

## INSTALLATION OF LAUTEX MARINE UP-PANEL

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| General:                       | It is recommended that the interior walls, ventilation ducts, piping lines and electrical cabling should be installed prior to installation of the LAUTEX ceiling system. The ceiling area should be measured and controlled on-site and compared to the ceiling plan drawing available, in order to avoid deviations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Marking:                       | The final ceiling height should be levelled and marked on the surrounding walls by using stretched lines or laser marker.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Perimeter profiles:            | After the marking, the perimeter L-list can be installed onto the walls on the correct levelled height. Thereafter the ceiling area should be divided and marked up longitudinally by means of marker lines, in order to accommodate UP-carriers at internal spacing not exceeding 1200 mm. The location of the first carrier from wall should not exceed 150 mm. (If carriers are dimensioned on the ceiling plan, then this spacing should be marked up).                                                                                                                                                                                                                                                                                                                                                                           |
| Hangers:                       | <p>After marking of the UP-carrier lines, the vertical threaded hanger rods (M8) should be installed alongside with the marker lines, with 1000–1200 mm internal spacing. The upper end of the rods should be secured properly by welding to the steel deck above, or onto sides of the deck stiffeners, all in accordance with Classification Society's approval or as per Shipyard standards.</p> <p>The lengths of the hanger rods should be controlled with the levelled ceiling height, using the already installed perimeter L-profiles as reference. Too long rods should be shortened to measure. Recommended level of the M8 rod is 100 mm above the underside level of the perimeter L-list, when using carrier lock N:o 64. (When using carrier lock N:o 58 the height should be 30 mm above this level respectively).</p> |
| Additional hangers:            | If heavy, integrated type light fixtures or loudspeakers are to be installed into the ceiling, then it is recommended to provide additional hangers or even additional carriers, in order to accommodate the additional weight.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Carrier locks:                 | After installation of all hangers, the LAUTEX carrier locks should be fastened accurately to the M8 hanger rod. Carrier lock N:o 64 to be installed by using lock connection piece N:o 66. Carrier lock N:o 58 can be installed directly onto the M8-rod. The carrier locks to be adjusted and aligned to the appropriate level, starting from carrier lines adjacent to the walls, then aligning the remaining part of the ceiling. The level of the underside of the perimeter L-list should be used as reference.                                                                                                                                                                                                                                                                                                                  |
| Carriers:                      | Prior to the final installation of the carriers, the panels' modular lines should be aligned and marked. The carriers to be fastened underneath the carrier locks by locating the carrier lock into the carrier slot and then secured by twisting the lock 90°. Prior to locking the carriers into position the internal alignment between the carriers should be controlled and adjusted if required, by using long installation panels or marker lines.                                                                                                                                                                                                                                                                                                                                                                             |
| Carrier splicing:              | Carriers can be joined by using LAUTEX carrier connection splices, which are slid inside the carrier ends and secured by screws. Alternatively the ends of the carriers can be secured to each other, side by side by overlapping ends, and locked to each other by bolts or crews, or by tack-welding.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Alternative suspension System: | Instead of using LAUTEX ordinary hanger-suspension system (with carrier locks and threaded rods) a basic subconstruction can be achieved by installing a welded suspension framework (consisting of vertical and horizontal 20x40x1,5 mm rectangular steel tubes). The horizontal sub-construction should be installed with an internal spacing of 1000-1200 mm and aligned in according to the perimeter edge lists on the walls, whereupon it can be fixed and secured by welding. The carriers can be installed directly underneath the subconstruction by using screws, tack-welding, or more flexible, by using LAUTEX carrier locks N:o 57, providing adjustment possibilities later on.                                                                                                                                        |

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| Installation of panels:           | The UP-panels should be engaged to the clips of the carriers, by means of simultaneous pressure with both hands on both the wide and narrow flanges on the panel long sides respectively. (During installation it should be avoided to get torn plastic from mineral wool or protection foil in between the carrier clips and the panels, which can lead to distortion.                              |
| Joining of panels:<br>(end bends) | When installing ceiling areas longer than 6000 mm, which is the normal maximum length of an individual panel, then UP-panels normally are supplied with end bends. Panels can be joined longitudinally by using specially LAUTEX-designed joint clips, which clamp the end bends tight together after installation. The maximum distance of panel joint to nearest carrier should not exceed 300 mm. |
| Joining of panels:<br>(open ends) | Clean-cut butt seam extensions of panels can be joined to each other by using panel connection splices, which are placed inside the panel open ends, and thus guiding and securing the panels ends to each other.                                                                                                                                                                                    |
| Dismantling:                      | Any ceiling panel can be dismantled and taken down. When dismantling pull the panel that you want to remove towards yourself. Simultaneously push the next adjacent one.                                                                                                                                                                                                                             |
| Securing the panels:              | After final installation and adjustments, the panels should be secured into position by pushing down the reverse securing clip behind the wider flange.                                                                                                                                                                                                                                              |
| Perimeter Z-profiles:             | In case perimeter z-profiles are used to cover the ends of the panels, these can be installed underneath the perimeter-L-profile, after installation of the panels, by using screws supplied by LAUTEX, painted into the same colour as the panels. The optimal spacing between screws is 400 mm.                                                                                                    |
| Perimeter U-profiles:             | In case perimeter u-profiles are used to cover the ends of the panels, these should be installed underneath the perimeter-L-profile, prior to the installation of the panels, by using screws installed from inside of the u-profile. The optimal spacing between screws is 400 mm.                                                                                                                  |
| U-insert lists or clips:          | When the panel widths are 200 mm or more, the panel ends can be secured to the perimeter profile by inserting short pieces of u-insert lists or pre-cut spring clips inside the u-profile or z-profile. The insert pieces maintain the shape of the profile bottom, which otherwise tend to bend upwards at the ends.                                                                                |
| Service hatches:                  | Regular access to the void space above the ceiling can be obtained by installing an integrated modular LAUTEX UP-access hatch. The regular size is 600x600 mm but other modular sizes are also available. The hatches are normally provided with hinges and locks                                                                                                                                    |
| Adapter plates:                   | Down light fixtures and loudspeaker units can be installed as integrated to the UP-panel ceiling system by using special modular UP-adapter plates. The adapter plates can be installed to the UP-carriers the same way as the panels, as described above, and secured by self tapping screws.                                                                                                       |
| Maintenance:                      | The ceiling panels shall be handled with care, avoiding distortions or scratches during handling. The protective foil should not be removed prior to the installation of each individual ceiling panel. Long panels can be bent if lifted in the ends, therefore it is important to support the panel in the middle during lifting, and to lift the panel in a vertical position.                    |
| Cleaning:                         | Dust can be wiped off panels by using soft brush or cloth or a vacuum cleaner with soft brush. Remove possible sharp metal chips with care, avoiding scratches. Stains can be removed by using soft cloth and a water diluted soap solution.                                                                                                                                                         |