Tecnodeck®
THE HIGH TECH WOOD COMPOSITE
www.tecnodeck.net

TECNODECK PLUS WALL

THE WORLD'S NOT ALWAYS FLAT

01/2024

COMPONENTS

PLUS WALL

COMPONENTS ESTIMATION PER M²

- Tecnodeck PLUS WALL Profile = 5 linear meters
- Tecnodeck ALU 38x20 = 2,5 meters linear
- Screw A2 Ø3,5x19 + Washer = 13 pcs of each
- Tecnodeck Spacer 30x3 = 8 pcs
- Nylon Anchor Fastener 8x60 = 8 pcs

Tecnodeck PLUS WALL
Profile 220x26

Tecnodeck rect washer
20x9x2,5

Screw A2 Ø3,5x19

Tecnodeck Alu-L 49x53

Self-drill screw pan head
A2 Ø4,8x19

Self-drill screw pan head
A2 Ø4,8x38

Nylon cap

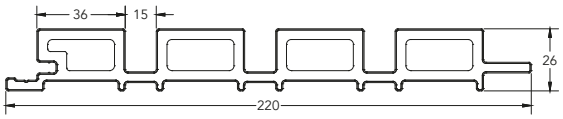
Tecnodeck spacer 30x3

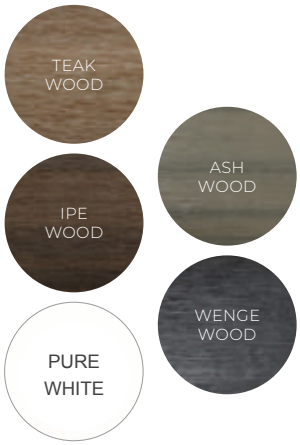
Tecnodeck Alu Profile 38x20

Nylon anchor fastener 8x60

TECHNICAL FEATURES

PLUS WALL





PLUS WALL PROFILE 220x15x36 mm

DENSITY EN ISO 1183-1 (g/cm^3)	1,41
WEIGHT (KG/ML)	2,94 (± 5%)
BOARD LENGTH (M) Standard	3
APPEARANCE Clause 6.1 of EN 15534-1:2014 Length of specimen: 1000 mm	no visible colour difference
PENDULUM TEST Clause 6.4.2 of EN 15534-1:2014 and CEN/TS 15676:2007 Requirements of EN 15534-4:2014 Pendulum value ≥ 36	Pendulum value of face surface: Length direction: 62 Width direction: 72
FALLING MASS IMPACT RESISTANCE Clause 7.1.2.1 of EN 15534-1:2014 and CEN/TS 15676:2007 Requirements of EN 15534-4:2014 Hollow profiles: None of 10 test specimens shall show a failure with a crack lenght ≥ 10 mm or a depth of residual indentation ≥ 0,5 mm. In case of failure, 10 additional test speciments shall be tested and no failure with a crack length ≥ 10 mm or a depth of residual indentation ≥ 0,5 mm shall occur.	None of 10 test speciments showed a crack on face surface. Maximum depth of residual indentation: 0,13 mm

TECHNICAL FEATURES

PLUS WALL

FLEXURAL PROPERTIES Clause 7.3.2 of EN 15534-1:2014 Requesits of EN 15534-4:2014 F'max ≥ 3300 N (arithmetic mean value) F'max ≥ 3000 N (individual values) Deflection under a load of 500 N ≤ 2,0 mm (arithmetic mean value) Deflection under a load of 500 N ≤ 2,5 mm (individual values) Span: 300 mm	Average F'max: 4177N Minimum F'max: 4013N Average deflection under 500N: 0,52mm Maximum deflection under 500N: 0,62mm Average bending strength: 28,9MPa Average modulus of elasticity: 4120MPa
RESISTANCE TO INDENTATION Clause 7.5 of EN 15534-1:2014 Requirements of EN 15534-4:2014 Load Rate: 66 N/S Final Load: 2000 N	Brinell hardness: 54N/mm^2 Rate of elastic recovery: 75%
CREEP BEHAVIOR (KNOWN SPAIN IN USE) Clause 7.4.1 of EN 15534-1:2014 Requesits of EN 15534-4:2014 Testing atmosphere: 24+2 °C, 50+5% RH Span: 300 mm (Manufacture declare) Load: 1000N Loading duration: 504h Recovering duration: 24h Requirements of En 15534-4:2014: ΔS ≤ 10 mm for arithmetic mean value ΔS ≤ 13 mm for individual values ΔS ≤ 5 mm for arithmetic mean values	ΔS arithmetic mean value: 1,24 mm ΔS for individual values: 1,37 mm ΔS arithmetic mean values: 0,86 mm
RESISTANCE TO ARTIFICIAL WEATHERING Clause 8.1 of EN 15534-1:2014, Cycle 1 of EN ISO 4892-2:2013 Duration: 2000 h Requirements of EN 15534-4:2014: ΔL*, Δa*, Δb* shall be declared.	ΔE*: 0,99 Grey scale: 4 - 5 (No declared value)
TENSILE STRENGTH PERPENDICULAR TO THE PANEL AFTER ARTIFICIAL WEATHERING En 319:1993 and Cycle 1 of EN ISO 4892-2:2013 and client's requirements Duration: 2000 h Test speed: 0,5 mm/min	Average value: 1,63MPa Failure mode: Adhesive failure (See note)
MOISTURE RESISTANCE - BOILING TEST Clause 8.3.3 of EN 15534-1:2014, EN 319:1993 and client's requirements Requirements of EN 15534-4:2014 Mean water absorption ≤ 7% Individual water absorption ≤ 9%	Water absorption: Average value: 0,67% Maximum value: 1,03% Length change: 0,22% Width change: 0,16% Thickness change: 1,60%
FIRE BEHAVIOUR	Not tested
TENSILE STRENGTH PERPENDICULAR TO THE PANEL AFTER BOILING TEST EN 319:1993, Clause 8.3.3 of EN 15534-1:2014 and client's requirements Test Speed: 0,5 mm/min	Average value: 1,54MPa Failure mode: Adhesive failure (See note)

TECHNICAL FEATURES

PLUS WALL

MOISTURE RESISTANCE - UNDER CYCLIC CONDITIONS Clause 8.3.2 of EN 15534-1:2014 Requirements of EN 15534-4:2014 Mean of decrease of bending strength ≤ 20% Individual decrease of bending strength ≤ 30%	Average bending strength: 25,6MPa Average modulus of elasticity: 3293MPa Mean of decrease of bending strenght: 11,4% Maximum individual decrease of bending: 15,3% Average value: Water absorption: 0,19% Length change: 0,01% Width change: 0,11% Thickness change: 0,22%
TENSILE STRENGTH PERPENDICULAR TO THE PANEL UNDER CYCLIC CONDITIONS EN 319:1999, Clause 8.3.2 of EN 15534-1:2014 and client's requirements Test speed: 0,5mm/min	Average value: 0.69MPa Failure mode: Core material
* LINEAR THERMAL EXPANSION Clause 9.2 of EN 15534-1:2014 Temperature range: - 20°C to 80°C Requirements of EN 15534-4:2014 Linear thermal expansion coefficient ≤ $50x10^{-6}K^{-1}$	Average value of the coefficient of linear thermal expansion: $36x10^{-6}K^{-1}$ (length direction)
HEAT REVERSION Clause 9.3 of EN 15534-1:2014 Specimen: 250x137x22 mm Heating: 100°C, 60 min	Average length change: 0,20%
* RESISTANCE AGAINST DISCOLOURING MICRO-FUNGI Clause 9.3 of EN 15534-1:2014 Specimen: 250x137x22 mm Heating: 100°C, 60 min	Rate: 0 No covering or discoloration visible
DEGREE OF CHALKING (APPLICABLE TO COATED PRODUCTS, ONLY) Clause 10.1 of EN 15534-1:2014 and ISO 16869:2008(E)	The product is uncoated
TENSILE STRENGTH PERPENDICULAR TO THE PANEL Clause 10.1 of EN 15534-1:2014 EN 319:1993 Test speed: 0,5 mm/min	Average value: 1,59MPa Failure mode: Adhesive failure (See note)
ABRASION RESISTANCE ASTM D4060-14 Wheel: CS-17 Load: 1Kg/wheel Revolution: 1000r	Wear Index: 31mg/1000r

NOTE:
The Tecnodeck® profiles dimensions have a tolerance of ± 1mm.
These features are only for information purposes, and the manufacturer may change them without previous notice.

LACQUERING COLORS* FOR METAL ACCESSORIES

PLUS WALL

Tecnodeck®
THE HIGH TECH WOOD COMPOSITE
www.tecnodeck.net

ASH WOOD

WENGE WOOD

TEAK WOOD

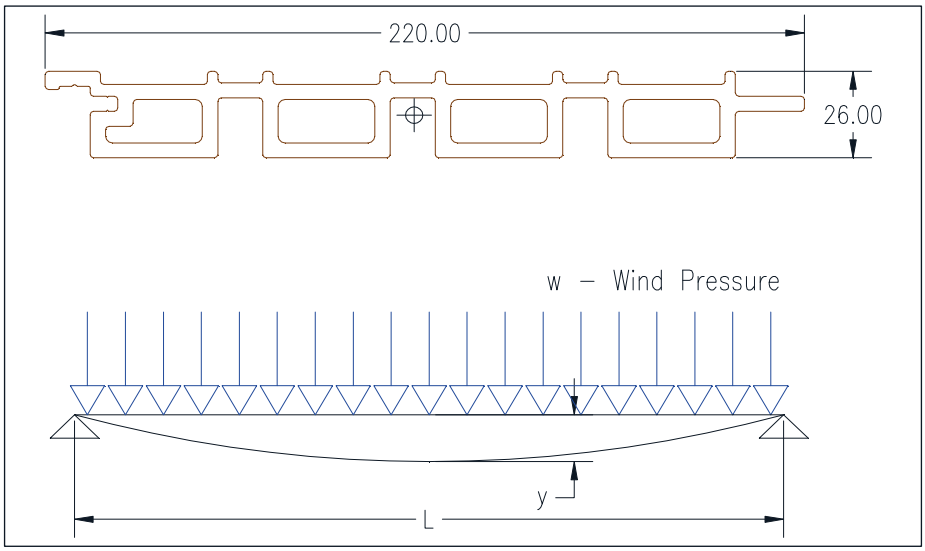
IPE WOOD

* The lacquer colors are approximate to the profile colors.

WIND PRESSURE TESTS

PLUS WALL

Tecnodeck performed several bending tests with PLUS WALL.
The worst-case scenario, is with the wind blowing from behind the structure.



According to the test our internal result, PLUS WALL has a flexure ultimate load caracteristic of σR = 28,1Mpa.
In the following table it is possible to verity the safety coefficient of the PLUS WALL Profile, according to the wind pressure.

Wind Speed		Wind Pressure		PLUS WALL
V		P		Safety Coefficient
mph	km/h	psf	N/m²	
110	177	30,98	1.482,31	14
130	209	43,26	2.070,33	10
150	241	57,60	2.756,36	8
170	274	73,98	3.540,39	6
190	306	92,42	4.442,42	5
210	338	112,90	5.402,46	4

1 mph = 1,609344 Km/h
1 Lbs = 4,4482216282509 N

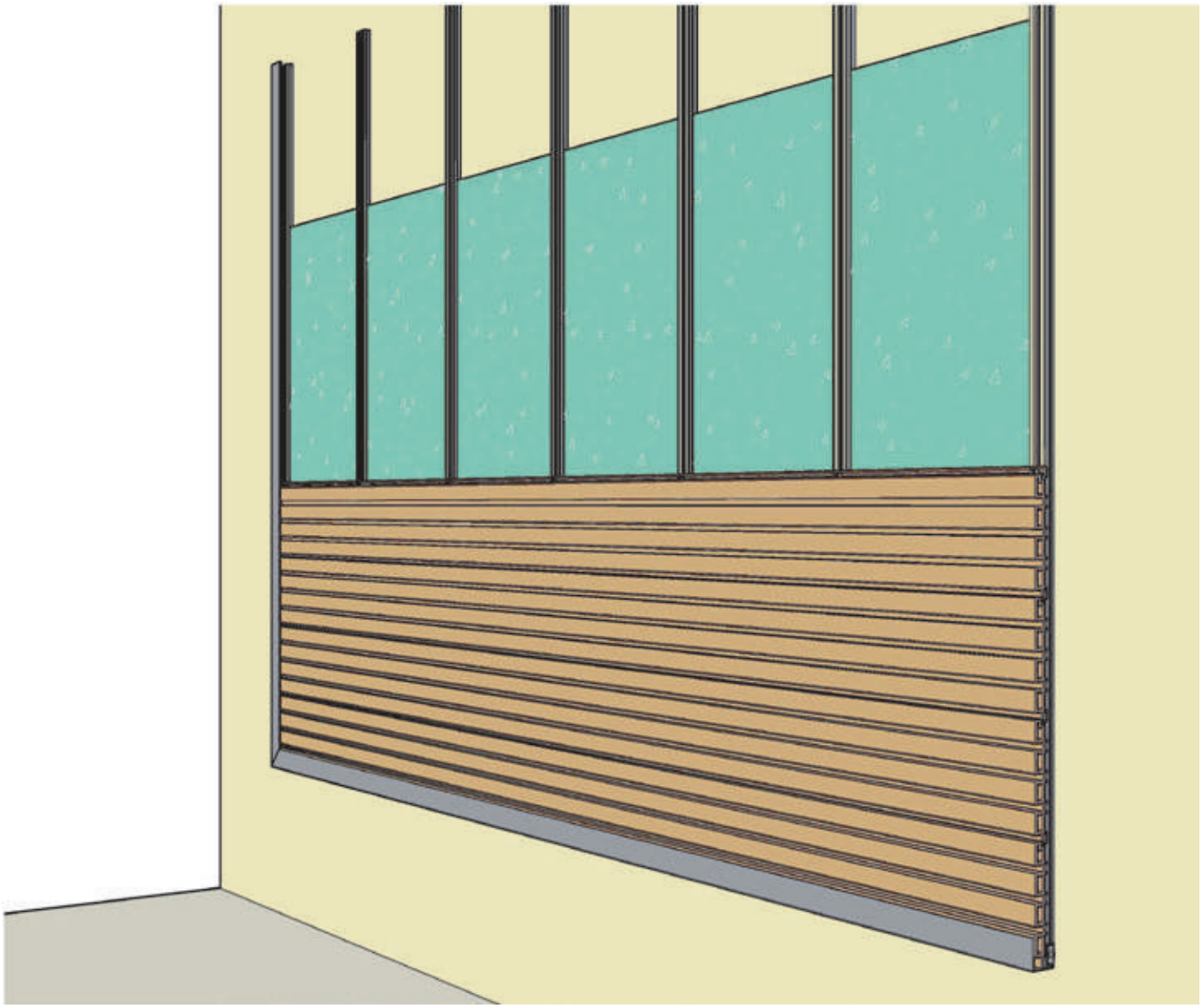
According American Society Civil Engineers (ASCE)

$P = 0{,}00256\ V^2$ (pfs)
$P = 0{,}613\ V^2$ (N/m²)

POSSIBLE INSTALLATIONS

PLUS WALL

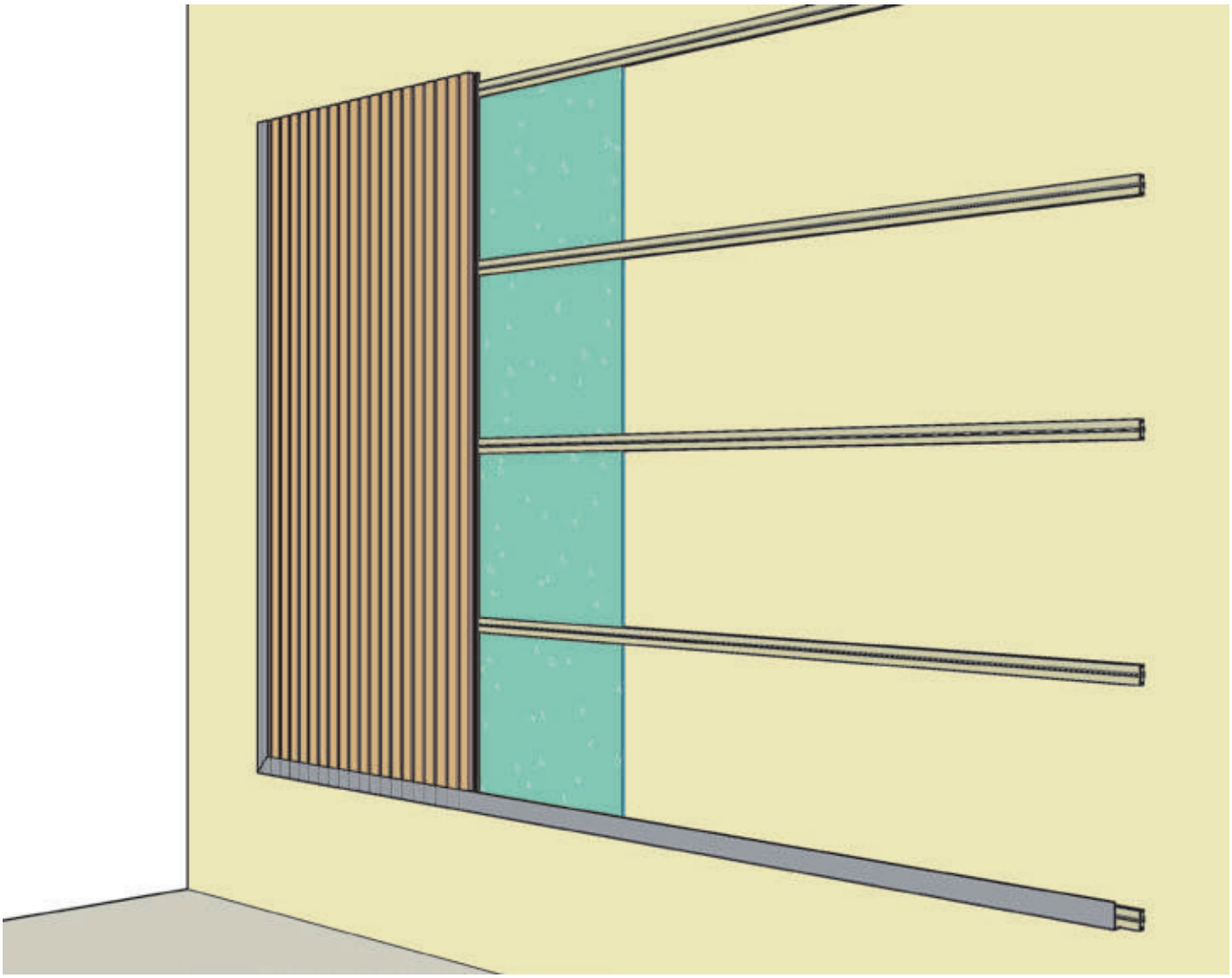
HORIZONTAL



POSSIBLE INSTALLATIONS

PLUS WALL

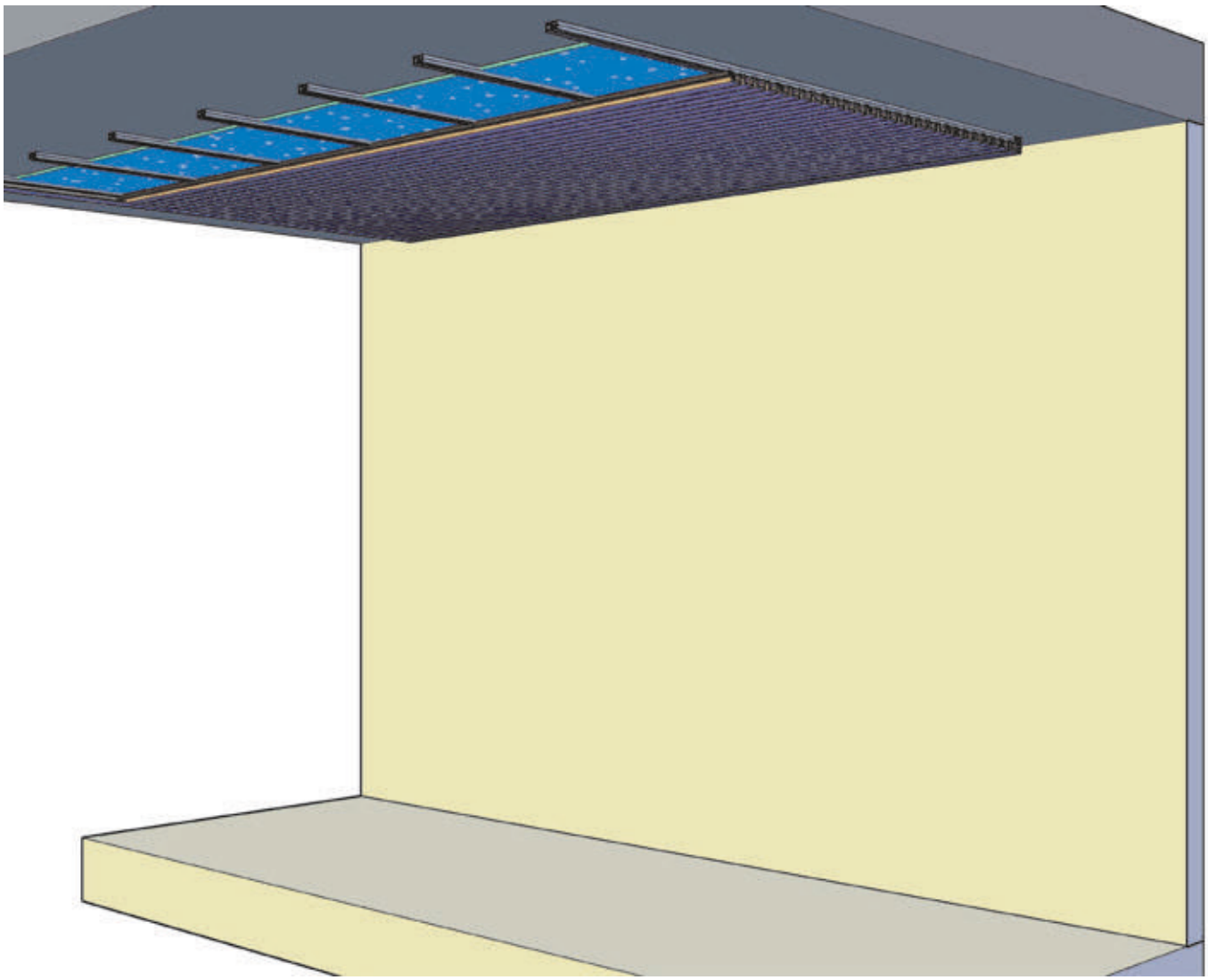
VERTICAL



POSSIBLE INSTALLATIONS

PLUS WALL

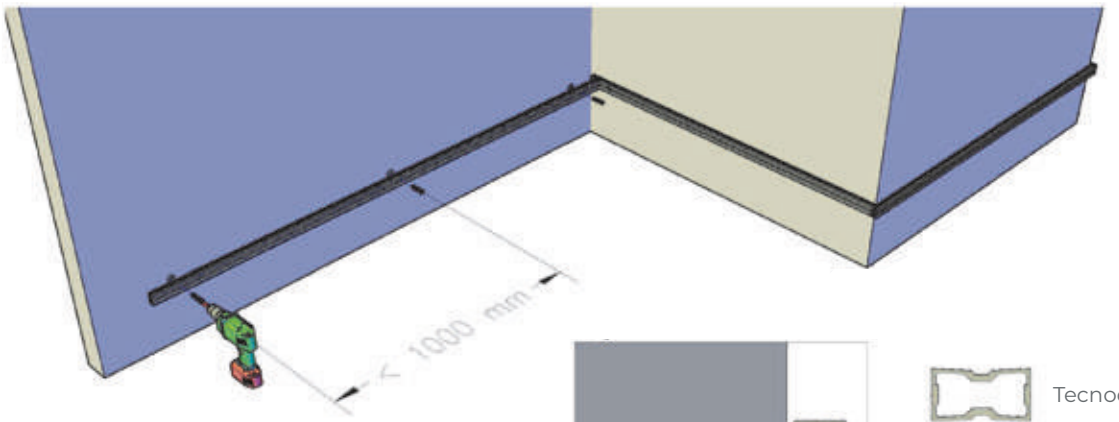
CEILLING

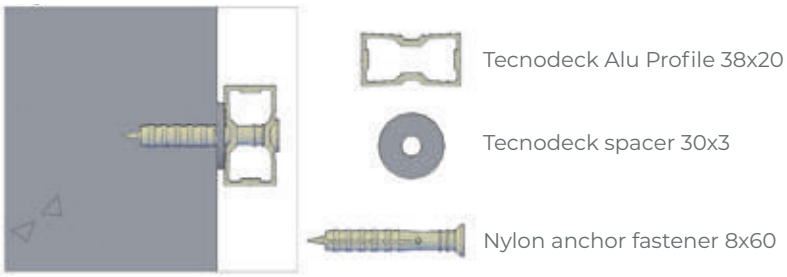


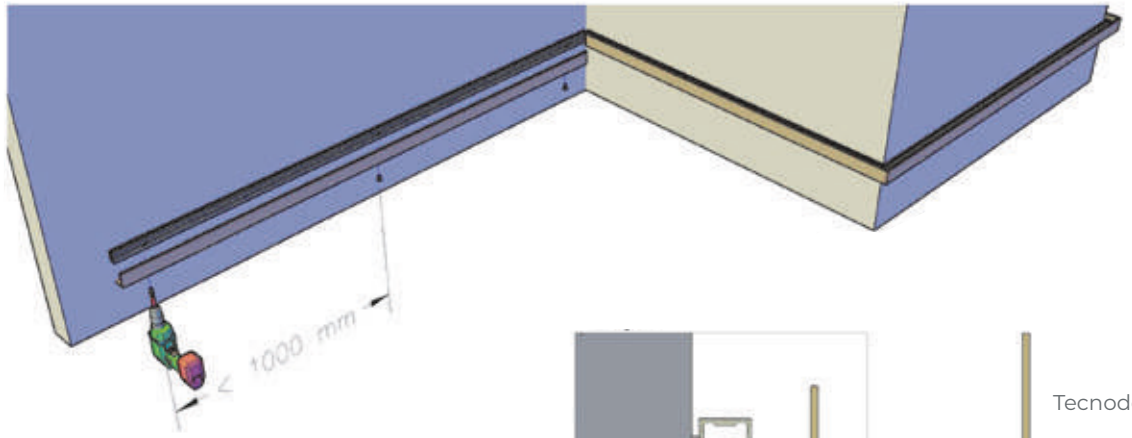
INSTALLATION

PLUS WALL

STEP 1 - L-ALU PROFILE JOIST SUPPORT. PLACING AND FIXING



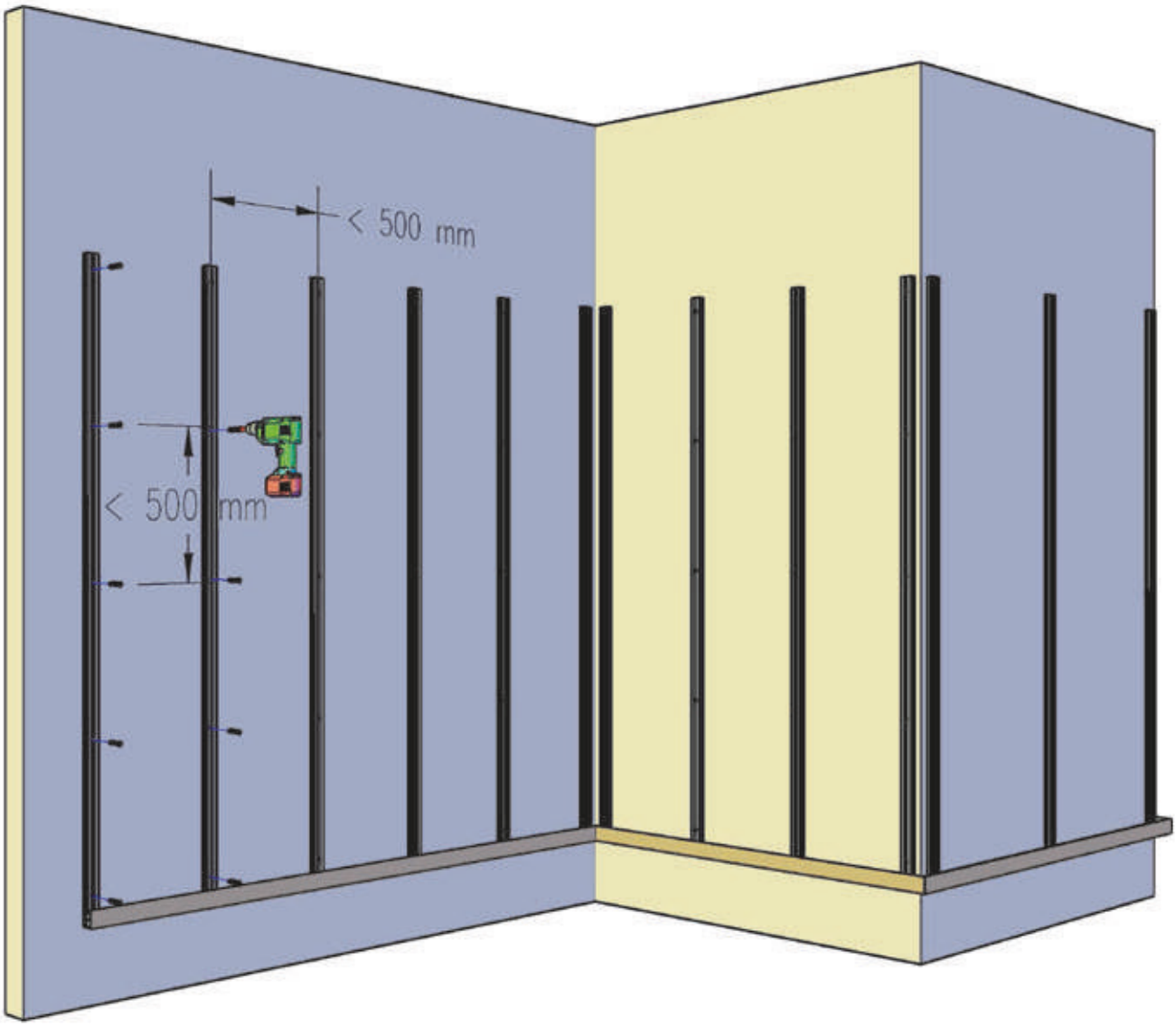


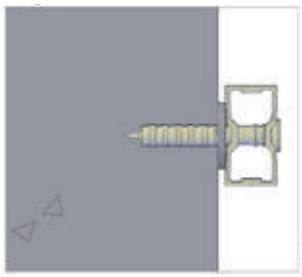


INSTALLATION

PLUS WALL

STEP 2 - JOIST PLACING AND FIXING





Tecnodeck Alu Profile 38x20

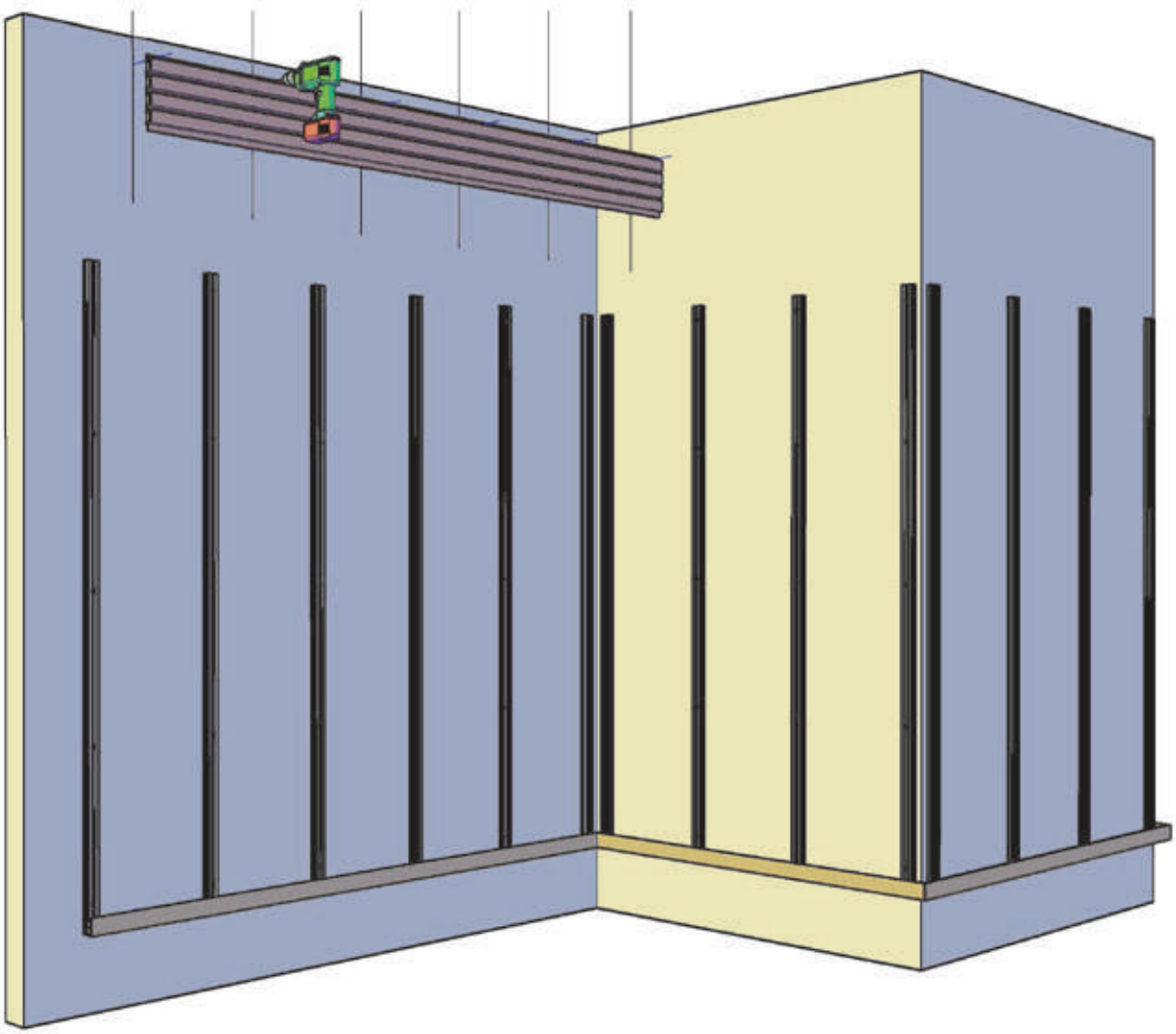
Tecnodeck spacer 30x3

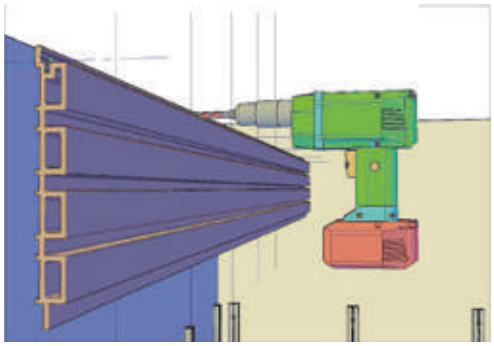
Nylon anchor fastener 8x60

INSTALLATION

PLUS WALL

STEP 3 - PLUS WALL BOARD CUTTING AND DRILLING





Pre-drill W Board with Ø8mm drill or bigger.

- Before screw PLUS WALL Profile, align profile with 15 mm spacers.
- Repeat this procedure and verify alignments in all profiles to guarantee the profiles and panels alignment.

ATTENTION

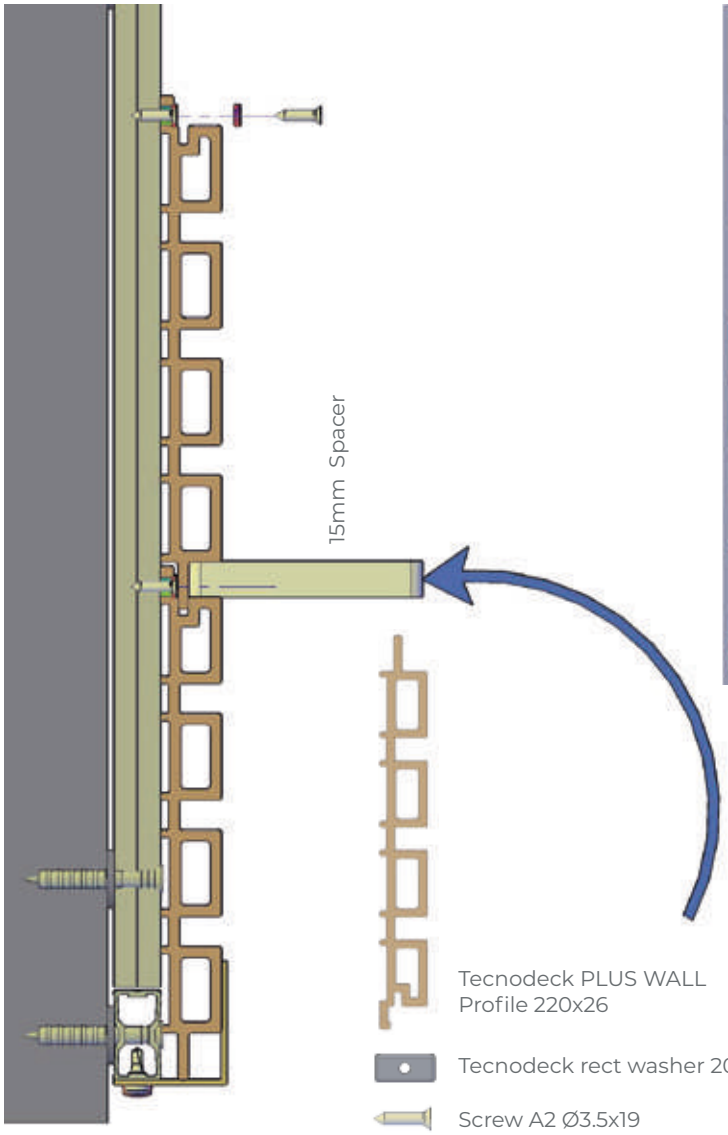
- A peripheral space of 10mm must be kept around the installed set of panels, allowing the normal expansion movement.
- Use profiles to cover these spaces without blocking the material movement.
- Please do not overtighten the fixation screws.
- Overtightening the fixations screws, can damage the boards and/or the rectangular washer and does not allow for the natural free movement of the boards due to temperature changes.
- Use the screwdriver torque control.

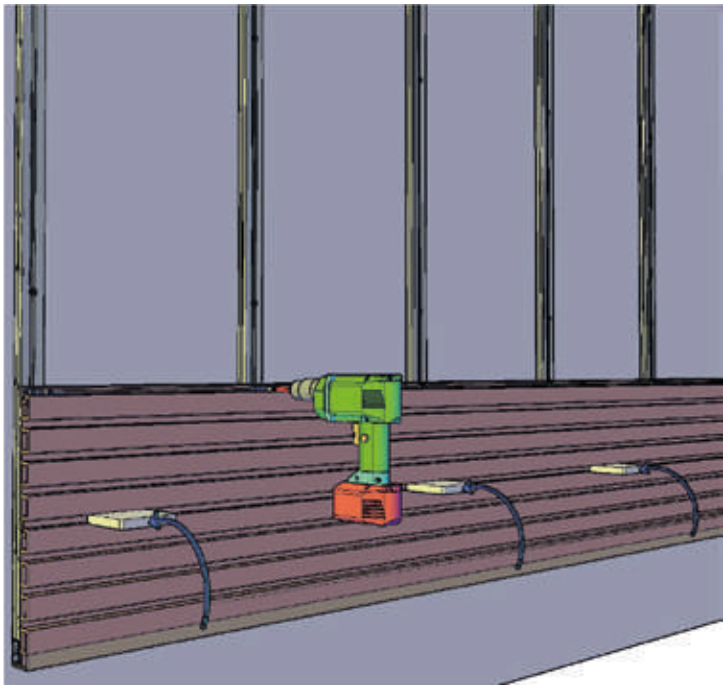
Tecnodeck PLUS WALL
Profile 220x26

INSTALLATION

PLUS WALL

STEP 4 - PLUS WALL BOARD PLACING AND FIXING





- Before screw PLUS WALL Profile, align profile with 15 mm spacers.
- Repeat this procedure and verify alignments in all profiles to guarantee the profiles and panels alignment.

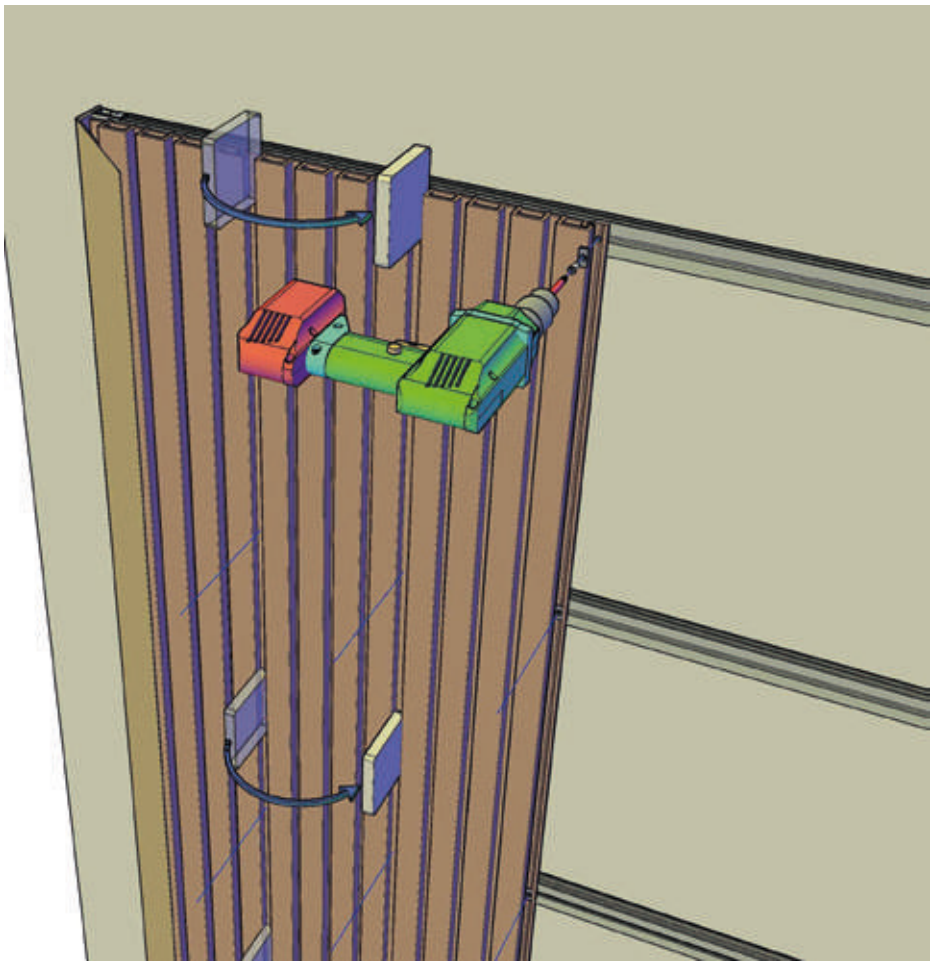
ATTENTION

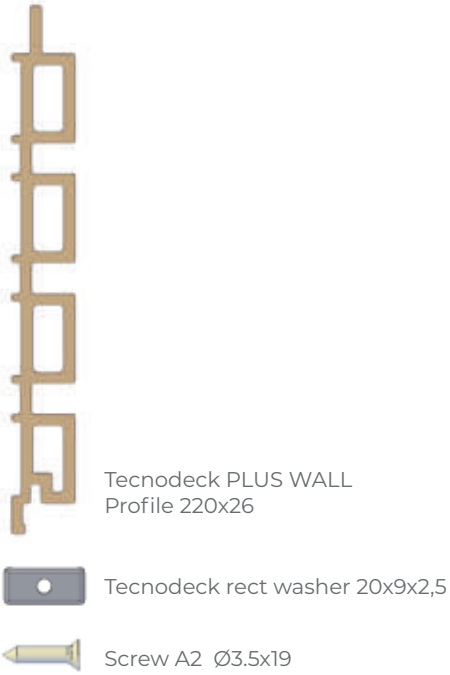
- A peripheral space of 10mm must be kept around the installed set of panels, allowing the normal expansion movement.
- Use profiles to cover these spaces without blocking the material movement.
- Please do not overtighten the fixation screws.
- Overtightening the fixations screws, can damage the boards and/or the rectangular washer and does not allow for the natural free movement of the boards due to temperature changes.
- Use the screwdriver torque control.

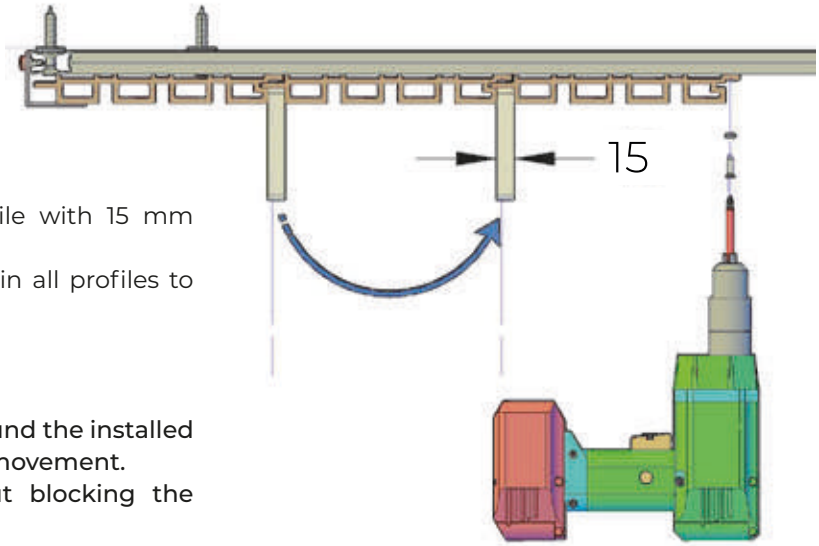
INSTALLATION

PLUS WALL

STEP 4 - PLUS WALL BOARD PLACING AND FIXING







- Before screw PLUS WALL Profile, align profile with 15 mm spacers.
- Repeat this procedure and verify alignments in all profiles to guarantee the profiles and panels alignment.

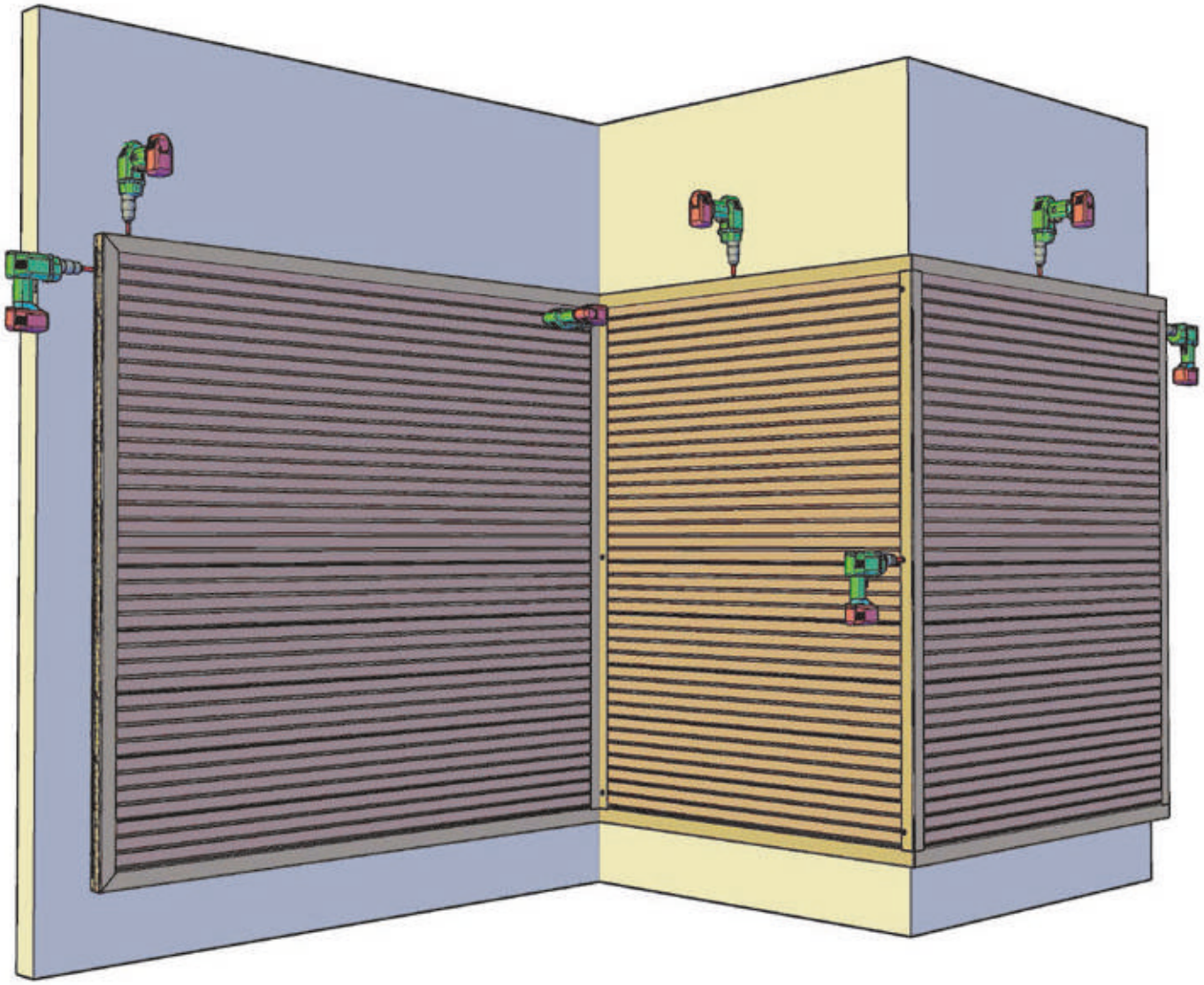
ATTENTION

- A peripheral space of 10mm must be kept around the installed set of panels, allowing the normal expansion movement.
- Use profiles to cover these spaces without blocking the material movement.
- Please do not overtighten the fixation screws.
- Overtightening the fixations screws, can damage the boards and/or the rectangular washer and does not allow for the natural free movement of the boards due to temperature changes.
- Use the screwdriver torque control.

INSTALLATION

PLUS WALL

STEP 5 - FINISHING PROFILE PLACING AND FIXING



Tecnodeck Alu-L 49x53

Self-drill screw pan head A2 Ø4,8x19

Self-drill screw pan head A2 Ø4,8x38

Nylon Cap