PREMIUM PLUS SYSTEM

Storage Solutions
Shelving Division

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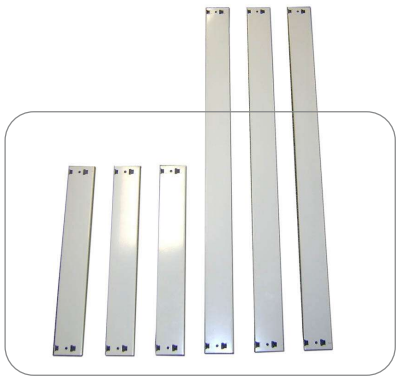
1. ASSEMBLY SYSTEM

1.1. The Premium Plus system is a medium-duty metal shelving system consisting of uprights, beams and crossbars, designed for boltless assembly. The load level is usually a board resting on the beams and crossbars.

Premium Plus angles detail



Premium Plus beams and crossbars detail

1.2. Assembly is performed by inserting the flanges of the upright into the holes available on the ends of beams and crossbars.

Beam-upright hooking detail

1.3. Bay rigidity is provided by fastening beams and crossbars to the upright, bracing the structure in both directions and making a exceptionally solid framework.

2. LOAD BEARING CAPACITIES

2.1. The Premium Plus shelving supplied by AR Storage Solutions-Shelving Division is a hand loaded system.

2.2. There is no accepted standard in the market for this type of shelving to define its expected behaviour under load, but we have specified strict requirements for our products at AR:

- Maximum deflection supported is L/200 under nominal load (where L is the length of the beam). This means that, for instance, a 1000mm long beam would show a maximum vertical deflection of 5 mm in the middle when its level supports the maximum load for which it was specified.

- The overload factor is 1.5, which means that the level does not collapse up to 50% overload of the nominal load. Thus avoiding negative effects on the system derived from potential extra forces by accidental impacts, incorrect handling of stored loads, etc.

2.3. Strength and rigidity of the shelving system depend on other factors, such as the profile geometry (defining its mechanical properties, e.g. area and moment of inertia) and steel quality (yield strength) with which it is formed. Optimization of a framework is achieved by properly combining geometry and steel quality. Both are critical for the final target, that is, the load it can bear.

2.4. In order to guarantee the load bearing capacity, we only work with cold rolled steel, obtained from a high-precision rolling mill. The yield strength and material thickness, basic characteristics of material to guarantee correct behaviour, have been defined and are checked for each product.

2.5. In all cases, the load is assumed to be uniformly distributed across the whole surface of the shelf.

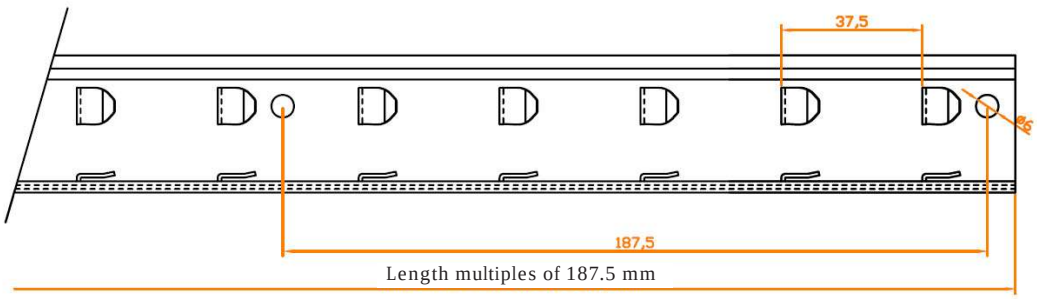
2.6. The load bearing capacities for the Premium Plus system's beams have been tested both internally and externally.

2.7. AR's Quality Management System meets the requirements of the ISO 9001:2008 Standard according to the certification issued by Lloyd´s Register Quality Assurance.

3. USES

3.1. Thanks to its design, strength and finishings, the Premium Plus shelving system can be used in many applications where the load to be stored is greater than the load supported by metal deck shelving: in storage rooms, garages, file rooms, industrial warehouses, offices, etc.

3.2. The angle pitch (37.5 mm) allows for multiple alternatives when it comes to positioning levels.



Premium Plus angle pitch detail

3.3. Bays can be linked to one another to create runs by joining adjacent uprights through the uprights perforations using M5 bolts, or even using simple plastic clamps. They can also be linked to the wall by means of the upright perforations.

4. ASSEMBLY TIPS

4.1. For assembly, we recommend to first assemble both sides of the bay. To do this, place the crossbars at the desired height by hooking them into the upright flanges. Then, join the two sets using beams placed at the same height as crossbars. Finally, after the full structure is assembled, place the chipboard panels at the resulting levels.

4.2. We recommend to lodge beams and crossbars completely into the upright flanges, if necessary using a tool not damaging the shelving elements, such as a rubber hammer.

Use a nylon hammer

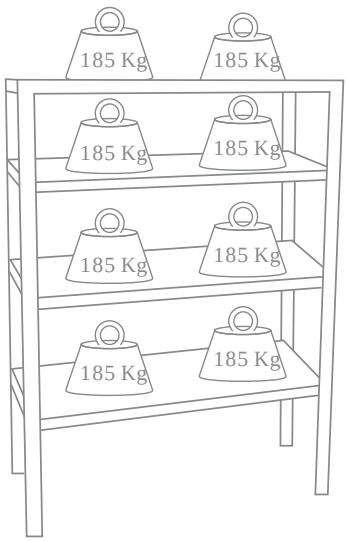
4.3. We recommend that the framework is fastened to the wall by using appropriate anchors on the holes in the angles. Fixing to the wall must be performed as high as possible (above 2/3 of the bay height is recommended). You must make sure the wall strength can support the forces imposed by the shelving system.

4.4. Before selecting the beam models to be used, we recommend to previously analyze the available space and the dimensions and weight of the loads to be stored according to our load bearing capacities table. We recommend to cover most of the available area with long beams (for example, 1200 mm) and the remaining area with shorter beams to choose from the range available.

Wide range of available dimensions

4.5. A safety recommendation is to place the heaviest loads on the lowest levels of the system to avoid the risk of falls from high levels.

4.6. We recommend to distribute the load as uniformly as possible, avoiding concentration on a single spot. Stated loads are for uniform distribution across the whole surface of the deck. If the whole load is concentrated on a single spot in the middle of the deck, the load capacity is reduced approximately by half.



Uniformly distributed load

Incorrectly distributed load

4.7. We recommend to use at least 8mm thick boards for shelving up to 500 mm deep (crossbars up to 500 mm). For greater depths, 10mm thick boards are recommended. The thicker the board, the more rigid the framework.

Detail of chipboards with different thicknesses.

4.8. Avoid the following:

- Overloading the decks beyond the specified nominal load
- Impacting the loaded shelving system
- Loading only the upper levels, leaving the lower levels free

4.9. Never climb on the system by stepping on the lower levels as it it were a ladder. Beams can be deformated and you risk falling off.

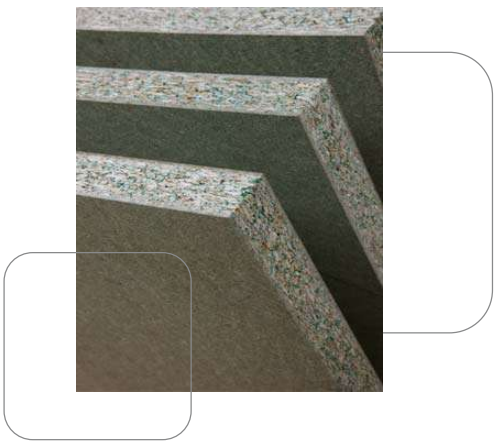
4.10. When using a ladder or other elements to access the highest levels, avoid resting it on the system to prevent unforeseen forces.

4.11. Whenever, as a consequence of handling and use, you detect permanent deformations in any component of the structure, unload the relevant level or bay and replace the damaged elements with new ones. The amount of load capacity reduction for a damaged shelving system cannot be predicted and the system might collapse.

4.12. You can always add shelves to an already assembled bay by placing beams, crossbars and boards at the desired levels.

4.13. We recommend to assemble the system on a correctly leveled floor (lack of maximum acceptable leveling in any direction of the floor: 1/350), in order to prevent falling of loads and undesired effects on the load distribution.

4.14. The Premium Plus system is designed for indoor use. Avoid using it in excessively humid environments due to potential deformations of the board. For these cases, we recommend to use waterproof or coated wood for improved resistance to moisture.



Detalle de aglomerados hidrófugos.
Aprecie el color verde del compuesto

4.15. We recommend to place the first level closest to the floor.