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THE RISE OF
CONSTRUCTION

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COVERINGS

HOW TO INSTALL PALMECO BOARDS IN FLOORINGS/AS FLOORING SUBSTRATES:

1. Check the flooring supports for Palmeco boards usage (e.g. poured cement, C-Purlins, Tubulars, Angular bars, I-Beams,..). Note: Make sure floors or frames are leveled and are clear of debris. Only 15mm & 18mm thick Palmeco boards are recommended.

2. If Wooden framing is used, use 2" wooden nails on Palmeco board fastening to the wooden frames. Note: A spacing of 12" center on each frame is recommended.

3. If Purlins and Tubulars are used, use 1 ½"-2" metal screws on Palmeco boards boring all the way thru the bars. Note: 2"x4" Tubulars is recommended with a spacing of 16" center on each tubular framing.

4. If Angular bars are used, use 1 ½"-2" metal screws on Palmeco boards boring all the way thru the bars.

5. For poured cement flooring, use 1½"-2" concrete nails on Palmeco boards into the cement flooring.

6. Continue laying Palmeco boards side by side leaving 2mm gap in between. Note: a 15mm Palmeco board's Static Bending has a Modulus of rupture of 6.58 MPa and Modulus of elasticity of 3.18 GPa.

7. Continue drilling metal screws for metal framings, nailing wooden nails for wooden beams and concrete nails for concrete floors with a foot spacing around the boards. Note: For the desired flat surface finish, fasteners must flushed with the surface or slightly below the Palmeco boards.

IDEAL COVERINGS

8.   For wet applications (e.g. toilets, kitchen, outdoors,..), use waterproofing material first to fill all the gaps between boards and on fasteners. Make sure to follow the manufacturer's instructions.

9.   Note: Palmeco boards can accommodate any waterproofing materials. It is recommended to use Pioneer Construction Epoxy L.V. type to fill up the gaps of each boards before applying Dr. Seal Acrylic Waterproofing Membrane (white color) over all the surface of the boards including the fasteners.

10.   As a ceramic tiling substrate, use the rough side of the Palmeco boards exposed for the tile adhesive coatings. Note: The smooth surface of Palmeco boards can accommodate all floor finishes (e.g. Laminated woods, wooden planks & parquets, Rubber & plastic Vinyl tilings,..).

11.   As a floor in itself, just prim and paint as desired. Note: Palmeco boards can also accommodate Rubberized flooring Paint finishes.

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HOW TO INSTALL PALMECO BOARDS AS INTERIOR AND EXTERIOR WALLINGS:

1. Mark the location of every stud, along the top of the wall and extending onto the ceiling as well as at the very bottom of the wall. Measure over every 16" for standard stud spacing. Stud marks will help you determine where to nail Palmeco boards. Note: a 15mm, 18mm thick Palmeco boards as wall don't need kickboards or baseboards to protect from normal weather conditions.

2. Install furring strips, running horizontally across the wall, if you are hanging panel boards vertically. Either purchase the strips or cut two-byfours into strips measureing 1-by-3 inches. Measure down the wall at either end plus at least once in the middle of the wall when using 6,9,12mm or if there is a window panel to support. Make marks every 24" and connect with a straight edge to create long horizontal lines. Attach the furring strips along these lines, nailing over every stud mark along the way. This creates a point of attachment for vertically running paneling boards. For paneling sheets or boards that run horizontally, these steps are unnecessary.

3. Gather your supplies, including the fasteners, caulking, ladders or scaffolding, screw guns, drills and hand tools. Note: 9mm and 12mm thick Palmeco boards are recommended for interior walls while 15mm and 18mm for exterior wallings.

4. Measure the width and length of a space (e.g. height of the wall) for the installation of Palmeco board. A Palmeco board comes in 4 X 8 ft standard size. Note: 2mm gap between boards is best to prevent crackings and movements of the support framings since Palmeco boards does not expand and contract at any given time.

IDEAL COVERINGS

5.   Mark the location of any electrical devices or other items (e.g. switches, convenient outlets, cable & tel. wirings,..) which will penetrate the boards and cut holes for them.

6.   Drive all fasteners into the Palmeco board panel (smooth surface side), making sure to sink them flush slightly below the surface so that after putty and sanding works, it would have a smooth leveled surface.

7.   Fill each subsequent sheet or panel into place until the area you're working on is complete. Install trim as needed, clean up surfaces where blemishes or spoiling from screw penetrations has occurred.

8.   Use waterproofing material to fill all the gaps between boards and on fasteners should you use Palmeco boards for toilets, kitchen, or any high humid areas. Make sure to follow the instructions given by the manufacturer.

9.   Note: Palmeco boards can accommodate any waterproofing materials. It is recommended to use Pioneer Construction Epoxy H.V. type to fill up the gaps of each boards before applying Dr. Seal Acrylic Waterproofing Membrane (white color) over the surface of the boards, floors and corners up to its wall height of a foot including the fasteners exposed and or sunk.

10.   Prim and Paint the walls. Note: You can use any putty material to treat the 2mm gaps between the Palmeco boards.

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HOW TO INSTALL PALMECO BOARDS IN CEILINGS/EAVES:

1. Determine the framing requirements for the material you choose (e.g. aluminum studs, wood lumbers, metal tubulars, c-purlins, angular bars,..). Note: Palmeco boards can accommodate any kind of support backings & its fasteners.

2. Choose appropriate fasteners (e.g. tek screws, gypsum screws, black screws, concrete/wood nailers, industrial staplers,..).

3. Gather your supplies, including the fasteners, caulking, ladders or scaffolding, screw guns, drills and hand tools. Note: 6mm (1/4") thick Palmeco boards (18 kgs. each) are recommended for ceiling works and would need 2-3 workers to install.

4. Measure the width and length of a space you will install a sheet of Palmeco board on. Note: 30mm spacing of each framing is recommended for 6mm thick of Palmeco board. And a 2-3mm gap between boards spacing is best to prevent cracking and movement of the support framings since Palmeco boards does not expand and contract in any given time.

5. Cut the board to its required width and length.

6. Mark the location of any electrical devices or other items (e.g. chandelier wirings,..) which will penetrate the boards and cut holes for them. Note: 6mm thick Palmeco board has a 3.5 MPa Tensile strength and 58 Kgf Screw Withdrawals even without the framing underneath.

IDEAL COVERINGS

7.   Drive all fasteners into the Palmeco board panel (smooth surface side), making sure to sink them flush slightly below the surface so that after putty and sanding works, it would have a smooth leveled surface

8.   Fill each subsequent sheet or panel into place until the area you're working in is complete. Install trim and caulk joints as needed, clean up surfaces where blemishes or spoiling from screw penetrations has occurred.

9.   Prim and Paint the ceiling. Note: You can use any putty material to treat the 2-3mm gaps between the Palmeco boards.

HOW TO INSTALL PALMECO BOARDS IN ROOFING/AS ROOFING SUBSTRATES:

1. Check the framing material used to support the entire roofing system to determine the appropriate fasteners. Note: Palmeco boards can accommodate any kind of support backings & fasteners. Only 15mm & 18mm thick Palmeco boards are recommended.

2. If Steel Trusses are used, place the Palmeco board on top of the truss and drill a hole into the board's 1" distance from all corners using 3/16" Ø metal drill bits. Note: No need to pre-drill holes on Truss before laying out of the boards.

3. If Wooden beams are used, use 2-3" wooden nails on Palmeco board to fasten onto the beams.

4. If Angular bars, Purlins and Tubulars are used, use 1 ½"-2" Tek screws on Palmeco boards boring all the way thru the bars.

5. Continue laying Palmeco boards side by side leaving only 2mm gap in between. Note: Palmeco boards has a 14% Water Absorption and 0% Thickness swelling

6. Continue drilling Tek screws for metal framings or wooden nails for wooden beams using half a foot spacing around the boards. Note: Make sure Palmeco board's corners are well rested on the frames.

IDEAL COVERINGS

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7. For the desired flushed/flat finish, follow steps 1-5 then use 5/8" Ø metal drill bits and bore Palmeco boards using the same hole, up to 6mm deep, to accommodate the hexagonal flat head of the standard 1 ½" Tek screws, enough to sink in for a flushed/flat surface. Now drill Tek screws into the panel making them flushed with the surface or slightly below it. Note: Flushed finish is required depending on the top roofing material used (e.g. Tiles, shingles,..) with Palmeco boards as its under-sheeting substrate.

8. Use waterproofing material to fill all the gaps between boards and fasteners. Make sure to follow instructions given by the manufacturer. Note: Palmeco boards can accommodate any waterproofing materials. It is recommended to use Pioneer Construction Epoxy L.V. type to fill up the gaps of each boards before applying Dr. Seal Acrylic Waterproofing Membrane (white color) over all the surface of the boards including the fasteners exposed and or sunk.

9. Prim and Paint as needed Note: Palmeco boards can accommodate water/oil-based Latex, Automotive and Enamel Paints.

IDEAL COVERINGS

FIXING & JOINTING PALMECO BOARDS

1. **SAWING:** Can easily be cut using a normal fine-toothed saw, fret saw or an electric tool like jigsaws & portable grinders. For 3mm thick Palmeco boards, the use of industrial cutters is quickest. When large quantities of the boards are to be cut, the use of a circular saw affixed on a working table is advisable.

2. **DRILLING:** Use masonry drills to countersink or drill screws. Use low/high speed drills for better results. Place the board under the drilling location for a clean hole. Use hammer action only for wooden and concrete nailers.

3. **PLANING & SANDIN:** Smoothing the edge can be achieved with a planer, sander, surform, rasp or file. Use conventional papers for sanding.

4. **JOINTING:** Palmeco boards are suitable for both timber and metal framing. Studs are recommended to be placed at 407mm centers. A gap of 2mm between joints is required. Be sure to fill the gaps for partitions. Before filing, each gap must be cleaned of all dusts otherwise the contact point between the sealants and the boards is compromised and may result in surface cracking. The use of fiber mesh joint tape and standard jointing compounds helps prevent surface cracking. These should be constructed according to local building regulations and practice.

5. **FIXING:** For screwing, it is recommended to use self drilling, self countersunk screw in stainless steel. Screw diameter should be from 3.5-4.2mm, length should be 2.5 times the panel thickness. Fixing at 200mm nominal centers, perimeter of panel fixings should be 10mm from

IDEAL COVERINGS

the edge of the board and all edges should coincide with support structures. 6mm thick Palmeco board can be stapled with 16 gauge, 6mm crown x 25mm long rust-proof staples.

6.   **CUTTIN:** Palmeco boards can easily be cut either longitudinally or traversely. A cut should be made on the face side of the board by means of a cutter or a knife for 3mm thickness. A line may be ruled prior to cutting. The rule can be drawn down the board at the required distance and can be scored with the knife at the end of the rule. The boards should be pressed with both hands, cut and snap over a straight edge. For smooth and clean cut, use a sharp circular saw (120 carbide teeth) and se the speed above 3000 rpm.

7.   **NAILING:** can use manual or power nailing using a flat headed, preferably stainless steel nail. Diameter should be 2.2 or 3.1mm, length 2.5 times the panel thickness. For power nailing, tools should be set to 3- 4 bars and then finely adjusted to achieve required penetration. It is essential to position the boards steadily against the background structure. Boards can also be stapled depending on the thickness of the boards and the compressor equipment used.

8.   **SUPPORT STRUCTURES:** Palmeco boards can rest on timber or steel supports at maximum of 600 centers for 15mm and 18mm thick Palmeco boards.

PALMECO BOARDS IN MAKING FURNITURE:

1. Mark and cut all pieces of Palmeco boards based on the plans and specifications. Cut like pieces together to save time and try to make every needed cut with one tool before setting up another.

   • *Should you need to add any decorative edges or other details with a router, drill holes for hardware and other machining tasks.*

   • *It is much easier to do these jobs before assembly. Note: Palmeco*

   • *Boards can be pre-laminated in 4X8 ft. board before cutting.*

2. Sand edges to provide a good surface for gluing and finish (e.g. laminated profiles, ducco,..). Note: Palmeco smooth side doesn't need any sanding and is ready for coating (e.g. paint or laminates).

3. Glue all joints. Use pin nails and screws for reinforcement until glue hardens. Clamp larger pieces with bar clamps. Assemble your project in section. For example, a table base and top can be assembled separately then joined to complete the project.

4. Sand the excess glue that might interfere with the finish. Use a 220 grit on a random sander for best results.

5. Use high gloss paints for the best finish. Three coats will do it. Follow label instructions for application and dry time. Note: Palmeco boards can accommodate latex, automotive and enamel paints.