE MEDICAL ATTENTION.** In case of skin contact, wash affected areas with soap and water. If irritation persists, **SEEK MEDICAL ATTENTION.** Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, or if swallowed, **SEEK IMMEDIATE MEDICAL ATTENTION.** Refer to the Chemrex® CX-941 Material Safety Data Sheet (MSDS) for further information.

VOC Content

45 g/L or 0.38 lbs./gallon less water and exempt solvents.

Preparation

Rolled rubber products must reach ambient room temperature to ensure a secure, tight installation with minimal size fluctuation. Each piece should be completely unrolled and allowed to set for a full 24 hours prior to installing. This allows the product to relax from being rolled and to size stabilize at the typical room temperature. Inspect the product prior to installation for measurable defects or variations. Ensure that flooring is laid so that any roll curl is facing down. This will prevent the ends from curling up.

Subsurface Preparation:

For best installation, any subsurface should be reasonably flat and free of holes or variances of more than 1/8".

1. Ensure that floors are structurally sound and fully cured a minimum of 28 days. **Test floor for vapor drive in accordance with anhydrous calcium chloride test. Vapor drive should not exceed the industry standard of less than 3.0 lbs. per 1,000 ft.^{2} in 24 hours.***
2. When test results are greater than 3.0 lbs. but less than 12 lbs. per 1,000 ft.^{2} in 24 hours, refer to the product data sheet for Chemrex® Concrete Floor Primer (Form No. 1019775).
3. Repair concrete and install joint sealants and fillers as necessary. Use patching materials as appropriate.
4. Low spots must be filled with a self- leveling underlayment or level prep.
5. Mechanical surface profiling is the preferred floor preparation method. It is the only acceptable preparation method where warranties are issued. Acid etching is not recommended. Shot blast the floor to medium-grit sandpaper texture, to remove curing and parting compounds and other surface hardeners and floor coatings.
6. Clean floors of oil, grease, and other bond inhibiting materials not removed by shot blasting or other mechanical means with a commercial degreaser.

A - Concrete:

New concrete must be allowed to cure thoroughly prior to installation (28 days). If sealants are used, do not use one with a petroleum base. Old concrete must be repaired and have joint sealants and fillers installed as necessary. All cracks or flaws should be filled in or repaired prior to covering with rubber products. Use patching materials as appropriate. Surface must be thoroughly cleaned of dirt, dust, grease, or other foreign matter by shot blasting (or other mechanical means) with a commercial degreaser and allowed to dry completely before beginning installation.

B - Wood Base:

Wood surfaces should be completely cleaned of dirt, dust, grease or other foreign matter and be completely dry prior to installation. Trapped moisture may rot the wood or interfere with installation adhesives. Nails or other protrusions should be pounded down or removed, holes repaired, and surface variances repaired within the 1/8" acceptable variance level.

C - Asphalt:

Asphalt requires the same preparation as concrete. However, due to variations in asphalt substrates, it is the user's responsibility to check the adhesion of the cured adhesive on typical test areas at the project before application.

Optional Seam Sealing

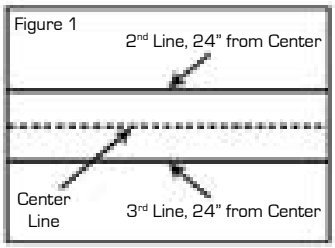
Rubber-Cal offers Chemrex® CX-22 sealant/adhesive for creating the performance of a one-piece floor. It will act as a bonding agent that will create uniform flooring seams. Chemrex CX-22 is available in a 10.5 oz (313 mm) gun-grade form. To bond the rolled rubber flooring together, leave a 1/16" gap between seams for adequate adhesive to penetrate adjacent pieces. To seal seams for waterproofing, sealant should be applied post-installation and only thinly applied to seams. Either application must be allowed to cure for 24 - 48 hours prior to use. To assure a strong bond, it is strongly recommended to thoroughly clean the edges of the mats by steam cleaning, using a mild dish detergent, or wiping with denatured alcohol. Allow mats to completely dry prior to applying sealant. Apply with caulking gun or trowel. Wearing gloves during application is highly recommended. Once material has cured it cannot be removed. Because of the high strength of Chemrex® CX-22, do not apply it as heavily as you would a conventional adhesive. Cut the smallest possible opening in the spout to render the appropriate sized bead. Be certain to fill all gaps between materials. Use mechanical fasteners to hold materials in place until adhesive has fully cured.

Installation & Application

1. Ensure that starter rows are firmly in place by wedging or face nailing. Once initial rows are secure, use Chemrex® CX-941 in a wet-lay or walk-on-work method of installation.
2. Wet-lay method: Apply adhesive to substrate with an appropriate trowel. Immediately place flooring into the wet adhesive. No flashing required. **NOTE: Do not apply more adhesive than can be covered in 30 minutes or the adhesive transfer could be jeopardized.**
3. A 100 lb. roller must be used in the wet-lay method during all installations. It must be rolled again within 30 minutes. Uneven flooring should be tacked, weighted or rolled to ensure good contact between the flooring and the substrate.
4. Clean up tip: Before troweling Chemrex® CX-941, cover the unused portions of the trowel with duct tape. After troweling, tear off the tape before the material cures.

Indoor Installation

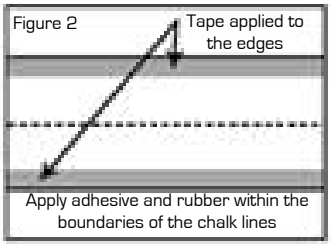
1) Permanent installations should be handled by a trained professional installer with experience in rubber flooring installations. Assume that the walls/curbs that the rolls are abutting are not perfectly straight or square. Begin by determining the vertical center of the area to be installed. Draw or snap a chalk line. Make two additional chalk lines 24" out from either side of the original chalk line (Figure 1). This is the guideline for the edges on the first 48" roll. (If the roll to be installed is of another width, divide the width in half and measure that distance out from the original chalk line to determine the first roll's guides).



A. If adhesives are needed: Apply Chemrex® CX-941 Adhesive within the 48" marked chalk lines (Figure 2), the length of the room, or the length of the roll, whichever ends first. The adhesive should

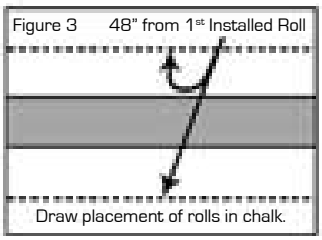
be applied thinly and evenly with a 1/8" X 1/8" X 1/8" "V" trowel for outdoor applications and a 1/16" X 1/16" X 1/16" "V" trowel for indoor applications (Chemrex® CX-941 adhesive will cover 60 ft.^{2}/gallon). Do not apply more adhesive than can be utilized within a 30 minute window as there is approximately 30 minutes of open air time to apply the adhesive and maneuver the rubber mat onto the adhesive and position prior to curing onset. Wipe off excess adhesive on hands or on equipment with mineral spirits. Gloves are strongly suggested during application, as the Chemrex® CX-941 adhesive is aggressive on skin. ***DO NOT allow mineral spirits to come into contact with the rubber rolls.***

B. Using double-sided sealing tape: Apply the double-sided sealing tape on the floor completely around the inside perimeter in regards to the width and length of the roll. Do not remove the release paper (complete step 2). At the beginning of the seam, fold back the rubber at the width point so that the tape is viewable. Remove release paper and ease rubber back down into place. Do not allow it to "flop" onto the tape, as it may create air pockets. Press to adhere. Continue this process for the remainder of the floor and continue to step 3.



2) Placing the roll end against the wall, unroll the first piece over the prepared area. Maneuver the rubber to lay precisely within the two chalk lines by tapping with a mallet and wood block. If the rubber exceeds the floor space, use a straight edge and non-retractable utility knife to trim the excess length (see cutting tips). Press firmly on the mats to remove curl and bubbles. **NOTE: If using adhesive or sealing tape: after the first 60 minutes have passed and the adhesive has begun to set, thoroughly roll the first roll of matting with a 50 - 100 lb. carpet roller to assure bonding of the rubber to the adhesive.** Be careful not to shift the roll outside of the chalk lines while rolling. Rolling should be done again at 75 and 90 minutes after the initial placement of the roll onto the adhesive. Rolling should be done both widthwise and lengthwise. This will insure intimate contact and ultimate bond.

3) Repeat steps above for remaining rolls. For subsequent roll placement, chalk lines can be used to define the areas of installation, but is not as crucial as with the initial piece (Figure 3). See curing times for traffic acceptability after installation.



4) Butting one mat up to the next, adjacent, or end to end will help ensure tight joints without gapping. If gapping does begin to occur during installation, use masking, cellophane or packing tape to hold the mats together until the adhesive cures or the remaining pieces are laid. Do not use duct tape as it may leave residue on the surface of the rubber when removed.

Adhesive Clean-up Tips

Before troweling with Chemrex® CX-941, cover the unused portions of the trowel with duct tape. After troweling, tear off the tape before the material cures. Clean all tools and excess Chemrex® CX-941 immediately after use with mineral spirits. Use proper precautions when handling solvents. Cured adhesive can be removed by cutting with a mechanical tool. **DO NOT allow mineral spirits to come into contact with the rubber rolls.**

Outdoor Installation

Outdoor installations typically require complete adhesion for maximum floor strength. Use the same procedures as in the indoor installation, using the Chemrex® adhesive process. Using Chemrex® CX-22 sealant will also add strength and immobility to the floor (if using seam sealant, leave a 1/16" gap between rolls). Take note of the outdoor temperature when using adhesive, as it will affect the curing time. In some areas, evening or night installations are best due to extreme heat. Colored products installed outdoors will be subject to harsh UV rays, and as such may discolor.

Rubber Cutting Tips

Tips on cutting rolled rubber: This procedure works best when using a recommended non-retractable utility knife. When using a utility knife, be sure to keep the blades sharp to aid in the cut, and help reduce the possibility of injury due to a dull blade.

1) Mark the rolls you will need to cut with chalk or a chalk line.
2) Put your straight edge on the corresponding marks you have placed on the rubber.
3) Holding the straight edge firmly in place, score the mats two or three times. This process may be made easier by cutting the mat on a raised surface such as the 2" x 4" wood block used during installation. Gravity will depress the cut edge down and away from the cut, and will be less likely to catch the knife blade.
4) Grab the rubber close to the score line, lift and bend the mat toward you in a tearing motion. The score line will "break open."
5) Make several more passes with the knife, working down the established cut, until the cut is complete.

Curing Times

Adhesives: Cure time is dependent on temperature and humidity. Times are based on 75° F (57° C) and 50% relative humidity.

Firm set: 1 – 2 hours
Light foot traffic: 12 – 24 hours
Normal traffic: 48 hours
Higher temperatures and humidity shorten the cure rate, while lower temperatures and humidity lengthen the time.

Double-Sided Carpet Tape: Foot traffic: Immediate
Non-Adhesive: Normal traffic: Immediate