



INSTALLATION MANUAL

ADVANTECHQUIET.COM



ATTENTION: This installation guide is intended to provide general information for the designer and end user. The following guidelines will help you safely and properly install the AdvanTech® X-Factor subflooring panels. We urge you, and anyone installing this product, to read these guidelines to minimize any risk of safety hazards and prevent voiding any applicable warranties. This manual is a general installation guide and does not cover every installation condition. Proper installation shall be deemed to mean the most restrictive requirement specified by Huber Engineered Woods (HEW), local building code, engineer or architect of record, or other authority having jurisdiction. You are fully and solely responsible for all safety requirements and code compliance. For additional information contact Huber Engineered Woods LLC.



**ENGINEERED
WOODS**

10925 David Taylor Drive, Suite 300
Charlotte, NC 28262
Phone: 800.933.9220 // Fax: 704.547.9228



SAFETY GUIDELINES: Follow all OSHA regulations and any other safety guidelines and safety practices during installation and construction.

-  Use approved safety belts and/or harnesses or other fall protection equipment.
-  Make sure the floor framing system is properly fastened to the supporting walls, beams, girders or other supports and is properly braced against roll over during floor panel installation. See floor joist or truss manufacturer's installation instructions for additional information. Follow all OSHA regulations and any other safety guidelines and safety practices during installation and construction.
-  Wear rubber-soled or other high-traction footwear while installing AdvanTech X-factor subflooring panels in a roof application. Do not wear footwear with worn soles or heels.
-  Ensure the roofing surface is free from oil, chemicals, sawdust, dirt, tools, electric cords, air hoses, clothing and anything else that might create a tripping hazard.
-  Install temporary toe boards along the roof surface of the panels where needed.



CONTENTS

ADVANTECH® X-FACTOR

OVERVIEW	6
NOTES & LIMITATIONS	7
STORAGE AND HANDLING	10
AVAILABLE PANEL SIZES	11
BENEFITS	12
CLASS II VAPOR RETARDER	12
TOOLS	13
FASTENING GUIDE	13
GENERAL INFORMATION AND COMPATIBILITY	14
ADVANTECH SUBFLOOR ADHESIVE	15

ADVANTECH® X-FACTOR - INSTALLATION

INSTALLATION STEP 1	16
INSTALLATION STEP 2	18
INSTALLATION STEP 3	20

ADVANTECH® X-FACTOR - FLOOR COVERINGS

ALLOWABLE FLOOR COVERINGS	21
DIRECT APPLICATION	
Carpet and Pad	22
¾" Hardwood Flooring Mechanically Fastened	23
¾" Hardwood Flooring Adhered	24



CONTENTS CONTINUED

Floating Engineered Wood/Vinyl Flooring	25
Engineered Wood Flooring Mechanically Fastened	26
Adhered Engineered Wood Flooring	27
SINGLE UNDERLAYMENT	
Adhered Vinyl/VCP/LVP/VCT/ Commercial Carpet	28
TILE FLOOR SYSTEMS	
Ceramic and Porecelain Tile	29



ADVANTECH® X-FACTOR // OVERVIEW

Huber Engineered Woods (HEW) is committed to the responsible use of natural resources. AdvanTech® panels are produced from young, fast growing trees for less waste and faster availability. All parts of the log are used during production. Leftover chips, bark and sawdust are used as fuel to reduce energy use during manufacturing.

The International Code Council (ICC) Evaluation Service (ES) provides technical evaluations of building products for manufacturers that want to validate and qualify their products as having superior design properties. HEW has maintained an ICC-ES report for its engineered wood subfloor, AdvanTech subflooring, to elevate it from other subfloors that only meet the PS-2 industry standard. Now, AdvanTech X-Factor Subflooring has been added to the Evaluation Service Report, ESR-1785, certifying that the panels endured testing protocols that measure and ensure higher published values of panel strength, stiffness, and fastener holding power. AdvanTech X-Factor subfloor has an Evaluation Service Listing Report ESL-1561, qualifying the panels to achieve a Class II Vapor Retarder when required. AdvanTech X-Factor offers moisture protection that provides an enduring premium appearance. For additional information, go to AdvanTechQuiet.com.

AdvanTech X-Factor subfloor panels, certified to be in conformance with requirements for U.S. Department of Housing and Urban Development (HUD-FHA) Use of Materials Bulletin #40C, bear the designation HUD-UM-40C within the stamp.



ADVANTECH® X-FACTOR // NOTES & LIMITATIONS

-  Do not install water sealers on AdvanTech X-Factor subflooring panels. This will void the limited lifetime warranty.
-  For finished floor adhesive compatibility, please refer to the Technical Tip "[Finished Floor Adhesive Compatibility with AdvanTech X-Factor Panels](#)" at huberwood.com. Unless stated otherwise, do not use water-based, latex-based or hybrid adhesives with AdvanTech X-Factor subflooring. A polyurethane or solvent-based adhesive should be used.
-  AdvanTech X-Factor subfloor panels are not designed for permanent exterior applications such as screened-in porches, exterior decks/porches/patios/open walkways, boats and boat docks, trailers, scaffolding, exterior wood siding, furring strips, animal shelters and other permanently exposed applications. These applications would void the limited lifetime warranty.
-  AdvanTech X-Factor subflooring should be dried-in under the finished roof and wall cladding assemblies within 500 days of installation.
-  Avoid dropping panels on corners or edges.
-  Do not use salt on AdvanTech X-Factor subflooring. Follow the guidance in the Tech Tip "[Removing Ice and Snow from AdvanTech Subflooring](#)".
-  AdvanTech X-Factor performs as structural decking only when used in roof applications. Roofing underlayment is required.



ADVANTECH® X-FACTOR // NOTES & LIMITATIONS

EXPOSURE

AdvanTech X-Factor panels should not be used in applications that will expose the panels to weather permanently. AdvanTech X-Factor panels are not approved or certified for exterior exposure. Classified as Exposure 1 under PS 2, X-Factor panels are intended to resist the effects of moisture due to construction delays or other conditions of similar severity but are not suitable for permanent exposure. Huber Engineered Woods allows AdvanTech X-Factor subflooring to be exposed for up to 500 days.

FLAME SPREAD

AdvanTech X-Factor subfloor panels are recognized as having a Class C (III) flame spread rating without need for test or label by HUD/ FHA Manual of Acceptance Practices, Section 405-8 to the Minimum Property Standards.

FOUNDATIONS

Crawlspace foundations shall have a durable ground cover vapor barrier installed and may be vented or unvented*. All foundations must be constructed in accordance with applicable code, to include code required distance above finished grade. In addition, panels should be acclimated to end use service conditions before applying necessary finished flooring.

* An unvented crawlspace shall be constructed in accordance with the governing building code or designer of record.



ADVANTECH® X-FACTOR // NOTES & LIMITATIONS

SUBFLOOR ADHESIVE

Use polyurethane or solvent-based subfloor adhesives that conform to industry standard APA AFG-01 or ASTM D 3498, and follow manufacturer's recommendations when installing AdvanTech X-Factor subflooring. Recommended adhesives structurally bond the panel to the joist for a stronger, stiffer installation than panels installed with fasteners alone. Panels should span two or more spans (three or more floor joists) with the long dimension perpendicular to the floor framing.

THINSET

When installing a thinset directly to AdvanTech X-Factor subfloor panels, use a modified thinset. Ensure the modified thinset is compatible with OSB substrates. It is not recommended to use non-modified thinset directly installed over the AdvanTech X-Factor subfloor panels.

COATINGS

Oil-based paints, primers and stains can be applied to AdvanTech X-Factor subflooring. Additional coatings that can be applied are 2-part epoxy/garage floor epoxy and bedliner coatings. DO NOT use water-based products or water sealers with AdvanTech X-Factor subflooring.



ADVANTECH® X-FACTOR // STORAGE & HANDLING

- ✔ Set panel stack on three supports (stickers) to keep off the ground.
- ✔ Outdoors, cover panels loosely with waterproof protective material.
- ✔ Anchor covers on top of the stack but keep away from sides and bottom to assure good air circulation.
- ✔ In high moisture environments, cut banding on the panel stack to prevent edge damage.
- ✔ When using a forklift, put the stack on a pallet or supports to minimize damage from forks.





ADVANTECH® X-FACTOR // PANEL SIZES

AdvanTech X-Factor subflooring are available in nominal 4' x 8' sheets with a tongue and groove* (T&G) profile. AdvanTech X-Factor subfloor panels are Exposure 1 rated and are available in the following span ratings and performance categories. AdvanTech uses SFI sourced wood.

 24 OC, Structural 1, 23/32 PERF CAT

Available sizes in 23/32"

- 4' x 8'

 48 OC, Structural 1, 1-1/8 PERF CAT

Available sizes in 1-1/8"

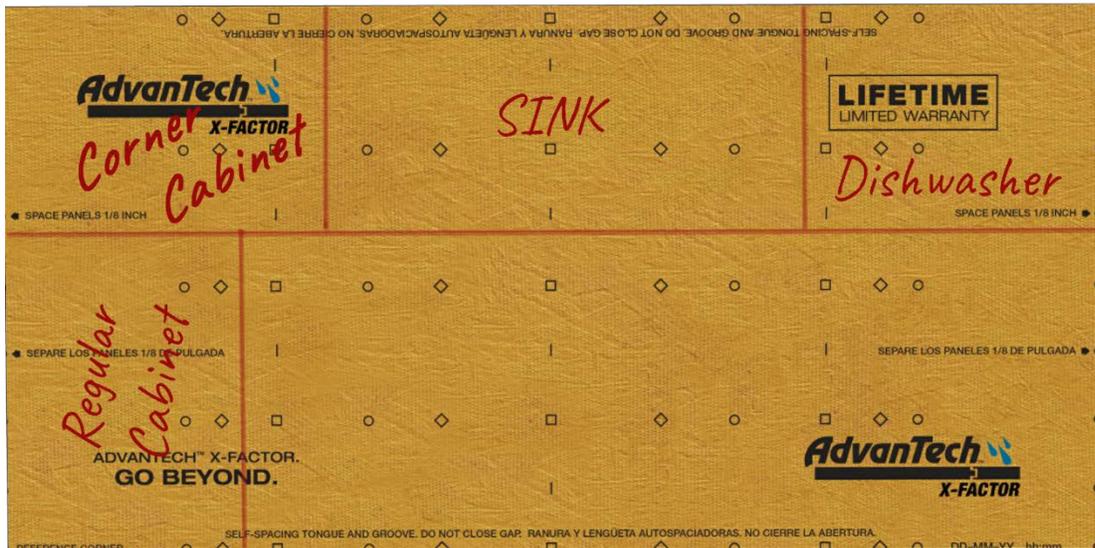
- 4' x 8'

*(Actual face dimensions for tongue & groove panel are approximately 47-1/2" x 95-7/8")



ADVANTECH® X-FACTOR // BENEFITS

AdvanTech X-Factor has protection against moisture that provides an enduring premium look. The surface of AdvanTech X-Factor panels allows for easy communication on the jobsite with a standard marker reducing the potential for installation errors.



ADVANTECH® X-FACTOR // CLASS II VAPOR RETARDER

AdvanTech X-Factor functions as a Class II Vapor Retarder as published in the Evaluation Service Listing Report ESL-1561 for finished flooring applications. For flooring applications requiring adhesive to be fully troweled, fill the panel seams with adhesive. For mechanically fastened applications, tape the seams using ZIP System™ flashing tape or similar tape. See the AdvanTech X-Factor FAQ for more information on acceptable flashing tapes.

PRO TIP: It is recommended to only tape the seams of AdvanTech X-Factor when a Class II Vapor Retarder is required, such as with hardwood flooring.



ADVANTECH® X-FACTOR // TOOLS

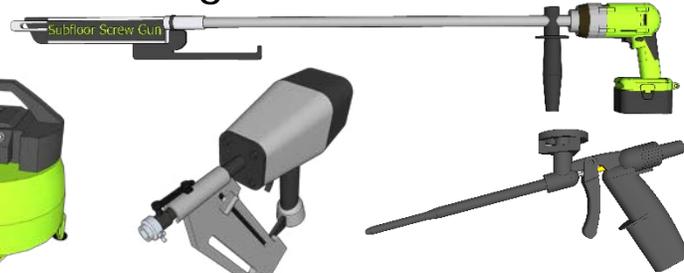
TOOLS

Common

- Pneumatic nail gun
- Generator
- Air compressor
- PPE

Recommended

- Collated screw gun
- Subfloor Adhesive Gun
- Framing Hammer



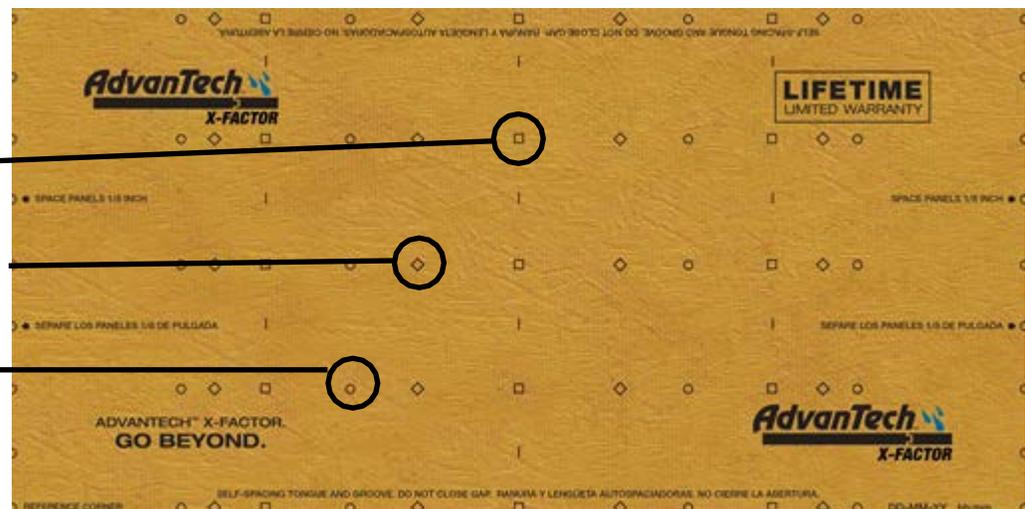
ADVANTECH® X-FACTOR // FASTENING GUIDE

AdvanTech® X-Factor subflooring is marked with circles denoting 16 inch o.c. framing, diamonds denotes 19.2 inch o.c. framing and squares denotes 24 inch o.c. framing.

Square = 24 inch
o.c. framing

Diamond = 19.2
inch o.c. framing

Circle = 16 inch
o.c. framing





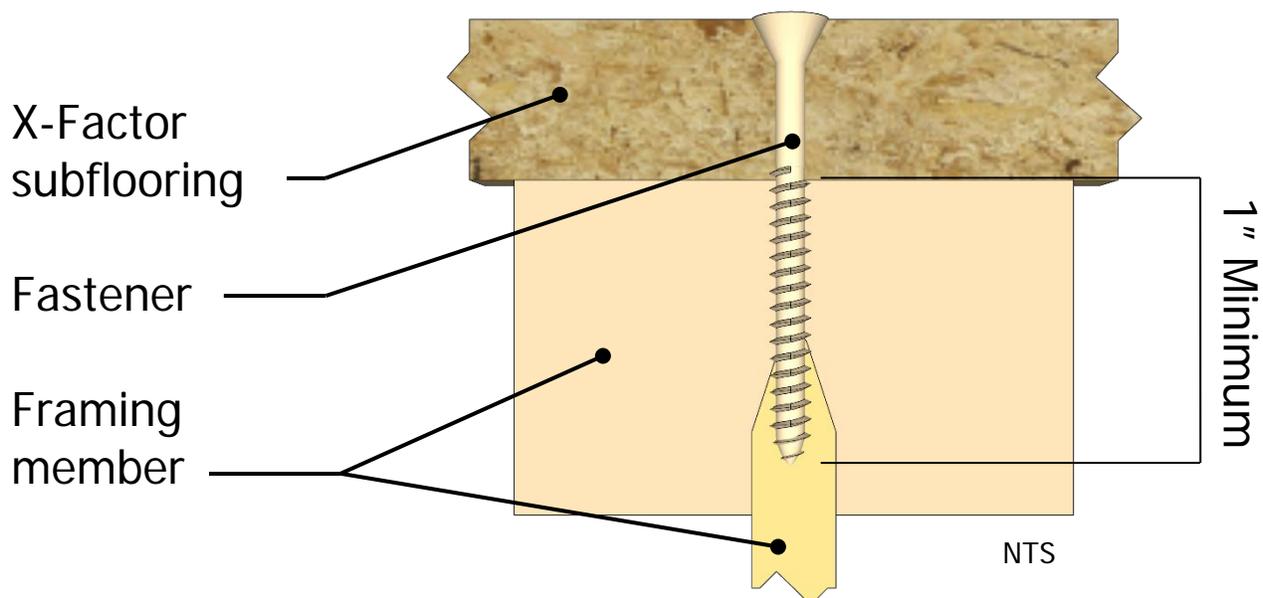
ADVANTECH® X-FACTOR // GENERAL INFORMATION & COMPATIBILITY

FASTENERS

Any code approved subfloor fastener can be used to attach the AdvanTech X-Factor subfloor panels to framing. Nails, screws and hybrid fasteners can be used with AdvanTech X-Factor subflooring. Hybrid fasteners do not eliminate the recommendation to use subfloor adhesive. See the table below for proper fastener selection.

Panel Thickness	$\leq 23/32''$	$> 23/32''$
Nail	8d	10d
Screw	#8	#9

The fastener must achieve at least 1-inch of penetration into the frame.



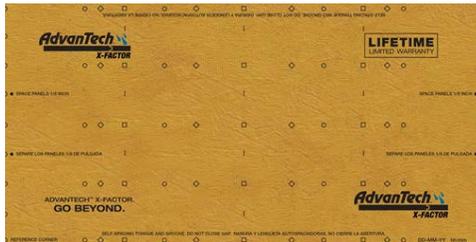


ADVANTECH® X-FACTOR // ADVANTECH™ SUBFLOOR ADHESIVE

ADVANTECH™ SUBFLOOR ADHESIVE

AdvanTech™ subfloor adhesive is a polyurethane adhesive designed to bond subflooring panels to floor framing. The AdvanTech™ subfloor adhesive can provide a 10-year no squeak guarantee wherever the subflooring panel meets framing for one or two-family dwellings.

How to get the AdvanTech X-Factor subflooring 10-year no squeak guarantee



Use AdvanTech X-Factor subfloor panels. **1**

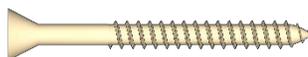
2 Use AdvanTech subfloor adhesive.



Ring-Shank Nail

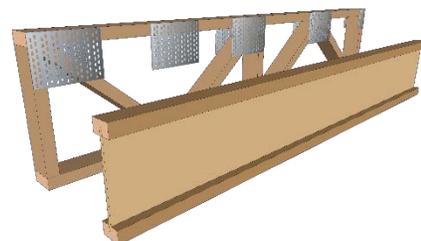


Threaded-Shank Nail



Use deformed-shank fasteners. **3**

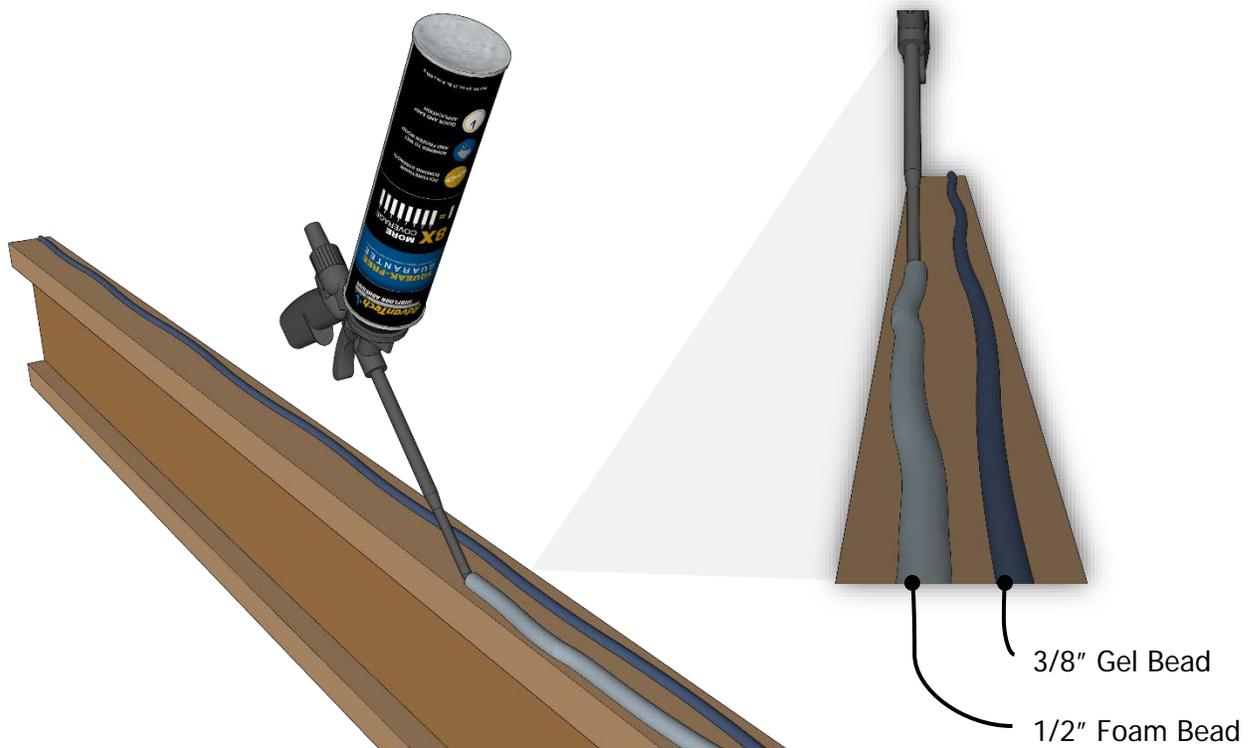
4 Use engineered wood-based framing (I-joist or truss)





ADVANTECH® X-FACTOR // INSTALLATION STEP 1

The following steps are presented as a general outline of the installation process. Apply a 3/8-inch bead of AdvanTech™ subfloor adhesive* (the adhesive should measure as 1/2-inch foam and will settle down to a 3/8-inch gel) on the top of the floor joists. The adhesive fills minor framing irregularities and provides a tight bond that helps prevent squeaks.

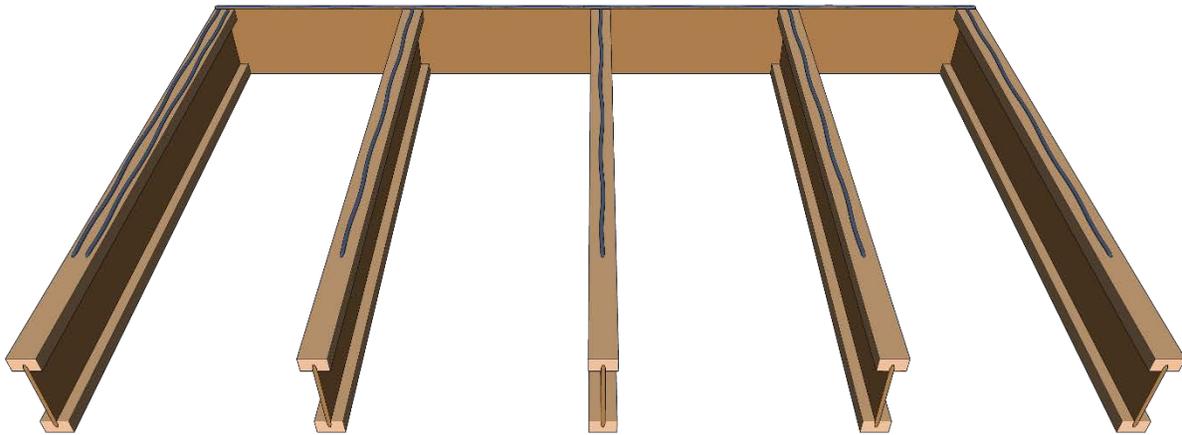


Where two subflooring panels come together on the same joist, apply two lines of adhesive to ensure both panels will have adhesive.

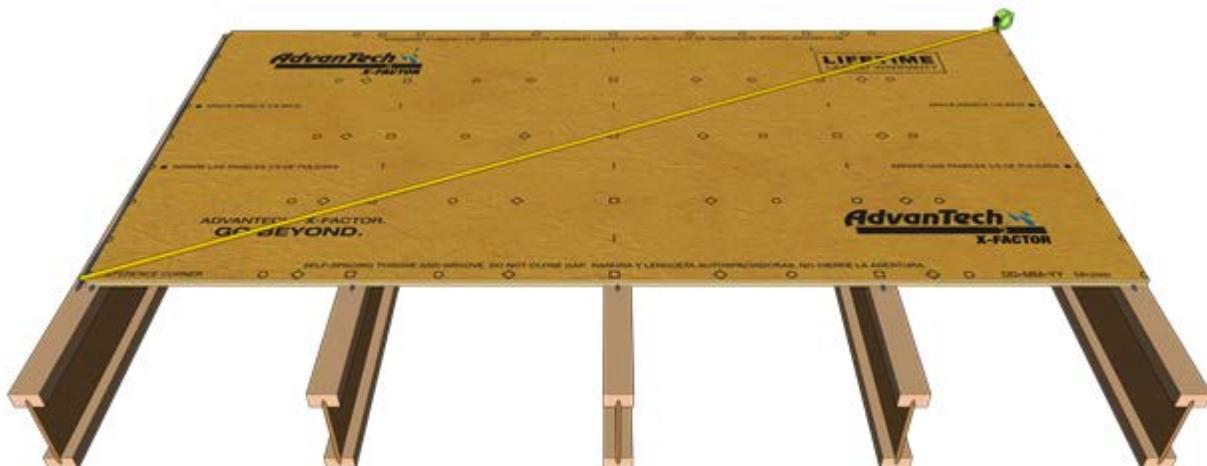
*Please see page 9 for compatible subflooring adhesive requirements when not using AdvanTech™ subfloor adhesive.



Apply only enough adhesive to lay one or two panels at a time to prevent the adhesive from curing or skinning. Adhesive performance is affected when it begins to skin over or cure, leading to squeaks or other problems. Install and store adhesives as directed by adhesive manufacturer.



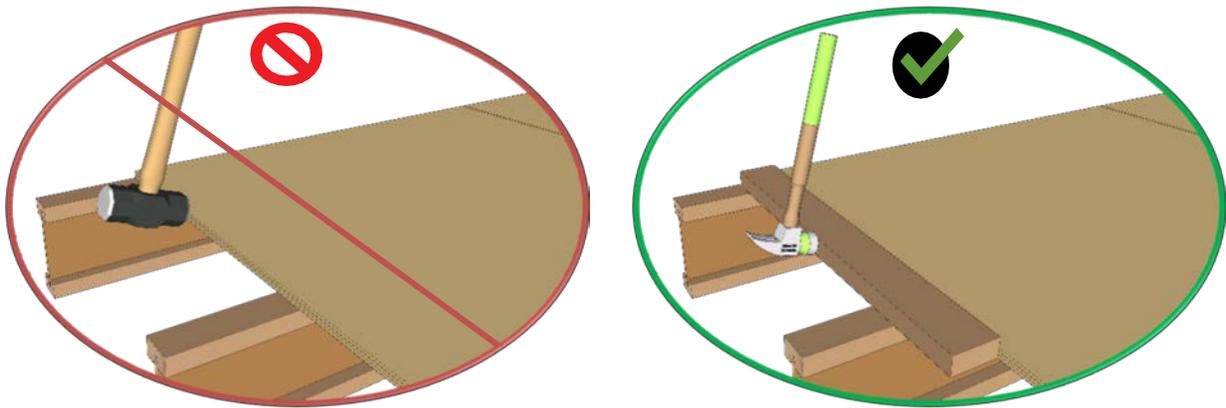
Immediately after applying the adhesive, lower the panel into place, making sure the panel is square on the joists. The top side of the panel should be facing up to allow for the certification stamp to be easily viewed from the bottom by local building officials. Panels should span two or more spans (three or more floor joists) with the long dimension perpendicular to the floor framing.





ADVANTECH® X-FACTOR // INSTALLATION STEP 2

Snug the tongue and groove (T&G) edges together using wooden blocks and a framing hammer. Avoid excessive force that can damage the tongue or groove. Damaged tongues or grooves can give the appearance of edge swell and may require costly sanding and blocking.



PRO TIP: Install the first row of AdvanTech X-Factor subflooring with the tongue profile oriented towards the exterior. This allows for the wooden block to be placed on the groove when tapping the panel into place. This prevents crushing of the tongue.

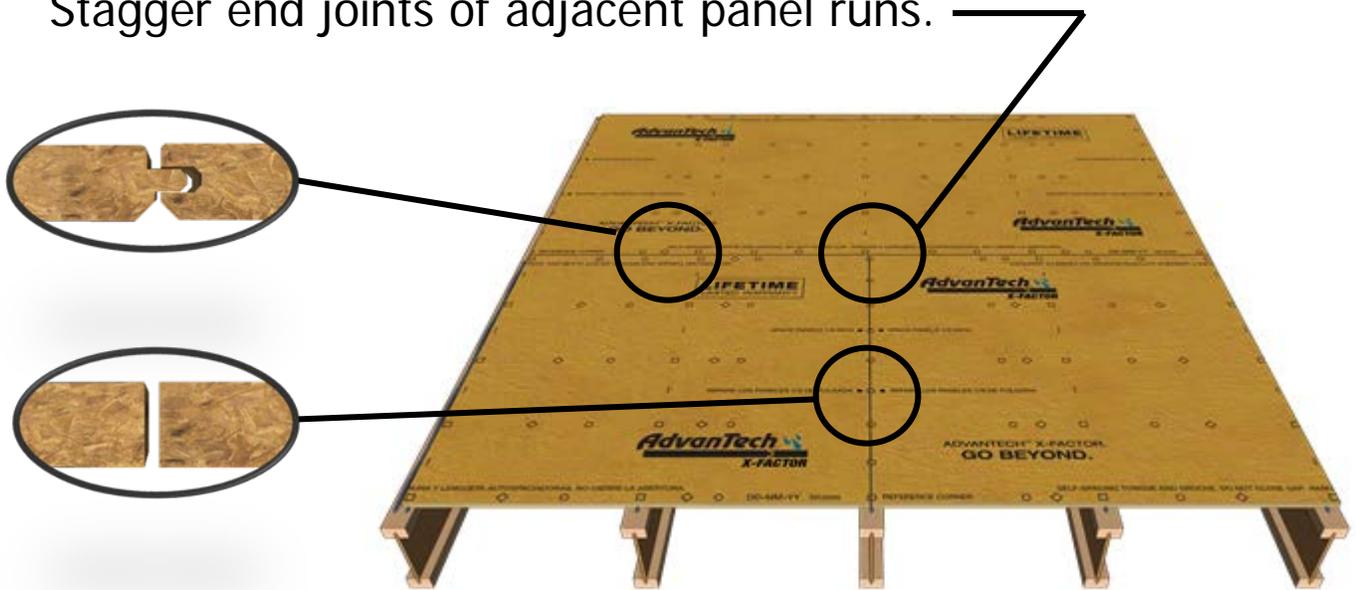




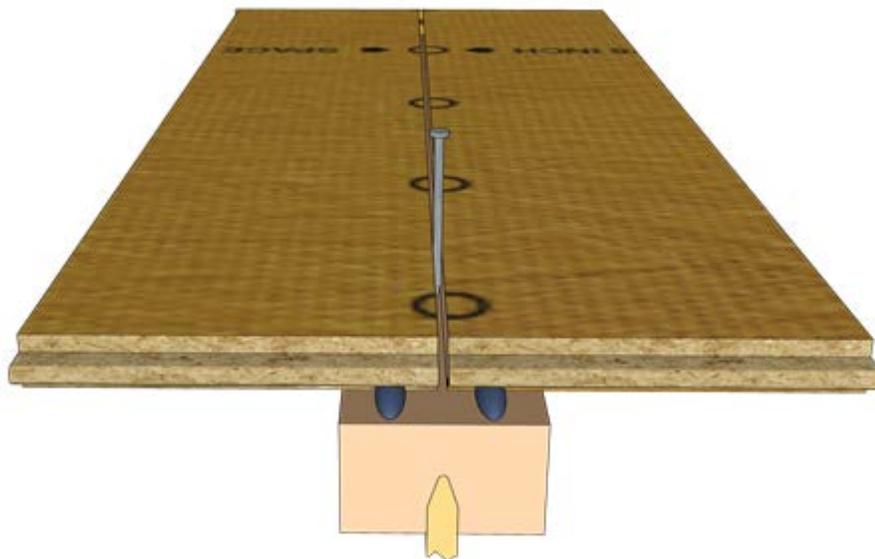
The 8-foot length of the panels have a T&G profile. The T&G edges are designed to self-space the AdvanTech X-Factor subfloor panels 1/8 inch.

The 4-foot lengths of the AdvanTech X-Factor subflooring should be spaced manually 1/8 of an inch.

Stagger end joints of adjacent panel runs.



PRO TIP: use 10d nails to space the AdvanTech X-Factor subfloor panels 1/8-inch.

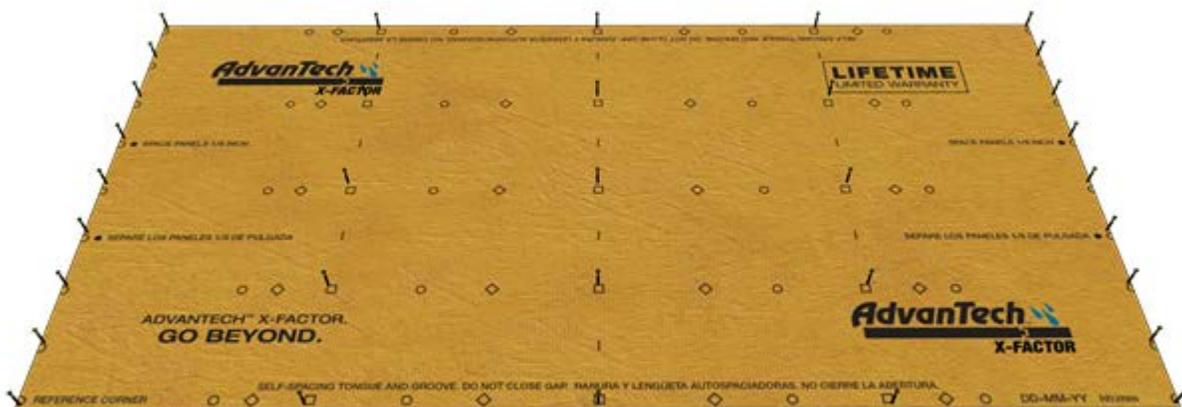




ADVANTECH® X-FACTOR // INSTALLATION STEP 3

Install ALL required fasteners (edges and intermediate) prior to adhesive skinning or curing. DO NOT sequence fastener installations starting at corners followed by a later stage installation at edges and intermediate locations. ALL fasteners must be installed during the subfloor adhesive's stated open time.

- Start at one corner and work your way to the remaining edges.
- Fasteners should be minimum 3/8-inch away from the panel edge.
- Fastener heads should slightly penetrate the panel surface.
- Maintain a maximum fastener spacing of 6-inch o.c. on supported edges (4-foot ends) and a maximum spacing of 12-inch o.c. at intermediate support locations.





ADVANTECH® X-FACTOR // FLOOR COVERINGS

The following floor coverings can be installed over AdvanTech X-Factor. Prior to installing the finished floor coverings over AdvanTech X-Factor subfloor, confirm framing and minimum subflooring thickness requirements with the finished floor manufacturer. The following pages expand on the typical installation procedures for select flooring coverings but are not representative of all finished floor manufacturer requirements.

Direct Application

- Carpet and Pad
- ¾" Mechanically Fastened Hardwood Flooring
- ¾" Adhered Hardwood Flooring
- Floating Engineered Wood/Vinyl Flooring
- Mechanically Fastened Engineered Wood Flooring
- Adhered Engineered Wood Flooring

Single Underlayment

- Adhered Vinyl/Luxury Vinyl Tile (LVT)
- Vinyl Composite Tile (VCT)
- Luxury Vinyl Plank (LVP)
- Commercial Carpet

Tile Floor Systems

- Ceramic Tile and Porcelain



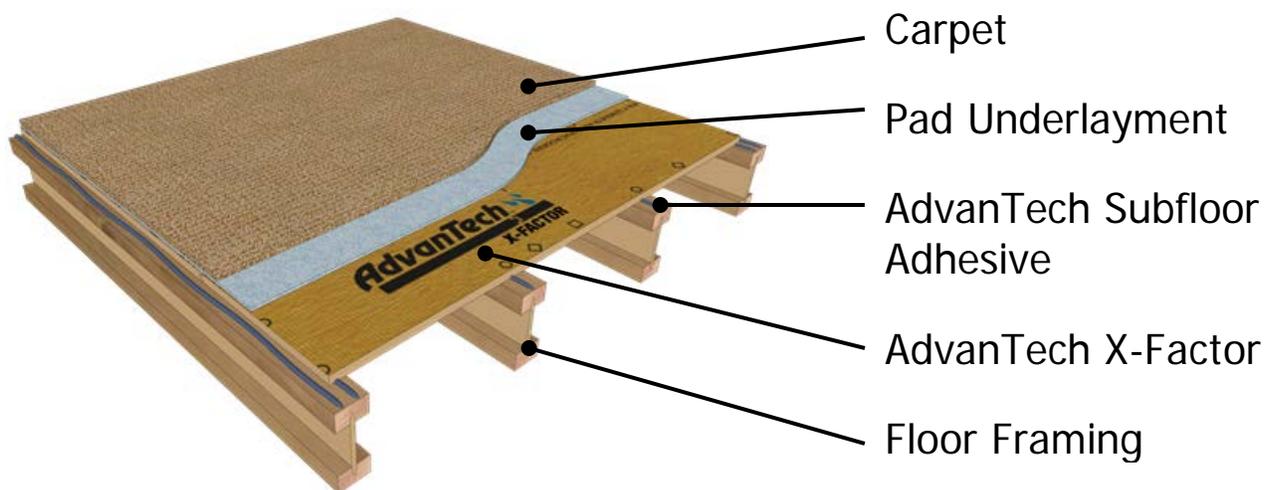
ADVANTECH® X-FACTOR // Direct Application

Carpet and Pad

STEP 1: Joists max spacing 24" o.c. with a 23/32" panel.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: Install padding and carpet per manufacturer's recommendations.





ADVANTECH® X-FACTOR // Direct Application

Mechanically Fastened Hardwood Flooring

STEP 1: Joists max spacing 19.2" o.c. with a 23/32" panel for finished flooring 3/4" or thicker.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: The AdvanTech X-Factor subfloor panels and the hardwood flooring moisture content should be $\leq 12\%$ and within 4% of each other. For wide plank flooring, please refer to flooring manufacturer's instructions as the moisture content tolerances are more stringent.

STEP 4: Tape the panel seams to achieve a Class II Vapor Retarder. Roll the tape with a rubber headed roller.

STEP 5: Install hardwood flooring perpendicular to the joist system.

PRO TIP: Use additional 1/2" wood underlayment if finished floor is installed parallel to the joist. Refer to manufacturer or NWFA* for fastener and installation recommendations.



*NWFA stands for the National Wood Flooring Association

** See AdvanTech X-Factor FAQ for more information on acceptable flashing tapes.



ADVANTECH® X-FACTOR // Direct Application

Adhered Hardwood Flooring

STEP 1: Joists max spacing 19.2" o.c. with a 23/32" panel for finished flooring 3/4" or thicker.

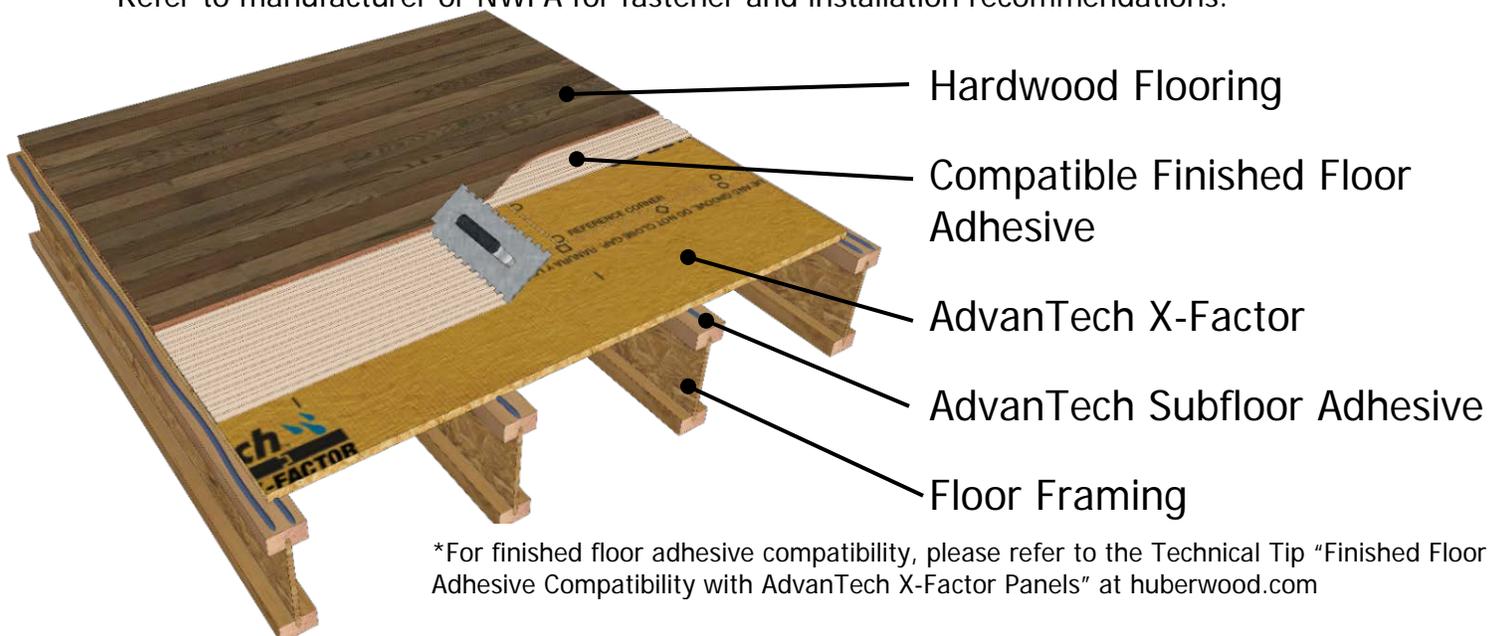
STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: The AdvanTech X-Factor subfloor panels and the hardwood flooring moisture content should be $\leq 12\%$ and within 4% of each other. For wide plank flooring, please refer to flooring manufacturer's instructions as the moisture content tolerances are more stringent.

STEP 4: Apply a compatible finished floor adhesive, to achieve a Class II Vapor Retarder ensure the seams are addressed with the trowel on adhesive.

STEP 5: Install hardwood flooring perpendicular to the joist system.

PRO TIP: Use additional 1/2" wood underlayment if installed parallel to the joist. Refer to manufacturer or NWFA for fastener and installation recommendations.



*For finished floor adhesive compatibility, please refer to the Technical Tip "Finished Floor Adhesive Compatibility with AdvanTech X-Factor Panels" at huberwood.com



ADVANTECH® X-FACTOR // Direct Application

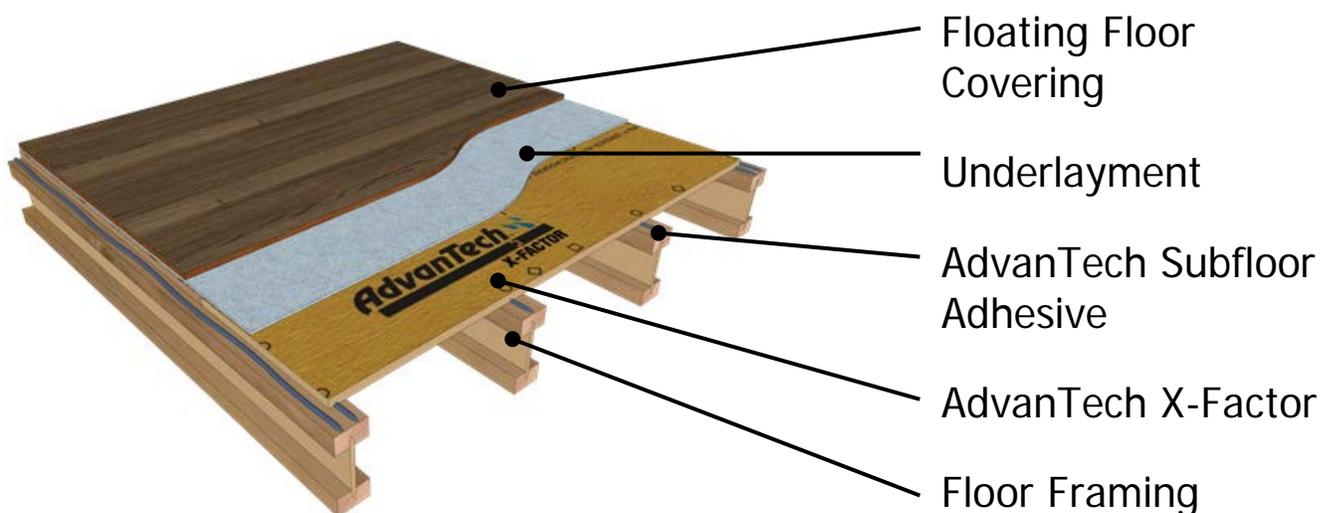
Floating Engineered Wood/Vinyl Flooring

STEP 1: Joists max spacing 19.2" o.c. with a 23/32" panel.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: The AdvanTech X-Factor subfloor panels and the floating hardwood flooring moisture content should be $\leq 12\%$ and within 4% of each other. For wide plank flooring, please refer to flooring manufacturer's instructions as the moisture content tolerances are more stringent.

STEP 4: Use cork or foam underlayment between AdvanTech X-Factor subfloor panels and floating floor. Install flooring per the manufacturer's installation instructions.





ADVANTECH® X-FACTOR // Direct Application

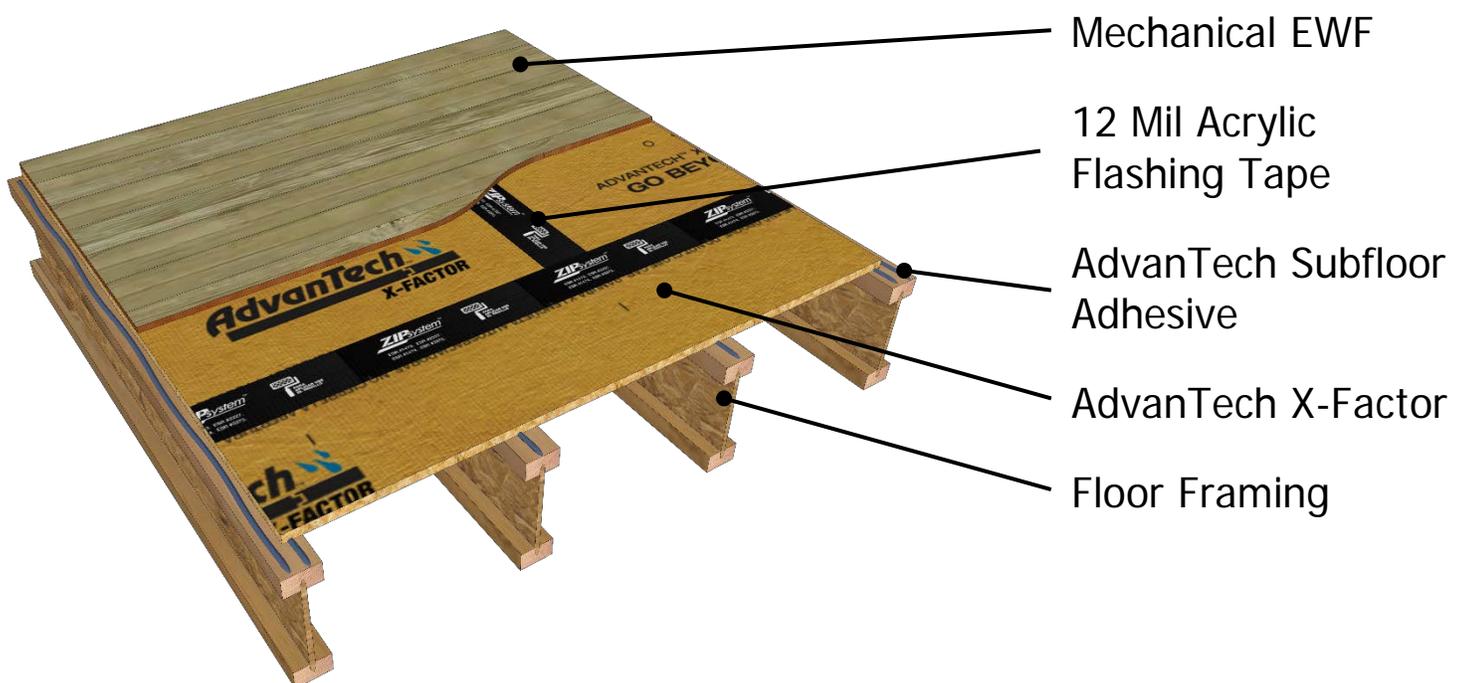
Engineered Wood Flooring – Mechanically Fastened

STEP 1: Joists max spacing 19.2" o.c. with a 23/32" panel.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: AdvanTech X-Factor subfloor panels and Engineered Wood Flooring (EWF) moisture content should be $\leq 12\%$ and within 4% of each other. Refer to EWF manufacturer for expansion spacing and suggested fasteners.

STEP 4: Tape the panel seams to achieve a Class II Vapor Retarder when necessary. Roll the tape with a rubber headed roller. Install EWF according to manufacturer's instructions.





ADVANTECH® X-FACTOR // Direct Application

Adhered Engineered Wood Flooring

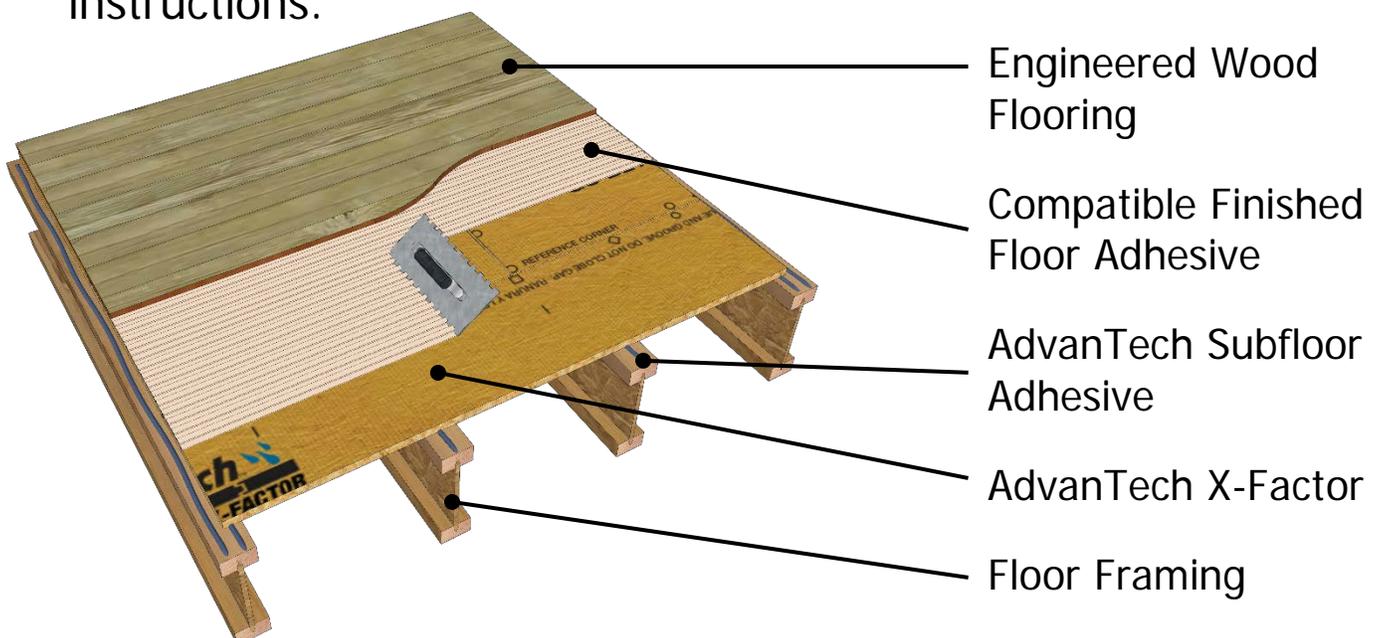
STEP 1: Joists max spacing 19.2" o.c. with a 23/32" panel.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: AdvanTech X-Factor subfloor and Engineered Wood Flooring (EWF) moisture content should be $\leq 12\%$ and within 4% of each other. Refer to EWF manufacturer for expansion spacing and suggested fasteners.

STEP 4: Apply a compatible finished floor adhesive, to achieve a Class II Vapor Retarder ensure the seams are addressed with the trowel on adhesive.

STEP 5: Install flooring per the manufacturer's installation instructions.





ADVANTECH® X-FACTOR // Single Underlayment

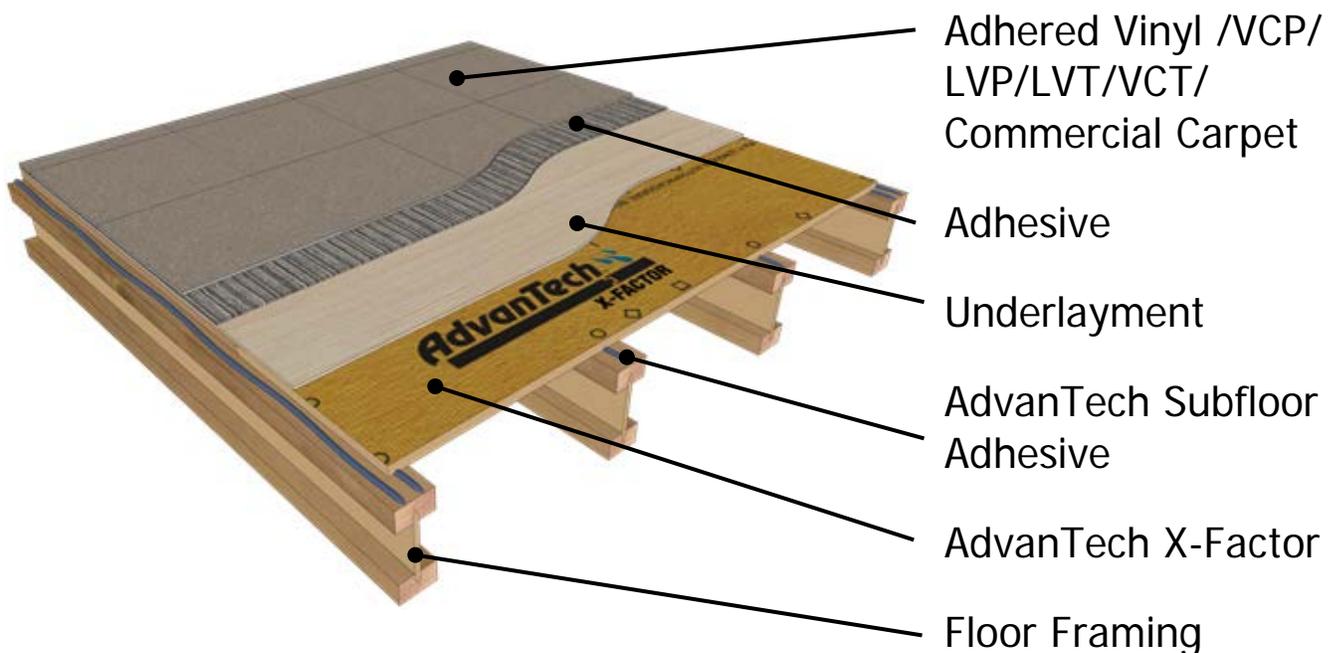
Adhered Vinyl/VCP/LVP/LVT/VCT/Commercial Carpet

STEP 1: Joists max spacing 24" o.c. with a 23/32" panel.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: Install ¼" underlayment over AdvanTech X-Factor subfloor panels. Note, fasteners of the underlayment should not extend beyond the bottom of the panels.

STEP 4: Apply adhesive with appropriate trowel size and install acclimated flooring covering material per manufacturer's instructions.





ADVANTECH® X-FACTOR // Tile Floor Systems

Ceramic and Porcelain Tile

STEP 1: The max joist spacing is 16" o.c. with a 23/32" subfloor panel. For joists spaced 24" o.c., the Tile Council of North America (TCNA) states a minimum 1-1/8" subflooring panel or a two-layer subfloor should be used.

STEP 2: Follow AdvanTech X-Factor subflooring installation as written in the previous sections of this installation manual.

STEP 3: Refer to the TCNA guidelines to determine the appropriate backer board or uncoupling membrane and only use a modified thinset when adhering to AdvanTech X-Factor subfloor panels.

STEP 4: Determine grade of thin-set to apply and install tile per manufacturer's recommendations.

STEP 5: Install the ceramic or porcelain tile in accordance with the tile manufacturers written instructions.

