

TECNODECK PLUS WALL

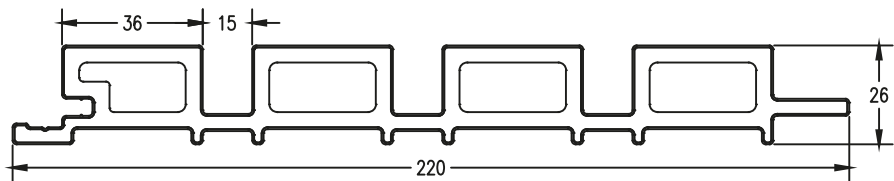
 **Technodeck**®
THE HIGH TECH WOOD COMPOSITE
www.technodeck.net

THE WORLD'S NOT ALWAYS FLAT



TECHNICAL FEATURES

TECNODECK[®] PLUS WALL



TECNODECK[®] PLUS WALL 36x15x220

DENSITY EN ISO 1183-1 (g/cm³)	1,41
WEIGHT (Kg/ml)	2,94 (+/- 5%)
BOARD LENGTH (m) Standard	3
APPEARANCE CLAUSE 6.1 of EN 15534-1:2014 Legth of specimen: 1000mm	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 \geq 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 \geq 10mm or a depth of residual indentation \geq 0,5mm. In case of failure, 10 additional test specimens shall be tested and no failure with a crack length \geq 10mm or a depth of residual indentantion \geq 0,5mm shall occur.	None of 10 test specimens showed a crack on face surface. Maximum depth of residual indentation: 0.13mm

FLEXURAL PROPERTIES

CLAUSE 7.3.2 of EN 15534-1:2014
Requirements 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 ≤
2,0mm (arithmetic mean value)
Deflection under a load of 500 N ≤
2,5mm (individual values)
Span: 300mm

Average Fmax: 4177N
Minimum Fmax: 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: 2000N

Brinell hardness: 54N/mm²
Rate of elastic recovery: 75%

CREEP BEHAVIOR (KNOWN SPAN IN USE)

CLAUSE 7.4.1 of EN 15534-1:2014
Requirements of EN 15534-4:2014
Testing atmosphere: 24+2 °C, 50+5% RH
Span: 300mm (Manufacture declare)
Load: 1000 N
Loading duration: 504h
Recovering duration: 24h
Requirements of
EN 15534-4:2014:
Δ S ≤ 10mm for arithmetic mean value
Δ S ≤ 13mm for individual values
Δ Sr ≤ 5mm for arithmetic mean values

ΔS (arithmetic mean value): 1.24mm
ΔS (Maximum individual value): 1.37mm
ΔSr (arithmetic mean value): 0.86mm

RESISTANCE TO ARTIFICIAL WEATHERING

CLAUSE 8.1 of EN 15534-1:2014 ,
Cycle 1 of EN ISO 4892-2:2013
Duration: 2000h
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: 2000h
Test speed: 0.5mm/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: 0.5mm/min

Average value: 1.54MPa
Failure mode: Adhesive failure
(See note)

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 $\leq 20\%$
Individual decrease of bending strength $\leq 30\%$

Average bending strength:
25.6MPa
Average modulus of elasticity: 3293MPa
Mean of decrease of bending strength: 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 319:1993, 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 $\leq 50 \times 10^{-6} \text{ K}^{-1}$

Average value of the coefficient of linear thermal expansion: $36 \times 10^{-6} \text{ K}^{-1}$
(length direction)

HEAT REVERSION

Clause 9.3 of EN 15534-1:2014
Specimen: 250x137x22mm
Heating: 100°C, 60min

Average length change: 0.20%

***RESISTANCE AGAINST DISCOLOURING MICRO-FUNGI**

Clause 9.3 of EN 15534-1:2014
Specimen: 250x137x22mm
Heating: 100°C, 60min

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: 0.5mm/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 $\pm 1\text{mm}$.
These features are only for information purposes, and the manufacturer may change them without previous notice.

LACQUERING COLORS

TECNODECK[®] PLUS WALL

ASH WOOD



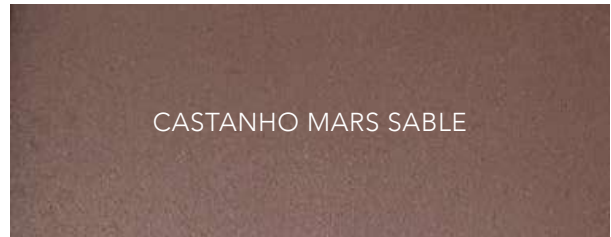
WENGE WOOD



TEAK WOOD



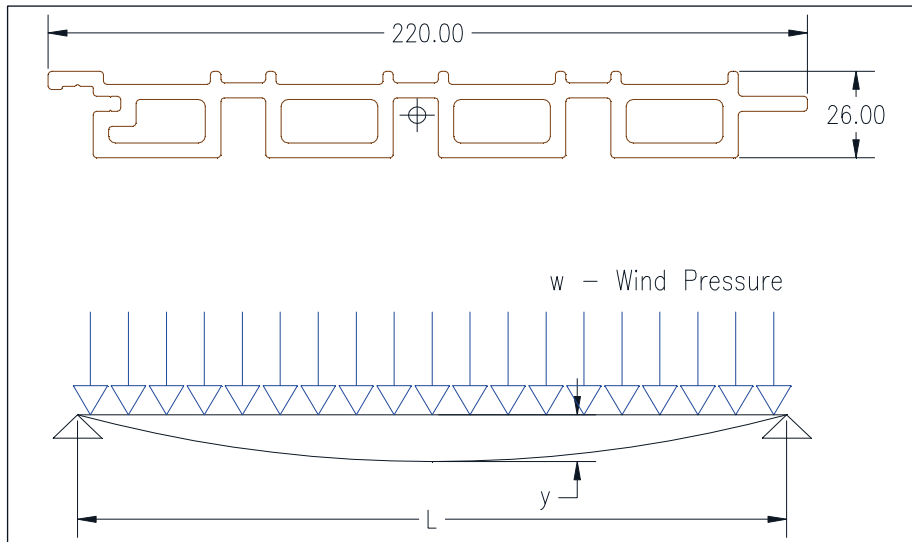
IPE WOOD



WIND PRESSURE TESTS

TECNODECK[®] PLUS WALL

Tecnodeck performed several bending tests with Tecnodeck Plus Wall. The worst situation, is with the wind blowing from behind the structure.



According to the test result, Tecnodeck Plus Wall has a Flexure Ultimate Load Characteristic of $\sigma_R = 28,1\text{Mpa}$.

In the following table it is possible to verify the safety coefficient of the Tecnodeck Plus Wall Profile, according to the wind pressure.

Wind Speed		Wind Pressure		Tecnodeck Plus Wall Safety Coefficient
V		P		
mph	km/h	psf	N/m ²	
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

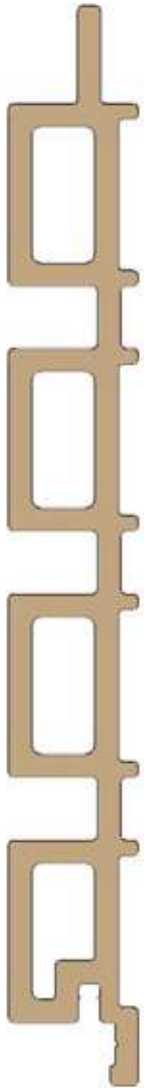
According American Society Civil Engineers (ASCE)

$P = 0,00256 V^2$ (pfs)

$P = 0,613 V^2$ (N/m²)

COMPONENTS

TECNODECK[®] PLUS WALL



Tecnodeck PLUS WALL Profile 220x26



Tecnodeck Rect Washer 20x9x2.5



Screw A2 Ø3.5x19



Tecnodeck Alu-L 49x53



Screw A2 Ø4.8x19



Screw A2 Ø4.8x38



Nylon Cap



Tecnodeck Alu 38x20



Tecnodeck Spacer 25x3



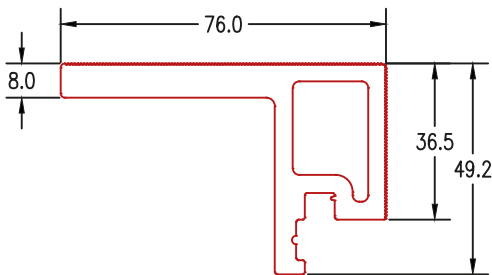
Nylon Anchor Fastener 8x60

COMPONENTS

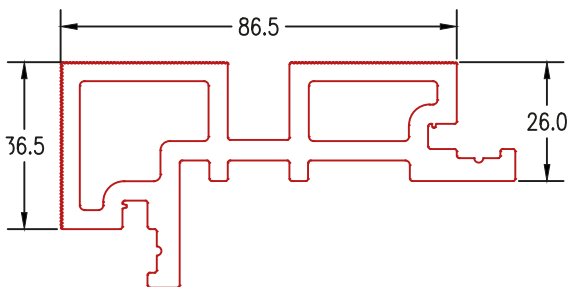
TECNODECK[®] PLUS WALL



Finishing Profile



Exterior Corner Profile



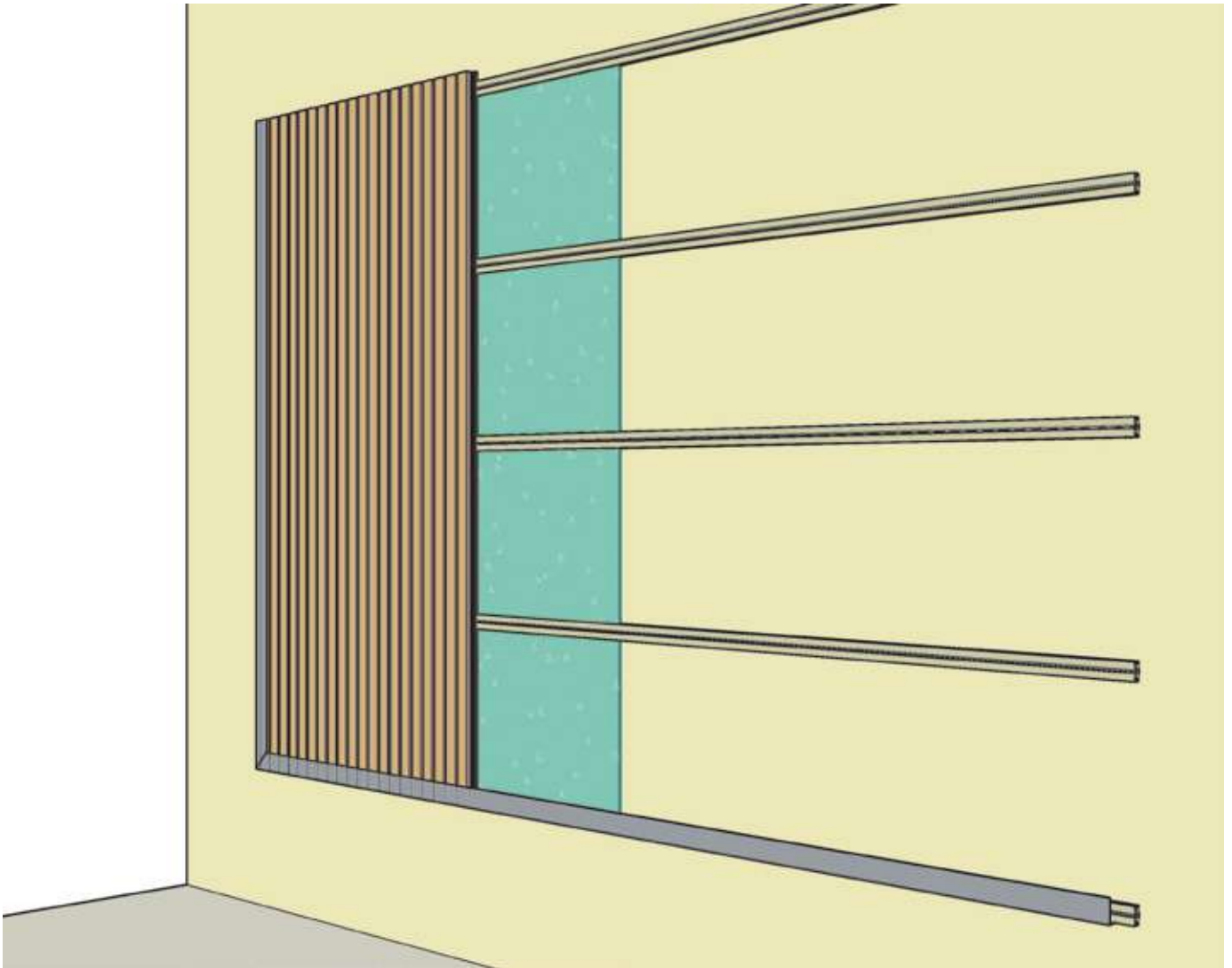
POSSIBLE INSTALLATIONS

TECNODECK[®] PLUS WALL

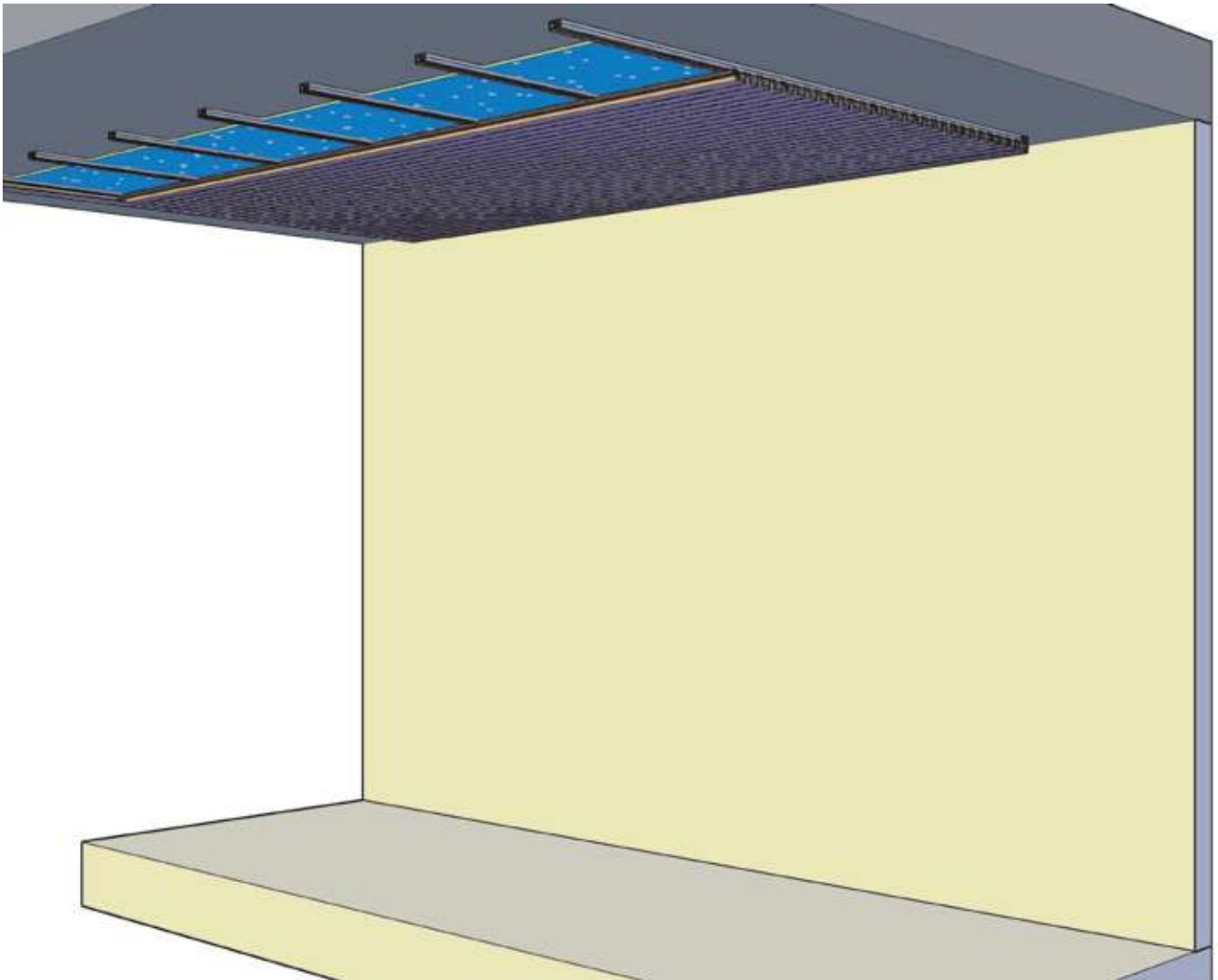
HORIZONTAL



VERTICAL



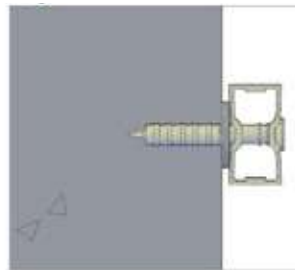
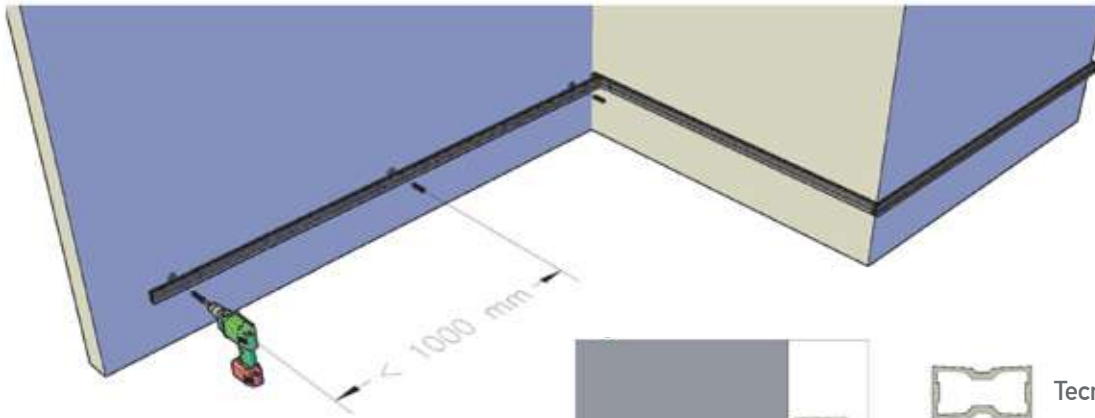
CEILING



INSTALLATION

TECNODECK[®] PLUS WALL

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



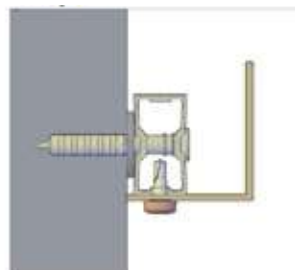
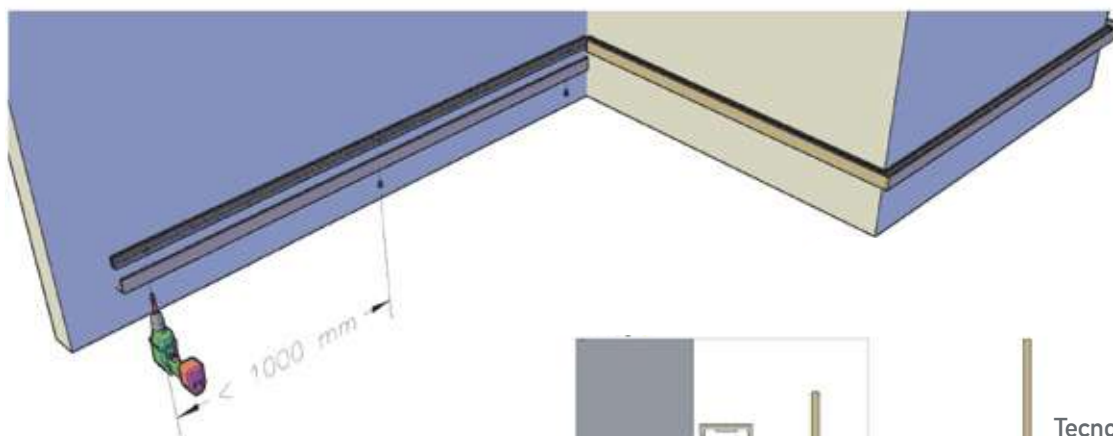
Tecnodeck Alu 38x20



Tecnodeck Spacer 25x3



Nylon Anchor Fastener 8x60



Tecnodeck Alu-L 49x53

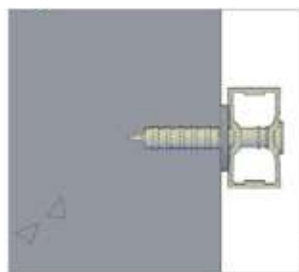
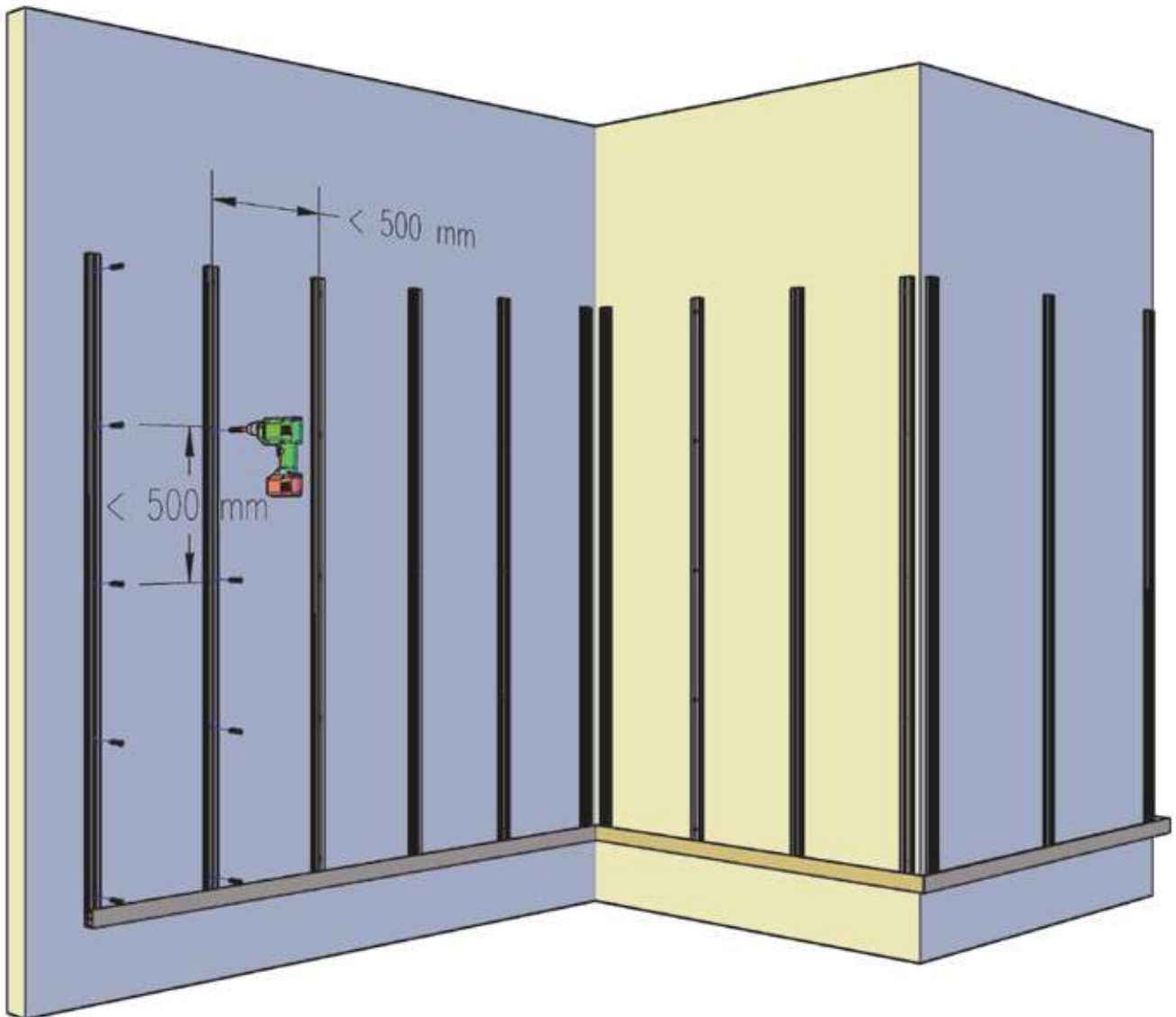


Screw A2 Ø4.8x19



Nylon Cap

STEP 2 - JOIST PLACING AND FIXING



Tecnodeck Alu 38x20

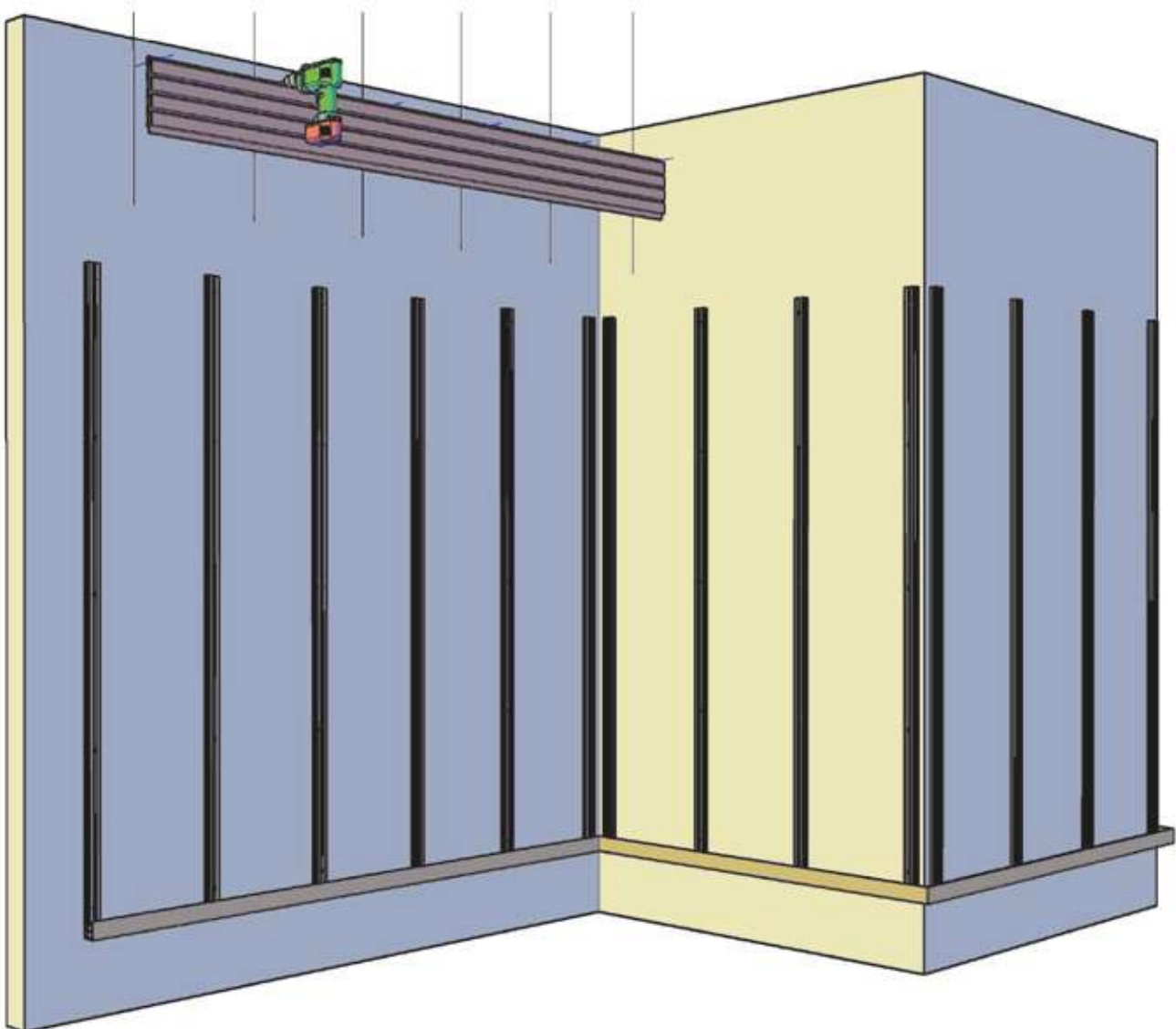


Tecnodeck Spacer 25x3



Nylon Anchor Fastener 8x60

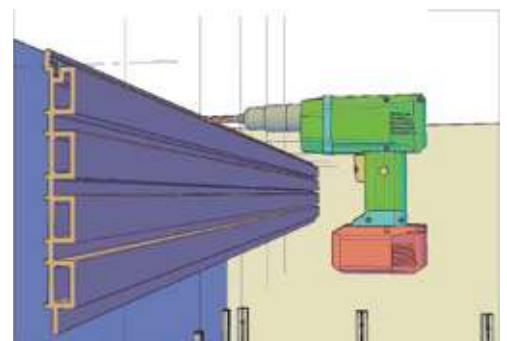
STEP 3 - BOARD CUTTING AND DRILLING



- Before screw PLUS WALL Profile, align Profile with 15mm 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.

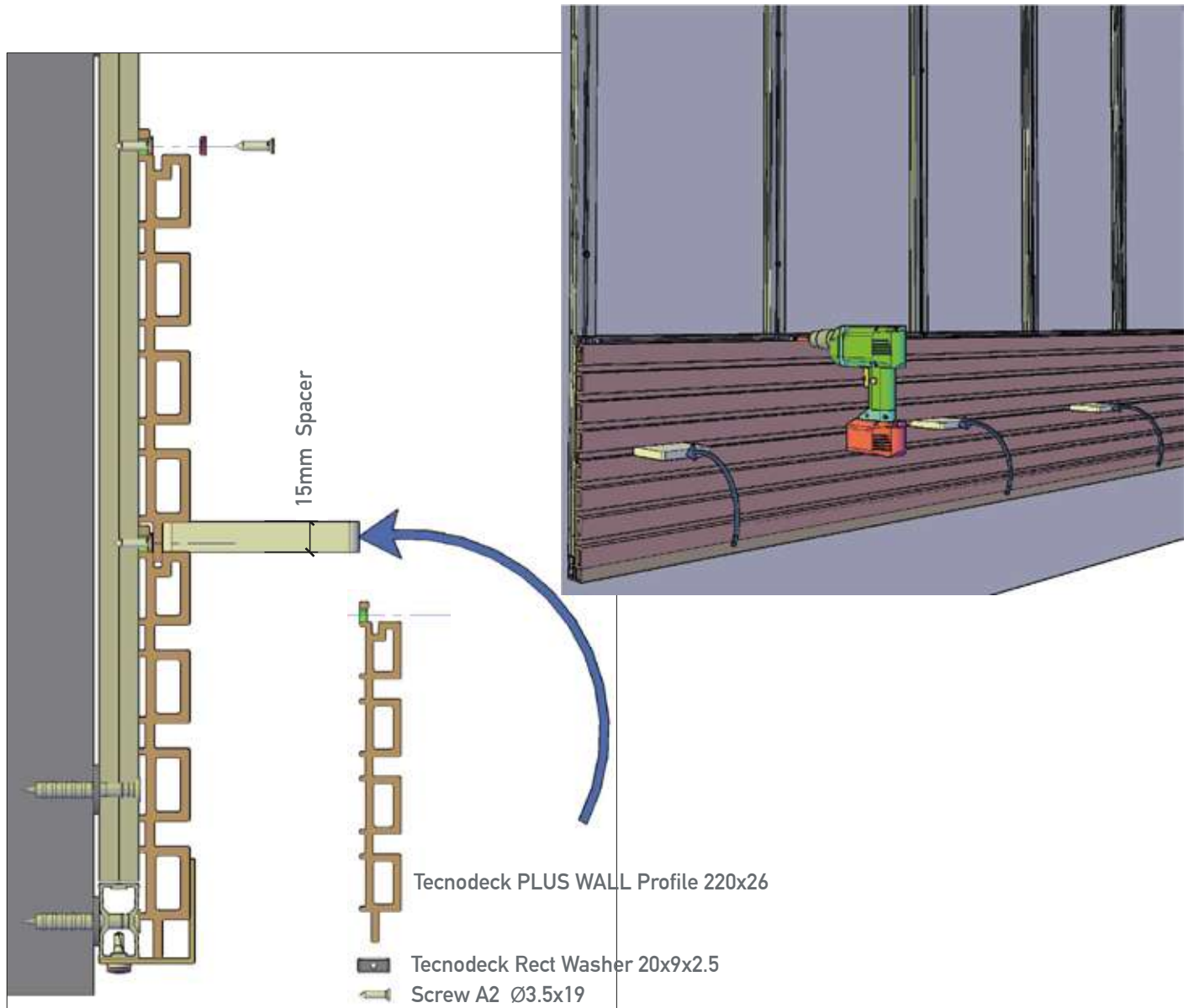


Pré-drill PLUS WALL Board with Ø8mm drill or bigger.



Tecnodeck PLUS WALL Profile 220x26

STEP 4 - BOARD PLACING AND FIXING

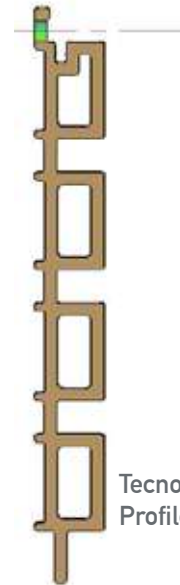
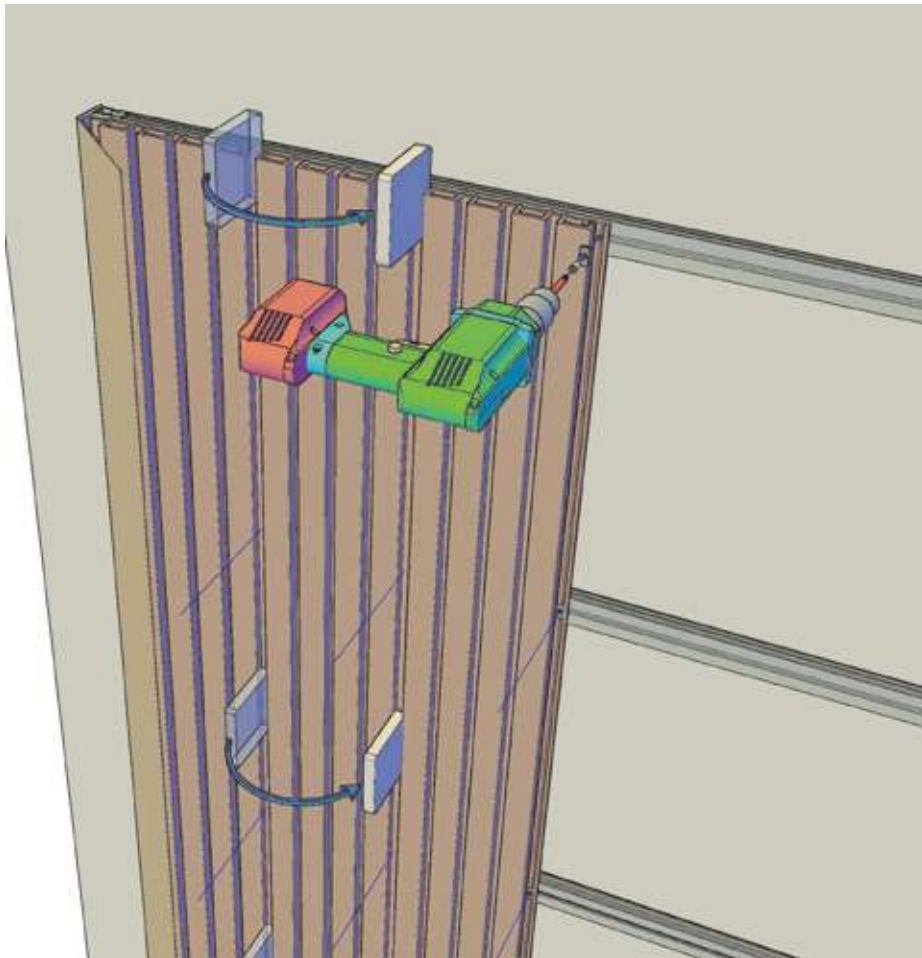


- Before screw PLUS WALL Profile, align Profile with 15mm spacers.
- Repeat this procedure and verify alignments in all profiles to guarantee the profiles and panels alignment.

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.

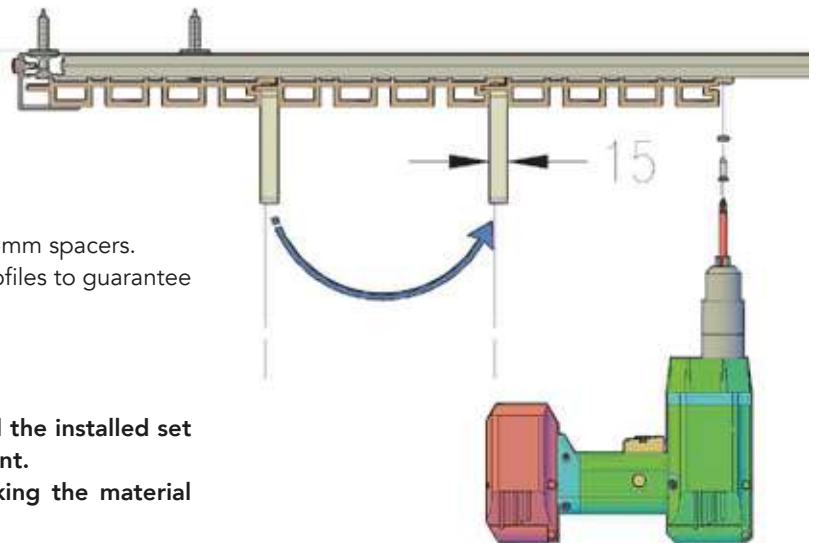
STEP 4 - BOARD PLACING AND FIXING



Tecnodeck PLUS WALL
Profile 220x26

 Tecnodeck Rect Washer 20x9x2.5

 Screw A2 Ø3.5x19

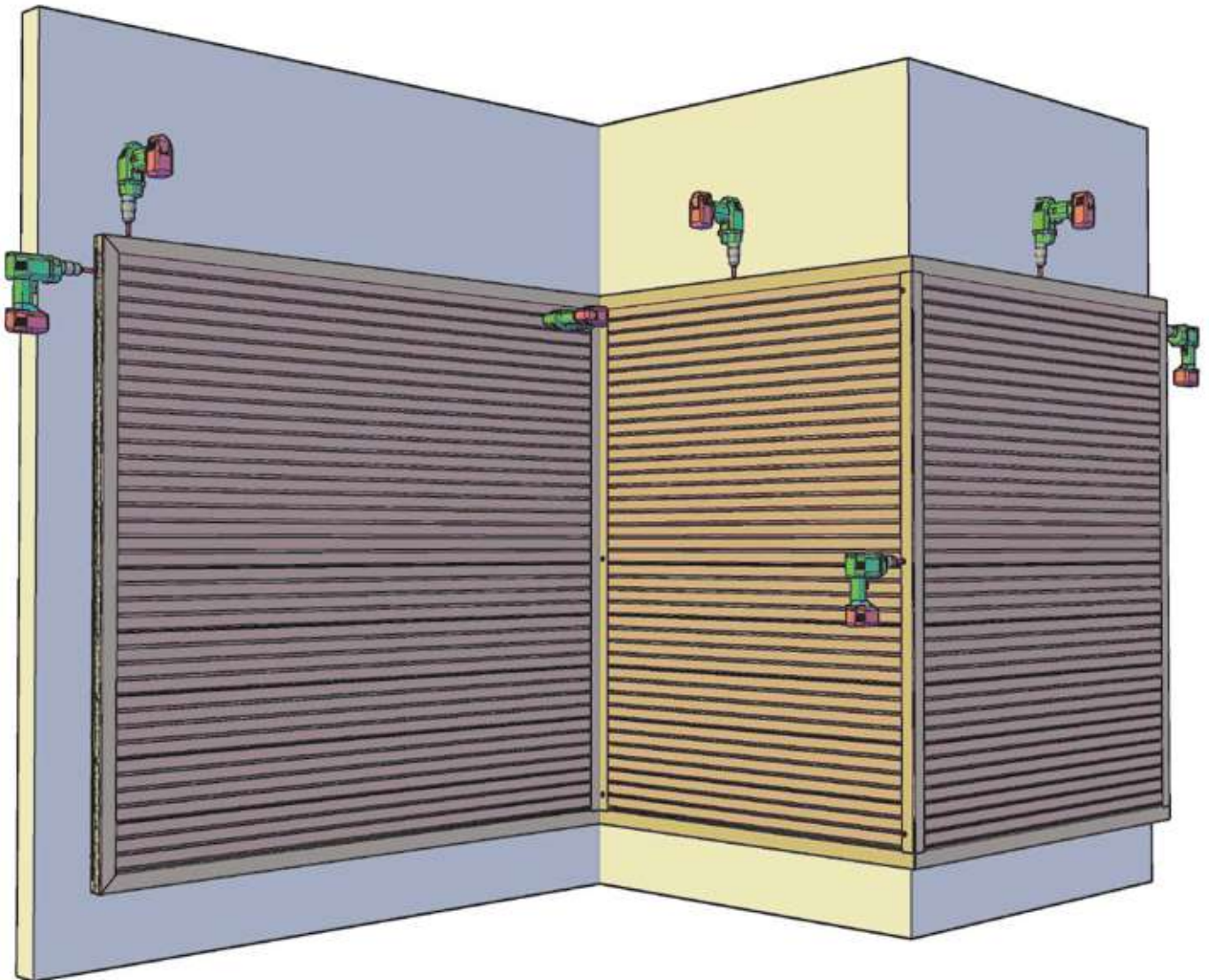


- Before screw PLUS WALL Profile, align Profile with 15mm spacers.
- Repeat this procedure and verify alignments in all profiles to guarantee the profiles and panels alignment.

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.

STEP 5 - FINISHING PROFILE PLACING AND FIXING



Tecnodeck Alu-L 49x53



Screw A2 Ø4.8x19



Screw A2 Ø4.8x38



Nylon Cap