SPAX Smarter Facade Solutions

MADE IN GERMANY

The Smart Facade Screw from SPAX

Why do we put facades on our buildings? A facade protects the building structure and insulation from the elements. An unprotected building structure is like standing in the rain with no clothes on. You'll get cold, wet and will only survive for a certain amount of time! This fact is often overlooked when designing and building new structures - especially in the past with all the leaky homes we have all seen and heard about. It is important that we design and build facades appropriately for the environmental conditions and use suitable materials.

Timber has become a popular cladding material for domestic, commercial and industrial buildings. It is an attractive, natural and environmentally-friendly solution. However, fastening the timber cladding boards to the sub-structure can be problematic.

When using traditional fastening methods like nails and standard countersunk screws problems can often occur such as nail and screw heads protruding, splitting as well as loosening of the timber boards due to natural movement of the timber. Many buildings have their lifespan considerably reduced due to penetrating moisture.

SPAX has developed another smart solution with the SPAX double-thread facade screw. This SPAX screw is designed to work with the timber rather than against it, allowing the timber boards to expand naturally in wet weather and shrink in hot, dry weather. The SPAX fixing thread under the head clamps the facade to the sub-structure, locking the boards firmly in place, while working with the timber during expansion and contraction, so loose boards, protruding screw heads and premature failures are a thing of the past.

SPAX has a smart fastening solution for all different cladding profiles and materials with this new range of specially designed screws. SPAX facade screws are made of quality stainless steel and come in standard and antique colours. All SPAX screws are manufactured in Germany to the highest standards.

We recommend timber cladding to be sealed before attaching with an appropriate, good quality timber sealer. If you really want to protect your investment and live in a healthy home environment, then make sure you don't overlook the importance of a well designed facade and the materials it is made from.

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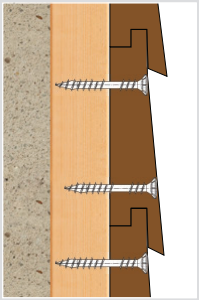
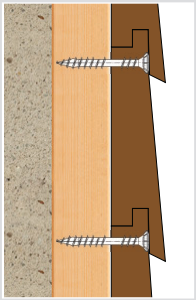
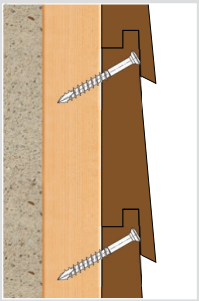
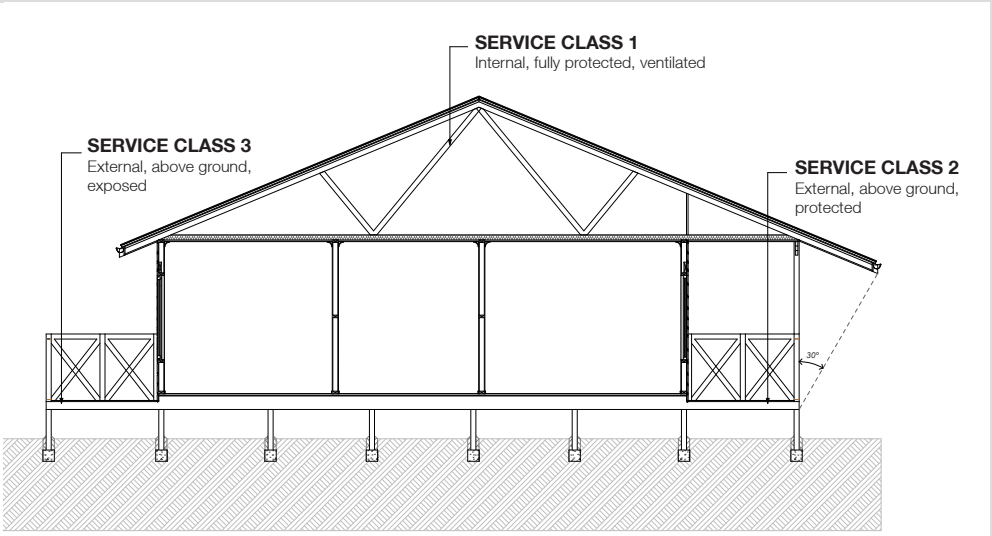
The right SPAX for your application

Application	Recommended Product	Advantages
	**Facade** Visible Connection 	Most common fastening method. Strong and stable fastening. This is recommended for all facade profiles and applications, especially where the boards are exposed to the elements. Suitable for all board widths fixed horizontally and vertically.
		Use SPAX Decking screw 316 Stainless Steel for high corrosive areas.
	**Facade** Non Visible Connection 	This non-visible connection is ideal for profiles that offer sufficient board overlap to cover the screw head. Caution needs to be taken not to exceed the minimum edge distance for the screw. Ideal for boards under 130mm width. Suitable for horizontal and vertical fixing.
		Use SPAX Decking screw 316 Stainless Steel for high corrosive areas.
	**Facade** Non Visible Connection Angle 30°- 45° 	This non visible connection is ideal for profiles where the fastening point is close to the board edge or only minimum board overlap is possible. Ideal for boards under 130mm in width. Suitable for horizontal and vertical fixing.
		Use SPAX Decking screw 316 Stainless Steel for high corrosive areas.

Recommended Facade Installation

Design and preparation

Good building design will help ensure long term performance of claddings and the building in general. Use roof overhangs to achieve Service Class 2 wherever possible to help limit full weather exposure and to extend longevity of the building.



External timbers are regarded as protected in AS1684 if they are covered by a roof projection (or similar) at 30 degrees to the vertical and they are well detailed and maintained (coated and well ventilated)

Ensure that the cladding timber is stored in a dry and well ventilated area during construction. Coating the timber cladding is your first line of defence against UV degradation, issues relating to movement due to moisture, and visual signs/impacts of timber aging. The timber needs to be sealed on all sides with an appropriate wood sealer. All end grain should be sealed and covered off. Strategically placed flashings that are designed to allow water runoff from around openings and intersections must be implemented.

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Buildup example of a vertically installed facade

Cavity battens need to be installed over the vapour membrane to allow for airflow. Install flashings and waterproof corners around windows, doors and other openings in line with manufacturers recommendations.

The first board is to be installed straight and true on the side of the wall with the tongue facing the yet to be clad wall so that the groove of the next board can be slipped over. Cladding must be installed with enough spacing to allow for expansion. Do not cramp boards tight.

Cladding should overhang slightly at bottom edge and be cut at a 15 degree angle to allow a dripline. Boards must not be installed within 100mm of the pavement or ground. Ensure all docked ends are re-sealed and joints are sealed with a bead of silicone.

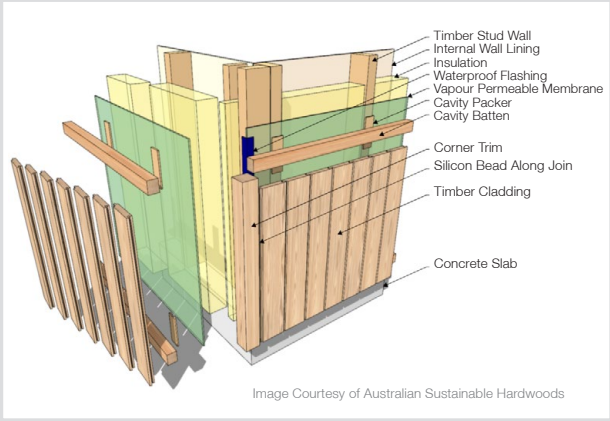


Image Courtesy of Australian Sustainable Hardwoods

Buildup example of a horizontally installed facade

Cavity battens need to be installed over the vapour membrane to allow for airflow. Install flashings and waterproof corners around windows, doors and other openings in line with manufacturer's recommendations.

To install cladding, the first board is to be installed at the bottom edge, straight and true, with the tongue facing upward. This is to provide a pathway for any trapped moisture to escape during service life. For a neat result, it is recommended that the wall height first be measured and that the cladding boards on either top or bottom be ripped to their required width so that they neatly and evenly fit within the required wall height.

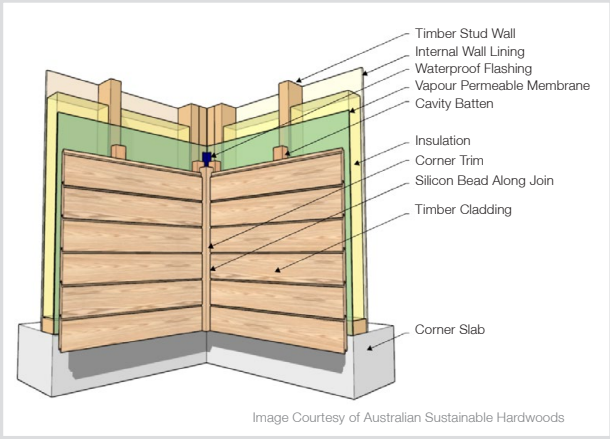
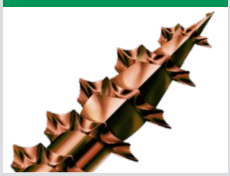


Image Courtesy of Australian Sustainable Hardwoods

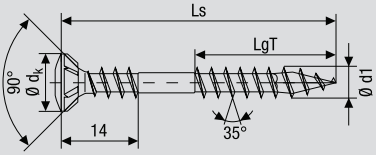
Cladding must be installed with enough spacing to allow for expansion. Do not cramp boards tight. Cladding should overhang slightly at bottom edge and be machined at a 15 degree angle to allow a dripline. Boards must not be installed within 100mm of the pavement or ground. Ensure all docked ends are re-sealed and joints are sealed with a bead of silicone.

SPAX Facade with fixing thread

A2 1.4567 AISI 304 | EDELSTAHL Rostfrei INOX STAINLESS STEEL | SKH SKH-013 | CE 13 DoP 1 ETA-12/0114

T-STAR plus	Raised countersunk head with milled ribs	Fixing thread	Ground Serration 4CUT point
			

SPAX T-STAR *plus* T20 drive ensures maximum torque transmission. The raised countersunk head make the SPAX a feature. Ribs under the head ensure clean countersinking. The fixing thread provides a permanent connection of the cladding, allowing for natural movement in the timber without putting pressure on the screw head. SPAX 4CUT point effectively reduces splitting of the timber. Available in antique 304 stainless steel.



SPAX Facade with fixing thread
stainless steel A2/304 antique

A2 1.4567 AISI 304 | A2 antique

Dimensions [mm]					Packing units		SPAX-No.
Thread Ø d1	Length total Ls	Length partial thread LgT	Maximum Board Thickness at fixing point	Bit size T	SPAX BOX [pieces]	Master carton [pieces]	
4.5 Ø d_K = 8 mm	43	18	11	20	500	1,500	4547140450439
	50	21	15	20	500	1,500	4547140450509
	60	26	20	20	400	1,200	4547140450609
	70	31	25	20	250	750	4547140450709

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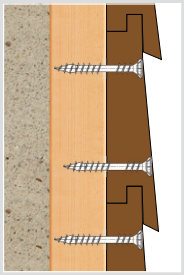
Visible Connection - Installation Instructions



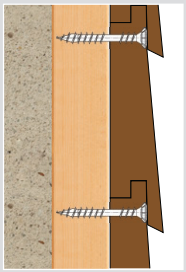
This is the recommended and most common fastening method. To ensure buildings are durable, energy efficient and provide us with a healthy living environment, a suitable building envelope and insulation must be installed in accordance with the manufacturer's guidelines. Adequate ventilation between the building envelope and the cladding is essential to prevent moisture build-up.

It is recommended that all surfaces of the cladding boards are sealed with a high quality wood sealer prior to installation. All cut edges should be re-sealed after cutting. This will minimize movement and splitting due to moisture penetration.

Select the correct screw length from the table on page 6 according to the board thickness or the thickness at the fixing point.

Pre-drilling with a SPAX countersinking tool #5001000351005 is required for hardwood boards and hardwood substructures. When fastening hardwood boards to a pine substructure, only the hardwood boards should be pre-drilled. Please follow recommendations from the timber supplier. Ensure adherence to national building codes, including screw spacings and board thickness. Drive the SPAX façade screw in using a SPAX T-STAR *plus* T-20 drive bit until the edge of the screw head is flush with the timber, using a rotary drill-driver and not an impact driver. Minimum penetration depth of the screw into the timber substrate is 30mm. After installation, apply a final coat of wood sealer.

Invisible Connection - Installation Instructions



To ensure buildings are durable, energy efficient and provide us with a healthy living environment, a suitable building envelope and insulation must be installed in accordance with the manufacturer's guidelines. Adequate ventilation between the building envelope and the cladding is essential to prevent moisture build-up.

This fixing method is only suitable for boards up to 130mm in width. It is recommended that all surfaces of the cladding boards are sealed with a high quality wood sealer prior to installation. All cut edges should be re-sealed after cutting. This will minimize movement and splitting due to moisture penetration.

Select the correct screw length from the table on page 6 according to the board thickness or the thickness at the fixing point. Accurate placement of the screw is critical to ensure that the screwhead is fully covered by the next panel without exceeding the minimum edge distance of the screw. We recommend using a suitable adhesive in conjunction with the screw to prevent any cupping or movement in the cladding boards.

Pre-drilling with a SPAX countersinking tool #5001000351005 is required for hardwood boards and hardwood substructures. When fastening hardwood boards to a pine substructure, only the hardwood boards should be pre-drilled. Please follow recommendations from the timber supplier. Ensure adherence to national building codes, including screw spacings and board thickness. Drive the SPAX façade screw in using a SPAX T-STAR *plus* T-20 drive bit until the top of the screw head is flush with the timber, using a rotary drill-driver and not an impact driver. Minimum penetration depth of the screw into the timber substrate is 30mm. After installation, apply a final coat of wood sealer.

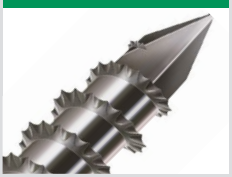
SPAX Facade with very small head

A2 1.4567 AISI 304

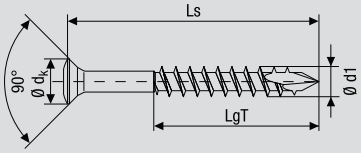
EDELSTAHL Rostfrei INOX STAINLESS STEEL

SKH SKH-013

CE 13 DoP 1 ETA-12/0114

T-STAR plus	Very small raised countersunk head	Ground serrations	CUT point to reduce splitting
			

SPAX T-STAR *plus* T15 drive ensures maximum torque transmission. The very small raised countersunk head is ideal for non-visible connections, suitable for tongue and groove profiles. The special *CUT point* reduces timber splitting and enables fastening with lower edge distances.



SPAX Facade with very small head

stainless steel A2/304

A2 1.4567 AISI 304

Dimensions [mm]					Packing units		SPAX-No.
Thread Ø d1	Length total Ls	Length partial thread LgT	Maximum Board Thickness at fixing point	Bit size T	SPAX BOX [pieces]	Master carton [pieces]	
4.0 Ø d_k = 6 mm	45	29	15	15	100	1,000	0467000400453

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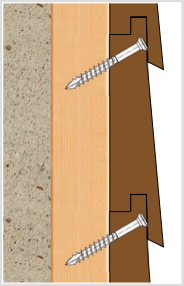
Invisible Connection - Installation Instructions



To ensure buildings are durable, energy efficient and provide us with a healthy living environment, a suitable building envelope and insulation must be installed in accordance with the manufacturer's guidelines. Adequate ventilation between the building envelope and the cladding is essential to prevent moisture build-up.

This fixing method is only suitable for cladding boards up to 130mm. In harsh climates, cladding boards should not be directly exposed to the elements. It is recommended that all surfaces of the cladding boards are sealed with a high quality wood sealer prior to installation. All cut edges should be re-sealed after cutting. This will minimize movement and splitting due to moisture penetration.

Check that the board thickness at the fixing point does not exceed 15mm.

Accurate placement of the screw is critical to ensure that the screwhead is fully covered by the next panel without exceeding the minimum edge distance of the screw. A suitable adhesive must be used in conjunction with the screw to prevent any cupping or movement in the cladding boards.

Pre-drilling with a SPAX countersinking tool #5001000351005 at an angle of 30°– 45° is required for hardwood boards and hardwood substructures. When fastening hardwood boards to a pine substructure, only the hardwood boards should be pre-drilled. Please follow recommendations from the timber supplier. Ensure adherence to national building codes, including screw spacings and board thickness.

Drive the SPAX façade screw in at an angle of 30°– 45° using a SPAX T-STAR *plus* T-15 drive bit until the screw head is below the timber surface, using a rotary drill-driver and not an impact driver. Minimum penetration depth of the screw into the timber substrate is 30mm. After installation, apply a final coat of wood sealer.

The SPAX Facade & Decking screw A4/316 is the ultimate fastening solution for harsh, corrosive environments. Due to the higher load capacity it is also ideal for high wind zones.

SPAX Facade & Decking A4/316

A4 AISI 316 | EDELSTAHL Rostfrei INOX STAINLESS STEEL | SKH SKH-013 | CE 13 DoP 1 ETA-12/0114

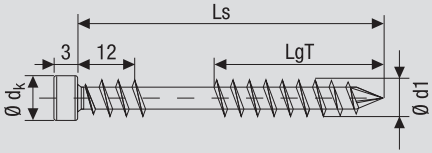
T-STAR *plus*

Fixing Thread

Ground Serrations

CUT point

SPAX T-STAR plus T25 drive ensures maximum torque transmission. The fixing thread provides a permanent connection of the cladding, allowing for natural movement in the timber without putting pressure on the screw head. SPAX Ground Serrations reduce the driving in torque and make installation easy. The special CUT point reduces timber splitting and enables fastening with lower edge distances.



SPAX Facade & Decking Screw

stainless steel A4/316

A4 AISI 316

Dimensions [mm]					Packing units		SPAX-No.
Thread Ø d1	Length total Ls	Length partial thread LgT	Maximum Board Thickness at fixing point	Bit size T	SPAX BOX [pieces]	Master carton [pieces]	
6.0 Ø d_K = 7 mm	40	23	12	25	200	2,000	0538000600403
	50	23	19	25	100	1,000	0538000600503
	60	28	24	25	100	1,000	0538000600603
	80	40	32	25	100	1,000	0538000600803
	100	40	40	25	100	1,000	0538000601003

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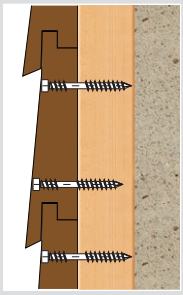
Visible and invisible connection in corrosive environments

Installation Instructions

Use the SPAX facade & decking screw A4/316 for high corrosive environments subject to sea spray or direct contact with salt water.

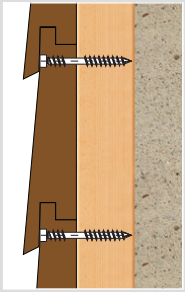
The SPAX facade & decking screw A4/316 is suitable for all fastening methods.

To ensure buildings are durable, energy efficient and provide us with a healthy living environment, a suitable building envelope and insulation must be installed in accordance with the manufacturer's guidelines. Adequate ventilation between the building envelope and the cladding is essential to prevent moisture build-up.



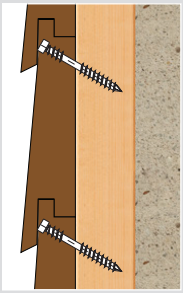
It is recommended that all surfaces of the cladding boards are sealed with a high quality wood sealer prior to installation. All cut edges should be re-sealed after cutting. This will minimize movement and splitting in the timber, due to moisture penetration and prolonged sun exposure.

Select the correct screw length from the table on page 10 according to the board thickness or the thickness at the fixing point.



For invisible connections, accurate placement of the screw is critical to ensure that the screwhead is fully covered by the next panel without exceeding the minimum edge distance of the screw. The SPAX decking screw can be installed at an angle of 30°– 45° if needed. Please see instructions on page 9.

Pre-drilling with a SPAX Step-drill 5000009186540 is required for hardwood boards and hardwood substructures. When fastening hardwood boards to a pine substructure, only the hardwood boards should be pre-drilled. Please follow recommendations from the timber supplier. Ensure adherence to national building codes, including screw spacings and board thickness.



Drive the SPAX decking screw in using a SPAX T-STAR *plus* T-25 drive bit until the edge of the screw head is flush with the timber, using a rotary drill-driver and not an impact driver. Minimum penetration depth of the screw into the timber substrate is 30mm.

After installation, a final coat of wood sealer should be applied.

SPAX PACIFIC PTY. LTD.
ALTENLOH, BRINCK & CO - GROUP SINCE 1823

Australia
Phone: 07 4056 2009 · info@spaxpacific.com

New Zealand
Phone: 09 570 7447 · info@spaxpacific.co.nz

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SPAX WE CARE