INSTALLATION PROCEDURES

SOLID VINYL FLOORING

EURO-FLEX® FSD, CSD, HIGH TRACTION TILE
EURO-FLEX® FSD, CSD SHEET
SOFTCOLOR VINYLC SHEET
SAFEFLOORGUARD SHEET
REMP SPORT AND REMPWOOD
(See separate instructions for ESD conductive vinyl flooring)

DRY VOC - FREE ADHESIVE TECHNOLOGY

SIGAWAY® ORIGINAL FULL SURFACE double sided self stick dry adhesive FLASH COVING WITH SIGA CONTACT

WATER BASED VOC - FREE ACRYLIC ADHESIVE

WATER BASED VOC-FREE ACRYLIC ADHESIVE TECHNOLOGY

INSTALL
INTERNATIONAL STANDARDS & TRAINING ALLIANCE
FLOORCOVERING PROFESSIONALS

MEMBER OF
FCICA
Floor Covering Installation Contractors Association
www.fcica.com

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1. General information

1.1 Storage and Transport

All solid vinyl Euro-flex™, Softcolor and SafefloorGuard rolls should be shipped and stored upright at all times. Storage outdoors, storage on uneven surfaces, storage of roll laying flat on palettes or racks, or storage on other than man-made surfaces is not permissible and will void any warranty claims.

1.2. Limited Warranty

Tek Stil Concepts, Inc. makes no warranty of merchantability or of suitability of its products for any particular purpose and sells its products upon the condition that customers shall conduct their own tests to determine the suitability of the products for their intended purpose. Under no circumstances shall Tek Stil Concepts, Inc. be liable for economic, special, incidental or consequential damages or losses of any kind whatever.

Limited Warranty

The Products are warranted for one year from the date of shipment against manufacturing and material defects, provided SELLER'S instructions and recommendations relating to the installation and maintenance procedures are complied with. SELLER warrants that the Products will conform to the description of the order confirmation, and that the Products delivered will be of fair, average and consistent quality within the description. If purchased by sample, the Products shall conform to such sample with only such reasonable' variations as are, in the opinion of' the SELLER commercially acceptable. The SELLER does not guarantee color marbleization and shade matching, however, SELLER warrants that Products from identical dye lots will be of commercially acceptable color match. The Products shall be warranted for a period of five (5) years against non-conformance with technical properties or specifications expressly agree upon by the parties in writing and against deterioration of such properties or specifications under ordinary and normal conditions of use The SELLER'S obligations under this warranty are limited to repairing or at its sole option replacing Products if notice of defect is given to the SELLER in writing and if the SELLER'S examination shows that the Products have failed under the terms of the above warranty, The SELLER shall not be responsible for installation costs involved in the repair of replacement of such Products, or in freight costs for replacement materials. This warranty shall be null and void if the Products have been stored improperly or outdoors, or on uneven or not man-made surfaces, or if they have been exposed to unusual conditions, such as fire, smoke, flooding, oil based grease or asphalt based chemicals or coloring substances. The SELLER shall not be responsible for problems caused by moisture hydrostatic pressure, excessive alkali in concrete flooring, or by weak or uneven floor substrates. Complaints for defects caused by faulty installation, abuse, vandalism, improper maintenance, gouges, cuts or indentations caused by improper floor protectors, or by movement of heavy machines, instruments of pieces of furniture over installations will not be accepted. ***All other warranties, express or implied, including any implied warranty to*** *the* effect ***that the goods shall be fit for a particular purpose and any liability of the SELLER for consequential damages are hereby excluded. No representative or agent of the SELLER shall have the authority to make any representation, agreement or promise. except as stated herein. The SELLERS liability for acts of his agents is limited to gross negligence.***

Tek Stil Concepts, Inc. refers to adhesives, under-layment products and tools or accessories manufactured by others only in the context of a recommendation of the type of product to be used, but cannot assume warranties for performance, quality or suitability of products of other manufacturers. It is the user's responsibility to adhere to all warnings and safety precautions contained on the labels or instructions sheets for all products.

All instructions provided herein are based on state of the art installation experience, or on generally accepted installation or workmanship procedures for ESD conductive PVC monolithic flooring. Tek Stil Concepts, Inc. cannot accept any liability whatever therefore. Site and job conditions may vary widely and cannot be predicted for all circumstances. The installer should precisely investigate the suitability of the recommendations provided herein by making small test installations prior to beginning large installations.

2. Sub-floors And Preparation of Sub-floors

2.1 General

Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard may be installed over new or over existing concrete, wood, poured asphalt, ceramic tile, terrazzo, marble, metal, or over existing epoxy, VAT, VCT, PVC, or linoleum flooring provided that existing flooring is free of voids, cracks and is firmly bonded in all areas to the flooring beneath. For glue-down installation with water based acrylic adhesive sub-floors must be absorbent.
Sub-floors must be free of paint, dirt, oil, wax, moisture, alkali, salts, varnish or any foreign substances and must be broom clean. Sub-floors must be firm, sanded smooth and even. Unevenness must be filled in with gray Portland cement based latex fillers; or self leveling concrete (such as Ardex) or epoxy fillers.

Note:
The use of gypsum based leveling or patching compounds is <u>not permissible.</u>

2.2. Sub-floor Moisture

Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard are totally water proof and water impermeable. These products therefore are a barrier to evaporation of sub-floor moisture. Moisture itself and/or alkali which are introduced to the concrete surface by hydro-kinetic pressure will damage flooring, adhesives and installations.

2.2.1. Correctable Moisture Conditions

- Excess moisture may be due to “green” (insufficiently cured concrete) which can be corrected by allowing additional curing time. Concrete curing times depend upon the mix, wet curing, of the concrete, thickness of slab, time of the year of pour (summer/winter) and the ambient temperature and humidity. Curing times may range to3-6 months or longer.
- Moisture may also be surface moisture, such as that introduced by a leaking roof. This can be dried with space heaters and forced air flow.

2.2.2. Dangerous Types of Building Moisture

Unless a vapor barrier is installed underneath the slab, excessive moisture may be due to a combination of

- Water vapor (Water vapor will travel from one area to another whenever a difference in water vapor pressure exists between the two areas.)
- Capillary Action (travel of water from a lower to a higher area.)
- Hydro-kinetic or hydro-dynamic pressure (water forced through the slab by the weight of the water in the soil surrounding the foundation.)
- Leakage (liquid water travels from a higher to a lower plane due to gravity, surrounding and flooding the area below the slab, where crushed stone may have been used to interrupt capillary action.) Landscaping, driveways, and parking lots are frequently pitched towards buildings.

Sub-floors must be tested for moisture prior to installation. They must be dry and constructed in such a way that moisture cannot seep through and damage adhesive or product. A film vapor barrier (moisture barrier) must be provided for all on-grade or below-grade installations, or whenever solid vinyl flooring is to be installed above wet rooms, such as pools, canteen kitchens, and shower rooms. The vapor barrier may be dispensed with <u>only</u> if there is a positively and continuous longitudinal and lateral force-ventilated 12”-30" hollow space underneath the installation.

Note:
The installation and performance of a moisture barrier is the responsibility of the building owner or general contractor, not the flooring installer. The installer should decline the responsibility for any installation where moisture barriers are not provided on- or below-grade. The installer should inform the owner that **moisture tests only indicate the moisture condition at the time of testing**. Future intrusion of moisture could occur if water tables change. Solid vinyl **may not be installed** on-grade or below-grade, when hydro-kinetic pressure conditions exist, and/or a guaranteed vapor barrier is not provided.

Moisture Condition Disclaimer
Floor Covering Installations cannot be guaranteed against damage caused by excessive moisture, alkaline substances, of fluid pressure from the sub-floor material over which the flooring installation is made. Testing for moisture prior to installation only measures the condition of the sub-floor at the time of installation, and in the areas tested and will not support any warranty against problems caused by excessive moisture in the future.

Caution:
The installer should inform the owner that moisture tests only indicate the moisture condition at the time of testing. Future intrusion of moisture could occur if water tables change, if there is no film vapor barrier installed. If the presence of a vapor barrier is unknown, it is advisable to conduct a core drilling test and search for the presence of a film barrier above the granulate or attached to the concrete core.

Caution:
Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard should not be installed on-grade or below-grade whenever hydrokinetic (hydro-static) pressure or changing water table conditions exist, and when a guaranteed film moisture barrier has not been installed prior to pouring the concrete.

Caution:
No sealants, coatings or other "After-The-Fact" attempts to correct >2.5% moisture by the Carbide Method, (or >3 lb./1000 sft./24 hours moisture by the calcium chloride test) in buildings without a film moisture barrier **are approved by Tek Stil Concepts, Inc., and such coatings or sealants are NOT warrantable. by the Manufacturers of flooring or adhesives discussed hereinafter.** The use of such sealants, coatings, or similar, is solely and exclusively at the risk of the user.

2.2.3 Permissible Moisture Limits
Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard are water impermeable and must **not be installed** if sub-floor **moisture exceeds** the below maximums when testing by one of the factory approved moisture testing methods.

Sub-floor	% Moisture by CM (carbide Method)	lb./1000 sft./24 hours by RMA ($CaCl_2$) Method	% Moisture by Electronic Method
Concrete slab	<2.2%	< 3lb.	n/a
Radiant heated concrete	<1.8%	<2 lb.	n/a
Tar free asphalt	0.0%	0.0 lb.	n/a
Solid wood	n/a	n/a	<12.0 %
Plywood	n/a	n/a	<8.0%
Old parquet	n/a	n/a	8-10.0%

2.3. Approved Moisture Testing Methods

2.3.1 CM (carbide method) of Moisture Determination

The Carbide Method Test Kit comprises

- Hammer and Chisel
- Gram Scale
- Pre-weighted ampullas of calcium carbide
- Steel balls to crush ampulla
- Steel flask sealed with pressure gauge

Obtain a representative sample of the total thickness of the sub-floor, using hammer and chisel or slow-drilling a hole up to 3.5 inches deep. Experience shows that the greatest moisture content is in the bottom 1/3 of the slab.
Crush the concrete specimen, remove coarse aggregate (stone), and powderize sample quickly so as to avoid additional absorption of moisture from the air. Depending upon expected moisture content, weigh either 15 or 20 (if expected moisture content is <3.0%) grams and insert into the steel flask provided with the test kit, along with a calcium carbide measured ampulla. Close bottle, break ampulla by rotating steel balls provided with the kit and mix the sample. Moisture will react with calcium carbide and develop acetylene gas, raising pressure in the bottle. After 5-7 minutes, pressure is stabilized and can be read on the pressure gauge, and is converted on a moisture table so as to determine the exact moisture of the flooring in fractions of a percent accuracy.

2.3.2. Calcium Chloride Method of Moisture Determination (RMA Method)

The calcium chloride test kit contains:

- A clear petri-dish containing anhydrous calcium chloride crystals ($CaCl_2$)
- A clear plastic cover
- A sealant tape to secure the plastic cover to the concrete
- A caution placard used to prevent anyone from disturbing the test while it is being conducted
- A moisture test label for recording the data

Calcium Chloride Test Procedure Step by Step

2.3.2.1. The concrete's surface temperature should be < 55^{o}F.
2.3.2.2. Remove all foreign substances from the surface of the concrete either by sanding or with a concrete rubbing stone. **Do not use water to clean the concrete.**
2.3.2.3. Inspect test kit for contents and condition.
2.3.2.4. Apply the strip of sealant tape around the perimeter of the base of the clear plastic cover.
Apply the sealant so that there are no voids. The cover must be completely airtight during the entire test.
2.3.2.5. Remove the petri-dish from the vapor-proof pouch and attach the moisture test label to the top of the petri-dish.
2.3.2.6. Use a gram scale to weigh the petri-dish, label and its contents. Record the starting weight, date and time on the moisture test label.
Note:
Do not allow moisture to affect the petri-dish before or after the test.
2.3.2.7. Remove the tape from around the petri-dish, remove the top of the petri-dish and place on the concrete top-side down. Place the bottom of the petri-dish into the top (leaving the contents exposed) and then take the piece of tape and stick it to the inside top of the plastic cover.

Note:
Any spillage of the anhydrous calcium chloride crystals requires re-weighing of the petri-dish.

2.3.2.8. Take the clear plastic cover with the sealant applied and carefully place over the petri-dish.
Be sure to press the cover and sealant onto the concrete to obtain an airtight seal.
As an added precaution to assure an airtight seal, tape the flanges of the plastic cover to the concrete with duct tape. Place a barricade around the test area to prevent any disturbance to the test
2.3.2.9. Leave the test undisturbed for a minimum of 60 hours and a maximum of 72 hours.
If disturbed, the test will have to be started over with a new test kit.
2.3.2.10. At the end of the test time, remove the plastic cover, replace the top on the petri-dish.
Reseal the petri-dish with the tape, being careful not to spill any of the anhydrous calcium chloride crystals.
2.3.2.11. Record the ending date and time the test ends on the moisture test label.
2.3.2.12. Weigh the petri-dish within one hour of the completion of the test.
2.3.2.13. Calculate the weight gain by subtracting the beginning weight from the ending weight and record.
Record the duration (number of hours) of the test. Using the formula supplied by the manufacturer of the moisture test kits, determine the amount of moisture being emitted from the concrete in pounds per 24 hours per 1,000 sft.

2.3.3 Electronic Moisture Determination

Electronic methods measure conductivity, not moisture. Depending upon the type of electrical or electronic unit, conductivity (moisture content) of wood flooring is determined by inserting 2 electrodes into the flooring at predetermined distances. Conductivity is translated to moisture content using a conversion scale specific to each type of wood.
This method may be applied as a fast **pre-screening method only** when assessing the probable moisture of concrete. Electronic methods are **not considered reliable for concrete** because inclusion of metal or salts in the aggregate can show concrete to be more conductive ("wetter") than it actually is; similarly some concrete additives may show less conductivity ("drier") than is reflected by quantitative moisture determination of the slab.

2.3.4. The Number of Tests Required when testing by the CM or the RMA Methods
The norm is to use one test per 1,000 - 2,000 square feet. All tests should be conducted simultaneously and should be placed far enough apart to cover representative areas of the floor. This usually means one or two in the center of the floor area with the balance around the perimeter, especially at exterior walls and near columns and pipes.

2.3.5. Documentation of Tests
All tests should be documented. A moisture test form should be filled out and witnessed by an authority on the site such as a job superintendent, owner or contractor. A copy of the test results should be sent to the general contractor or owner. The test results should indicate each test by number, location in the building, date and time of the test.
For the CM test, record moisture in Percent. For the RMA (calcium chloride test) the starting and ending weight, the weight gain, total hours, and pounds of emissions must be recorded.
Note: It is recommended that a representative of the general contractor or building owner witness the test and sign the test data sheet.

Appendix 2.3.5. shows a representative Moisture Test Documentation Form

2.4 Sub-floor Preparation

2.4.1. Concrete sub-floor Mechanical Preparation

Concrete sub-floors should be dry, smooth, level, dense and absorbent. They must be free from expansion joints, depressions, sealants or foreign substances of any kind. Pre-stressed concrete planks should be finished with at least 2-3 inches of high density concrete topping and reinforced with wire mesh to prevent cracking. Rough spots in the concrete should be leveled with clean, moist, sharp white sand, using a terrazzo grinding machine. Cracks should be cleaned and filled in with epoxy based filters.

Note:
Expansion joints should not be covered with flooring.

2.4.2 Underlayments

Porous or highly absorbent concrete should be given a prime coating of diluted liquid adhesive prior to toweling on a latex based gray Portland cement mastic. The cement mastic should be of adequate strength to absorb impact and rolling loads so as to avoid breakdown under traffic. An average depth of 0.08" is recommended for troweled latex based gray Portland cement mastic underlayment. Mastic must be dry and cured prior to installation. Self leveling ARDEX K-15 self leveling underlayment (or similar) is recommended. Single component "add water only" gray Portland cement leveling agents should be avoided due to inherent weakness but if they are used, add an acrylic binder instead of water.

Note:
Gypsum (white patch) **may not be used** under Unifloor(R) because of inadequate strength.

2.4.3 Wood sub-floors

All wood sub-floors should have at least 18" air space between the ground and the wood floor with adequate cross ventilation beneath them to keep them from damp and rotting. Unifloor(R) should not be installed on wood sub-floors that are directly in contact with on- or below-grade concrete sub-floors, even if separated by sleepers. Wood sub-floors must be cleaned of varnish, oil, paint and waxes. Single layer plywood combination sub-floor underlayment is suitable for Unifloor(R) when-installed according to American Plywood Association recommendations. All panel compositions and configurations rated as standard APA Sturd-I-Flor, regardless of type, must be installed according to APA and the manufacturer's recommendations. Wafer board, oriented stand board and structural particleboard require an additional 1/4" underlayment.

Wood sub-floors shall be 1/2" or heavier plywood (APA grade or double layer tongue- in-groove strip wood not over 3" face width covered with 1/4" or heavier plywood, APA underlayment grade.) Single layer wood floors, not tongue-and-groove or tongue-and-groove strip wood over 3" face width should be covered with 1/12" or heavier APA underlayment grade plywood installed according to APA specifications. Cracks wider than 1/8" and holes larger than 1/4" in diameter should be filled with snugly fitting wood or epoxy based filler. Defective boards must be replaced with sound material. Loose boards must be re-nailed. All unevenness should be leveled. Latex based gray Portland cement leveling compounds should not be used on wood. Use special leveling compounds instead.

2.4.4. Poured Tar-Free Asphalt Underlayment

Poured asphalt underlayments are sometimes applied as a humidity barrier. They should be free of bubbles, cracks or voids. The Surface must be sanded or level. If the surface is not pre-sanded, a film forming primer must be brushed on. A gray Portland cement based latex filler must be troweled on in .08"
thickness and dried prior to installing the flooring.

2.4.5. Terrazzo, Epoxy, ceramic tile, marble or metal sub-floors
These are considered non-absorbing sub-floors and must be primed accordingly. The sub-floor must be firm and without loose areas, free of oil and foreign substances, and insulated adequately against intrusion of humidity. A film forming primer, such as latex or solvent based cement should be applied, to be followed with an application of self leveling compound or troweled latex based gray Portland cement mastic. Leveling of old quarry or cement tile can be accomplished with Ardex K-15 or similar. If installations will be made with liquid adhesive ESD-106 conductive of TSC-100 or 200 Adhesives, any non-absorbent sub-floors must receive an .080" thick absorbent gray Portland cement based or Ardex K-15 coating prior to applying the liquid adhesive. See separate instructions for Sigaway dry installation method.

2.4.6. Old PVC, VAT, VCT, Epoxy, Urethane or linoleum floors
Installations may be made only when existing flooring is totally bonded to the sub-floor in all areas, with the old adhesive showing adequate strength and integrity. Further, the floor must be adequately insulated against intruding moisture. Any residual waxes, floor polishes, paints, or residues of floor care products must be removed by sanding or solvent wash. **If in doubt, remove existing flooring, adhesive, prime, level and prepare sub-floor as per 2.4.2.**

Caution:
Do not sand asbestos containing products **-** health hazard.

2.4.7. Installing Over Cutback Adhesive
Cutback can stain and permanently discolor ESD Unifloor(R) or ESD euro-flex™ with time. Cutback should be isolated from the Unifloor(R) adhesives and flooring by applying sufficient thickness of Ardex K-15, or gray Portland cement based latex underlayment.

2.4.8. Miscellaneous Sub-floors
Please consult the factory representative whenever you encounter unusual sub-floors or installation requirements.

2.4.9. Joints between different height sub-floors or between different gauge flooring
These can be eliminated by feathering a high quality latex based gray Portland cement compound, such as Ardex™ Feather Finish prior to installing the thinner flooring. Alternately metal or PVC T-profiles may be used to cover such joints.

3.0 Installation of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard Sheet and Tile

3.1. Factory Labels
Each roll or carton of tile features important information on labels, such as Product Name, roll size, color name or number, dye-lot number or shade number. Also there are roll or tile serial numbers.

3.1.1. Record The (Serial) Numbers and Dyelot Numbers Used in each Area
The installer should make a permanent record of the Serial number of the Roll Number and Dyelot Number of each roll or carton of tile which is to be installed in a particular area. This number is an important quality control identifier which must accompany any claim or questions as to product variances.

3.1.2 Confirm Product Type, Dyelot, Color, And Absence of Transport Damage or Visual Defects.
It is the installer's responsibility to check that all materials to be installed are of the correct product type and color. labels identify dye-lots. It is the installers responsibility not to-mix dye- lots in the same area. Color match of adjacent sheets should be visually confirmed under good lighting conditions prior to installation. Slight color differences between rolls can be minimized by rearranging rolls. **The factory cannot be held responsible for color differences or other visible defects once materials are glued down.**

3.2 Condition and Relax Flooring Before Fitting

3.2.1. Conditioning
It is necessary to **condition the building, adhesives, and PVC flooring at a temperature not below 68-70°F (18-21°C).** Remove the factory wrappers from rolls during conditioning. Allow 2-3 days to condition PVC materials at these temperatures if they were brought in from colder storage. Tiles should be placed only one carton high during conditioning.

3.2. Relaxing Sheet Flooring
PVC flooring has a memory. To remove the tendency of unconditioned rolls to curl (returning to rolled memory), the conditioned sheets should be unrolled and allowed to relax for at least 2-5 hours prior to fitting at a temperature not less than 68-70°F (18-21°C).
Several rough cuts of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard (5-6 layers) may be stacked one on top of the other during relaxation. Relaxation is faster if the ambient temperature is 100°F. Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard may be relaxed in 30 minutes to one hour if placed over an outside driveway on a hot summer day, for example. Egg-shaped (transport damaged or incorrectly stored) materials may have to be relaxed with a hand hot-air blower, or using a space heater.

3.2.2. Relaxing Tile Flooring
Tiles should be stacked in 10-20 tile lots during conditioning. Stacked cartons do not allow temperature conditioning. Take care not to curl tile edges during stacking.

Caution:
Inadequate relaxation may result in material lifting off wet adhesive in areas.

Caution:
Materials containing a fiberglass interliner **may never recover** from transport damaged or incorrectly stored egg-shaped condition, because of internal damages to the fiber glass web. Such damaged materials should not be installed.

Caution:
The installer must inspect each relaxed sheet for edge straightness and any surface irregularities or damages. Do not install material which is damaged or defective.

3.3 Pattern Direction
Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard ESD have a generally lengthwise (machine direction) oriented pattern direction. Generally, the machine direction (roll direction) should be at a right angle to the main windows, so as to minimize the visibility of welded seams. Tiles should be checker-boarded or installed in a half drop pattern.

3.4 Adhesives and installation

3.4.1 Approved Adhesives for Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard ESD
Unless specifically used as loose lay mats or runners, rolls and tiles must always be glued down. Factory approved specialty adhesives are **TSC 100,** or **Sigaway(R) Original Dry Textile Reinforced Self Stick Sheet Adhesive**.

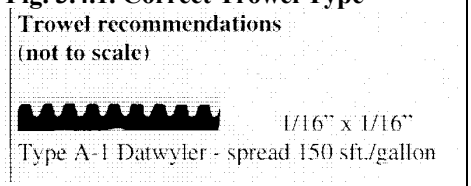
TSC 100 acrylic adhesive is a VOC-free non flammable one part adhesive. This may be installed on-, above- or below-grade, provided factory specified moisture levels are not exceeded and **appropriate moisture barriers are provided for**

on- or below-grade applications. These adhesives have excellent seam strength and do not require additional seaming adhesive when properly applied.

Sigaway(R) Original Dry Self Stick Conductive Textile Reinforced Self Stick Adhesive is approved for Euro-flex™ Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard. See later sections for detailed installation instructions.

Liquid Adhesive application must be between 150-165 sft./gallon (250-300 gm/m^2), depending upon the absorbency and condition of the sub-floor.

Fig. 3.4.1. Correct Trowel Type



Liquid Adhesive should be applied with a Type A-1 V-notched trowel. The Installer must confirm the actual application of 150-180 sft./gallon of liquid adhesive by measuring the spread rate. The correctly troweled adhesive should be almost smooth in appearance; there should be no voids between teeth of the trowel adjacent to high troweled lines (as results from inappropriate trowel types.)

Caution:
The installer should frequently replace or re-sharpen the trowel, as V-notched Trowels tend to wear faster at their points. Worn trowels result in insufficient adhesive application.
Caution:
Inappropriate (U notched) or coarse troweled adhesive pattern lines will telescope trough the PVC flooring and appear unsightly in a few days after installation.
Caution:
The user should always determine suitability of the products for their intended use by testing a small sample of the adhesive on a representative portion of the sub-floor, along with the Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard Unifloor(R) product to be installed, prior to installing a large area so as to assure that the system performs satisfactorily. A pull strength test after 2-3 days and prior to making the large installation is recommended.
Caution:
TSC 100. TSC 200 water based adhesives must be stored above 50' F (10^oC) at all times. Adhesive which was allowed to freeze is rendered unusable. Adhesive which was stored below a temperature of 50^OF (10^0C) may be damaged and may not be useable. Observe shelf life limitations, which are 2 years for TSC 100 or TSC 200 Acrylic Adhesive and for ESD-106 Conductive Acrylic Adhesives.

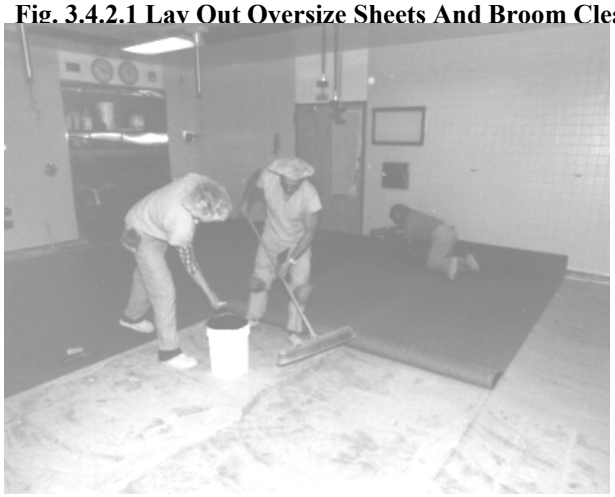
3.4.2.1 Installation Procedure with liquid adhesive

Broom clean and remove all dust and debris before laying out vinyl sheets.

Cut sheets approximately 1% over length. Both factory edges should be cut vertically.
Fold back a sheet of flooring halfway. Mark along edge of adjacent sheet with a carpenter's pencil. Then fold roll back this second sheet halfway.

Spread adhesive with a fine notched trowel, such as 1/16 x 1/6“ Depending upon the absorbency of sub-floors, and ambient temperature and moisture conditions, about a 200 sft. area may be troweled at one time. Allow TSC 100, TSC 200 and ESD-106 Conductive adhesive should be allowed to skin over for approx. 15-20 minutes, before placing flooring materials onto the adhesive. Sheets or tiles must be placed onto the skinned adhesive.

Fig. 3.4.2.1 Lay Out Oversize Sheets And Broom Clean



This waiting period allows for excess moisture to evaporate, reducing the inherent tendency of the vinyl flooring to reject water. After the adhesive is skinned over the vinyl will attract the skinned adhesive. The adhesive at this moment should readily transfer to the vinyl and **an equal amount of adhesive should be on the flooring and on the back of the vinyl when a 2-3 ft. section is rolled back**. If the adhesive does not transfer to the back of the vinyl, it is too dry and the vinyl should not be installed without a second spread of adhesive.

Fig. 3.4.2.2 Folding Back Vinyl and Troweling Approx. 200 sft. (shown with a black Conductive Adhesive not TSC-100 adhesive)

Entrapped air causes bubbles. Starting from the center of the sheet, **feather out all entrapped air towards the edges, preferably by using a cork smoother manually** (see Fig. 3.4.3. on the next page.) This has the advantage that any entrapped air or laying defects can be inspected at eye level prior to the setting of the adhesive.

Less preferably, air may be feathered out **from the center to the edges** using a 125 lb. roller. This is not preferred because any entrapped air cushion can be spread over a large area, resulting in multiple air bubbles which become be visible once the adhesive has set and which can require time consuming repairs.

Joint areas are to be squeegeed thoroughly with the dressing hammer.

Finish by rolling the entire installed surface with a 125 lb. roller. Roll again after 6-12 hours. Wait 24-48 hours before routing (grooving) and heat welding, so as not to "cook" the adhesive and cause adhesive to leech into seams.

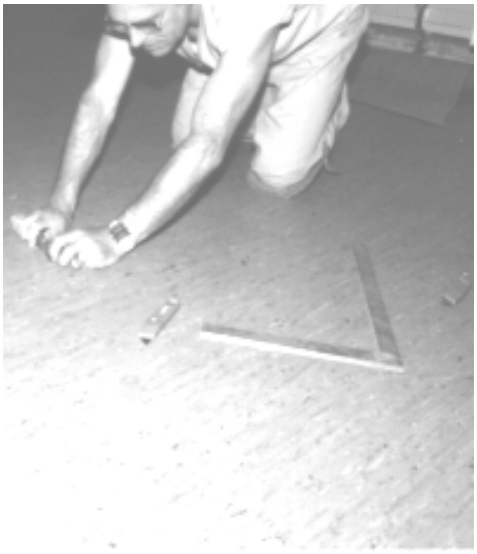


Fig. 3.4.2.3 Feathering All Areas Manually With A Cork Smoother: This prevents entrapped air from forming bubbles and hollow spots.

3.4.3 Installing Tiles

Section off the area in order to avoid unnecessary trimming of tiles. Use chalk mark guidelines. In large areas start from the center of the room and install towards the wall. Observe Adhesive spread rates and skin-over times. Work backwards in order to avoid dislodging freshly installed tiles. Install tiles checker-boarded or in half drop patterns.

When installing solid vinyl tiles over Sigaway(R) Original make chalk lines on the old surface and marks will be visible through the Sigaway(R) .
Alternately place marks directly on the release paper. Remove enough release paper to start the first row of tiles and subsequently only uncover enough area as will be installed immediately. To provide access to raised access floors or trench covers over which Euro-flex™ tiles have been installed, run a knife along the edges of the tiles right and left of the access area and peel a number of tiles or a whole row of tiles. The Sigaway(R) Original will stay on the back of the tiles and can be re-installed once access is completed. Tile installations should be welded if pressure liquid cleaning is anticipated for the facility or if welding is specified by sanitary codes.

3.4.4. Installation with Sigaway® Original dry adhesive

Sigaway® Original may be installed over non-absorbent sub-floors, such as existing tile, epoxy, metal, or over normal concrete.

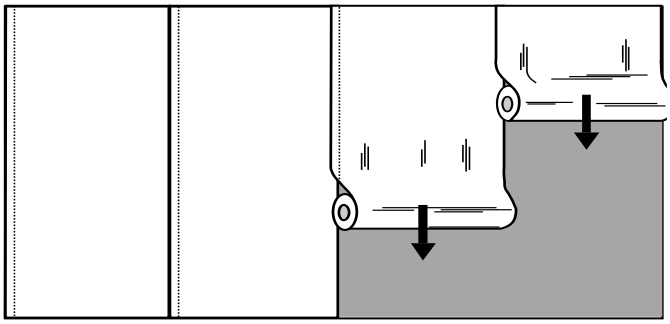
Follow the detailed installation instructions and observe product limitations included with each roll of Sigaway® Original.

3.4.4.1.a Unroll Sigaway® and apply pressure with a broom

3.4.4.1.b or use a cork smoother to apply pressure

3.4.4.1.a Roll out Sigaway and assure good contact with the sub-floor by applying pressure with a broom or **3.4.2.1.b** cork smoother and overlap by approx. 1inch.

3.4.4.2. Lay out an approx. 500 sft. area at a time on the same day that the sheet or tile vinyl will be installed.. Double cut the overlap.



3.4.4.3. Install the new vinyl flooring perpendicular to the Sigaway®.

3.4.4.2. overlap and double cut Sigaway®

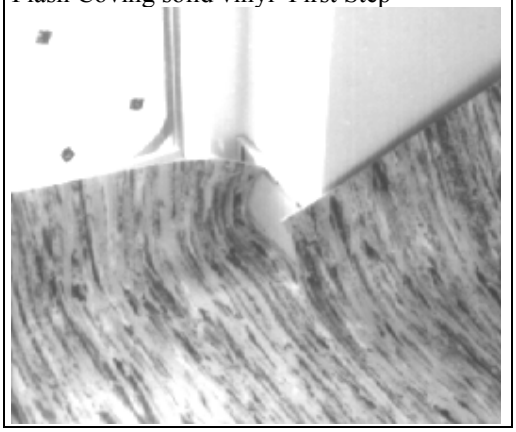
3.4.4.3. Remove the Release paper

Note:
There is no waiting period to heat-weld installations made with Sigaway® and such installations may be immediately exposed to foot and rolling load traffic.

3.4.4.4 Fit seam areas, double cut and heat weld all vinyl sheet goods to prevent shrinkage

3.4.4.5 Use Siga Contact Film to flash cove solid vinyl. Heat-weld inside and outside corners as described in section 3.7

Fig. 3.5.1.
Flash Coving solid vinyl First Step



3.5.1. Flash Coving (Self-Coving) Of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring) , Softcolor or SafefloorGuard Unifloor(R)

If the installation is to be flash-coved, first clean, patch, level and remove dust and any old cove base adhesive residues. Apply contact cement to both, the wall and the back of the vinyl portion which is to be coved. Alternately, Siga Contact and TSC Promont® dry contact cement in film form can be applied to the wall. When using liquid contact cement adhesive allow the adhesive on both surfaces to dry completely (30-45 minutes) before applying the vinyl with skinned (moist) adhesive.

When Flash Coving with **Siga Contact film adhesive,** the Siga Contact film is applied to the wall only. Release paper should be left in place until the flash coving can be properly positioned. Inside and Outside flash coved corners may be heat welded immediately

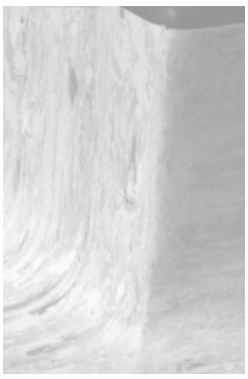
3.5. Production of Flash Coved Inside-Outside Corners

Newer technology has replaced the conventional "butterfly" technique (whereby a triangular piece of vinyl is heat-welded onto corners.)

3.5.1. Example Inside Flash Coved Corner:

This workmanship entails straight fitting of the material at a 90^{o} angle into the corners and either heat welding or hot air puttying the seam closed, using a hot air gun and screw driver or similar tool. (See Photos in Section 8. "Repairs") Heated Unifloor(R) will act like a plastic putty. Using a large screwdriver or similar, putty the inside corner of Unifloor(R) until all voids are filled. After the seam is cooled, scrape off patched area with rounded knife.

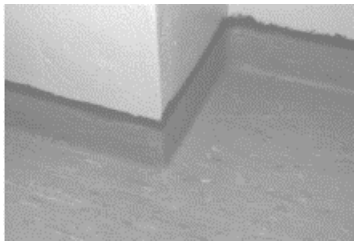
3.5.2. Example Outside Flash Coved Corner



One side of the Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard (left) is cut flush with the wall edge. The other side (right) is rough trimmed to fit over the corner plus the thickness of the vinyl (left piece). Hot Air puttying technology is used to weld these two pieces together without additional welding rod. After a cooling period of 10 minutes, the excess materials can be shaved off the corner with a Stanley knife and wood scraper.

Fig. 3.6.1. Hot air Puttied Inside/Outside Corner

Fig. 3.6.2. Hot air Puttied Inside/Outside Corners over Patch Leveled Wall.



3.6. Three Dimensional Installations

A three dimensional Unifloor(R) Installation is made in accordance with the technology outlined under 3.6. In case of this example, flooring is installed halfway up to

pedestal base, a second sheet is installed halfway down. Edges are hot air puttied and clean shaven with Stanley knife and wood scraper. Where the upper and lower pieces meet (halfway up the pedestal, the seams are routed and heat-welded.

Fig. 3.6.3 Example of Three-Dimensional Coving. With Hot air Putty Technologies, as Described Under Flash Coved Corners.

Fig. 3.7 Installing Contrasting Colors of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard

Attractive graphic designs can be created by inserting material pieces of a different color, and perhaps heat welding with a third, contrasting color. Generally, contrasting materials are double cut, seams are routed and heat-welded.

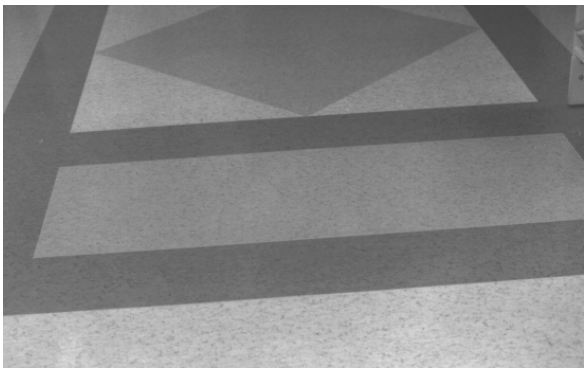


Fig 3.7.1. Heat-welded Contrasting Color With Matching Weld Rod

3.8. Installation of euro-flex™ or Softcolor on Walls

Installations may be made from ceiling to floor, and can be heat welded using either a Floor-To-Ceiling Profile (see Fig. 5.2.), or can be heat-welded to the flooring at the joints.

Fig. 3.8.1. Unifloor(R) Flash-coved 12" up Wall and Heat-welded With Contrasting Weld Rod On Walls

Wall Installation requires at least two installation mechanics.
To install, support the roll by a scaffold near the ceiling height.
Pre-measure the lengths of material and re-roll same.
Apply solvent based contact cement to the top 3 ft. from the ceiling, and to the top three feet of the vinyl backing.
After the contact cement has dried on both surfaces, spread TSC 200 acrylic adhesive on the wall, starting from where the contact cement ends to the wall base.
Carefully position the top three feet of the material, press against the wall, and slowly roll down the entire roll length.
Feather out all air from the center to the edges, and hand rub the material with the cork smoother. After adhesives are dry, re-rub, then heat weld, which hides unevenness of seams better than chemical weld.

4. See separate installation instructions for the Installation of ESD Unifloor(R) Static Dissipative, ESD Unifloor(R) Conductive or ESD Euro-flex™ Conductive Flooring

5. Removed

6. Removed

7. Welding of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor, Remp Sport or SafefloorGuard

7.1 To Weld Or Not To Weld

Installations of all sheet goods Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring, Softcolor or SafefloorGuard **must be heat-welded** to prevent shrinkage.

Heat-welding provides optimal dimensional stability, resistance to rolling loads, contamination from above and avoids chemicals or cleaning fluids penetrating through the seams and attacking adhesive underneath:

Welding is required for any installation of:

- Euro-flex™, Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard rolls.
- Whenever smooth, monolithic floors are required for tiles to prevent chemicals, bacteria, moisture, dirt or pathogenic substances to penetrate into seams.
- Whenever clean-room conditions, resistance to isotope contamination etc. are required.
- Whenever floors are subject to steam cleaning, pressure washing or frequent flooding with antiseptics containing liquids or to solvents from electronic assembly.
- Whenever floors are subjected to exceedingly heavy traffic.
- When installations are made on elastic sub-floors, such as wood or plywood.
- Whenever flooring is subject to great thermal variations, such as large sunlight exposed areas, behind curtain walls or over radiant heated sub-floors.

Welding may be omitted:

Welding is optional for Euro-flex™ Tile+, when the following conditions apply:

- **Excessive water** (or antiseptics containing water) is **not used in maintenance**
- **Sealed seams are not required for chemical resistance and hygienic reasons.**

Example of tile installations where welding is optional:

- Light manufacturing or electronic assembly facilities not subject to rolling loads and liquid pressure cleaning.

7.2 Choice of welding method

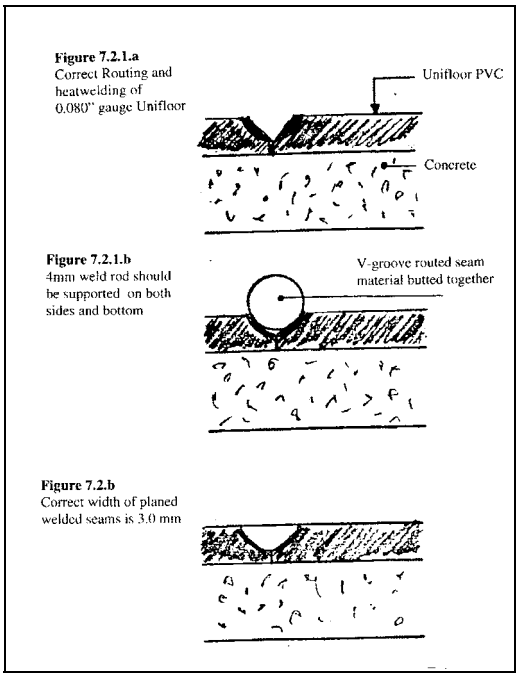
7.2.a Heat-welding is specified for all Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard **sheet** flooring materials used on floors or stairs. The Manufacturer provides 4 mm (.16") welding rods to match colors and properties of each Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , and Softcolor or SafefloorGuard system. 6mm weld rod must be used for Remp Sport or Remp Wood 6-8mm sheet.

Heat-welding creates the strongest and densest permanent bond when applied to properly V-groove routed and tightly fitting seams.

7.2.b. Chemical welding methods may be employed **only** for Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard installed on walls or when welding to (cove base) Profiles.

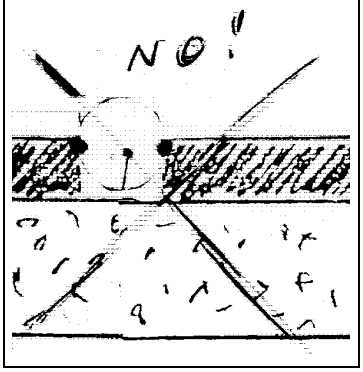
7.2.a.1. Preparation For Heat Welding - Routing of Seams.

Seams should be butted together, double cut, or under-scribed without a gap. **Incorrect seams** result when material is installed with a gap between sheets in lieu of routing and then heat-welded (see figure 7.2.a.4). Also an incorrect seam can result if material is routed but a gap of <0.5 mm (0.020") is left between the rolls. Since there is no total support for the round weld rod, the welded seam will lift during plane trimming and subsequently collapse to a concave seam.



Correct Seams Figures 7.2a.1-7.2.a. 3. are butted together, double cut, or under-scribed with minimum spaces in between. V-groove Routing to 66% of depth leaves a maximum seam opening of 3 mm on the face of the flooring. A 4 mm welding rod is consequently totally supported right, left, and bottom.

Fig. 7.2.a.4. Incorrect Seams - not routed or gap between pieces. Only corners of weld rod are fused to the vinyl.



Incorrect seams are predestined to fail under rolling loads or heavy traffic and defeat the purpose of heat welding.

7.2.a.2 Routing

Routing should be done not more than 30 minutes before heat welding in order to prevent construction dust or other contaminants from settling into routed seams (which could lead to separations of the welding rod from seams.) The proper V-groove routing technology is of the utmost importance.

5. Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard 2.0 mm (0.080"gauge) or 2.7 mm (0.11"gauge) products should be V-groove routed to a depth of 65-70 % of the total thickness of the flooring. The widest width of the routed seams should never exceed 1.0 mm, and the widest welded seam should never exceed 3mm (0.12").

Fig. 7.2.a.5 Hand Grooving Tool

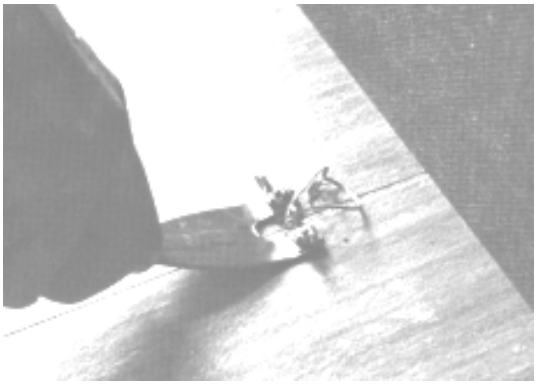
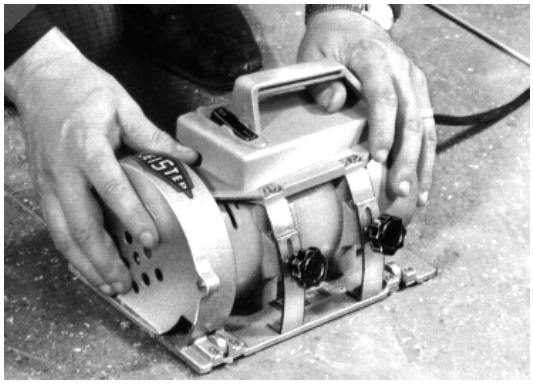


Fig. 7.2.a.6 Leister Fraesrex(R) Router



7.2.a.3 Heat welding

Flooring installed with liquid adhesives TSC 200 or ESD-106 Conductive Adhesive must allow for adhesives to dry and cure for at least 12-24 hours prior to attempting welding. Seams must fit tightly and may not contain voids. Installations using Sigaway(R) Original or Sigaway(R) Electronic may be heat-welded immediately.

7.2.a.3.1 Leister Hand Welding Tool Kit (includes Hot air Welding Tool with Speed Welding Nozzle, Feed Roller, Grooving Tool, Triple Nozzle, and Half-moon Knife for the planing of Welding Rod)

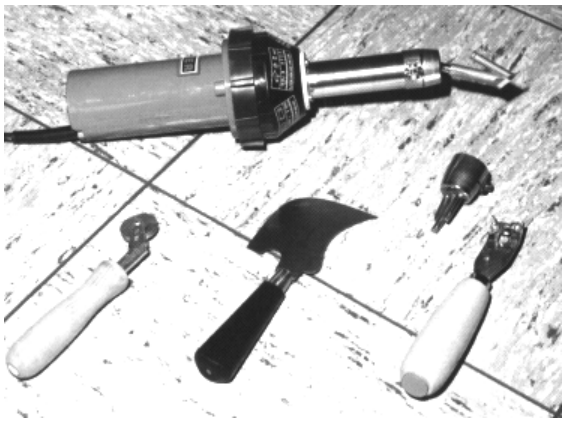
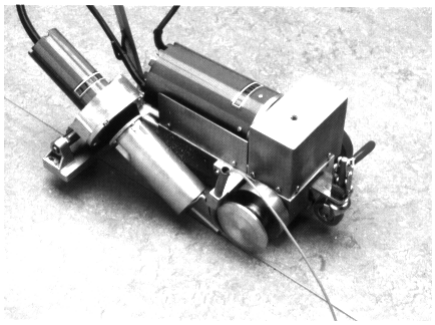


Fig. 7.2.a.3.2 Leister Automatic Welder available with automatic wall switch-off

Note:

Solid vinyl must be welded with welding rod **matching the chemical properties** of these products.



wall switcl

Prior to attempting welding, heat up the hot air gun. When welding, the surface of the routed groove and the welding rod are heated up to about the same temperature 230-280°F (110-140°C) with the hot air welding gun. Using a roller or the nozzle of the heat welding tool, the molten welding rod is pressed carefully into the grooved seam.

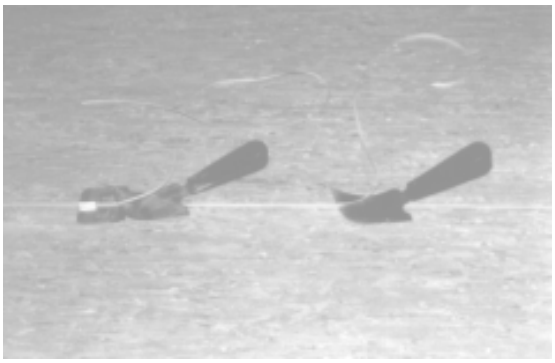


Fig. 7.2.a.3.3 Trimming Welding Rod

After allowing a partial cooling of the welded seam, excess welding rod is planed (cut off). Planing may be done with a hand chamfering tool and special spatula. It is recommended to sharpen the spatula only on the top of the blade to avoid cutting into the Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard. Experienced installers can plane hot air welded seams in one pass once the material is cold.

Caution: When welding, avoid the creation of hollow sections!

7.2.b Chemical welding

Chemical or cold welding may only be used for installation on walls.

Seams must be very carefully cut or butted together because chemical welding cannot hide cutting defects on seams, or any open gaps.

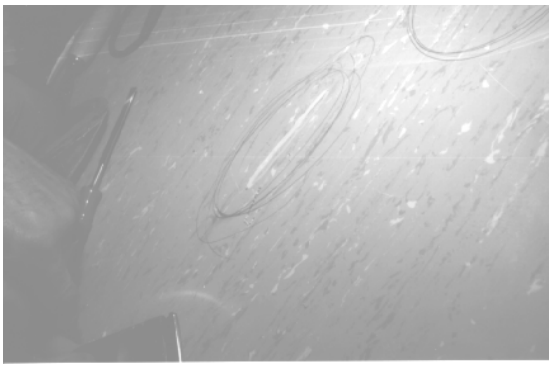
Chemical welding should not be attempted for at least 24 hours after installation with liquid adhesives. Welding fluid is applied from flexible polyethylene bottles or tubes equipped with specially developed nozzles. The welding fluid forms a permanent bond with the adjacent flooring, which fully cures within about 2-3 days.

The nozzle is positioned at the bottom of the seam, and welding fluid is pressed by hand out of the polyethylene bottle and allowed to fill the seam. The installer moves the nozzle away from the starting point, controlling the flow pressure and speed so that the seams fills evenly, and a slight excess of fluid rides on top of the seam. If necessary, the seams may be pushed together at this time, and any excess drops of chemical welding fluid may be removed after approx. 5 minutes by blotting with a soft clean cloth and pulling the drops away, avoiding rubbing of the seam. After completion of the cure, any voids may be filled in with a second application. Shiny marks maybe removed after curing by rubbing with a nylon pad. Excess chemical weld may also be left to dry on the surface, but neither seams nor areas containing excess fluid may be exposed to soil or subjected to traffic for at least 3 hours.

Chemical weld may not be diluted. It has a shelf life of about 3 months in polyethylene bottles, longer if used from tubes or if transferred to glass bottles. The nozzles are to be closed off with needles immediately after each use.

8. Repairing Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard ESD Unifloor(R) Installations

Many damages Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring or SafefloorGuard can be repaired easily and invisibly. It is important for the project owner to reserve adequate yardage (about 1%) of each of these products and color used on the project for future repairs.



Easy Steps To Repair
Use a Stanley knife to diagonally shave off the edges from the defective area. Use a new piece of matching Unifloor(R). Preheat the defective area and the new piece of Unifloor(R) patching material.

Fig. 8.1. Diagonally Cut Perimeter of Damaged section Section

Fig. 8.2. Using A Tool To Heat-Putty Insert a Section of New Flooring

The heated patching piece of solid vinyl will act as a plastic putty. Using a large screwdriver or similar, work in the patching piece of solid vinyl until all voids are filled. Let the repaired area cool down (10 minutes.) Rough trim any material exceeding the height of the flooring carefully from the center of the patch to the outside of the repaired area, using a half-moon knife and plane in a second operation.

Fig. 8.3. Using Roller to Insert Repair Piece
After the repaired section is leveled with the half-moon knife and the wood scraper, it may be dry buffed. Color differences will generally disappear after 1-3 buffings.

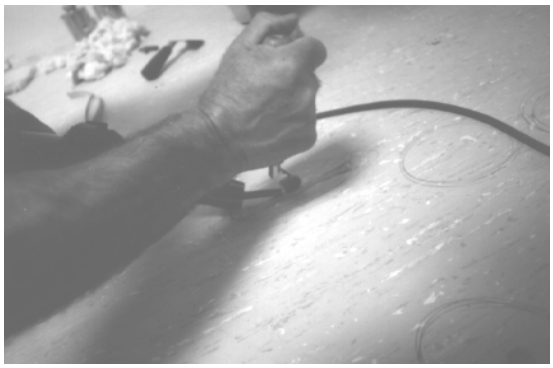


Fig. 8.4. After Cooling, trim excess repair piece flush with half moon knife and wood scraper.

Fig. 8.5.
Fine Level The Repaired Section With A Wood Scraper
After the repaired section is leveled with the half-moon knife and the wood scraper, it may be dry buffed. Color differences of the repaired area will disappear after 2-3 buffings.

Fig. 8.7. Repairing of a Burn

Burns may be simply being scraped off with a wood scraper and polished by dry buffing. Even repeated burns in the same area may be repaired in this fashion because Unifloor(R) is homogeneous in pattern and density throughout.

Repairing Large Damages Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard Installations
Large damages are best repaired by overlaying and double cutting a diagonal piece of Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard matching material, and removing the damaged diagonal piece. Then apply contact cement to floor and new diagonal patch, let contact cement dry (or use TSC Promont or Siga Contact Cement dry film adhesive), insert the diagonal patch, groove and heat weld the new diagonal piece.

9. The Cleaning and Maintenance Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard Installations

General
Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard have an extremely dense surface which requires no application of waxes or sealants. Coarse dirt should be removed by wiping with a soft broom or by vacuum cleaning. Localized marks can be treated with a machine or with a wet scouring pad. Almost any commercial detergent or cleaning agent may be used for Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor , but separate maintenance instructions must be referred to for carbide chip containing SafefloorGuard

Avoid cleaning products containing phenolic substances in heavy concentration, acetone, ether or nitrous solvents, as these may cause swelling and subsequent dulling of the surface.

Spots or spills of chemicals should be removed within 10 minutes to one hour. Prompt localized maintenance minimizes the chance for discoloration.

Wet cleaning is with detergent and water. Manual scrubbing or machine scrubbing may be employed. Dirty water may be mopped up and left to dry. Dry buffing may be employed. Wipe clean methods are suitable.

Note:
Rubber containing certain antioxidants or anti-aging additives (as sometimes found on furniture or cart casters) may permanently discolor Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor or SafefloorGuard. Replace black rubber casters or rubber pads with gray Antistatic Rubber to minimize such discolorations. Flooring stain, solvent based felt pen markers, lipstick, shoe polish and grease based pencils may cause light to strong permanent discolorations.

Note:
Solid color Softcolor products are extremely sensitive to scuff marks and should be avoided for most foot traffic intensive installations.

Please note typical detailed maintenance recommendations in Appendix 9.1. for Euro-flex™ , Unifloor(R) homogeneous PVC (solid vinyl) flooring , Softcolor and Appendix 9.2. for SafefloorGuard

Appendix to 2.3.5

Installers Company Name, Address, Telephone

MOISTURE TEST R E P 0 R T

Date:
Job Name:

Job Location:

Customer Person to contact:

Moisture Tests Conducted: (List type of test, areas tested, results and dates:

Area Tested (number all test locations)	Type of Test	Date of Test	Result in % (CM Method) or lb./1000 sft.

Conclusions & Recommendations:
_____
_____

NOTICE TO CUSTOMER:
Floor covering installations cannot be guaranteed against damage caused by excessive moisture, alkaline substances, or fluid pressure from the sub-floor material over which the floor covering installation is made. Testing for moisture prior to installation measures only conditions at the time of and in the areas tested and will not support any warranty against problems caused by excessive moisture that may occur in the future.

Report Prepared by:_____

Date Report Copy Delivered to Customer: _____/_____/200_____

Customer acknowledgment of receipt of Report Copy: _____
(name and title)

Tek Stil Concepts, Inc., P.O. Box 67, Haddonfield NJ 08033 Phone 856/428-4464 Fax 856/429-6532
Toll Free: 800/603-0848 e-mail: info@tekstilconcepts.com

APPENDIX 3.4 Product Data Sheet: TSC-100 ACRYLIC FLOORING ADHESIVE

TSC-100 Conductive Adhesive is a grayish-white solvent free water based, one part acrylic adhesive designed for TSC's Unifloor, euroflex™, SafefloorGuard, and Rempwood and Remp Sport cushioned vinyl flooring.
It may be installed on, above, or below grade, provided specified moisture levels (<2.0% CM or <3lb/1000 sft. by calcium chloride test) are not exceeded, and appropriate moisture barriers are provided for on-grade, or below-grade applications.
The adhesive is **not suitable over sub-floors with hydrostatic pressure**. The adhesive has excellent seam strength, and does not require additional seaming adhesive when properly applied. The adhesive may be used over concrete, wood, and metal, but modified installation instructions are specified for non-absorptive surfaces (request details.)

Important:

It is solely the responsibility of the user to determine the suitability of the product for its intended use. Test a small sample of this adhesive on the sub floor along with the floor covering, prior to installing a large area to assure that the product performs satisfactorily.

Do not allow the product to freeze. Store between >10^{O}C (50^{O}F) and <35^{O}C (95^{O}F). **Keep out of the reach of children. Do not take internally.** Close container after each use. This product has a limited (18 months) shelf life. **Dizziness may occur in improperly ventilated areas)**.

Technical Data:

Base:	modified acrylic water based adhesive
Appearance:	off-white creamy paste
Total solids:	64% approx.
Open time:	up to 45 minutes
Weight/gallon:	10.5 lb.
Shelf life:	18 months if stored at <55 -<95°F
Freeze stability:	not freeze stable

Trowel Recommendation
(Illustration is not to scale. 1/16" x 1/16" Type A-1 solid vinyl - spread approx. 150 sft./gallon.
A trowel blade is shipped with each container of TSC-100
*Installer **MUST** check spread rate. Vinyl requires almost smooth trowel marks).*

Installation:

Building and all materials must be brought to temperature of <18^{O}C (68^{O}F) at least 24 hours prior to installation. Surfaces should be clean, smooth, and dry, free of paint, grease, or oily substances. In the case of porous or overly absorbent sub-floors, it is advisable to apply an undercoat adhesive, a bonding agent, or suitable leveling compound not containing gypsum, having sufficient resistance to pressure.

A. Installing TSC's solid vinyl flooring:

Apply with a fine toothed (1/32" x 1/32" to 1/16 x 1/16") **V-notched trowel**, finer or coarser as required by unevenness of sub floor surface. The installer **must make a test patch prior to installing large quantities**, and must confirm that the trowel used will **yield a spread rate of approx. 150 sft./gallon**, and that this quantity is adequate to fully bond the ESD vinyl flooring. **Allow the adhesive to skim over**, which requires between 10-30 minutes (depending upon temperature, air flow, and humidity of the environment), before placing flooring material into the adhesive.. **Do not install over adhesive which is too dry to transfer to the back of the flooring**. Check for transfer of adhesive onto vinyl backing by pulling back 3 feet from seam or side. Feather out all air by recommended techniques prior to rolling with 100-150 lb. rollers. Reactivating with hot air gun is possible after a 48 hour curing period.

B Clean-Up and Time before subjecting installation to traffic:

Clean up wet adhesive with soapy water; dried adhesive with a rag wet-out with naphta, mineral spirits, isopropyl alcohol, or similar solvents. Maintain building at <68°F for 4 days**. Do not subject installations of vinyl to rolling loads for 4 - 5 days.**

Tek Stil Concepts, Inc., P.O. Box 67, Haddonfield NJ 08033 Phone 856/428-4464 Fax 856/429-6532
Toll Free: 800/603-0848 e-mail: info@tekstilconcepts.com

Material Safety Data Sheet

Approved by US Department of Labor "Essentially Similar" to Form OSHA 20)

SECTION I

Manufacturers Name:	Klebag Chemie AG, CH-6373 Ennetbuergen, Switzerland
Represented by:	**Tek Stil Concepts, Inc.**
Street Address:	**P.O.Box 67**
City, State, Zip Code:	**Haddonfield NJ 08033 USA**
Emergency Telephone Number:	**1-856-428-4464**
Product Name:	**Adhesive TSC-100**
Product Class:	Water Based Acrylic Dispersion Adhesive

SECTION II -- HAZARDOUS INGREDIENTS

Ingredients: *Substances subject to reporting requirement of Section 313 Title III of the 1986 Superfund Reauthorization Act and 40 CRF Part 372	**CAS #**	**Percent**	**Occupational Exposure Limit**	**Vapor Pressure mmHg**
no hazardous substances in formula				

SECTION III -- PHYSICAL DATA

Boiling Point: 212°F
Vapor Density: Heavier **X** Lighter ___ than air
Evaporation Rate: Faster than ether _____ Slower than ether **X**
Specific Gravity (water = 1): 1.05
Solubility in Water: Dispersible
Appearance and Odor: TSC-100 is a viscous gray paste with slight ammonia odor
% Volatile by Volume: 42-78%

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: OSHA CLASS IIIB **DOT None**
Extinguishing Media:
Foam **X** Alcohol Foam **X** Dry Chemical **X** Water Fog **X** other: _____
Special Fire Fighting Procedures: Water may be useful in keeping fire exposed containers cool.
Unusual Fire / Explosion Hazards: Closed Containers exposed to extreme heat may rupture due to pressure.

SECTION V -- HEALTH HAZARD DATA

Effects of Overexposure Acute: Skin sensitization and dermatitis in sensitive persons.
Chronic: Skin sensitization and dermatitis in sensitive persons.
Medical Condition Prone to Aggravation by Exposure: None known
Hazardous Chemicals Listed as Carcinogens or Potential Carcinogens: **YES ____ IARC YES ____ OSHA YES _____**
National Toxicology Program: **NO X Monographs: NO X**
Primary Route(s) of Entry: **X Dermal X Inhalation ____ Ingestion**
Emergency and First Aid Procedures
1. Eye Contact: Flush 15 minutes with a gentle stream of water. Seek medical attention if irritation of redness persists.
2. Skin Contact: Remove contaminated clothing. Wash skin with soap and water

3. Inhalation: No first aid is normally required. However, seek medical advice if any unusual symptoms develop.

4. Ingestion: Drink one or two glasses of water to dilute. **DO NOT** induce vomiting. Seek medical attention immediately.

SECTION VI -- REACTIVITY DATA

Stability: ___ **Unstable** X **Stable**
Hazardous Polymerization: ___**May Occur** X **Will Not Occur**
Incompatibility: (materials to avoid) Strong oxidizing agents. Strong reducing agents.
Hazardous Decomposition Products: By fire: CO_2, CO
Conditions to Avoid: Excessive heat or cold

SECTION VII -- SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled
Flush spilled material into suitable retaining areas or containers with water. Small amount may be absorbed onto sand or diatomaceous earth and containerized. Prevent liquid from entering sewers, storm drains or other unauthorized treatment drainage systems or natural waterways.
Waste Disposal Method
Follow practice for disposal in accordance with Federal, State and Local regulations.

SECTION VIII -- SPECIAL PROTECTION INFORMATION

Respirator Protection:
None normally required if used with adequate ventilation.
Ventilation:
General mechanical exhaust ventilation is recommended in confined areas.
Protective Gloves:
Rubber gloves are recommended to prevent skin contact and possible subsequent irritation.
Eye Protection
Chemical safety goggles are recommended to safeguard against potential eye contact, irritation, or injury.
Other Protective Equipment: Provide eye bath and safety shower
Hygienic Practices:
Prudent hygienic practices, such as washing after handling, are always recommended.
Wash saturated clothing before re-use.

SECTION IX -- SPECIAL PRECAUTIONS

Precautions To Be Taken For Handling And Storing:
Store in dry areas above 40 ^{o}F and below 80^{o}F, and away from sources of ignition. Keep containers closed when not in use.

Other Precautions:
Keep out of the reach of children! For industrial use only! Use with adequate ventilation! Harmful if swallowed! Avoid contact with eyes and skin! Do not allow to freeze!

SECTION X -- EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372.

CAS NUMBER	CHEMICAL NAME	PERCENT BY WEIGHT
n/a	none	0

Sourcing Of Materials Referred To In This Document:

Manufacturer	Phone	Fax	Materials/Equipment
Ardex Engineered Cements, Inc. 400 Ardex Park Drive Aliquippa, PA 15001	724-203-5000	724-203-5001	Ardex (R) K-15, Featheredge
Tek Stil Concepts, Inc.	856/428-4464 800/603-0848	856-429-6532	Euro-flex™ , euro-flex™ High Traction Unifloor(R) Vinyl Softcolor Remp Sport Vinyl Safefloor Guard High Traction ESD Conductive Unifloor(R) and ESD conductive euro-flex™ Weld Rod
Leister see Tek Stil Concepts	856/428-4464 800/603-0848	856-429-6532	Triac(R), Universal Automatic Hot air Welders, Nozzles Fraesrex(R) Routers
see Tek Stil Concepts	856-428-4464 800-603-0848	856-429-6532	Taski(R) R-20; R-50, Traction Plus cleaner
Siga see Tek Stil Concepts	856-428-4464 800-603-0848	856-429-6532	Sigaway(R) Original Sigaway(R) Electronic Siga Contact(R) Siga Construction Tape Siga Circuit(R) Siga Copper Tape TSC Promont
Tek Stil Concepts, Inc., P.O. Box 67 Haddonfield NJ 08033	856-428-4464 800-603-0848	856-429-6532	Adhesive TSC 100; TSC 200 acrylic adhesives for vinyl flooring CM (Calcium Carbide) Test Kit Leister Tools Sigaway® Original; Sigaway® Electronic, Siga Circuit Dry Self-Adhesives, TSC Promont. Siga Copper Tape