

Storage & Handling

1. Storage

- ① When storing products at a warehouse, maintain appropriate temperature (10°C. 55°F) and store upright. Careful attention should be paid to the possibility of rolls falling down. Secure completely to prevent accidents.
- ② Do not expose products to direct sunlight and moisture (water). Store them at a place not affected by rain or snow.

2. Movement & Handling

CAUTION

Material is heavy! Use a forklift for movement or loading / unloading. If necessary, two people should move the product in order to avoid physical injury or damage.

When moving products with a forklift, make sure that product is not damaged by the forks.

Installation

1. Preparation Before Installation

- ① Remove existing flooring. (When removal is undertaken, make sure that all applicable local, state, and federal regulations are observed.)

WARNING

Do not sand, dry scrape, beadblast, or mechanically pulverize existing flooring, backing or lining felt, or asphalt adhesive. These may contain asbestos fibers or crystal silica (silica). Do not create asbestos dust because such asbestos fibers or crystal silica may cause asbestosis or other serious respiratory diseases. Smoking greatly increases the risk of serious bodily harm when airborne asbestos particles are breathed. It is necessary to determine whether those products contain such asbestos fibers.

- ② Dry the subfloor to get the moisture content of below 5%.
- ③ Clean the subfloor. Remove traces of dust, stains, paint, oil, grease, asphalt, varnish, wax, adhesive, and other contaminants.
- ④ Any cracks, grooves, holes, and depressions should be leveled. Use a cementitious leveling agent.

2. Precautions

Flooring materials and adhesives ideally should be maintained at a temperature between 20°C(70°F) and 30°C(85°F) for at least 48 hours before and after installation.

- Be sure to store flooring materials upright. Do not lay flooring down for extended periods of time.
- When sheet flooring materials have been stored at cold temperatures, it is necessary to open the sheet flooring, roll out overnight for conditioning before installation.
- Suitability for installation of new sheet flooring over existing flooring rests solely with the installer.

3. Identification of Flooring Products & Rough-Cutting

- ① If installation requires more than one roll of flooring product, be sure to select those with successive roll numbers with the same lot number.
- ② Examine the installation site to determine the number of rolls for installation required. Be sure to avoid placing seams in any entrance ways.
- ③ Rough cut the flooring and allow it to be sufficiently conditioned to the working environment.

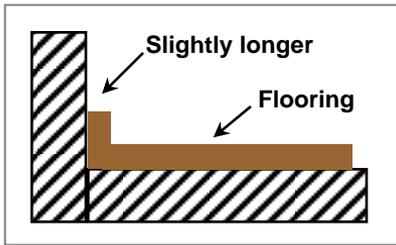
For effective installation, rough cut material on the previous day, wind the flooring products again inside-out, and store at recommended temperature.

4. Primary Installation

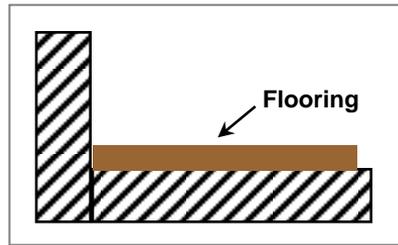
Primary installation according to the Knife Cutting Method or Scribe Cutting Method.

4-1. Knife Cutting Method

- ① Spread sheet flooring products over subfloor. (See Fig. 1)
- ② Portions along the wall surface and edge should be sufficiently adhered to the surface and cut in a 'V' shape from corner. Next, cut flooring to be slightly longer according to the shape of the walls. (See Fig. 2)



(Fig. 1)



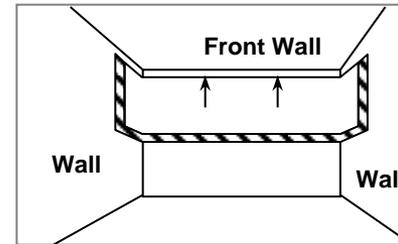
(Fig. 2)

4-2. Scribe Cutting Method

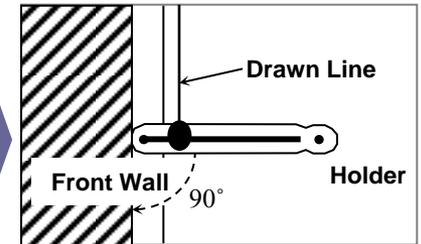
- ① Spread sheet flooring products over the subfloor. (See Fig. 1)
- ② Place ends of sheet flooring up the wall surface slightly and spread balance over subfloor with certain distance from the front wall (about 4 inches). (See Fig. 2)
- ③ Point a scribing tool toward the front wall and slowly move at a right angle to the flooring. (See Fig. 4)
- ④ Use a hook-shaped knife to cut the flooring along the line that has been marked by the Scribing Tool. Use knife at a slant to cut more back side than the surface. Finally, set the flooring toward the front wall. (See Fig. 5)
- ⑤ In order to cut the flooring at both wall sides, draw a line along the edge with a chalk and mark "+ line" on the subfloor and the flooring as shown in figure. (See Fig. 6)
- ⑥ Move and spread the flooring until one edge of the flooring rising up the wall. (See Fig. 7)
- ⑦ Accurately measure the distances of the line at a right angle to the subfloor and the line on the flooring moved. (See Fig. 7)
Draw a line on the sheet flooring with a scribing tool along the wall where the flooring goes down to the subfloor. (See Fig. 8)
- ⑧ Cut the flooring along the drawn line with the hook-shaped knife and set the flooring toward the wall.

- ⑨ Cut the flooring rising up the opposite wall according to the same method.

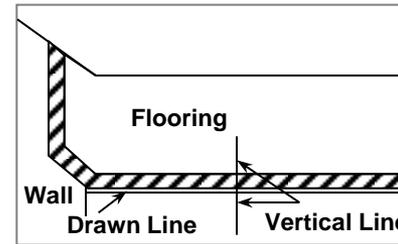
Long Scriber Cutting Procedure



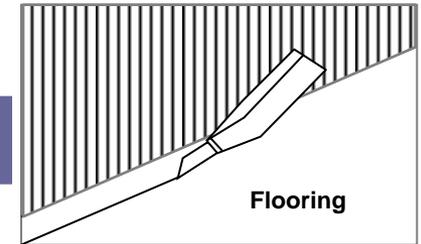
(Fig. 3)



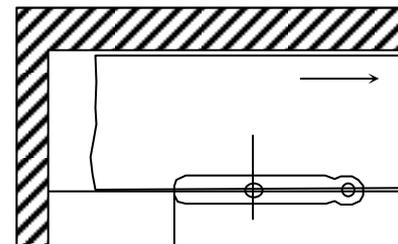
(Fig. 4)



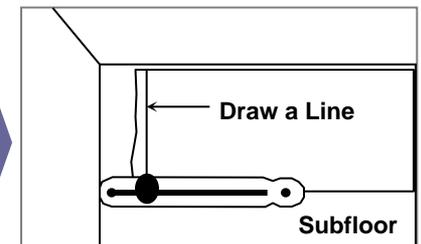
(Fig. 6)



(Fig. 5)



(Fig. 7)



(Fig. 8)

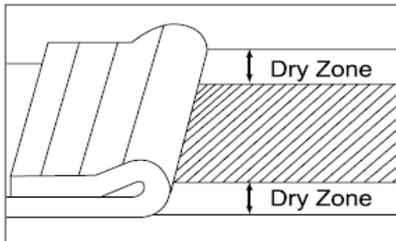
5. Adhesive Application

- ① Be sure to allow appropriate open time before installation. Open time means the interval of time beginning when the adhesive is spread on the substrate and ending when the adhesive will no longer adhere to the product being applied over it. Open time results in drying of adhesive, enhancing the adhesive strength.

Open time depends on environmental conditions, subfloor's porosity, etc. Refer to technical data of adhesive's firm for open times, etc.

➤ *Too long open time results in decreased adhesive strength.*

- ② This flooring product should be installed using specified adhesive and trowel.
- ③ While preventing movement of the flooring sheets, turn up at least half of the sheet as shown. (See Fig. 9)
- ④ Snap a chalk line along the flooring's folded part, which plays a role of guide for installation of the second half.
- ⑤ Apply the specified adhesive and spread with the specified trowel. (See Fig. 9)
- ⑥ When the adhesive has full adhesive strength, carefully lay the flooring products while not leaving any air bubbles. Rolling with a 45kg(100 lb) or more 3-section roller is recommended. This rolling process removes air bubbles and contributes to complete bonding. If necessary, use a hand roller for corners.
- ⑦ After adhesion of the first half, repeat the same procedures for the remaining half.



(Fig. 9)

The following conditions may result in poor installation.

- a) Lack of adhesive.
- b) Installation when the adhesive is lumped When adhesive is applied incorrectly.

6. Installation of Second Roll & Remaining Rolls

- ① Spread the second roll of flooring product over the subfloor while appropriately overlapping the embossed-line on the firstly installed flooring's edge and the embossing-line on the second edge.
- ② Conduct wall-side cutting according to the previously described procedures.
- ③ Apply the adhesive.
- ④ Install the other flooring sheets according to ② and ③.

Note : In spite of constant manufacturing process, color difference within different batches is possible. To avoid differences in designs and colors, Use only one batch for one single room.

For all sheet-type product, the reverse installation is strongly recommended to get best appearance, especially for products with solid pattern.

7. Seams

- ① Seams are the most important part in installation.
- ② Seams should be recess scribed for best results.
- ③ Apply the adhesive with the specified trowel. When the adhesive has full adhesive strength, carefully lay the sheet flooring.
- ④ Roll sheet flooring with a 3-section roller. Use a hand roller for seams and then, wipe any adhesive residue off of the seams.
- ⑤ Continue the installation according to the same method.

8. Seam Connection

For seam connection, two methods are being applied ; Heat Weld and Cold Weld (Chemical Weld).

8-1. Heat Weld

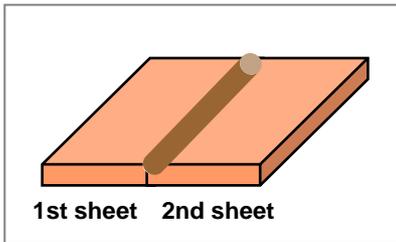
For commercial application, Heat welding is highly recommended for better result.

- ① Prior to heat welding, the adhesive applied should be completely cured. Wait at least 24 hours.
- ② Supply the power to the heat welding gun and heat it to 220 °C (428 °F). Temperature is very important in heat welding. Too hot or too slow may result in burning or melting the flooring surface.

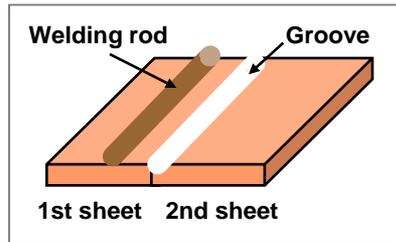
- ③ Using a floor router, determine appropriate blade depth after trials with scrap material. Adjust the machine to have a groove approximately 2/3 depth of material.
- ④ Using a floor router, make a groove 2/3 in depth relative to the flooring's thickness along the seam line. (See Fig. 12)
Stop the router several centimeter from the wall and use a hand grooving tool to make the groove from that point to the wall.
- ⑤ Feed the welding rod into the welding gun nozzle.
(In advance, practice welding work with use of scraps as in step ③)
- ⑥ Proceed welding at a constant rate.
- ⑦ As the gun approaches the wall, change the direction and continue welding.
- ⑧ Cut the protruding portion of welding rod to be flush with the sheets before rod cools down.

Cutting after complete cooling may lead to poor results. If cutting is done at high temperatures, contraction may occur after cutting.

- ⑨ For other sheets, conduct heat welding according to the above procedures.



(Fig. 12)



(Fig. 13)

9. Finishing & Miscellaneous

- ① Sweep the floor.
- ② Remove all trash and scraps.
- ③ Wait 48 hours after installation before cleaning the floor.
Remove any stained materials with a damp mop.
- ④ Move furniture or other objects into the newly installed area 48 hours after installation.
Use the hard board or cart to prevent any damage to the flooring.
- ⑤ For heavy furniture or objects, use the pad to prevent any damage to the flooring.