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FOREWORD

The finest floor covering made will not look good nor perform well if it is not installed properly. In the flooring industry, 97%-98% of all complaints are installation, subfloor or maintenance related.

The first step to a successful installation is choosing the right floor covering for the particular application. No one flooring is right for every application. If you have any doubt as to the suitability of a product, check with the manufacturer.

With today's technology, flooring products, subfloor preparation products, adhesives and installation techniques change at a rapid pace. It is the responsibility of the installer to assure that the products are installed in strict adherence to the manufacturer's recommendation.

This installation manual is just one of the many technical support services provided by Forbo Linoleum. Do not install any floor covering product until you are fully educated and familiar with its installation procedures and that the subfloor and job conditions have been met.

IMPORTANT!
The procedures described in this manual have been carefully developed to offer the best possible situations for a proper and successful installation with Forbo's flooring products. Following these guidelines will offer the consumer the full value of the manufacturer's warranty. Any deviation from these instructions may result in an installation failure, which is not related to a manufacturing defect. Failing to follow these guidelines does not relate to the manufacturer's limited five year warranty, it only increases the chance of an installation failure.

PROFESSIONALISM AND ATTITUDE

"Professionalism" is not merely possessing mechanical skills and knowledge it is also an attitude. Having the right attitude and conducting yourself in a professional manner at all times is essential to gaining the respect of all those you come into contact with. Above all else, taking pride in your work is the key to successful installations.

Take the time to review the manufacturer's installation guidelines. If you ever have any doubts, do not proceed with the installation. Call your local supplier for further information. The liability of the installation rests solely with the installer and flooring contractor. The warranty from the manufacturer covers only the product, and is in no way contingent upon installation and maintenance practices.

PROFESSIONALISM AND EDUCATION

The flooring industry is continually changing. In order to remain successful, those working in the industry must also change. Education is the key to this change.

The Forbo Master Mechanic course is a benchmark for advanced installation training. In addition to being dedicated to offering the resilient flooring installer the most comprehensive and professional installation training courses in the industry, Forbo Linoleum also offers an array of other educational opportunities such as product presentations, supplier training seminars , and dealer installation clinics for flooring products, Moisture Limitor, and BBC.

Forbo Linoleum installation training courses are PASS/FAIL. In order to qualify for a certificate, the installer must successfully and satisfactorily complete the installation tasks, have a thorough knowledge of the information presented throughout the course, and most importantly, demonstrate a professional attitude.

Upon successful completion of the course, the installer will receive a certificate suitable for framing, a laminated wallet card to carry, and a patch that can be sewn on a shirt, jacket, etc. Qualified installers are maintained in a database utilized for referrals throughout North America.

ASSOCIATE MECHANIC PROGRAM

Forbo Linoleum ASSOCIATE MECHANIC installation training covers a range of topics and techniques including:

- subfloor evaluation and preparation
- product knowledge
- tools
- fitting methods
- Marmoleum installation
- seaming
- repairs
- heatwelding
- maintenance
- PROFESSIONALISM

This training is designed for experienced resilient flooring installers who desire to improve their level of knowledge and skill.

MASTER MECHANIC PROGRAM

Forbo Linoleum "MASTER MECHANIC" installation training is tailored for the Forbo Associate Mechanic who desires to reach the highest level in his trade. This intensive and rewarding course covers a range of advanced installation topics and techniques including:

- wall installations
- accent heat welding
- specialty tools
- flash coving
- heatwelding flashcove seams and corners
- inset and design installations
- PROFESSIONALISM

TRAINING CENTERS

Associate and Master Mechanic installation training is offered at Forbo Linoleum technical training centers in the following locations:

Hazleton, PA
South San Francisco, CA
Dallas, TX
Toronto Canada

Forbo Linoleum will provide all meals, hotel accommodations and transportation to/from our facilities and the Wilkes Barre/Scranton airport for our Pennsylvania center; San Francisco airport for our California center; DFW Airport or Love Field for our Texas center; and Toronto International for our Toronto center.

If you are a professional and desire to enhance your skills and knowledge, contact your local Forbo supplier or Forbo Linoleum for course dates and an application form.

Forbo Linoleum
Technical Support Services
P.O. Box 667
Hazleton, PA 18201
Email: info@fL-NA.com
Website: www.forboLinoleumNA.com
Tel: (570) 459-0771
Fax: (570) 450-0318
Toll Free: 800-842-7839

DESCRIPTION OF FORBO LINOLEUM PRODUCT RANGE

Forbo Linoleum flooring products are divided into two categories: linoleum and vinyls.

LINOLEUM FLOORING

Marmoleum and Artoleum from Forbo Linoleum is made from primarily natural ingredients which consist of oxidized linseed oil, rosins, cork and/or wood flour, all of which are calendered onto a carrier sheet. Depending on the calendering method used and the composition, various types of linoleum can be manufactured.

Artoleum (Scala, Piazza, Graphic, Sierra) is calendered onto a jute back. Available in rolls 79" (2 meters) wide, up to a length of 105' (32 meters) and in a thickness of 1/10"(2.5mm).

Marbleized Linoleum (Marmoleum Real, Marmoleum Fresco, Marmoleum Dual, Marmoleum Vivace) is calendered onto a jute back. Available in rolls 79" (2 meters) wide, up to a length of 105' (32 meters) and in a thickness of 1/10" (2.5mm).
Application: school, nursing home, hospital, retail shop, office, hotel, bank, prison.

Linoleum Tile (Marmoleum Dual) is a marbleized linoleum calendered onto a dimensionally stable polyester webbing. Available in tiles 20" x 20" approximately (50cm x 50cm) and a thickness of 1/10" (2.5mm).
Application: school, nursing home, restaurant, hospital, bank, retail shop.

Plain Linoleum (Walton) is an unpatterned, solid colored linoleum calendered onto a jute back. Available in rolls 79" (2 meters) wide, up to a length of 105' (32 meters) and in thickness of 1/10" (2.5mm).
Application: dance floor, television studio, museum, art gallery, as well as inlay and accent work.

VINYL FLOORING

Forbo manufactures several types of vinyl floor covering which vary in manufacturing processes and ingredients. The primary composition is polyvinylchloride resins, plasticizers, stabilizers, fillers and pigments.

TractionStep is a high quality, durable sheet vinyl. It is produced with translucent vinyl chips and fine carborundum chips embedded throughout the wear surface which increase friction when pressure depresses the vinyl. TractionStep is also static dissipative with an ohms resistance of $1x10^6$ to $<10^9$ STG. Available in rolls 79" (2 meters) wide, lengths of 82' (25 meters) and in a thickness of .080" (2.0mm).
Application: locker room, food service, bakery, corridor, scrub area, static dissipative areas.

TractionStep Slip-Resistant (Smooth & Studded) is the "slip-resistant" quality of the Step products. TractionStep Slip-Resistant has a special embossing with many more and larger carborundum chips in the wear surface. Available in sheets 79" (2 meters) wide, lengths 82' (25 meters) and in a thickness of 0.080" (2mm).
Application: indoor ramp, wet areas, hydrotherapy, entry, produce area, commercial kitchens.

Smaragd Classic and Marble is designed for the toughest of applications. Smaragd's wear surface is 99.3% pure vinyl to give extreme stain and chemical resistance, ease of maintenance, and indentation resistance unsurpassed. Available in sheets 79" (2 meters) wide, lengths of 82' (25 meters) and in a thickness of 0.080" (2mm).
Application: operating room, veterinary clinic, health care, research center, lab.

Colorex (EC & SD) is a homogeneous, pressed vinyl conductive/dissipative tile. The random burled pattern is the result of conductive elements precisely dispersed throughout, so the tiles will maintain their electrical resistance for life. Available in tile 24" x 24" (61cm x 61cm) and in a thickness of 0.080" (2mm).
Application: computer room, production area for computerchip, electronic and laser equipment, laboratory, clean room, access panels.

APPLICATION CHART

Forbo floor covering products are recommended for interior applications only.

CHART KEY

- ••• Best Choice/Excellent Performance
- •• Very Good Performance
- • Acceptable

AREA OF APPLICATION	ARTOLEUM® MARMOLEUM®	MARMOLEUM® DUAL TILE	SMARAGD®	TRACTIONSTEP®	New! TRACTIONSTEP® SLIP-RESISTANT SMOOTH & STUDDED	New! COLOREX® EC/SD	BULLETIN BOARD
BANKS/OFFICES							
Elevator	••	••	•	•	•	•	
Elevator Lobby	•••	•••	••	••		•••	
Hallway/Corridor	•••	•••	••	••		•••	
Locker Room/Shower Area	•	•	•	•	•••		
Office/Conference Room	•••	•••	••	••		••	
Public Area/Lobby	•••	•••	••	••		••	
Ramps (indoor)					•••		
Restrooms	••	••	••	••	••	•	
Tackable Wall Surface/Partitions							•••
Vaults		•••				•••	
Vending Area/Lunchroom	•••	•••	•••	•••		•••	
COMPUTER ROOMS							
Computer Room Areas	••	••				•••	
Raised Floors/Access Panels						•••	
Tackable Wall Surface/Partitions							•••
EDUCATIONAL/INSTITUTIONAL							
Cafeteria/Dining Room	•••	•••	•••	•••		•••	
Classroom/Hallway/Corridor	•••	•••	••	••		••	
Dormitory (rooms or hallways)	•••	•••	••	••		••	
Gymnasium/Multi-Purpose Room	••	••	•	•		•	•••
Jails/Prisons	•••	•••	••	••		••	
Kitchen/Food Prep					••		
Laboratory	••	••	•••	••		•••	
Locker Room				•••	•••		
Ramps (indoor)					•••		
Tackable Wall Surface/Partitions							•••
HEALTH CARE							
Elevator Lobby	•••	•••	••	••		•••	
Emergency Room	••	••	•••	•••		•••	
Exam/Procedure Room	••	••	•••	•••		•••	
Hallway/Corridor	•••	•••	••	••		•••	
Hydrotherapy Room					•••		
Offices/Public Areas	•••	•••	••	••		••	
Patient Room	•••	•••	•••	••		•••	
Pharmacy	•••	•••	•••	••		•••	
Physical Therapy Room	•••	•••	•••	•••		••	
Ramps (indoor)					•••		
Surgery/Scrub Area/Lab			•••	••	••	••	
Utility Room/Service Area	••	••	•••	••	••	••	
Tackable Wall Surface/Partitions							•••
HOSPITALITY/RESTAURANT							
Eating Area	•••	•••	•••	••		••	
Exercise Room	••	••	••	••		••	
Ramps (indoor)/Balconies					•••		
Stage/Dance Floor	•••	•••					
Tackable Wall Surface/Partitions							•••
INDUSTRIAL							
Clean Room/Sterile Packaging			•••	••		•••	
Conductive/Static Dissipative				••		•••	
Pharmaceutical				•••			
Raised Floors/Access Panels	•••	••	••	••		•••	
Research/Production Lab	•	•	•••	••	•	•••	
Small Parts Assembly	••	••	••	••	•	•••	
Warehouse/Manufacturing Area	••	••	••	••	••	•••	
Tackable Wall Surface/Partitions							•••
MILITARY							
Barracks/Housing	•••	•••	••	••	••	••	
Shipboard	•••	•••	••	••	••	••	
SUPERMARKET/RETAIL							
Boutique/Specialty Shop	•••	•••	••	••		•••	
Deli/Bakery	••	••	•	••	•••	•••	
Elevator Lobby	•••	•••	••	••		•••	
Frozen Food/Dairy/Produce				••	•••	••	
Sales Floor/Aisles	•••	•••	•	•		•••	
Tackable Wall Surface/Partitions							•••
VETERINARY CLINIC/HOSPITAL							
Exam/Procedure/Surgery Room	••	••	•••	•••	•	•••	
Kennel Area	•••	•••	•••	•••	•••	•••	
Tackable Wall Surface/Partitions							•••

No one floor covering is suitable for every type of application. When selecting a floor covering for a particular application, several things should be taken into consideration, such as safety, type and frequency of maintenance (that must be or can be used), stain resistance, color (light colors will show stain and soil faster), indentation resistance, chemical resistance, indoor air quality, hygienics, aesthetics, life cycle cost, etc. If you have any doubt as to the suitability of a product for an application, check with the manufacturer.

Forbo Linoleum, Inc., Humboldt Industrial Park, P.O. Box 667, Hazleton, PA 18201 • 570-459-0771 / 1-800-842-7839
Fax: 570-450-0258 • www.forboLinoleumNA.com • Email: info@fL-NA.com

8-01/MDW/2M

ARTOLEUM®

FAST FACTS

SCALA, GRAPHIC, PIAZZA, SIERRA

RANGE: 57 Colors

GAUGE: 2.5mm (1/10")

WIDTH: 79" (2 meters)

LENGTH: 105' (32 meters)

APPLICATION: On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Acclimate material to jobsite conditions a minimum of 24 hrs. prior to installation
- Use Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive for flat installation and when coving material
- Use 1/16" square notch trowel
- Lay material into wet adhesive
- Roll with 100 lb. roller
- Underscribe seams and cut on a bevel; refer to seaming procedures
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Do not reverse sheets for seaming
- Install one sheet at a time
- Install cuts and rolls in consecutive order
- Flat trowel material (as to double stick) and weigh down stove bar marks
- Heat welding optional; but recommended. Use Artoweld welding rod only.
- Do not chemical weld
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

MARMOLEUM®

FAST FACTS

REAL, FRESCO & VIVACE

RANGE: 68 Colors - (36) Real, (24) Fresco, (8) Vivace

GAUGE: 2.5mm (1/10")

WIDTH: 79" (2 meters)

LENGTH: 105' (32 meters)

APPLICATION: On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Acclimate material to jobsite conditions a minimum of 24 hrs. prior to installation
- Use Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive for flat installation and when coving material
- Use 1/16" square notch trowel
- Lay material into wet adhesive
- Roll with 100 lb. roller
- Underscribe seams and cut on a bevel; refer to seaming procedures
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Do not reverse sheets for seaming
- Install one sheet at a time
- Install cuts and rolls in consecutive order
- Flat trowel material (as to double stick) and weigh down stove bar marks.
- Heat welding optional; but recommended. Use Marmoweld welding rod only.
- Do not chemical weld
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

MARMOLEUM® DUAL SHEET

FAST FACTS

DUAL SHEET

RANGE: 24 Colors

GAUGE: 2.5mm (1/10")

WIDTH: 79" (2 meters)

LENGTH: 89' (27 meters)

APPLICATION: On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Acclimate material to jobsite conditions a minimum of 24 hrs. prior to installation
- Use Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive for flat installation and when coving material
- Use 1/16" square notch trowel
- Lay material into wet adhesive
- Roll with 100 lb. roller
- Underscribe seams and cut on a bevel; refer to seaming procedures
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Do not reverse sheets for seaming
- Install one sheet at a time
- Install cuts and rolls in consecutive order
- Flat trowel material (as to double stick) and weigh down stove bar marks
- Heat welding optional; but recommended. Use Marmoweld welding rod only.
- Do not chemical weld
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

MARMOLEUM® DUAL TILE

FAST FACTS

DUAL TILE

RANGE: 31 Colors

GAUGE: 2.5mm (1/10")

TILE SIZE: 20" X 20" approximately (50 cm x 50 cm)
13" X 13" approximately (33 cm x 33 cm)

APPLICATION: On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Acclimate material to jobsite conditions a minimum of 24 hrs. prior to installation
- Use Forbo Linoleum T940 (US) or Forbo 414 (Canada) adhesive
- Use 1/16" square notch trowel
- Lay material into wet adhesive
- Roll with 100 lb. roller
- Install tile in alternating directions
- Install cartons in consecutive order
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Heat welding optional; but recommended. Use Marmoweld welding rod only.
- Do not chemical weld
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

W A L T O N

F A S T F A C T S

WALTON

RANGE:	12 Colors (Solid) 4 Colors (Textured--Fizz) 4 Colors (Textured--Wave)
GAUGE:	2.5mm (1/10")
WIDTH:	79" (2 meters)
LENGTH:	105' (32 meters)
APPLICATION:	On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Acclimate material to jobsite conditions a minimum of 24 hrs. prior to installation
- Use Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive for flat installation and when coving material
- Use 1/16" square notch trowel
- Lay material into wet adhesive
- Roll with 100 lb. roller
- Underscribe seams and cut on a bevel; refer to seaming procedures
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Do not reverse sheets for seaming
- Install one sheet at a time
- Install cuts and rolls in consecutive order
- Flat trowel material (as to double stick) and weigh down stove bar marks
- Heat welding optional; but recommended. Use Marmoweld welding rod only.
- Do not chemical weld
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

S M A R A G D

F A S T F A C T S

CLASSIC, MARBLE

RANGE: 20 Colors--(12) Classic, (8) Marble

GAUGE: 2.0mm (.080")

WIDTH: 79" (2 meters)

LENGTH: 82' (25 meters)

APPLICATION: On, Above and Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Use Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive
- Use 1/32" x 1/16" x 1/32" fine notch trowel
- Lay material into adhesive and roll with 100 lb. roller - For non-porous subfloors, allow the adhesive to flash off, but not dry; for porous subfloors, material may be laid into wet adhesive
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Reverse sheets for seaming
- Install cuts and rolls in consecutive order
- Heat welding is always recommended for all Forbo sheet vinyls - Use Forbo Vinylweld welding rod only
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Double stick vertical surfaces, allow adhesive to flash off, but not dry, on both surfaces before installing material
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

TRACTIONSTEP

FAST FACTS

TRACTIONSTEP

RANGE: 25 Colors

GAUGE: 2.0mm (0.080")

WIDTH: 79" (2 meters)

LENGTH: 82' (25 meters)

APPLICATION: On, Above and Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Use Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive. For wet room areas or heavy rolling load traffic, use Forbo 660 (for both US and Canada).
- Use 1/32" x 1/16" x 1/32" fine notch trowel
- Lay material into adhesive and roll with 100 lb. roller - For non-porous subfloors, allow the adhesive to flash off, but not dry; for porous subfloors, material may be laid into wet adhesive
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Reverse sheets for seaming
- Install cuts and rolls in consecutive order
- Heat welding is always recommended for all Forbo sheet vinyls - Use Forbo Vinylweld welding rod only
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Double stick vertical surfaces, allow adhesive to flash off, but not dry, on both surfaces before installing material
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

TRACTIONSTEP SLIP RESISTANT

F A S T F A C T S

TRACTIONSTEP SLIP RESISTANT

RANGE: 8 Colors (Smooth & Studded Profiles)

GAUGE: 2.0mm (.080")

WIDTH: 79" (2 meters)

LENGTH: 82' (25 meters)

APPLICATION: On, Above and Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Use Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive. For ramps and wet room areas, use Forbo 660 (for both US and Canada).
- Use 1/32" x 1/16" x 1/32" fine notch trowel
- Lay material into adhesive and roll with 100 lb. roller - For non-porous subfloors, allow the adhesive to flash off, but not dry; for porous subfloors, material may be laid into wet adhesive
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Reverse sheets for seaming
- Install cuts and rolls in consecutive order
- Heat welding is always recommended for all Forbo sheet vinyls - Use Forbo Vinylweld welding rod only
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Double stick vertical surfaces, allow adhesive to flash off, but not dry, on both surfaces before installing material
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

C O L O R E X T I L E

F A S T F A C T S

COLOREX TILE

RANGE: 26 Colors – SD
10 Colors – EC

GAUGE: 2.0mm (.080")

SIZE: 24" x 24" (61cm x 61cm)

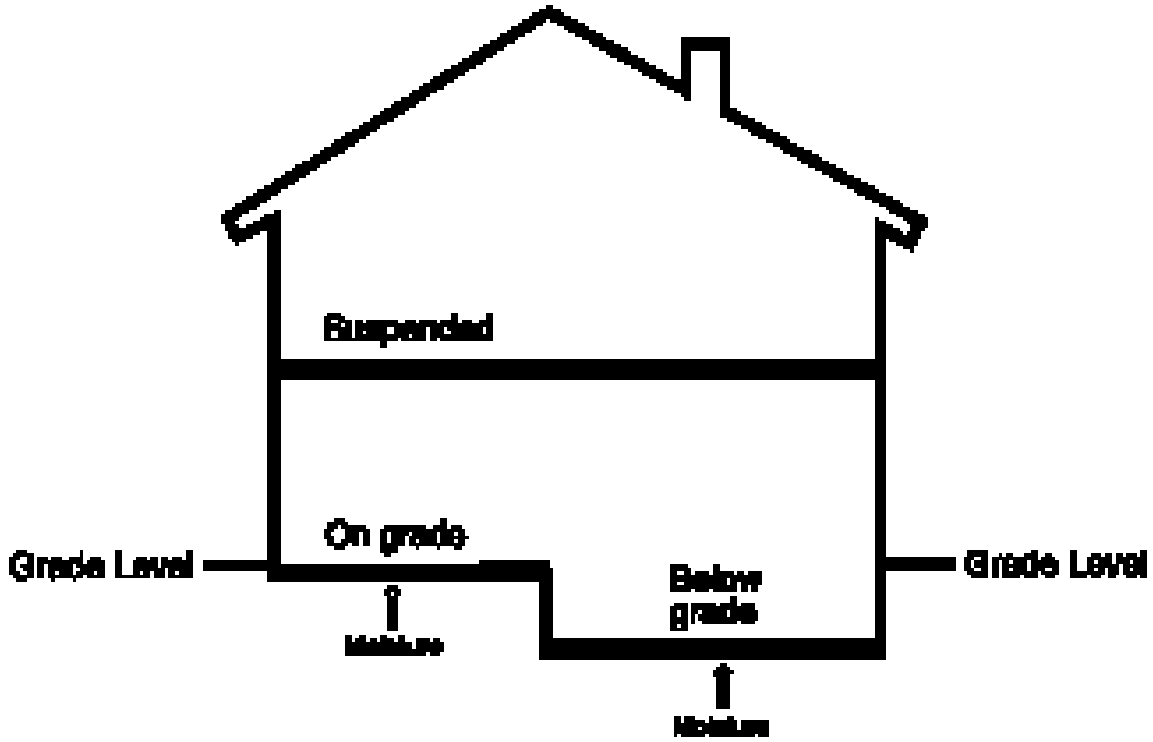
CARTON: 14 tiles (56.07 sq. ft.)

APPLICATION: On, Above, Below Grade

FAST FACTS

- The permanent HVAC must be on and set at a minimum of 68° F (20° C)
- Use Forbo Linoleum C930 Conductive (US) or Forbo 545EL (Canada) adhesive only. For non-conductive installations, use Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive.
- Use 1/16" square notch trowel
- On non-conductive substrates (such as wooden, non-porous substrates with bonding problems or existing resilient flooring) use 041 SC Primer
- Lay material into wet adhesive for porous subfloors. For non-porous subfloors allow adhesive to flash off, however, when trowel notch is depressed wet adhesive must be evident.
- Roll with 100 lb. roller.
- Moisture emission not to exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs.(US) or 3.0 lbs per 1000 sq. ft. in 24 hrs (Canada) as tested with a calcium chloride test kit (for moisture emission that exceeds these requirements please request information on Forbo Linoleum Moisture Limitor)
- A pH test should be conducted and should not exceed a pH of 10
- Always conduct an adhesive mat bond test, this will aid in determining the proper working time of the adhesive
- Use only portland base patching compounds and leveling compounds
- Install cartons in consecutive order
- Install tiles in same direction
- Heat welding is optional - Use Forbo Vinylweld welding rod
- Flash coving optional
- Install minimum of one 3-foot grounding strap for every 2000 sq. ft. of flooring
- Do not install over gypsum-based patches or leveling compounds
- Do not install on wood subfloors built on sleepers over concrete, on grade or below grade
- Double stick vertical surfaces, allow adhesive to flash off on both surfaces before installing material
- Refer to Installation Manual for complete instructions
- Prevent heavy rolling loads and traffic for 72 hours
- It is recommended to wait at least 5 days prior to conducting initial maintenance, to allow curing of adhesive

SUBFLOORS



No floor covering is better than the subfloor over which it is installed. The finished appearance and performance of the floor covering will be determined and affected,in part,by the condition of the subfloor. It is essential that all subfloors be rigid,finished smooth,flat,level, permanently dry, clean and free of all foreign materials such as dust,paint, grease,oils,solvents,curing and hardening compounds,sealers,asphalt and old adhesive residue. Subfloor preparation should be done with the permanent HVAC set at a minimum of 68° F (20° C).

Vacuuming the subfloor with a commercial shop vac is a preferred method of removing dirt and dust. For concrete floors,damp mopping the subfloor is an excellent way to remove fine dust. A clean subfloor ensures proper bond between the subfloor and the floor covering.

Wherever trade names,trademarks,product names,or company names are mentioned; they are used only as a reference to establish a comparative standard of quality. It should not be assumed that these products are the only products for the suggested or intended.use Also, it does not mean that other products of similar or equal quality may not be suitable.

GRADE LEVELS

1.On Grade – A location for a finished floor with no portion below ground level,and with the floor and the ground in contact or separated by less than 18 inches of well-ventilated space between the bottom of the lowest horizontal structural member and the ground at any point.

2. Above Grade – A location for a finished floor where the floor is not in contact with the ground and which provides at least 18 inches of well-ventilated space between the bottom of the lowest horizontal structural member and the ground at any point.

3. Below Grade – A location for a floor structure which is in contact with the ground or with less than 18 inches of well-ventilated space between the bottom of the lowest horizontal structural member and the ground, at any point and if part or all of the floor is below ground level.

DEFINITIONS

1.Subfloor –That structural layer intended to provide support for design loadings. The substrate for the underlayment.

2. Underlayment – The layer of material installed on or over the subfloor to provide a smooth, clean surface to receive the resilient floor covering.

3. Subfloor–underlayment combination – Designed to meet the structural requirements and provide a smooth surface to receive the floor covering.

• **Note:** Subfloor-underlayment combinations are usually only sufficient for textile type floor coverings. For resilient floor coverings,underlayment should be installed.

(For further information you may refer to ASTM F141)

WOODEN SUBFLOORS (Refer to ASTM F1482)

Wood floors should be double construction with a minimum thickness of 1". **The floor must be rigid,free from movement and have at least 18" of well-ventilated air space below.** Forbo floor coverings should not be installed over wooden subfloors built on sleepers over, on grade,or below grade concrete floors without being fully aware of the high rates of failure due to the excessive moisture vapor emissions from the concrete. Architects understanding these causes of failures have been able to create successful designs to minimize the chances of failure when a decision is made to install floor covering over sleeper construction.

Underlayments

Underlayment panels are used to correct deficiencies in the subfloor and to provide a smooth,sound surface on which to adhere the resilient flooring.

APA Underlayment Grade plywood,minimum 1/4" thickness, with fully sanded face is the preferred panel. The underlayment must be free of any foreign material that may cause staining,such as patching compounds,sealers, inks,solvents, etc.

The underlayment should be installed with dispersion type staples placed every 4 to 6 inches in the field and every 2 to 3 inches along the seams. Sanding is a preferred method for smoothing joints.

The American Plywood Association offers other acceptable guidelines for proper wooden subfloor installation. The above mentioned is not considered the only procedure for a successful installation.

Other types of underlayment panels such as Tecply, Multiply and Masonite Brand Underlayment have been used with success. **Always install and fasten underlayment panels according to the manufacturers' recommendations.**

There are certain types of subfloors and underlayment that through years of experience are known to be prone to failure and are therefore **NOT** recommended.

Particle board/chip board,tempered hardboard are not suitable to install Forbo floor coverings over.

Lauan board is not considered a suitable underlayment to install Forbo floor coverings over. In some cases permanent staining to resilient flooring has occurred from chemicals used in the construction of Lauan board. This is also true when using pressure treated or fire retardant wood.

Regardless of which underlayment is used,any failures in the performance of the underlayment or Forbo floor coverings due to the underlayment is the responsibility of the underlayment manufacturer and not with Forbo.

Strip Wood/Plank Flooring

Due to expansion and contraction of the boards during seasonal changes, Forbo recommends the use of 1/4" or thicker underlayment panels be installed over these types of floors.

NOTE: The use of a skim coat of patching material over wooden subfloors may cause more problems than it resolves especially in the joint areas. The moisture from the patch is absorbed by the wood, swelling the wood fibers and causing telegraphing through the newly installed floor covering. Proper installation of a wooden subfloor is critical to the successful installation of resilient flooring.

Installation of wooden subfloors should be given the same attention as far as job site conditions as when installing Forbo floor coverings.

CONCRETE FLOORS (Refer to ASTM F710-98)

Floors shall be smooth,rigid,flat,level,permanently dry, clean and free of all foreign material such as dust,paint, grease,oils, solvents,curing and hardening compounds,sealers,bond breakers,asphalt and old adhesive residue.

Concrete shall have a minimum compressive strength of 3500 psi/150 pounds per cubic feet.

Imperfections such as chips,spalls,cracks and/or corrective leveling shall be performed with Portland cement based patching and/or underlayment materials. Expansion joints in the concrete are designed to allow for the expansion and contraction of the concrete. If the floor coverings are installed over the expansion joints,it more than likely will cause adhesive bond failure and bubbling or buckling of the flooring material. Therefore, Forbo recommends that the flooring products not be installed over expansion joints,and that expansion joint covers designed for use with resilient floorings be used.

Isolation,construction and control (sawcuts) joints may be successfully patched. However, movement from the concrete may also cause the patching material to telegraph. Having the permanent HVAC system on and set at a minimum of 68°F (20°C) 72 hours prior to an y floor work,will dramatically reduce the chances of concrete movement after the floor prep and material installation has been completed.

Telegraphing of patched joints and subfloor imperfections may often be accentuated if the flooring material is maintained with a high gloss finish.

It may be difficult to determine if any curing or hardening compounds and/or sealers have been used. Therefore an adhesive bond test should be conducted (and passed) prior to beginning the installation.

Patching Materials

There are many brands available but basically there are two types of patching materials for the use of smoothing and patching subfloor irregularities.

One type is referred to as **calcium sulfate/ plaster/ gypsum** base compounds. These type patches may harbor and promote mildew growth, have low indentation resistance and poor bond and adhesion strength. The use of these compounds **is not recommended** by Forbo Linoleum.

The second type is a **portland cement compound** usually with a latex liquid binder. This type will not promote mildew growth, has a much higher psi strength and better adhesion properties to the subfloor. Forbo Linoleum recommends **only** the use of portland base patching and leveling compounds. There are dozens of portland base patching compounds on the market, and their quality and performance may vary greatly. **Only use the highest quality materials.**

Regardless of which patching or leveling compound is used, any failures in the performance of the compound or Forbo floor coverings due to the compound is the responsibility of the compound manufacturer and not with Forbo.

Many failures have been directly attributed to the use of gypsum based toppings,leveling and patching compounds because of poor indentation resistance,poor resistance to mold and mildew and separation of the product within itself.

NOTE: If it is necessary to use gypsum based leveling compounds for acoustical benefits it is Forbo's recommendation that the consumer require a letter of warranty and liability from manufacturers of the materials being used as well as from those installing the materials. This will at least offer some assurance to the consumer should a failure occur when using these types of underlayments and patching compounds.

Always test the bond strength of your patching compound,lesser quality patching compounds have a tendency of bonding problems.

OLD ADHESIVE RESIDUE

If a residue of asphaltic (cut-back) or other type of adhesive is present, it must be dealt with in one of 3 ways:

1. It may be mechanically removed such as: bead blasting or scarifying.

2. A self-leveling cementitious underlayment may be applied over it. Check with the underlayment manufacturer for suitability, application instructions and warranties.

3. Forbo Linoleum Moisture Limitor may also be used as a primer over old adhesive residue (refer to Moisture Limitor guidelines for complete instructions).

WARNING!

Warning Regarding Complete Adhesive Removal: Some Solvent Based "Cut-Back" Asphaltic Adhesives May Contain Asbestos Fibers That Are Not Readily Identifiable. Do Not Use Power Devices Which Create Asbestos Dust in Removing These Adhesives.The Inhalation of Asbestos Dust May Cause Asbestosis or Other Serious Bodily Harm. Smoking Greatly Increases the Risk of Serious Bodily Harm.

• Never use solvents or citrus adhesive removers to remove old adhesive residue.Residue left within the subfloor will affect the new adhesive and new floor covering. Conducting a pH test and bond test prior to the installation will help identify the use of these materials.

Existing Resilient Floors

Most Forbo floor covering may be installed over a single layer of non-cushioned resilient flooring provided it meets certain conditions.

1. Concrete floors that are on,above and below grade – one calcium chloride moisture test (minimum of 3) should be conducted for every 1000 sq.ft.of flooring.The test results should not exceed the requirements of the product to be installed.The existing flooring and adhesive must be removed where the test is conducted.(ASTM F1869-98)

2. The existing flooring must be fully adhered and well bonded.

3. The existing flooring must not be embossed or textured enough that it will telegraph through the new flooring.

4. All waxes and finishes must be removed and rinsed with clean water and a pH test should be conducted to assure stripper residues have been removed. Also conduct an adhesive bond test to ensure proper bond between the adhesive and the existing flooring material.

5. Cuts,gouges,dents and other irregularities must be repaired or replaced.

6. The substrate and underlayment must meet the recommendations of the existing and the new floor covering.

7. The use of embossing levelers is not recommended for commercial installations.

NOTE: Application of a skim coat of patching material over the existing resilient flooring may cause more problems than it resolves; such as bonding failures,cracking and indentations.

NOTE: The responsibility of determining if the existing flooring is suitable to be installed over rests solely with the installer and flooring contractor. If there is any doubt as to its suitability, it should be removed or an acceptable underlayment installed over it.

Installations over existing resilient flooring may be more susceptible to indentation,and there is always a possibility the existing flooring may telegraph through. **Remember, you are no better than what you go over.**

POURED FLOORS (EPOXY, POLYMERIC,SEAMLESS)

Forbo floor coverings may be installed over most poured floors provided they meet the following conditions:

1. That one calcium chloride test is conducted for every 1000 sq. ft.of flooring (minimum of 3). The test results must not exceed the requirements of the product to be installed. There should be no history of moisture-related problems of the existing flooring. (ASTM F1869-98)

2. It must be totally cured and well bonded to the concrete. It must be free of any residual solvents and petroleum derivatives.

3. Loose,damaged areas and irregularities must be repaired with a portland base patching compound.

4. The texture must be smooth.Sand or wet stone the surface to remove any grit and texture.

5. All waxes and finishes must be removed and rinsed with clean water and a pH test should be conducted to assure stripper residues have been removed.

6. After area has been properly prepared,adhesive bond tests must be conducted (and passed) with the flooring and adhesive that will be used on the job. Remember the weakest link should always be the adhesive.

The responsibility of determining if the existing flooring is suitable to be installed over, rests solely with the installer and flooring contractor.

WARNING!

DO NOT SAND, DRY SWEEP, DRY SCRAPE,DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING,BACKING,LINING FELT OR ASPHALTIC "CUT-BACK" ADHESIVES. THESE PRODUCTS MAY CONTAIN EITHER ASBESTOS FIBERS OR CRYSTALLINE SILICA. AVOID CREATING DUST. INHALATION OF SUCH DUST IS A CANCER AND RESPIRATORY TRACT HAZARD. SMOKING BY INDIVIDUALS EXPOSED TO ASBESTOS FIBERS GREATLY INCREASES THE RISK OF SERIOUS BODILY HARM. UNLESS POSITIVELY CERTAIN THAT THE PRODUCT IS A NON-ASBESTOS CONTAINING MATERIAL, YOU MUST PRESUME IT CONTAINS ASBESTOS. REGULATIONS MAY REQUIRE THAT THE MATERIAL BE TESTED TO DETERMINE ASBESTOS CONTENT. THE RCFI'S *RECOMMENDED WORK PRACTICES FOR REMOVAL OF RESILIENT FLOOR COVERINGS* ARE A DEFINED SET OF INSTRUCTIONS WHICH SHOULD BE FOLLOWED IF YOU MUST REMOVE EXISTING RESILIENT FLOOR COVERING STRUCTURES.

Radiant Heated Floors

Forbo floor coverings may be installed over radiant heated floors provided the operating temperature does not exceed 85°F. To allow proper adhesion of the adhesive to the subfloor the radiant heating system should be lowered,or turned off for at least 48 hours prior to installation of the Forbo flooring material.This is to ensure the surface temperature of the subfloor does not exceed 65° F during the installation of the flooring material. The room temperature must be maintained at a minimum of 65° F prior to, during,and after installation for 72 hours after which the temperature of the radiant heating system can be increased.When raising the floor temperature,do so gradually so that the substrate and flooring material can adapt to the temperature change together. A rapid change could result in bonding problems. For more information, contact Forbo Linoleum Technical Services.

POROUS & NON-POROUS SURFACES

Adhesive Bond Test – In several locations throughout the area to receive the flooring,glue down 3' x 3' pieces of the flooring with the recommended adhesive.Bond tests give the installer the opportunity to evaluate the porosity of the subfloor and determine the correct timing for application of the flooring material. The floor should be smooth,dry and allowed to set for 72 hours before attempting to remove. It is also a good practice to place your bond test over some areas where a patching compound has been used in order to check the bond strength of the patching compound. When removing the test floor check for looseness around the edges of the material,moisture always takes the path of least resistance. A proper bond test will show no signs of moisture and it will restrict all movement of the material. When peeling back the material you should see proper transfer of adhesive between the subfloor, the adhesive and the flooring material. If there are any doubts as to the results of the bond test you should always call the distributor or the manufacturer.

Prior to the bond test check the concrete for its porosity. The easiest way to do this is by taking a straw or eye dropper of water, place a row of water drops on the surface of the concrete, if within 60 seconds the drops are not being absorbed into the concrete, then there is the possibility of curing compounds,sealers,bond breakers,or an over power troweled surface. The bond test should confirm these possibilities. In such situations, bead blasting or scarifying the subfloor may be necessary prior to installation.

Another alternative is the use of a priming agent. Primers can often be used for increasing bond strength when installing over nonporous subfloors. Primers can keep very porous subfloors from creating an adverse situation for the adhesive being used. (i.e.quickly absorb the moisture from the adhesive too fast, reduces working time,does not allow the adhesive to cure properly.) Check with the manufacturer of these products for proper application guidelines and warranties.

Non-porous substrates such as metal,terrazzo,ceramic tile, or marble can be installed over. However, the same guidelines as mentioned for installing over concrete or existing floor coverings should be followed. If you are installing Marmoleum Dual Tile you can give the adhesive a little more open time,but you must not let the adhesive get past a semi-wet stage. **A bond test is essential!**

NOTE: Remember the weakest link should always be the adhesive. If it takes sufficient force to remove the test flooring but all,or the majority of the adhesive is adhered to the back of the material,this would be considered unacceptable.

Moisture Test – It is essential that moisture tests be taken on **all** concrete floors regardless of the age or grade level with a minimum of three tests for the first 1000 square feet. The test should be conduced according to ASTM F1869-98.One test should be conducted for every 1000 sq.ft.of flooring.The test should be conducted around the perimeter of the room, at columns and where moisture may be evident.The moisture emission from the concrete shall not exceed 5.0 lbs. per 1000 sq.ft. in 24 hrs.(US) or 3.0 lbs.per 1000 sq. ft in 24 hrs.(Canada) for all Forbo floor coverings. If your results exceed these limits,please contact Forbo Linoleum Inc.for information regarding the use of Forbo Moisture Limitor for moisture emission up to 8.0 lbs per 1000 sq.ft.in 24 hrs. For the most accurate results, the weight of the calcium chloride dish should be made on the job site at the start and end of each test. A diagram of the area showing the location and results of each test should be submitted to the architect,general contractor or end user. If the test results exceed the limitations,the installation **should not** proceed until the problem has been corrected.

NOTE: If a moisture inhibitor or control product has been used, a moisture test should still be conducted. **As always,this may not be the floor installers responsibility to conduct the test. It is, however, the floor covering installer's responsibility to make sure these tests have been conducted with proper results prior to installing the floor covering.**

When moisture tests are conducted it indicates the conditions only at the time of the test.The flooring contractor cannot be held responsible if moisture appears in the future,causing a failure.

NOTE: When you are obtaining low calcium chloride test results,yet you feel that there are still signs of a moisture problem,you should then measure the relative humidity inside the concrete. The relative humidity at the center of the concrete slab should not exceed 80% R.H.

pH Test – It is essential that pH tests be taken on all concrete floors regardless of the age or grade level. During the curing process of concrete or when moisture is present and working its way through the concrete,it dissolves alkali salts that are contained in the concrete.When the moisture reaches the surface of the concrete it evaporates,leaving behind alkali salt residue on the surface.These alkali salts can and will cause several installation and material problems,such as adhesive failure, discoloration, shrinkage and softening of the floor covering.Therefore, pH tests should be conducted in several locations throughout the area.The best rule to follow is when you take up your calcium chloride test,conduct the pH test where you had placed your plastic dome. If the pH is greater than 10,it must be neutralized prior to beginning the installation. This can usually be achieved by sanding or bead blasting the concrete and vacuuming up the residue. Retest to assure the pH has been neutralized. There are also manufacturers of neutralizers, check with your local flooring supply store for such products.

JOB CONDITIONS

- The installation of the resilient flooring should not begin until the work of all other trades has been completed,especially overhead trades.
- Areas to receive flooring shall be clean,fully enclosed,weathertight with the permanent HVAC set at a uniform temperature of at least 68° F. The flooring material should be conditioned in the same manner. Maximum temperature should not exceed 100° F after installation.
- Areas to receive flooring shall be adequately lighted to allow for proper inspection of the substrate,installation and seaming of the flooring and for final inspection.

  NOTE: Conducting an adhesive bond test, moisture test and pH test prior to having a controlled environment may change drastically once a controlled environment is established, which could result in an installation failure due to created temperature inversions in the interior environment.

MATERIAL STORAGE AND HANDLING
INSPECTION OF MATERIAL

- Material should be delivered to the job site in its original unopened packaging with all labels intact.
- Store all rolls vertically, labels up, and ensure that the color, roll and batch numbers can be easily read.
- Linoleum tile boxes should be stacked no more than five cartons high.
- Material should be stored in areas that are fully enclosed,weathertight with the permanent HVAC system set at a uniform temperature of at least 68° F for 72 hrs. prior to,during and after installation.
- Material should always be stored and transported rolled face out on a heavy tube.
- Material should always be visually inspected prior to installation. **No labor cost will be covered on claims based on visual defects that could have been seen prior to installation.**

COLOR MATCHING

- When more than one roll of a color is being installed, all material should be from the same batch and the rolls must be installed in consecutive order. If material from more than one batch is to be used,the job should be laid out so that different batch numbers are not installed side by side.
- When installing linoleum products,all sheets must be installed running in the same direction.
- Dual tile has a directional pattern and should be installed in alternating directions (quarter turn every other tile)

ADDITIONAL INFORMATION

For more extensive guidelines and stances of the mentioned topics, Forbo Linoleum would encourage you to contact the following associations:
APA--American Plywood Association--253-565-6600
ACI--American Concrete Institute --248-848-3700
PCA--Portland Cement Association--800-868-6733
RFCI--Resilient Floor Covering Institute--301-340-8580
ASTM--American Society for Testing and Materials--610-832-9500

ADHESIVES

- Use only Forbo adhesives for the installation of Forbo floor coverings. Adhesives are formulated for specific products and applications. It is essential that all subfloors be rigid, finished smooth, flat, level, permanently dry, clean and free of all foreign materials such as dust, paint, grease, oils, solvents, curing and hardening compounds, sealers, asphalt and old adhesive residue.
- Apply adhesives with the flooring manufacturers' recommended notch trowel. Trowels are metering devices used to apply the proper amount of adhesive for the flooring product being installed. The use of an improper notch trowel can cause adhesion problems, telegraphing, indentation problems and inadequate working time, all resulting in installation failures.
- Both the open time and working time of the adhesive can be affected by temperature, humidity, subfloor type and porosity. **Open time** is the time required for the adhesive to flash-off before the floor covering can be laid into it. **Working time** is the amount of time you have after spreading the adhesive to lay the flooring into it for a successful bond.
- Always carefully read and follow the instructions on the adhesive label.
  NOTE: ANY BONDING CLAIM SUBMITTED TO FORBO LINOLEUM INVOLVING AN ALTERNATIVE ADHESIVE WILL BE REJECTED.

NOTE: Poor adhesive transfer is the major cause of installation and maintenance related problems. Rolling the floor covering properly with a minimum 100 pound roller directly after the material is laid into the adhesive is essential to a successful installation. Rolling again before leaving the job site each day will give even greater assurance for a successful installation.

INSTALLATIONS IN WET AREAS

- In installations where the adhesive may be subjected to water(NOT subfloor moisture), Forbo's 660 Polyurethane Adhesive must be used.
- Polyurethane adhesives have no initial tack, are sensitive to subfloor porosity, and set up and curing is directly affected by temperature and humidity. Installer skill and **professionalism** is important when working with these type adhesives.

DESCRIPTIONS (US Adhesives)

FORBO LINOLEUM L 910 ADHESIVE An SBR polymer adhesive used to adhere Marmoleum Real, Fresco, Vivace, and Walton on all grade levels of concrete and approved suspended wood floors. Forbo Linoleum L 910 is solvent free. A 1/16" x1/16" x 1/16" square notch trowel blade is included with each 4 gallon pail.

Available in one gallon and four gallon pails.
Trowel recommendation: 1/16" x 1/16" x 1/16" square notch.
Spread rate: Approximately 150 sq. ft. per gallon.

FORBO LINOLEUM T 940 ADHESIVE A modified acrylic polymer adhesive used to adhere Marmoleum Dual Tile on all grade levels of concrete and approved suspended wood floors. Forbo Linoleum T 940 is solvent free. A 1/16" x1/16" x 1/16" square notch trowel blade is included with each 4 gallon pail.

Available in one gallon and four gallon pails.
Trowel recommendation: 1/16" x1/16" x 1/16" square notch
Spread rate: Approximately 150 sq. ft. per gallon.

FORBO LINOLEUM V 920 ADHESIVE A modified acrylic polymer adhesive used to adhere TractionStep, Smaragd and Colorex (non-conductive installations), on all grade levels of concrete and approved suspended wood floors. Forbo Linoleum V 920 is solvent free. A 1/32" x 1/16" x 1/32" fine notch trowel blade is included with each 4 gallon pail.

Available in one gallon and four gallon pails.
Trowel recommendation: 1/32" x 1/16" x 1/32" fine notch
Spread rate: Approximately 200 sq. ft. per gallon.

FORBO LINOLEUM C 930 ADHESIVE Recommended for conductive/ESD installations of Colorex EC/SD, on all grade levels of concrete and approved suspended wood floors. Forbo Linoleum C 930 is solvent free. A 1/16" x 1/16" x 1/16" square notch trowel blade is included with each 4 gallon pail.

Available in one gallon and four gallon pails.
Trowel recommendation: 1/16" x1/16" x 1/16" square notch
Spread rate: Approximately 150 sq. ft. per gallon.

FORBO 660 POLYURETHANE ADHESIVE For use with Forbo floor covering in areas subjected to moisture and high traffic. For use with Smaragd, TractionStep, Marmoleum and Artoleum on all grade levels of concrete, metal and approved suspended wood floors. Forbo 660 is solvent free. A 1/32" x 1/16" x 1/32" trowel is included with each unit. **A 1/16" x 1/16" x 1/16" trowel blade is recommended for installation of Marmoleum Sheet Products.** Note: The moisture emission rate for 660 adhesive is 3.0 lbs. per 1000 square feet in 24 hours.

Available in two gallon, 1 gallon and 1/2 gallon units.
Trowel recommendation: 1/32" x 1/16" x 1/32"(vinyls and dual tile). 1/16" x 1/16" x1/16" (Marmoleum and Artoleum sheet)
Spread rate: Approximately 150 sq.ft. per gallon.

NOTE: The moisture emission rate for U.S. adhesive is 5.0 lbs per 1000 square feet in 24 hours (the exception is Forbo 660).

NOTE: If your moisture limit exceeds the above recommendations, please contact Forbo Linoleum regarding the use of Forbo's Moisture Limitor.

DESCRIPTIONS (Canada Adhesives)

FORBO LINOTACK 414 A synthetic resin dispersion adhesive used to adhere Marmoleum Real, Fresco, Vivace, and Walton on all grade levels of concrete and approved suspended wood floors.

Available in 3 liter pails or 15 liter pails.
Trowel recommendation: 1/16" x 1/16" x 1/16" square notch.
Spread rate: Approximately 40 sq. ft. per liter.

FORBO 511 ADHESIVE A solvent free synthetic resin dispersion adhesive used to adhere Marmoleum Real, Fresco, Vivace, and Walton on all grade levels of concrete and approved suspended wood floors.

Available in 10 liter pails.
Trowel recommendation: 1/16" x 1/16" x 1/16" square notch
Spread rate: Approximately 40 sq. ft. per liter.

FORBO 540 PLASTISAFE An acrylic dispersion adhesive used to adhere TractionStep, Smaragd and Colorex (non-conductive installations), on all grade levels of concrete and approved suspended wood floors.

Available in 15 liter pails
Trowel recommendation: 1/32" x 1/16" x 1/32" fine notch
Spread rate: Approximately 40 sq. ft. per liter.

FORBO 545 EL Recommended for conductive/ESD installations of Colorex EC/SD and TractionStep SD on all grade levels of concrete and approved suspended wood floors.

Available in a 10 liter pail.
Trowel recommendation: 1/16" x1/16" x 1/16" square notch
Spread rate: Approximately 40 sq. ft. per liter.

NOTE: The moisture emission rate for Canadian adhesive is 3.0 lbs per 1000 square feet in 24 hours.

NOTE: If your moisture limit exceeds the above recommendations, please contact Forbo Linoleum regarding the use of Forbo's Moisture Limitor.

INSTALLING MARMOLEUM & ARTOLEUM SHEET FLOORING

ARTOLEUM , MARMOLEUM REAL, MARMOLEUM FRESCO, MARMOLEUM DUAL, MARMOLEUM VIVACE, WALTON, CORK CARPET

GENERAL

- Ensure that calcium chloride moisture tests have been conducted and that the results do not exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs. (US) or 3.0 lbs per 1000 sq. ft in 24 hrs. (Canada) as per ASTM F-1869-98.
- pH of concrete subfloor surface is no greater than 10.
- A bond test is conducted and passed.
- The permanent HVAC system turned on and set to a minimum of 68° F (20° C) for a minimum of 72 hours prior to, during and after installation. After the installation, the maximum temperature should not exceed 100° F.
- Flooring material has been climatized to the installation area for a minimum of 24 hours prior to installation.
- Only Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive should be used.
- Use a 1/16" x 1/16" x 1/16" square notch trowel only.
- **Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.**
- Linoleum will expand slightly in the width and shrink slightly in the length when placed into the adhesive. Proper installation procedures will compensate for this.
- Do not reverse sheets for seaming.
- Install one sheet at a time.
- Flat trowel backside of material (as to double stick) and weigh down stove bar marks
- Install all cuts and rolls in consecutive sequence.
- Take pride in your work and be **Professional** at all times.
- **Ensure that all recommendations for subfloor and jobsite conditions are met prior to beginning the installation. Once the installation is started, you have accepted those conditions.**

CUTTING AND FITTING SHEETS

1. Cut the required length off the roll, including enough to run up the wall 2-3" at either end.

2. Push the length of the sheet as close to the starting wall as possible, letting the extra length run up the wall at each end.

NOTE: Material should be laid out and positioned so that any seams will fall at least 6" from underlayment joints and/or saw cuts in the concrete.

3. Set the scribes to a minimum of 3/8" more than the greatest distance between the wall and the flooring material. Scribe the shape of the wall onto the flooring. Next, cut the material along the scribe line using a hooked blade knife and holding it at an angle so as to slightly undercut the material. (Fig. 1)

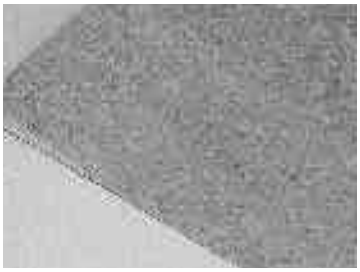
4. Push the fitted sheet tightly against the wall.

1.

2.

3.

4.



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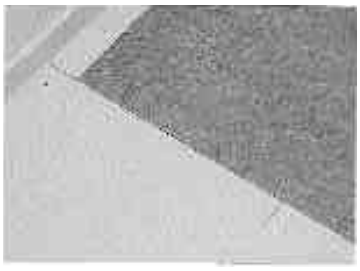

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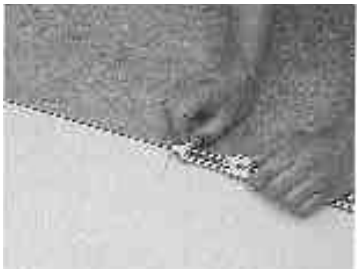


7.

5. Using the Forbo seam and strip cutter, trim the factory seam edge. (Fig. 2) A straight edge, utility knife and hooked blade knife may also be used to trim the factory edge. Set straight edge to trim off approximately 1/2". With utility knife, score material about 1/3 the thickness deep. Then with the hooked blade, cut along the score line holding the knife at an angle to undercut the edge.

NOTE: Check the instructions included with the seam and strip cutter on how to change the configuration of cutter depending on which product is being installed.

6. Draw a pencil line on the subfloor, lengthwise along the seam edge. (Fig. 3)

7. Lap the material back about halfway.

8. Spread the Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive with the proper notched trowel (Fig. 4). Begin spreading at the lap point working back toward the wall. Spread from the side wall up to the pencil line at the seam edge. Do not spread adhesive 5-6' from the end.

9. Material must be laid immediately into the wet adhesive and rolled with 100 lb. roller.
Roll across the width first, then along the length.

NOTE: To ensure proper bonding of the material, it is recommended to roll the material next to the walls with a hand seam roller.

10. Repeat the same procedure on the other half. Again, do not spread adhesive for the last 5-6' from the end.

11. To finish the ends draw a crossline on the subfloor and the sheet near the end (Fig. 5). Draw back the sheet along the pencil line until the end of the sheet lies flat on the subfloor (Fig. 6). Set the scribes or dividers to the distance between the two crosslines (Fig. 7). Scribe the end of the sheet to the wall and cut off. Spread the adhesive and roll. Repeat the procedure at the other end.

NOTE: It is always best to massage the material down into the wet adhesive next to the wall. This not only ensures proper transfer of adhesive but it helps to relax end curl memory that exists in the material.

12. The first sheet should now be fully cut in, adhered and rolled.

Seaming Procedures

1. Cut the second sheet to the required length with 2-3 inches extra at either end.

NOTE: DO NOT REVERSE SHEETS. INSTALL ALL LINOLEUM SHEETS IN SAME DIRECTION.

2. Overlap at seam approximately 1 inch.

3. Using the Forbo seam and strip cutter, trim the factory edge on the opposite side to prepare for the next seam.

4. Draw a pencil line down the length of the second sheet.

5. Lap the material back about halfway.

6. Spread the Forbo Linoleum L910 (US) or Forbo 414 (Canada) adhesive with the proper notch trowel. Begin spreading at the lap point working back toward the wall. Spread from the edge of the first sheet up to the pencil line at the seam edge of the second sheet. Do not spread adhesive 5-6' from the end.

NOTE: The subfloor porosity and room atmosphere conditions (temperature, humidity, etc.) can affect the working time of the adhesive.

7. Material must be laid immediately into the wet adhesive and rolled with 100 lb. roller.

8. Immediately after material has been laid into the adhesive, underscribe the seam using the short scribes with scribe pin (Fig. 8).

NOTE: Scribes should be set so that there will be a hairline gap at the seam, which would be a net fit where the material will fall into place with no pressure on the material. This will compensate for the slight expansion that will occur.

9. Next, cut the material along the scribe line using a hooked blade knife and holding it at an angle so as to slightly undercut the material (Fig. 9).

10. Roll seam with hand roller making sure that the flooring material gets into wet adhesive.

11. Repeat the same procedure on the other half.

12. Finish the ends of each sheet in the same manner as the first sheet.

13. Repeat the same procedures for each drop, completing one drop at a time until the job is completed.

14. If **cross or butt seams** must be made, use the following procedures to allow for any shrinkage that may occur in the length:

A. Straight edge and undercut at an angle the end of the first sheet.

B. Draw a pencil line at end of first sheet, spread adhesive to line, lay in material and roll.

8.

9.

C. Overlap second sheet at butt seam approximately 1".

D. Fully adhere and roll second sheet as usual except for the last 18" at butt seam, wait 20-30 minutes.

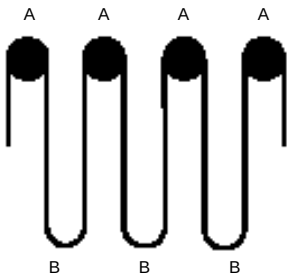
E. Spread adhesive for last 18", lay material in, underscribe seam net, cut, roll.

NOTE: In some situations, such as installing material in a narrow hallway where only one piece of material is being used, tubing the material will be necessary. In these situations, close attention should be made in making sure the material is laid into wet adhesive, as well as, being sure to avoid adhesive overlap which could result in a ridge line where the material was folded back. Tubing minimizes the shrinking of the material.

10.

DRYING ROOM YELLOWING

Marmoleum is made from natural raw materials. An occurance during the manufacturing process is that while it is maturing in the drying stoves,a yellow cast, termed "drying room yellowing" may appear on its surface. This film,caused by oxidation of linseed oil, occurs intermittently and with varying intensity. It is most noticeable on the blue and grey shades. However, the discoloration is only ***TEMPORARY.***



11.

When exposed to light,the drying room film disappears. The process may take only a few hours in bright sunlight but longer with artificial light. Finish over the drying room film makes NO difference--it will still disappear with exposure to light.

12.

STOVE BAR MARKS

When drying linoleum, the product is suspended in large loops in the drying rooms. The top loop (A), known as a pole mark, is cut off and recycled. The bottom of each loop (B) is called a "stove bar mark" (Fig. 11) and will appear approximately in the center of a roll (Fig. 12). When installing the stove bar mark area, simply spread adhesive with the flat side of the trowel on the backside of the sheet across the material (Fig. 13) (Fig. 4) then spread the adhesive on the floor (as to double stick) the material. Remember you must place the material directly into the wet adhesive. Be sure that when you place the stove bar mark into the wet adhesive that you massage the material down and push the material flat. Roll the material in all directions, starting across the width of the material. Be sure that the stove bar mark is rolled first to avoid trapping the tension on the material. Place weights on the stove bar area until the adhesive has set up.

13.

NOTE: The stove bar marks are not considered a factory or material defect. If problems occur they are always directly related to improper installation techniques.

INSTALLING FORBO SHEET VINYL FLOORING

SMARAGD, TRACTIONSTEP SLIP RESISTANT AND TRACTIONSTEP

General

- Ensure that calcium chloride moisture tests have been conducted and that the results do not exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs. (US) or 3.0 lbs per 1000 sq. ft in 24 hrs. (Canada) as per ASTM F-1869-98.
- pH of concrete subfloor surface is no greater than 10.
- A bond test is conducted and passed.
- The permanent HVAC system turned on and set to a minimum of 68° F (20° C) for a minimum of 72 hours prior to, during and after installation. After the installation, the maximum temperature should not exceed 100° F.
- Flooring material has been climatized to the installation area for a minimum of 24 hours prior to installation.
- Only Forbo Linoleum V920 (US) or Forbo 540(Canada) adhesive should be used.
- Use a 1/32" x 1/16" x 1/32" fine notch trowel only.
- **Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.**
- Forbo sheet vinyls have a glass fiber interlayer which gives them their dimensional stability. They will not shrink or compress. If cut too full or back rolled, it will result in a bubble.
- Install all cuts and rolls in consecutive sequence.
- Reverse sheets for seaming.
- Take pride in your work and be **Professional** at all times.
- **Ensure that all recommendations for subfloor and jobsite conditions are met prior to beginning the installation. Once the installation is started, you have accepted those conditions.**
- When installing vinyl back sheet flooring, conducting an Adhesive Bond Test is essential to determine the proper timing for application of the flooring material. (see Adhesive Bond Test)

CUTTING AND FITTING SHEETS

Forbo sheet vinyls are very flexible and easy to handle. In most cases a qualified installer will be able to hand fit the material in areas where base or trim moldings will be installed after the installation is completed.
NOTE: Because of the abrasive qualities of the metalized carborundum chips in the Step products, knife blades will have a very short life.

1. Cut the required length off the roll, including enough to run up the wall 2-3" at either end.

2. Push the length of the sheet as close to the starting wall as possible, letting the extra length run up the wall at each end.

3. Set the scribes to a minimum of 3/8" more than the greatest distance between the wall and the flooring material. Scribe the shape of the wall onto the flooring. Next, cut the material along the scribe line using a hooked blade knife (Fig. 1).

4. Push the fitted sheet tightly against the wall.

5. Trim approximately 1/2" off salvage edge of seam with a straightedge and sharp knife.

6. Cut second sheet with proper extra length.

7. Position second sheet with a 1/2"-1" overlap over first sheet at the seam.

8. Repeat steps 5, 6, 7, for as many sheets as necessary to complete the area or those sheets that can be installed that day.

1.

9. Lap back all overlapped sheets as one, half way back. **DO NOT BACK ROLL VINYL BACKED FLOORINGS.**

10. Snap chalk line along area where adhesive will be spread to assure an even and straight line of adhesive. Spread Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive with proper notched trowel over entire area. Be very careful not to leave any adhesive ridges or puddles.

NOTE: For installation into wet areas or ramps, see page 19 for proper adhesive recommendation.

NOTE: On non-porous subfloors, let adhesive flash off before laying flooring in to it. On porous subfloors, the flooring may be laid in to the wet adhesive.

NOTE: The subfloor porosity and room atmosphere conditions (temperature, humidity, etc.) can affect the working time of the adhesive.

11. Push lapped flooring from the fold onto adhesive, working toward the wall. DO NOT FLOP MATERIAL IN – air will be trapped, causing bubbles.

12. Roll floor with 100 lb. roller in both directions.
Roll across with width first, then across the length.

NOTE: To ensure proper bonding of the material, it is recommended to roll the material next to the walls with a hand seam roller.

13. After material has been laid into the adhesive, underscribe the seams using the short scribes with either the scribe blade or scribe pin (Fig. 2).

NOTE: Set scribes so that the seam will have a slight gap, about half the thickness of a razor blade. If cut too full, it will result in bubbles or ridges. Heat welding Forbo Vinyl Sheet flooring is always recommended.

2.

14. Cut material along scribe line with hooked knife.

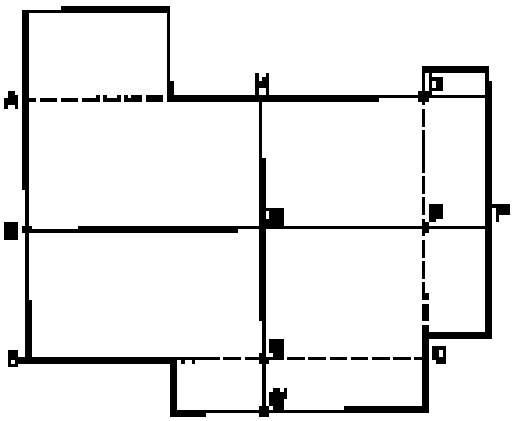
15. Roll the seam with a hand roller.

16. Repeat the same procedure on the other half of the room.

TAKE CAUTION NOT TO OVERLAP ADHESIVE LINES OR LEAVE RIDGES OF ADHESIVE. IT MAY TELEGRAPH THROUGH THE MATERIAL.

17. Heat weld seams the following day. See heat welding instructions.

INSTALLATION OF CONDUCTIVE TILE



COLOREX EC & SD

General

- Ensure that calcium chloride moisture tests have been conducted and that the results do not exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs. (US) or 3.0 lbs per 1000 sq. ft in 24 hrs. (Canada) as per ASTM F-1869-98.
- pH of concrete subfloor surface is no greater than 10.
- A bond test is conducted and passed.
- The permanent HVAC system turned on and set to a minimum of 68° F (20° C) for a minimum of 72 hours prior to, during and after installation. After the installation, the maximum temperature should not exceed 100° F.
- Flooring material has been climatized to the installation area for a minimum of 24 hours prior to installation.
- Only ForboLinoleum C930 (US) Conductive Adhesive or Forbo 545 EL (Canada) adhesive may be used.
- Use a 1/16" x 1/16" x 1/16" square notch trowel only.
- **Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.**
- Install all tiles running in the same direction.
- Make sure all material is from the same batch number. Mix tiles from several boxes.
- On non-conductive substrates (such as plywood, existing flooring or non-porous subfloors), prime floor with 041 conductive primer.
- Take pride in your work and be **Professional** at all times.
- **Ensure that all recommendations for subfloor and jobsite conditions are met prior to beginning the installation. Once the installation is started, you have accepted those conditions.**

Layout and Installation

Colorex tile is installed using conventional tile installation techniques.

It is customary to start from the center of the room. In corridors and small spaces, it may be simpler to work lengthwise from one end, using the center line as a guide.

The center line is drawn as follows: a chalk line is snapped from center of wall A-B(=E) to the center of wall C-D(=F). The center of line E-F is found (M). Draw a perpendicular line through M using the 3:4:5 method to establish G-H. (Fig 1.)

Starting at center point M, measure out lengthwise and widthwise to the walls to make sure you will have at least a half of a tile at the border. Adjust lines E-F and G-H if necessary.

ADHESIVE

Use only the Forbo Linoleum C930 (US) Conductive Adhesive or Forbo 545 EL (Canada) adhesive and a 1/16" square notch trowel blade.
There are no substitutes.

TRANSFER

Only spread as much adhesive as you can install tile into while still wet. Proper transfer is essential to proper ESD control.

LAYING

Begin laying tile at the center point ensuring that the tile is laid exactly along the chalk line. If the first few tiles are not installed correctly, it will affect the entire installation.

Tile must be installed into wet adhesive. If subfloor is non-porous, allow adhesive to flash off slightly, but do not let dry. Roll immediately with a 100 lb. roller.

Since it takes time to scribe and cut the border tiles, it is advisable to spread the adhesive only where full tiles will be laid. After the field is complete, cut the border tiles in, then spread adhesive.

Install all tiles running in the same direction.

GROUNDING

At the perimeter of the room (or at grounded steel columns) near the ground point, simply lay a 3-4' length of ground strap into the wet adhesive with about 12" extending up the wall (Fig. 2).

Spread additional adhesive on top of the strap and lay the tile over it.

A minimum of one grounding strap should be installed for every 2000 sq. ft. of uninterrupted tile.

NOTE: It is the floor contractor's responsibility to discuss the placement and connection of the grounding straps prior to the installation. This will aid in avoiding any controversies once the job is started.

HEAT WELDING SEAMS

Colorex tiles may be heat welded using the procedures described in the "Heat Welding Forbo Vinyls" section.

FLASH COVING

Colorex can be easily flash coved using standard flash coving procedures as described in the flash coving section.

Again, since it takes time to scribe and cut the border tiles, it is advisable to spread the adhesive only where full tiles will be laid. After the field is complete, cut the border/cove tiles in, then spread adhesive and install tiles within 20 minutes.

TESTING

After installation is completed, test flooring with ohms meter, according to EOS/ESD S 7.1, ASTM F150, or NFPA 99 (Fig. 3). All measurements recorded for warranty registration must be point to ground.

Note: For non-conductive installations, use Forbo Linoleum V920 (US) or Forbo 540 (Canada) adhesive and disregard grounding procedures. For installations in wet areas or where extremely heavy rolling traffic is uspect, Forbo's 660 (for both US& Canada) adhesive should be used.

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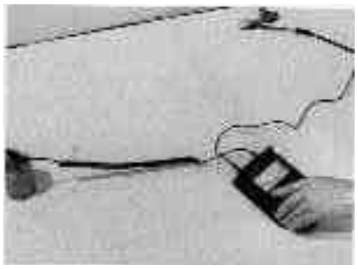
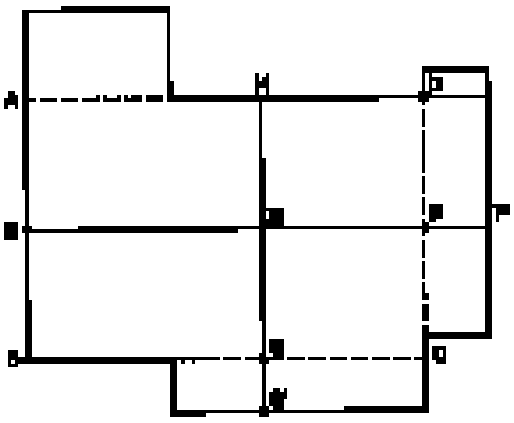


INSTALLATION OF MARMOLEUM DUAL TILE

MARMOLEUM DUAL

GENERAL

- Ensure that calcium chloride moisture tests have been conducted and that the results do not exceed 5.0 lbs. per 1000 sq. ft. in 24 hrs. (US) or 3.0 lbs per 1000 sq. ft in 24 hrs. (Canada) as per ASTM F-1869-98.
- pH of concrete subfloor surface is not greater than 10.
- A bond test is conducted and passed.
- The permanent HVAC system turned on and set to a minimum of 68° F (20° C) for a minimum of 72 hours prior to, during and after installation. After the installation, the maximum temperature should not exceed 100° F. Do not stack more than 5 cartons high.
- Flooring material has been climatized to the installation area for a minimum of 24 hours prior to installation.
- Only Forbo Linoleum T940 (US) or Forbo Linotack 414 (Canada) adhesive may be used.
- Use a 1/16" x 1/16" x 1/16" square notch trowel only.
- **Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.**
- Make sure all material is from the same batch number. Mix tiles from several boxes.
- Do not remove more tile from the box than can be installed in 1 hour.
- Take pride in your work and be **Professional** at all times.
- **Ensure that all recommendations for subfloor and jobsite conditions are met prior to beginning the installation. Once the installation is started, you have accepted those conditions.**



LAYOUT AND INSTALLATION

- Dual tile is installed using conventional tile installation techniques.
- It is customary to start from the center of the room. In corridors and small spaces it may be simpler to work lengthwise from one end, using the center line as a guide.
- The center line is drawn as follows: a chalk line is snapped from center of wall A-B(=E) to the center of wall C-D(=F). The center of line E-F is found (M). Draw a perpendicular line through M using the 3:4:5 method to establish G-H (Fig. 1).
- Starting at center point M, measure out lengthwise and widthwise to the walls to make sure you will have at least a half of a tile at the border. Adjust lines E-F and G-H if necessary.

ADHESIVE APPLICATION

1. Use only the Forbo Linoleum T940 (US) or Forbo Linotack 414 (Canada) adhesive and a 1/16" x 1/16" x 1/16" square notch trowel.

2. In most cases, the tile should be placed immediately into the adhesive, before the adhesive has had an opportunity to dry. Good transfer of adhesive to the backing of the tile is essential for proper bond. The installer must understand, however, that subfloor porosity and room environment (temperature, humidity, air circulation etc.) may affect the working characteristics of the adhesive (open time and working time). When installing over non-porous substrates such as existing flooring, terrazzo, etc., a short open time may be appropriate, *but under no circumstances should the adhesive be allowed to dry before placing the tile into the adhesive.* (Refer to page 20 for definition of open time and working time).

3. Immediately after placing the material into the adhesive roll in both directions with a 100 lb roller.

INSTALLATION

1. Begin laying tile at the center point, ensuring that the tile is laid exactly along the chalk lines. If the first few tiles are not installed correctly, it will affect the entire installation.

NOTE: Dual tile has a directional pattern and should be installed in alternating directions (quarter turned).

2. Because linoleum tile must be installed into wet adhesive, do not spread adhesive in an area larger than tile can be installed while the adhesive is still wet.

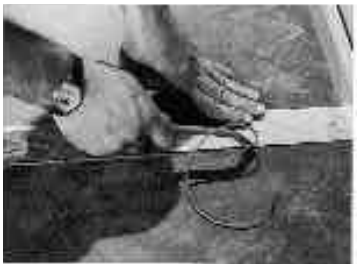
3. Since it takes time to scribe and cut the border tiles, it is advisable to spread adhesive first only where the full tiles will be laid. When the field is complete, scribe and cut the border tiles before the adhesive is spread. When fitting is complete, adhesive can be spread in the border area and border pieces can be installed and rolled while the adhesive is still wet.

HEAT WELDING FORBO MARMOLEUM & ARTOLEUM

Heat welding of linoleum is not always necessary, however, it is always the preferred method. Heat welding provides for a watertight and hygienic seam, or just for an artistic touch. Forbo linoleums may be heat welded with either a matching or contrasting welding rod.

The welding cord for linoleum is made of a solidified adhesive which is melted and fused, by means of a hot air welding gun, into a joint that has been grooved in the linoleum.

1.



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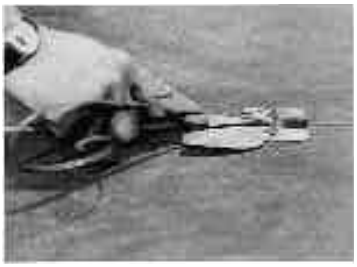


4.

Only Forbo Artoweld/Marmoweld welding rod is compatible with Forbo linoleums.

Heat welding should be done after the flooring adhesive has set up, usually the following day.

It's always a good idea to practice on a scrap piece of material first to assure proper temperature and speed.

NOTE: Forbo's multi-colored welding rod is square shaped instead of round. All tools and installation procedures remain the same.

Procedure:

1. Seam should have been prepared according to recommended seaming procedures. Gaps in the seam may prevent a quality weld.

2. Groove seam using the Forbo groover (Fig. 1). The depth of the groove on 2.0mm and 2.5mm gauge should be down to the jute fibers but not through them. On thicker gauge materials, groove to a depth of 2.5mm. This is very important to ensure proper adhesion of the welding rod.

3. The ends of the seam, where the Forbo groover cannot reach, must be completed using the hand groover (Fig. 2).

NOTE: The Forbo groover and the Forbo hand groover use the same blade (3.5 mm wide U-shape) to ensure a consistent width groove throughout.

4. Clean all grooves thoroughly.

5. Use only professional quality welding guns that will maintain the proper temperatures. Use 5mm speed tip.

6. Preheat welding gun for several minutes before beginning. *Optimal temperature setting for linoleum is 350°C (approx 662° F).

7. Cut length of welding rod long enough to weld over half the seam.

8. Insert rod through welding nozzle about 3-4", hold on to excess and immediately begin welding (Fig. 3).

9. The welding tip should always be parallel to the flooring and directly over the groove. Apply some downward pressure on the tip to help force welding rod into groove.

10. Determine the correct welding speed by ensuring that the welding rod actually melts into the groove. A small bead should form on either side of the welding rod.

11. While the welding rod is still warm, trim the excess material with the crescent knife and trim plate in one continuous movement (Fig. 4).

12. If the welding rod has not properly bonded, a new piece of rod can be melted and fused in and trimmed.

13. Repeat the same procedure on the other half, starting from the opposite wall working toward the center. Overlap the welding rod approximately 1" where they join.

NOTE: All welding rod repairs should be made prior to making the final trim.

14. After the rod has cooled to the touch, make the final trim using only the crescent knife (Fig. 5).

15. Minor repairs and smoothing out of the rod may be done using the butane repair tool.

16. The maximum bond strength of the weld is gained after 24 hrs of curing time.

NOTE: When welding a linoleum product which butts up to a vinyl product, you must always use the linoleum welding rod.

5.

HEAT WELDING FORBO VINYLS

Heat welding is the recommended procedure for all seams, coving and corner fill pieces of Forbo sheet vinyls. Heat welding provides for strong, watertight and hygienic seams.

The welding cord for Forbo vinyls is made of pure pvc which is designed to melt at the same temperature as the pvc of the sheet vinyl flooring. This is why you should never use welding rods other than those specified for the product you are installing.

Heat welding should be done after the flooring adhesive has set-up, usually the following day.

It is always a good idea to practice on a scrap piece of material first to ensure proper temperature and speed.

Procedure:

1. Seam edges should be tight. Gaps in the seam will deter a quality weld.

2. Groove seam using the Forbo groover (Fig. 6). The depth of the groove should be about 2/3 the depth of the material. Be careful not to go too deep. This is very important to ensure proper strength and bonding of the welding rod.

NOTE: Due to the abrasive qualities of the metalized carborundum chips in the Step products, groover blades will have a very short life. If using an electric groover on these products, only use a carbide diamond tip blade. Conventional electric groover blades will have a very short life.

3. The ends of the seam, where the Forbo groover cannot reach, must be completed using the hand groover.

NOTE: The Forbo groover and the Forbo hand groover use the same blade, to ensure a consistent width groove throughout.

4. Clean all grooves thoroughly.

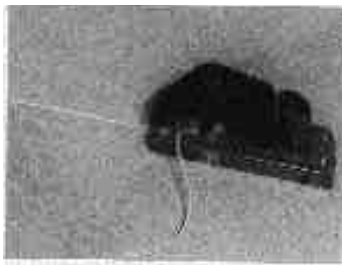
5. Use only professional quality welding guns that will maintain the proper temperatures. Use 5mm speed tip.

6. Preheat welding gun for several minutes before beginning.

7. Cut length of welding rod long enough to weld over half the seam.

8. Insert rod through welding nozzle about 3-4", hold on to excess and immediately begin welding (Fig. 7).

9. The welding tip should always be parallel to the flooring and directly over the groove.



6.

7.

10. Determine the correct welding speed by ensuring that the welding rod actually melts into the groove. A small bead should form on either side of the welding rod.

11. While the welding rod is still warm, trim the excess material with the crescent knife and trim plate in one continuous movement (Fig. 8).

NOTE: When heat welding TractionStep Slip Resistant Studded, the welding rod is trimmed in one step, after the rod is cooled, using a Pajarito knife.

12. If the welding rod has not properly bonded, a new piece of rod can be fused in and trimmed.

13. Repeat the same procedure on the other half starting from the opposite wall working toward the center. Overlap the welding rod approximately 1" where they join.

14. After the rod has cooled to the touch, make the final trim using only the crescent knife (Fig. 9).

15. Minor repairs and smoothing out of the rod may be done using the butane repair tool.

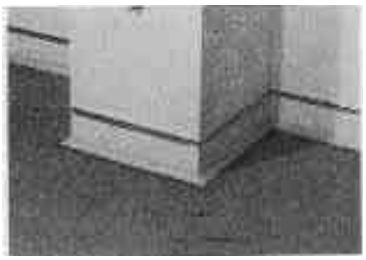
8.

9.

FLASH COVING FORBO VINYL

All Forbo sheet floorings and solid vinyl tiles may be flash coved. Flash coving is the extension of the flooring material up the wall, usually 4"-6".

Equal attention should be made to wall preparation as is given to floor preparation. The flooring material is only as good as what it covers.



1.

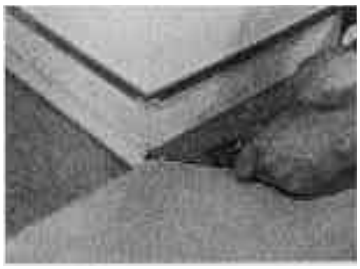
NOTE: Do not cove material over non-porous surfaces (vinyl wallcoverings, marlite, HPL, epoxy paint, etc) without first making sure a proper bond can be achieved.

Cove Cap

Cove cap is used to finish off the top edge of the flooring (Fig. 1). Caps are available in metal, vinyl and rubber. The vinyl and rubber caps are available in a wide range of colors and are easier to install.

Metal caps are more durable and easier to scribe and fit the flooring to. When using metal caps, it is best to use miter cutters to form wrap around corners.

Fastening the cap to the wall may be accomplished by different methods, depending on the type of wall you are working with.



2.

The fastest and easiest method, which will work on all types of surfaces, is double face foam tape, available from Forbo Linoleum.

Cove Stick

Cove stick is used where the floor and wall meet to provide support for the back of the floor covering (Fig. 1).

Cove stick is made from several types of materials: wood, vinyl, plastic and rubber.

Any type may be used, provided:

A. It has a minimum radius of 7/8".

B. It is hard and rigid. Soft, flexible types will not give adequate support for the flooring.

C. It is a material that will not stain the flooring.

3.

All corners should be cut with a miter box and saw.

The cove stick may be glued or nailed to the wall. If using nails, make sure the nail heads are flush so they will not show through the flooring.

COVING VINYLS

Forbo sheet vinyls may be installed with or without cove stick. When cove stick is not used, special attention must be used that the floors are level and the walls are straight and plumb. If the material is forced to conform to irregularities it will cause a curtaining effect on the coved area.

When spreading the adhesive, the adhesive must also be applied to the back of the material that is being coved, and allowed to flash off. A 2" paint roller works well for this.

NOTE: Do not cove material over non-porous surfaces (vinyl wallcoverings, marlite, HPL, epoxy paint, etc) without first making sure a proper bond can be achieved.

CORNERS

On vinyls, the preferred method for an outside corner is the "V-plug" or "butterfly" method.

Fold the material back tight along the wall. Using the angle template, cut the material at a 45° angle from the point of the corner (Fig. 2, previous page). Wrap material around corner. Use the template to cut a 90° fill piece from scrap material. Groove the back of the fill piece where it wraps around the corner to aid in forming the corner (Fig. 3, previous page) (Fig.4).

For inside corners, fold the material upon itself tight into the corner. Use the angle template and cut material at a 45° angle (Fig. 9). Wrap material around corner (Fig. 10). Cut off the excess material leaving about 1" overlap at the seam. Force material tight into the corner and base with a stair tool . Trace cut the seam at the 45° angle (Fig. 11).

Groove seams with hand groover and angle template (Fig. 5).

Heat weld all seams using a bent tip and welding roller (Fig. 6) (Fig. 12).

After the welding rod has cooled, trim the rod in two passes, using a crescent knife and trim plate or the exacto knife (Fig. 7) (Fig. 8) (Fig. 13).

Minor repairs and smoothing out of the rod may be done with the butane repair tool.

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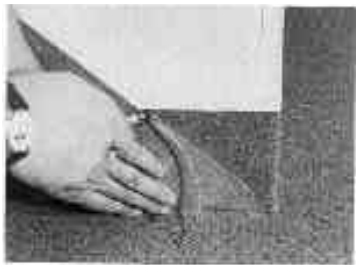

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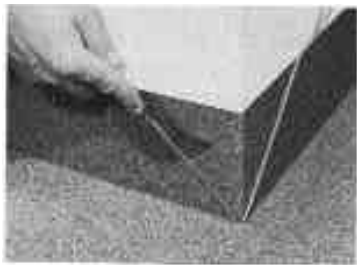

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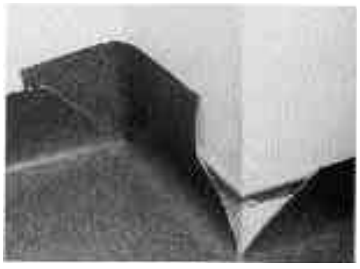

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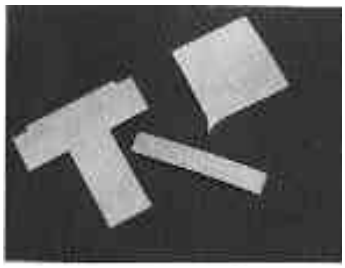
FLASH COVING MARMOLEUM & ARTOLEUM



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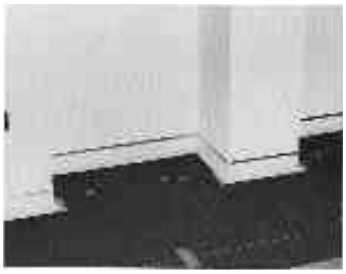

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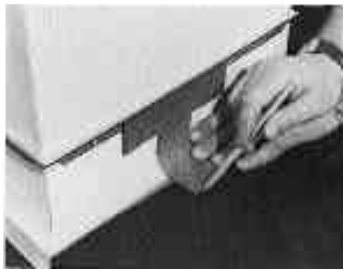

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COVING MARMOLEUM & ARTOLEUM

Flash coving linoleum is done using standard pattern scribing procedures for coving.

Equal attention should be made to wall preparation as is given to floor preparation. The flooring material is only as good as what it covers.

NOTE: Do not cove material over non-porous surfaces (vinyl wallcoverings, marlite, HPL, epoxy paint, etc) without first making sure a proper bond can be achieved.

Cove stick must always be used when flash coving linoleums, and the cove stick must be of rigid type. Soft, flexible types of cove stick will not provide adequate support for the flooring.

Several methods of pattern scribing may be employed when installing linoleum. The installer should always use the method which he is most comfortable with and that offers the best possible results. A common method is using the T-template and the inside corner template (Fig. 14).

After installing the cove stick and cap, and the floor preparation has been completed, cut the pattern felt to within 1/4" of the bottom of the cove stick and tape the felt to the subfloor to prevent movement (Fig. 15). It is important to make hash marks at all seams on the felt to assure proper pattern alignment.

Using a pencil and the T-template (Fig. 16), start in one area and progress around the room pressing the template firmly into the cove stick and under the cove cap. To mark an inside corner, place the template under the cap strip and tight to the inside corner. Mark the base and sides of the template. Repeat on the other side of the corner (Fig. 17). Mark several places on the wall to show the height of the cap. Continue around the room, marking all inside corners. Door casings and other obstacles can be marked with dividers and a square (Fig. 18). Outside corners are done by using a “boot” or mitered corner. Try to put the boot on the least conspicuous side. Mark the cove cap on both sides of the corner (Fig. 19). Allow for about a 1" overhang on the side not being filled. On the boot side of the corner, straight edge the pattern felt 1 1/2" away and parallel to the bottom of the cove stick (Fig. 20). Use a straight edged piece of scrap and place it on the miter of the cove stick and extend it out to the straight edged line on the pattern felt and mark.

The use of set marks on the felt and on the subfloor will help in aligning the material during installation. Make sure to check all marks before removing the pattern felt from the floor.

21.

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23.

Place the pattern felt on the linoleum floor covering, align pieces of felt and secure to the flooring with tape (Fig. 21). Place the T-template on the lines drawn on the pattern felt and trace onto flooring to determine the top of the cove cap (Fig. 22).

When marking the inside corners, place the template on the lines made on the felt. Mark the template on the under side of the cove cap and inside the corner. Repeat on the other side. Place the inside corner template on the marks made on the inside corner and trace it with a pencil (Fig. 23). Continue around the pattern, marking and connecting all areas that fit under the cove cap. Mark all door casings and obstacles using dividers and/or a square.

On an outside corner, first mark the piece that extends past the corner and follow the same shape of the radius of the mitered cove stick. Using a square on the straight edge line (1 1/2" from the base of the cove stick) of the pattern where the boot will be placed, cut the linoleum floor covering along the square, starting at the miter and continuing back a distance slightly greater than the height of the cove cap and up the material where the boot will fit in. Make sure it is cut at a 90º angle.

After all marks have been transferred from the pattern felt, cut out the material.

INSTALLING

Set the sheet into the area to be installed, lining up all set marks.

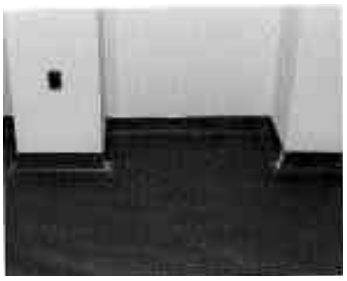
Lap the material back halfway and spread adhesive.

The Forbo Linoleum L910 (US) or Forbo Linotack 414 (Canda) adhesive must be spread on the wall and cove stick out onto the floor using the proper notch trowel.

Material must be laid into the wet adhesive and rolled with a 100 lb. roller.

Make sure that the material is tight to the cove stick and tight underneath the cove cap. Tuck corners into place and roll with a hand roller, making sure proper transfer has been achieved.

NOTE: There are several ways to cove material, for further information call Forbo Linoleum Support Services Department at 1-800-842-7839 and ask for your Forbo Technical Rep to contact you.



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OUTSIDE CORNER (Fig. 24.)

Using an outside corner scribe and a scrap of material as a guide, mark the excess material and trim on a bevel (45º angle) to the top of the cove stick (Fig. 25).

Place a straight edge piece of scrap against the miter of the cove stick (Fig. 26). Mark all the way out to the straight edge seam of the floor and trim.

Cut the "boot" using a square, keeping the marbleization of the material running in the same direction as the flooring (Fig. 27). Strip measure for the height of the "boot" fill piece, mark and cut to that height. Cut the length of the "boot" long enough to extend past the corner about 1/2" (Fig. 28).

Put the "boot" in place and use the outside corner scribe to mark from the cove cap down to the cove stick (Fig. 29). Push the material tight into the cove stick and mark the back with a pencil along the radius of the cove (Fig. 30).

Remove the "boot" and with a hook knife held at a 45º angle, cut the material along the scribe line down to the pencil mark at the radius. Turn the material over and continue to cut on a bevel to the inside of the pencil mark to 3/4 of the way down (Fig. 31).

Put the "boot" back into place and use the straight edged scrap to complete the cut to the bottom of the miter (Fig. 32). Remove the "boot" and spread adhesive on the wall and floor. Install the "boot" and roll with a hand roller.

Use the back side of a scrap of material or fine sand paper to remove any burrs on the edges.

REPAIRS

Linoleum:

- Cigarette burns and small scratches may be repaired using steel wool (double 0 or triple 0). Rub the damaged area, making sure to rub with the grain until damage is removed. Apply floor finish with a clean cloth to repaired area.

- To repair small gouges and voids, a paste made from a small scrap of linoleum may be used. The paste is made by scraping the surface of a scrap piece of material using a paint scraper or knife. Take the scrapings and grind them together to make a fine powder. Mix the powder with white glue to form a paste. Fill the gouge with the paste, making sure to have an excess that, once dry, can be sanded even with the floor surface using steel wool. Apply floor finish to repaired area.

- Large gouges or torn areas may be repaired by plugging with a new piece of material. Plugs in the shape of a fish eye or diamond running with the marbleization will be less noticeable. Match marbleization of plug as close as possible to that of area to be repaired. Install new piece using proper adhesive and roll with a seam roller. Apply floor finish to repaired area.

Vinyl Sheet:

- Minor cigarette burns may be repaired by first scraping away the charred material. Next, apply a few drops of vinyl seam sealer, allow the seam sealer to soften the vinyl, scrape again to remove the remainder of the charred material. Fill in damaged area with seam sealer and allow to dry.

- Minor tears may be repaired by cleaning the damaged area with a clean, white rag and some solvent and then apply a PVC flooring seam sealer.

- Large gouges or torn areas may be repaired by plugging with a new piece of material. Plugs in the shape of a triangle, fish eye or diamond will be less noticeable. Install a new piece with proper adhesive and roll with seam roller. Apply chemical weld seam sealer in seams, if flooring is in wet area or clean room the seams should be heat welded.

Vinyl Tile:

- Most minor scratches and stains may be sanded off surface using fine sand paper and steel wool, buff with a buffing pad

- Larger gouges or holes may be filled by heat welding a piece of the tile into the gouge, let cool, then sand smooth the surface with orbital sander then buff with a buffing pad.

31.

32.

PO BOX 667 HUMBOLDT IND. PARK
HAZLETON, PA 18201
800-842-7839/570-459-0771
FAX: 570-450-0258

DIRECT
PRICE LIST

***TO ORDER TOOLS AND MAINTENANCE PRODUCTS DIRECTLY FROM FORBO CALL 1-800-842-7839
VISA OR MASTERCARD ONLY (NO CHECKS OR C.O.D.'S)

MAINTENANCE PRODUCTS	WEIGHT	PRICE
JWP Starter Kit w/LinoBase (2,000 sq. feet) Matte	27 lbs.	$ 51.51
JWP Starter Kit w/LinoBase (2,000 sq. feet) High Gloss	27 lbs.	$ 51.51
JWP Starter Kit w/o LinoBase (2,000 sq. feet) Matte	18 lbs.	$ 27.81
JWP Starter Kit w/o LinoBase (2,000 sq. feet) High Gloss	18 lbs.	$ 27.81
JWP Starter Kit w/LinoBase (10,000 sq. feet) Matte	133 lbs.	$ 257.53
JWP Starter Kit w/LinoBase (10,000 sq. feet) High Gloss	133 lbs.	$ 257.53
JWP Starter Kit w/o LinoBase (10,000 sq. feet) Matte	89 lbs.	$ 139.03
JWP Starter Kit w/o LinoBase (10,000 sq. feet) High Gloss	89 lbs.	$ 139.03

TOOLS	CAT. #	PRICE per UNIT
LONG SCRIBER	T 101	$ 47.95
SHORT SCRIBER	T 102	$ 58.75
SEAM/STRIP CUTTER	T 103	$ 115.90
THERMO GROOVER	T 105	$ 16.90
PAJARITO KNIFE NO. 659	T 131	$ 30.40
FORBO GROOVER	T 133	$ 371.95
SCRIBER PINS (100 PCS.)	T 149	$ 46.55
SCRIBER PINS (25 PCS.)	T 149.25	$ 11.50
ROBERTS STRAIGHT BLADES (10)	T 15.363	$ 13.50
ROBERTS HOOK BLADES (10)	T 15.372	$ 20.25
SCRIBER BLADES (6 PACK)	T 156	$ 10.00
HAND GROOVER (BENT)	T 201	$ 20.95
HAND GROOVER (STRAIGHT)	T 202	$ 16.90
BUTANE REPAIR TOOL	T 203	$ 81.70
CIRCLE MAKER AND EXTENSION	T 204	$ 242.95
SPARE BLADES FOR GROOVERS (10)	T 206	$ 14.50
ANGLE TEMPLATE	T 207	$ 18.90
DBL. FACE FOAM TAPE (1 ROLL / 108' X 1/2")	T 209	$ 139.75
PH PAPER (100 strips per pack)	T 210	$ 15.55
X-ACTO KNIFE	T 212	$ 7.45
X-ACTO SPARE BLADES (E1), (2 PCS)	T 213	$ 8.80
X-ACTO SPARE BLADES (E3), (2 PCS)	T 214	$ 6.10
X-ACTO SPARE BLADES (E4), (2 PCS)	T 215	$ 6.10
12" INSERTABLE BLADE TROWEL (Right Hand)	T 600	$ 6.10
12" INSERTABLE BLADE TROWEL (Left Hand)	T 600L	$ 12.20
CALCIUM CHLORIDE TEST KIT #625 (CARTON OF 3)	T 625.03	$ 12.20
		$ 50.00

*Price includes shipping anywhere in the continental 48 states / All orders will be shipped Fed Ex ground

All prices are in U.S. Dollars

LIMITED 5-YEAR WARRANTY

FLOOR COVERING LIMITED 5-YEAR WARRANTY

Limited Warranty. Forbo warrants that its floor covering products, when installed using Forbo's recommended procedures and adhesives, shall perform in accordance with their published specifications and shall be free from manufacturing defects under normal use for a period of five (5) years from the date of original installation. THIS IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY FORBO, AND FORBO MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED, OR ANY KIND INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This limited warranty shall extend only to the original purchaser or original end-user and is not assignable.

Limitation of Remedies. Forbo's only obligation hereunder will be to deliver to the original purchaser or original end-user, free of charge, sufficient material of same or similar quality to replace the defective product, provided that if a warranty claim is made within one year after installation and if the warranty claim is not based on visual defects that could have been seen before the installation, Forbo will also assume reasonable installation costs of the replacement product. No labor cost will be covered on claims made later than one (1) year after date of original installation. Subject to the foregoing exception, FORBO SHALL HAVE NO OBLIGATION TO REMOVE ANY DEFECTIVE PRODUCT OR TO INSTALL ANY REPLACEMENT PRODUCT FOR ANY COSTS OF REMOVAL OR INSTALLATION, WHICH SHALL BE THE SOLE RESPONSIBILITY OF PURCHASER OR END-USER. Replacement will be provided only after Forbo's inspection of the product and its agreement to the defective condition. Forbo and its representatives must be permitted reasonable access to facilities for the inspection and testing of the product. All claims for defect shall be deemed waived unless made in writing delivered to Forbo or your Forbo Distributor during the warranty period and not later than thirty days after discovery of the defect. Purchaser and end-user have the sole responsibility to properly install and maintain the products. Forbo shall have no obligation to replace any product which has been subjected to misuse, neglect, accident or abuse, or which has not been installed or maintained in accordance with Forbo's written instructions, or which has been exposed to undue wear and tear, excessive moisture, alkali or acids. In addition to the foregoing limitations, Forbo's limited replacement warranty shall not cover surface stains including asphalt, driveway sealer, and carpet dye, dissatisfaction due to improper maintenance or installation, damage from improper maintenance or usage or general misuse including, without limitation, burns, cuts, tears, scratches, scuffs, indentation damage from high heels, rolling loads, improperly castered chairs, failure to use recommended floor protectors and the like, damage or discoloration from adhesives and floor care products not recommended by Forbo, extended direct exposure to sunlight, moisture, alkaline, hydrostatic pressure damage from the subfloor, mold or mildew, installation of sheet or tile flooring over gypsum cement underlayments or lightweight aggregate concrete, or difference in color between samples or photographs and the actual flooring. THE CORRECTION OF SUCH DEFECTS BY REPLACEMENT IN THE MANNER SET FORTH ABOVE SHALL CONSTITUTE THE SOLE AND EXCLUSIVE REMEDY HEREUNDER AND FULFILLMENT OF ALL THE OBLIGATIONS OF FORBO WITH RESPECT TO THE LIMITED WARRANTY GIVEN HEREIN. This exclusive and limited remedy shall not fail of its essential purpose by reason of timeliness, causes beyond Forbo's reasonable control or the general concerns of purchaser or end-user.

Limitation of Liability. Forbo's total, complete and exclusive liability hereunder shall be limited to replacement of defective product as provided herein and shall not exceed the value of the defective product furnished. Purchaser and end-user waive all other remedies, warranties and liabilities of any kind, express or implied, whether arising by operation of law or otherwise. FORBO SHALL NOT BE LIABLE FOR LOSS OF PROFITS, DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES UNDER THIS LIMITED WARRANTY OR FROM ANY CAUSE WHATSOEVER, WHETHER BASED UPON WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE. Forbo shall be entitled to legal fees, costs and expenses in defending and enforcing this clause against purchaser, end-user and others.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

If you experience any problem with Forbo floor covering, please contact the contractor who installed the flooring to help identify whether the problem is related to manufacturing, installation or maintenance. Retain all information and documents until the problem is resolved.

If the problem is manufacturing related and you are not satisfied with the contractors response, please notify in writing Forbo's Support Services and explain the problem thoroughly:

Forbo Linoleum Support Services
Humboldt Industrial Park, Maplewood Drive
P.O. Box 667
Hazleton, Pennsylvania 18201
(570) 459-0771

After Forbo is so notified, Forbo reserves the right to have an authorized Forbo representative inspect and verify the defect to determine whether replacement will be provided under the terms of this limited warranty. If Forbo disagrees with the claim, Forbo reserves the right to submit the matter to arbitration by a qualified disinterested third party.

This limited warranty may not be extended, altered or waived except in writing signed by any authorized officer of Forbo. Any action for breach hereunder must be commenced within one year after the cause of action has accrued. The limitation of remedies and limitation of liabilities under this limited warranty shall extend and apply to Forbo Linoleum, Inc. and its affiliated companies. All claims for warranty coverage under this limited warranty shall be made solely to Forbo Linoleum, Inc. in accordance with the terms of this limited warranty. This limited warranty shall be construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania without regard to conflicts of laws.