STUGA

# Staple Down Installation Instructions

**JOBSITE**

# Underlayment


**Stuga Nature All-In-One Underlayment**

The width of a row of Nature All-In-One Underlayment is comprised of 40” of underlayment plus an 8” overlap flap. The overlap flap guards the flooring from moisture at the seams, where the rows of underlayment are laid side by side. The overlap flap has a peel and stick strip to aid the installation process.

Step 1: Lay out first row of underlayment (logo side down, blue side up) with the overlap flap facing the starting wall. Allow the underlayment to wrap up the wall, on the ends, approx. 2".

Step 2: Reach under and grab the overlap flap and pull it up so it lies against the starting wall. Trim this overlap flap back to leave approx. 2" of plastic up the wall. (Use this cut off section to repair damage in the underlayment as needed*, see note below).

Step 3: Lay second row of underlayment flush to first row. Make sure the overlap flap is next to first row, and the ends wrap up the walls. (If flooring installation has already begun, make sure to stop the flooring approx. 8 inches from the side of the underlayment to allow for the installation of the overlap flap.)

Step 4: Again, reach under and grab the overlap flap. Pull the flap up and fold it back to expose the peel and stick strip. Remove the white protective cover from the adhesive strip. Lay overlap flap across the first row of underlayment and press into place.

Step 5: Continue this procedure row by row until the entire floor area is covered.

**TOOLS + TECHNIQUES**

# Before You Begin

### Notes

- Stuga flooring is covered by a Limited Lifetime Warranty. However, warranty coverage may be lost due to failure to strictly follow all installation instructions and recommendations or the use of improper materials or tools. READ All INSTRUCTIONS CAREFULLY.
- Always begin installation with the tongues facing the wall!

### Important!

- Do not open packages until ready to begin installation. Stuga flooring is sealed at the factory with a 7% moisture content. Opening cartons to acclimate the flooring (as with some solid flooring) will not damage the material but could result in a difficult installation.
- As an installer, it is your responsibility to be aware of the grade, relative humidity of the room, and moisture content of the subfloor.
- You should check that each plank is free of damage or manufacturing defects. Any unusable boards should be set aside for later replacement.
- Flooring should be installed perpendicular to joists to prevent subfloor sagging. Subfloor must be reinforced to staple down parallel to joists.

### Prior to Installation

- See Jobsite/Subfloor Preparation document and follow all requirements before installation.
- Door casings should be notched or undercut to avoid difficult scribe cuts.
- Sweep or vacuum subfloor thoroughly.
- Once subfloor has been prepared, Stuga recommends covering subfloor with Nature All-In-One Underlayment or 15 lb. or higher asphalt felt or rosin paper to retard moisture and help alleviate any remaining variations.

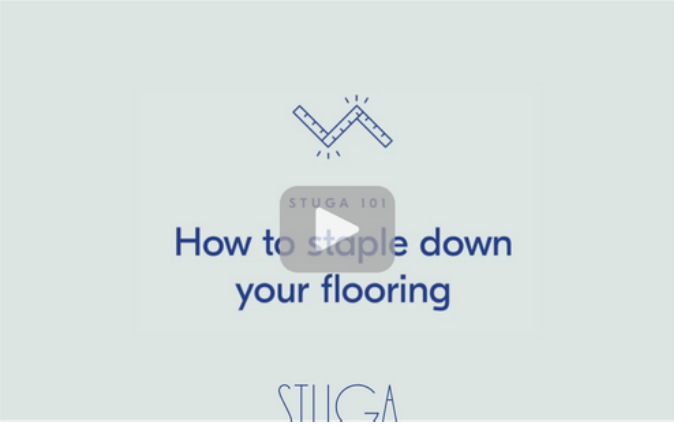
### Tools Needed

- Stapler that accommodates 18 gauge staples with a 1/4" crown and 1" inch to 11/2" leg. (Typically used for securing plywood underlayment) Similar to Power Nail 1890U

**TOOLS + TECHNIQUES**

# Before You Begin

- Safety goggles
- Portable air compressor
- Air regulator (preferably in line type)
- Air hose
- Utility knife
- Stuga Tapping Block (included in Welcome Box)
- Shims



**TOOLS + TECHNIQUES**

# Staple Down Installation

### Stapling Technique

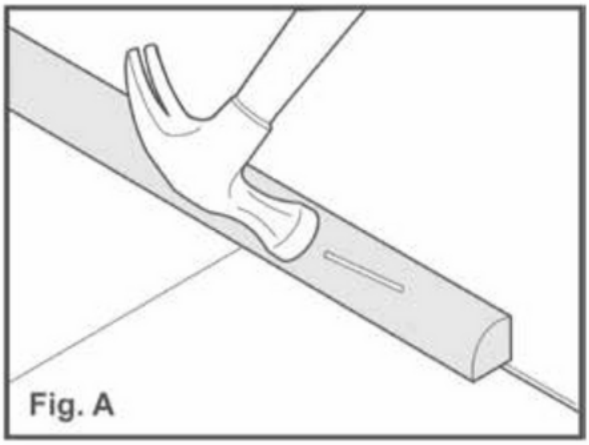
- The staples will be placed within the extended portion of the groove side of the locking joint. It should be placed on the flat surface between the bump that provides the lock to the locking system and the groove.
- The air pressure is typically set at 80-90 psi to adequately countersink each of the staples. Depending upon the length of the hose between the compressor and the stapler, along with the thickness of the material, you may have to adjust the air pressure up or down slightly.
- Visually, the staple should be slightly countersunk without breaking the wood fibers and without going through the surface. Great care should be taken as to not driving the staple totally through the flat surface. You must also make sure that it is countersunk deep enough that it doesn't interfere with the next board engaging into the groove or causing a dimple effect on the finished surface.
- Any wood fibers that are visible around the staple should be gently scraped away as to not prohibit engagement of the next board.
- The staples should be placed no further apart than 4" and no closer to the end joint than 4".

**TOOLS + TECHNIQUES**

# After Installation

### Trim and Moldings

- Remove any expansion shims and use required Stuga moldings and/or trim pieces to cover perimeter gaps (Fig. A). Always nail moldings to wall, never to flooring.




### Clean Up

- Immediately clean any debris such as wood chips, saw dust etc. that were left on wood flooring during installation. Sweeping and vacuuming is ideal here.

### Maintenance

- Clean floor using dry dust mop or damp (lightly misted or well rung out) mop or cloth.
- Regularly use Stuga Spray Cleaner for best results.
- Do not use oil soap or water-emulsion, self polishing waxes.
- NEVER wet mop floor.
- Place Peel & Stick Floor Protectors on furniture legs to prevent damage.
- For oiled Stuga floors please refer to the video on the following page regarding applying the recommended Satin Oil or Freshen Up.

**TOOLS + TECHNIQUES**

# After Installation


STUGA

# Subfloor Prep Instructions

**SUBFLOOR + INSTALLATION PREPARATION**

# Subfloor Preparation

**IMPORTANT**

Note: Warranty coverage may be lost due to failure to strictly follow all installation instructions and recommendations and/or the use of improper materials or tools. READ ALL INSTRUCTIONS CAREFULLY!

## Subfloor Specifications

A. The surface of the subfloor must be level to within 1/8" in an 8ft. radius. Check this by using the edge of a Stuga plank to find high/low spots. To fill excessive voids or variations in the subfloor, use leveling compounds approved for your application. Consult the compound manufacturer to be sure it is appropriate. Allow the compound to dry thoroughly before beginning wood floor installation. Fifteen-pound felt or roofing paper is also appropriate to level a floor for a float-in installation. Cut small pieces to fit the shape of the depression and then stack as many sheets as necessary to level the area. DO NOT use this method to correct extensive variations in concrete subfloors.

B. You must test concrete subfloors prior to installation by one of the following methods. Concrete subfloors must not contain more than 3 lbs. moisture on a dry-weight basis (calcium chloride test). Subfloor must read 4.5 or less with Tramex meter. Follow ASTM2170 - subfloor relative humidity not to exceed 75% with in-situ probe. Moisture content of wood subfloors must be less than 12% Moisture Content (MC). Document and keep ALL test results. Subsequent excessive moisture after pre-installation documented testing is evidence of moisture intrusion and will not be covered under Stuga warranty.

C. The subfloor must be clean.

D. Relative humidity at the job site must be, and remain, minimum 30%, maximum 60%. Temperature setting must be, and remain, within 15° F of normal operating range.

## Evaluation

Before installing a Stuga floor, inspect the job site thoroughly. With the help of the Installation Environment Chart determine if grade, subfloor, and subfloor conditions are acceptable for

**SUBFLOOR + INSTALLATION PREPARATION**

# Subfloor Preparation

the installation method you plan to use.

Exterior: Carefully inspect the outside surroundings for improper drainage and predictable or obvious sources of moisture. The yard should be graded (at least 6" in 10 ft.) to slope away from the foundation. Be sure that gutters and eaves sufficiently prevent rain from penetrating the foundation.

Under the house: In homes with crawl space or pier-beam foundations, foundation vents must provide cross-ventilation with no dead air space. Vents should be located throughout the foundation with opening area equal to 1-1/2% of the square-foot area within the crawl space (eg. a 1000sq. ft. crawl space must have 15 sq. ft. of vents that remain open all year). If excessive moisture exists underneath the house, you must lay a 6 mil black polyethylene moisture barrier on the ground in the crawl space below the installation area.

Interior: Check the moisture content of the subfloor. See item "B" above as well as "Moisture" at the end of this section. Room conditions can also indicate high moisture and relative humidity. Look for water stains, peeled paint near windows and doors, and rusty metal, especially nails.

### Preparation

Wood Subfloors: Moisture Content (MC) must be less than 12%. To prepare the subfloor for installation, re-nail any loose areas with squeaks. Sand or plane any high spots and fill any low areas The subfloor should not vary more than 1/8" in an 8' radius. Check this by using the edge of a Stuga plank to find any high or low spots. See Installation Environmental Chart for Approved Subfloors.

Preferred Subflooring: 3/4" (23/32", 18.3 mm) CDX grade plywood subfloor/underlayment 4' x 8' sheets OR 3/4" (23/32" 18.3mm) OSB subfloor/underlayment grade, with joint spacing 19.2" (475mm) on center joint construction or less. Direct Glue-Down installations: 2 layers 1/2" (11.9mm) CDX plywood.

Minimum Subflooring: 5/8" (19/32", 15.2mm) CDX plywood subfloor/underlayment 4' x 8' sheets, maximum 16" (400mm) on center joint construction. Direct Glue-Down installations: 2

**SUBFLOOR + INSTALLATION PREPARATION**

# Subfloor Preparation

layers 3/8" (10mm) CDX plywood.

Follow panel manufacturer recommendations for spacing and fastening. Typical panel spacing for joint systems is 1/8" (3.2mm) around perimeter and fastened every 6" (150mm) on bearing edges and every 12" (300mm) along intermediate supports.

Door casing should be notched or undercut to avoid difficult scribe cuts.

If nailing/stapling the floor, (Stuga 10mm thru 20mm Traditional Tongue & Groove or Woodloc®) we suggest you cover the sub floor with 15 lbs. or higher asphalt felt to retard moisture and to help alleviate variations in the subfloor.

Concrete Subfloors: Lightweight (float-in only) and standard-density (float-in and glue-down concrete subfloors are ideal applications for a Stuga floor. Concrete subfloors are generally acceptable for floating installation if the subfloor appears to be dry (i.e. no standing water or discoloration of concrete) and Stuga Floating Underlayment is used and installed properly. Be sure that, as a minimum, any concrete subfloor is at least 50-60 days old before installing a wood floor over it.

### Moisture

To curb the adverse effects moisture will have on a Stuga floor and to determine the source of moisture problems, use the following checklist:

- [ ] Inspect the gutters, drains, and down spouts outside the house. Clear out any clogs caused by leaves, dirt, or other substances. Down spouts are designed to transport water away from a foundation.
- [ ] Check the landscaping surrounding the home to be sure the yard is sloped away from the foundation (at least 6" in 10 ft.).
- [ ] Check windows and doors for proper drainage and waterproof caulking.
- [ ] Inspect concrete subfloor for cracks or buckling. Sometimes the water table (water beneath the surface) may rise and force water up through the concrete floor with

**SUBFLOOR + INSTALLATION PREPARATION**

# Subfloor Preparation

hydrostatic pressure.

- [ ] Check the ventilation system in the crawl space, basement, and attic. Moisture will collect on walls and floors if dead air (i.e. little or no ventilation) is present. As a rule, ventilation per sq. ft. should equal 1-1/2% of the sq. ft. of the area in question.

- [ ] Inspect pipes, water heater tank, dishwasher, and any other plumbing fixtures in the affected area.

- [ ] Remember to take seasonal changes in relative humidity into consideration when installing a Stuga floor.

- [ ] Signs that the moisture content is too high include discolored (darker) concrete and evidence of actual water droplets

**Required moisture testing for ALL Stuga radiant heat installations and direct glue-down flooring:**

Calcium Chloride test with a reading of 3 lbs. or less on a dry weight basis (2 lbs. or less for Radiant Heat Installations). Call the NWFA at 800-422-4556 (or 800-848-8824 in Canada) for the testing kit source nearest you. Follow test kit manufacturer's instructions for conducting test and measuring results.

**Concrete Moisture Barrier System***

* If moisture is present an alternative is a barrier of inexpensive sheet vinyl or "slip sheet" (PVC). Use the manufacturer's recommended adhesive for a full spread application to completely adhere the vinyl to the subfloor. Since Stuga cannot guarantee the bond of the vinyl to the subfloor, or subsequent performance of the vinyl, a patch test is strongly advised. Install several 3" x 3" pieces of vinyl in different areas of the installation. Wait 72 hours. Remove the vinyl. If the backing remains attached to the concrete, the subfloor should be acceptable for full spread vinyl installation. Note: Concrete sealers are typically NOT approved for Radiant Heat installations.

**SUBFLOOR + INSTALLATION PREPARATION**

# Subfloor Preparation

Other Subfloors: Stuga floors can be installed directly over some existing floors (i.e. vinyl and rubber tile, steel plates, terrazzo, and existing wood floors). The subfloor or existing floor must meet the requirements listed in "Subfloor Specifications." A Stuga floor installed over existing floors must be installed with the float-in method.

| INSTALLATION ENVIRONMENT CHART | | | |
|---|---|---|---|
| **Grade Type** | **Float** | **Staple** | **Glue** |
| Above Grade | Yes | Yes | Yes |
| On Grade | Yes | Yes | Yes |
| Below Grade | Yes | No | Call First |
| Over Radiant Subfloor | Yes | No | Call First |
| **Subfloor Type** | **Float** | **Staple** | **Glue** |
| Concrete (701lbs ft3 density or higher) | Yes | No | Yes |
| Light-weight concrete | Yes | No | No |
| Association grade underlayment plywood | Yes | Yes | Yes |
| Association grade underlayment particle board | Yes | No | Yes |
| Stamped Underlayment Grade OSB | Yes | Yes | Yes |
| Old wood floors - above grade | Yes | No | No |
| Asphalt Tile | Yes | No | No |
| Inlaid linoleum | Yes | No | Call First |
| Vinyl asbestos tile | Yes | No | No |
| Cushion vinyl | Yes | No | No |
| Rubber tile | Yes | No | No |
| Solid vinyl tile | Yes | No | No |
| Steel | Yes | No | No |
| Marble | Yes | No | No |
| Ceramic | Yes | No | No |
| Carpet | No | No | No |

**CALCULATION WORKSHEET**

# Minimum Board Width

Purpose: To ensure last board of the installation (or long board at an obstruction) is not too narrow.

General Rule: Stuga requires that no board have a width less than 3" or .38" of a full board width.

Notes on Equation: This rule applies to boards with an original thickness of 5/8" x 3-strip wide. This equation should be used when a board 4' or more in length meets an obstruction.

## WORKSHEET

Step 1

**Measure width of connected area* from starting wall to finish wall or obstruction, in inches. Round to the nearest 1/4".**

Connected Area Width in inches with fraction: _____

Step 2

**Convert "inches with Fraction" to "inches with Decimal". Use conversion chart below.**

Connected Area Width in inches with decimal: _____

Step 3

**Multiply "Required Expansion Space" by 2. Use chart below.**

Total Expansion Needed from above: _____

| Connected Area Width (From Step 2) | Expansion Space | | Total |
|---|---|---|---|
| Under 144" | ¼" | x2= | 0.5" |
| 144" - 288" | ½" | x2= | 1.0" |
| 288" - 480" | ¾" | x2= | 1.5" |

Step 4

**Subtract Total Expansion Needed from Connected Area Width to determine Actual Floor Width.**

Total from Step 2: _____ "

Total from Step 3: - _____ "

Actual floor Width in inches with decimal: = _____ "

Step 5

**Determine total # of rows of flooring needed.**

Actual floor width (Step 4): _____ "

Board width in decimal - measure board and use chart below to convert: ÷ _____ "

Total rows of flooring: = _____

Step 6

**If the result in Step 6 contains a decimal less than .38", you must rip the starting row in half to ensure proper width of the last row.**

## WORKSHEET

Step 1

**Measure width of connected area* from starting wall to finish wall or obstruction, in inches. Round to the nearest 1/4".**

Connected Area Width in inches with fraction: 325 ¼"

Step 2

**Convert "inches with Fraction" to "inches with Decimal". Use conversion chart below.**

Connected Area Width in inches with decimal: 325.25"

Step 3

**Multiply "Required Expansion Space" by 2. Use chart below.**

Total Expansion Needed from above: 1.5"

| Connected Area Width (From Step 2) | Expansion Space | | Total |
|---|---|---|---|
| Under 144" | ¼" | x2= | 0.5" |
| 144" - 288" | ½" | x2= | 1.0" |
| 288" - 480" | ¾" | x2= | 1.5" |

Step 4

**Subtract Total Expansion Needed from Connected Area Width to determine Actual Floor Width.**

Total from Step 2: 325.25"

Total from Step 3: - 1.50"

Actual floor Width in inches with decimal: = 323.75"

Step 5

**Determine total # of rows of flooring needed.**

Actual floor width (Step 4): 323.75"

Board width in decimal - measure board and use chart below to convert: ÷ 7.875"

Total rows of flooring: = 41.11 rows*

**The first board in this installation would be ripped in half.*

Step 6

**If the result in Step 6 contains a decimal less than .38", you must rip the starting row in half to ensure proper width of the last row.**

*Ripping the starting row in half will increase the last board width by .50 of a board. In this case the last board will end up being .61 of a board or approx. 5", instead of .11 or 1" wide.*

**CALCULATION WORKSHEET**

# Minimum Board Width

*** From Step 1**

Connected Area is defined as all areas connected without a break. If Room A and Room B both are to have flooring installed and are directly connected, or connected by a hallway, without a t-molding, the connected area is the width of both Room A and Room B, and the hallway (if applicable).

Obstructions can include cabinets, islands, and the wall opposite the starting wall in the same room, if the flooring continues to another room without a break. Multiple calculations may need to be made to best determine the amount cut from the starting row.