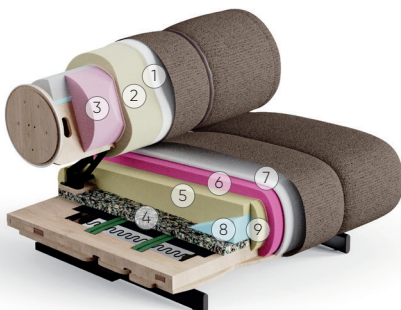


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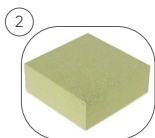
#checklist

Air Orion

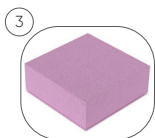
Time to explore the technical specifications of Air Orion.



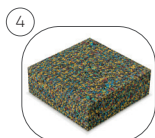
90 gr/m²
Fiber



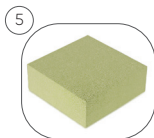
5 cm 23 kg/m³
HYPER Soft
Foam



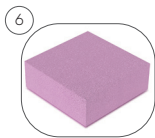
CNC-Cut
24 kg/m³
Super Soft Foam



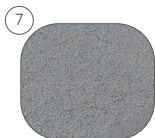
3 cm 50 kg/m³
Makeform



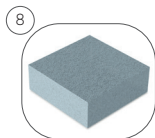
CNC-Cut
35 kg/m³
HR Foam



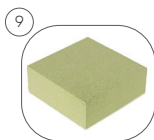
5 cm 35 kg/m³
HR Soft Foam



500 gr/m²
Fiber



10 cm 45 kg/m³
HLB Foam

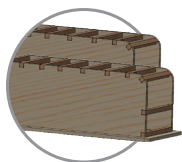


CNC-Cut
35 kg/m³
HR Foam



CONSTRUCTION

We use plywood, beech wood and MDF for the frame, which forms the main structure of the chair.



(Image 1-1)

We cut high-strength (36 N/mm²) plywood – a laminated timber material produced in accordance with EN 636 standards, made by arranging layers of wood approximately 1.5 mm thick with their fibres arranged perpendicular to one another and then pressed with resin – with high precision using CNC machines. (Image 1-1)

We use first-grade beech timber battens, which have been kiln-dried and left to season for at least one year, with a moisture content of 10 per cent or less, in the following dimensions: 2 × 2 cm, 5 × 2 cm and 7 × 2.5 cm.



(Image 1-2)

We mount 3 mm thick MDF (Medium Density Fibreboard) sheets onto the rear and side sections of our products to create a box-type structure that enhances strength.

We apply a water-based PVAc wood glue, which has high adhesive strength and complies with EN 204 standards (D3 grade), to all joints in the wooden frame.

In our frames, we assemble the parts using an interlocking system to enhance strength.

(Image 1-1) / (Image 1-2)

In the seating sections, to ensure comfort and ease, we use zigzag springs that have been treated in special heat-treatment furnaces to achieve extra hardness, and elastic columns with a 60 per cent elongation value and a tensile strength of 350 kg, produced by weaving polyester yarns around three rubber fibres each, in a total of 105 units, each 7 cm wide. (Image 2-1)



(Image 1-3)

We use plastic material in various cross-sections at the corners and edges of the frame to reduce rigidity and improve the visual appearance after installation.

FOAM

We apply a layered composite foam to the seat, backrest and armrests to maximise comfort and durability.

For the base layer of the seat, we use Makeform foam, which is 3 cm thick, has a density of 50 kg/m³ and is made from 100 per cent recycled material, to provide support.

The main seat foam consists of CNC-cut HR-ALTA (High Resilience) foam with a density of 35 kg/m³.

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In the top layer, we use a 5 cm thick, flexible and soft HR SOFT grade foam (density: 35 kg/m³) as comfort foam to fully envelop the entire seat.

We use CNC-cut soft foam (density: 24 kg/m³) for support in the inner and upper sections of the backrest.

We use a 5 cm thick, flexible and soft foam of HYPER SOFT quality with a density of 23 kg/m³ as comfort foam to fully cover the backrest.

For the top layer, covering the entire seat section, we use first-class laminated fibre made from 100 per cent polyester at 500 g/m², produced using thermal and chemical bonding methods in a non-woven form.

For the backrest, we use a top-layer of 100 per cent polyester, 90 g/m², premium-grade laminated fibre, produced using thermal and chemical bonding methods as a non-woven material to cover the entire section.

To prevent the front of the seats from becoming excessively soft and sagging due to heavy use, and to ensure the front upholstery fabric maintains a more aesthetic appearance, a 10 cm thick, 30 cm wide, triangular section of 45 (kg/m³) HLB barrier foam is applied to the front section of the seats.



(Image 2-1)

FITTINGS & LOAD-BEARING SYSTEMS

Air Orion model features cast polyurethane legs with internal metal reinforcement. The underside of the legs is fitted with plastic pads to prevent damage to the floor and slipping.

We use 20x30x1.5mm electrostatically powder-coated metal profile connectors to join the modules together.

MECHANISM



In the Air Orion model, we use the DSS30 backrest mechanism, which allows the seat to extend by 30 cm, thereby adding a deeper seating function to the product.

Our mechanism is manufactured using 4 mm thick DKP, HRP and 6220 sheet metal materials, which are shaped with high precision on CNC laser machines and finished with a textured electrostatic powder coating.

APPLICATIONS FOR STRENGTH AND DURABILITY

Products undergo testing comprising an average of 30,000 seating cycles during the R&D process. For 100 kg conventional products, the seat cushion uses foam that is 30–50 per cent thicker and 20–30 per cent denser.

Recycled material (felt) has been used instead of 12 per cent foam. Materials that do not pollute the environment and reduce the carbon footprint have been used.

Over 18 per cent of the material used is wood.

For the connecting elements, materials that are 50–100 per cent stronger, with a larger surface area and greater load-bearing capacity, are used.

The product has been designed with every aspect in mind – from its construction, production and transport to home assembly and even children jumping on it – and has been brought to life accordingly.

A filling blend and a tightly woven lining are used in the backrest and cushions. The current filling blend is more durable than other conventional fillings.

FABRIC & SEAMS

We use fabrics from manufacturers who produce to international quality standards in all our sofas.

Each batch of our fabrics is subjected to all necessary physical and chemical tests based on relevant standards, primarily EN ISO 12947-2, EN ISO 13936-2, EN ISO 13937-3, EN ISO 13934-1 and EN ISO 14704-1, and is tested for high Martindale abrasion (5,000 cycles and above), air loss (10,000 cycles and above), pilling (5 and above), and tear strength (40 N and above).

Our average fabric weights are 725 g/m² for the nubuck range, 450 g/m² for the woven range and 300 g/m² (EN 12127) for the velvet range.

As a joining thread, we use a lubricated polyester thread, size 30, 80 tex, made from high-strength (5,200 cN) continuous-filament polyester with reduced elasticity.

For topstitching, which we apply for both strength and aesthetic purposes, we use 20-count, 135 tex, high-strength (9,500 cN) nylon 6.6 thread.

Our sewing threads are certified to the Oeko-Tex Standard 100.

To maximise seam strength, we carry out the stitching process with a stitch spacing of 3 mm for joining seams, 5 mm for topstitching, and a topstitch width of 5 mm.