

Product Data Sheet

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Alu-Kompakt

Product Description

Dekodur Alu-Kompakt boards with aluminium inlays are high-pressure composite materials based on duromer high-pressure laminates (HPL) according to ON EN 438 HGS.

Due to the use of aluminium strips in the board core, the stability and breaking strength become very high with low board thickness and low weight.



Dekodur Alu-Kompakt boards with aluminium inlay can be sawn, milled and drilled without any problems.

Moreover, **Dekodur** Alu-Kompakt boards are suitable for punching.

Due to the integrated aluminium layer, **Dekodur** Alu-Kompakt boards are absolutely steam-tight. The boards offer high impact strength, a low splitting risk and good heat dissipation properties. Another excellent feature of Dekodur Alu-Kompakt boards with aluminium inlays is the high dimensional stability when exposed to different climatic conditions. The good surface properties of **Dekodur** Alu-Kompakt boards correspond to the Dekodur surfaces.

Dekodur Alu-Kompakt boards are compact boards with several aluminium core layers.

The aluminium serves to increase the mechanical properties, to provide improved stability under different climatic conditions on the front and back of the boards and/or as a decorative element for tabletop edges, for instance.

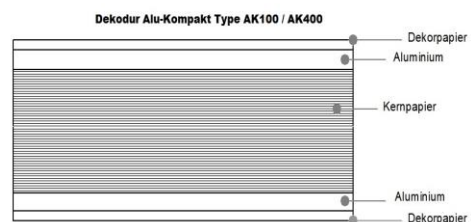
Form of Delivery and Quality

Dekodur Alu-Kompakt is produced and delivered in the format 2440 x 1220 in thicknesses of 3 - 6 mm, and in the format 3050 x 1220 mm in thicknesses of 3 – 12 mm.

We manufacture and deliver **Dekodur** Alu-Kompakt boards in the following versions:

Dekodur Alu-Kompakt 100 and 400

Dekodur Alu-Kompakt 400 are compact boards with 2 aluminium inlays for highest rigidity, stability and break resistance, as well as for the use under climatic conditions that are significantly different on both sides. For use without decorative purposes, we also deliver



Dekodur Alu-Kompakt 400 boards without decoration on both sides with brown or black core. **Dekodur** Alu-Kompakt 400 boards are cut to size against surcharge; any residual material will be included with the delivery. We optimise your cuts. **Dekodur** Alu-Kompakt 400 boards are made-to-order.

Format Tolerances

+10 – 0 mm: The board formats are production formats. All-round cutting is recommended if dimensional and angular accuracy are required.

Thicknesses

With single-sided decoration (back: smoothed melamine backing sheet): 3.00 – 5.00 mm.
With the same decoration on the front and back: 3.00 – 12.00 mm.

Thickness Tolerances

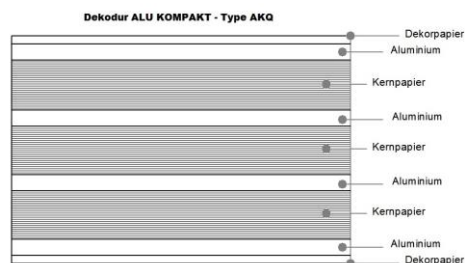
3.00 – 4.90 mm ± 0.30 mm
5.00 – 6.90 mm ± 0.40 mm
7.00 – 8.90 mm ± 0.50 mm
9.00 – 12.00 mm ± 0.60 mm

Core Colour

Black

Dekodur Alu-Kompakt Type AKQ

Dekodur Alu-Kompakt AKQ boards are compact boards with 2 outer and 2 inner aluminium inlays dividing the core into 3 layers of equal thickness. They are used for interior decoration. The boards must not be exposed to strong temperature and humidity changes (recommended range: +15°C - +35°C, 30 – 70% relative humidity). **Dekodur** Alu-Kompakt AKQ boards are cut to size against surcharge; any residual material will be included with the delivery. We optimise your cuts. **Dekodur** Alu-Kompakt AKQ boards are made to order.



Format Tolerances

+10 – 0 mm: The board formats are production formats. All-round cutting is recommended if dimensional and angular accuracy are required.

Thicknesses

With the same decoration on the front and back: 6.00; 8.00; 10.00, 12.00 mm.

Thickness Tolerances

3.00 – 4.90 mm ± 0.30 mm
5.00 – 6.90 mm ± 0.40 mm
7.00 – 8.90 mm ± 0.50 mm
9.00 – 12.00 mm ± 0.60 mm

Core colour

Black

Dekodur Alu-Kompakt Type AKT



Dekodur Alu-Kompakt AKT boards are compact boards with 3 inner aluminium inlays dividing the core into 4 layers of equal thickness. They are used for interior decoration. The boards must not be exposed to strong temperature and humidity changes (recommended range: +15°C – +35°C, 30 – 70 % relative humidity). **Dekodur** Alu-Kompakt AKT boards are cut to size against surcharge; any residual material will be included with the delivery. We optimise your cuts. **Dekodur** Alu-Kompakt AKT boards are made-to-order only.

Format Tolerances

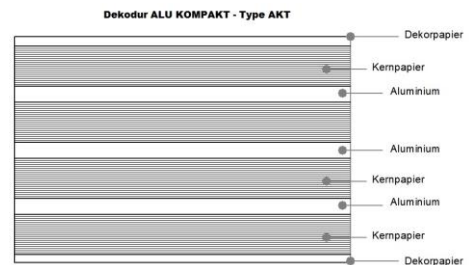
+10 – 0 mm: The board formats are production formats. All-round cutting is recommended if dimensional and angular accuracy are required.

Thicknesses

With the same decoration on the front and back: 6.00; 8.00; 10.00, 12.00 mm.

Thickness Tolerances

3.00 – 4.90 mm ± 0.30 mm
 5.00 – 6.90 mm ± 0.40 mm
 7.00 – 8.90 mm ± 0.50 mm
 9.00 – 12.00 mm ± 0.60 mm



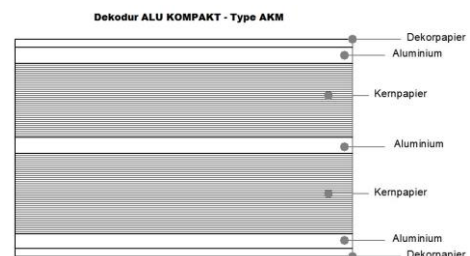
Dekodur Alu-Kompakt Type AKM

Dekodur Alu-Kompakt AKM boards are compact boards with 1 inner and 2 outer aluminium inlays dividing the core into 2 layers of equal thickness. **Dekodur** Alu-Kompakt AKM are used for interior decoration.

The boards must not be exposed to strong temperature and humidity changes (recommended range: +15°C – +35°C, 30 – 70 % relative humidity).

Dekodur Alu-Kompakt AKM boards can be cut to size against surcharge; any residual material will be included with the delivery.

We optimise your cuts. **Dekodur** Alu-Kompakt AKM boards are made-to-order only.



Format Tolerances

+10 – 0 mm: The board formats are production formats. All-round cutting is recommended if dimensional and angular accuracy are required.

Thicknesses

With the same decoration on the front and back: 6.00; 8.00; 10.00, 12.00 mm.

Thickness Tolerances

3.00 – 4.90 mm ± 0.30 mm
 5.00 – 6.90 mm ± 0.40 mm
 7.00 – 8.90 mm ± 0.50 mm
 9.00 – 12.00 mm ± 0.60 mm

Transport and Packaging

Careful handling is required in order to avoid damages to the corners and surfaces of the high-quality material. Despite of the excellent surface hardness and/or the transport protection film, the stack weight of Dekodur Alu-Kompakt boards is a possible cause of damages. Therefore, it is vital to avoid soiling between the boards. Dekodur Alu-Kompakt boards must be kept from slipping during transport. During loading and unloading, the boards must be lifted and never pulled or pushed by the edges! Always remove the transport protection film from both sides at the same time. The transport protection film must not be exposed to higher temperatures or direct sunlight.

Storage and Air-Conditioning

Dekodur Alu-Kompakt boards must be stacked horizontally on flat, stable supports and underlay boards. Dekodur Alu-Kompakt boards must be stored completely supported. The cover boards must always remain on the stack. The upper cover should always be weighed down. After boards have been removed, always close the PE packaging film again in order to protect the entire stack. The same applies to stacks with cut-to-size boards. Improper storage can lead to permanent board deformations. Dekodur Alu-Kompakt boards must be stored in closed rooms under normal climatic conditions. Different climatic conditions on both board surfaces must be avoided. Air-condition the boards before mounting! Ensure consistent all-round climate influences for pre-mounted fixing elements. Use intermediate layers from wood or plastic.

Processing of Dekodur Alu-Kompakt Boards

The surface of Dekodur Alu-Kompakt boards consists of high-quality melamine resins that ensure high durability. The processing characteristics of Dekodur Alu-Kompakt boards are similar to the processing of hardwood. Carbide-tipped tools have proven to be suitable and are indispensable for the processing of Dekodur Alu-Kompakt boards. If a long service life is required, diamond-tipped tools should be used. Sharp cutters and smoothly running tools are required for perfect processing. Breaking, splitting and spalling on the decoration side are caused by improper processing or unsuitable tools. Machine benches should be flat and without any joints, if possible, in order to keep shavings from sticking that might damage the surface. This also applies to tables and guides of manually operated machines.

Calculation of the Cutting Speed

$$v_c = D \cdot \pi \cdot n / 60$$

v_c – Cutting speed

D – Tool diameter [m]

n – Tool speed [min⁻¹]

Calculation of the Feed Rate

$$v_f = f_z \cdot n \cdot z / 1000$$

v_f – Feed rate [m/min]

f_z – Tooth feed

n – Tool speed [min⁻¹]

z – Number of teeth

Cutter Material

Carbide-tipped cutters (HW-Leitz – HM ProLine Leuco) can be used. In order to achieve increased product life, we recommend using tools with diamond-tipped cutters (PCD-polycrystalline diamonds).

General Notes

Too little chip removal might lead to a quick feed of the cutter. The required motor performance is thus increased and the tool service life reduced. If the shavings are too small, the tool will scratch and thus become blunt, which results in short service life. Recommendations for sawing: e.g. Leitz-HM saw blade WK 452-2-37 \varnothing 250-370 mm, or Leitz-HM saw blade WK 872-2-87, $n=4,000$ min⁻¹, $v_f=5-8$ m/min, or Leuco ProLine HM saw blade

Recommendations for milling (CNC): HM milling cutter, pulling motion, \varnothing 10 mm, $n =12,000$ min⁻¹,
 $v_f =1.50$ m/min

Cutting to Size with Manually Operated Devices

Fine-toothed circular hand saws are suitable for individual cuts. Teeth with low offset should be preferred. Start sawing from the board surface, while moving the saw with an inclination of approx. 30°. A stop bar and/or guide rail (Festools, for instance) must be used for straight cuts with circular hand saws. Carbide-tipped saw blades should generally be used. Always start sawing from the underside of the board. In order to avoid tears on the decorative side, use an alternate tooth saw blade for coarse cuts and a flat teeth or trapezoidal teeth saw blade for clean final cuts.

Milling – Edge Processing

Manual edge processing: Double-cut files are suitable for processing the edges. The working direction of the file is always from the decorative side to the core. Edges can be successfully rounded with fine files, shaping files, sandpaper (100-150 grain size) or draw blades.

Edge processing with manually operated devices: Electric planers with chamfer and/or mitre can be used for chamfer milling. Manual routers with carbide-tipped tools are used for special tasks (e.g. cut-outs for washbasins, TRAX coupling etc.) In order to protect the Dekodur Alu-Kompakt board surface, the contact area of the router must be covered by board cuttings, for instance. Do not use felt! Millings must be removed carefully. Milling tools with a diameter of 10-25 mm and a cutting speed of v_c 30-50 m/sec should be preferred. We generally recommend using carbide-tipped milling tools that are also available with inserts. For improved tool utilisation, height-adjustable milling tools should be preferred. The sharp edges resulting from the processing will subsequently be rounded using files, shaping files or sandpaper (100-150 grain size).

Edge processing with stationary machines: When milling Dekodur Alu-Kompakt boards, the optimum ratio of the number of teeth, cutting speed and feed must be taken into account. If the shavings are too small, the tool will scratch (burn), thus becoming blunt very quickly, i.e. that it has a relatively short service life. However, if the shavings are too large, the edge becomes wavy and inaccurate. High rotation speeds are not the only criterion for good edge quality! When working with manual feed, tools with the "BG-Test" label must be used only. For safety reasons, you must neither exceed nor fall below the speed range indicated on the tool. Tools for manual feed must only be used against the feed.

Finishing milled edges: The edge surfaces and sharp edges must be grinded and/or rounded using sandpaper. The use of HSS knives is also recommended. The cutting angle of the knife should be approx. 15°. Cutter heads with HW cutting insert knives or diamond-tipped milling tools are suitable for the processing of Dekodur Alu-Kompakt boards.

Routers

For processing with routing machines and machining centres, routers tipped with carbide spiral router bits or diamond-tipped routers are most suitable. The workpieces must be fixed very well. If necessary, use additional mechanical clamps to support the vacuum cups. Instead of using collet chucks, we recommend using ThermoGrip shrink chucks which offer the highest stability and rigidity of all known clamping systems for shank tools. A satisfactory processing result can only be achieved with sufficiently rigid machines. "Lightweight" cantilever machines are of limited suitability only.

Formatting, Grooving and Finish-Milling

In the event of high requirements on the cutting quality. Z3 version for high feeds. The following machines are used: Routing machines with/without CNC control, milling centres, special milling machines with milling spindle for receiving shank tools.

Information about the milling tools equipment:

Marathon coating for increased tool life and reduced tendency to form a built-up edge. Usually used after roughing cutters, approx. 1-2 mm added for cutting, mirror finish at the cutting surface for processing.

Routers for Formatting and Grooving with Uninterrupted Cut

The following machines are used:

Routers with CNC control, milling centres, special milling machines with milling spindle for receiving shank tools.

Information about the milling tools equipment:

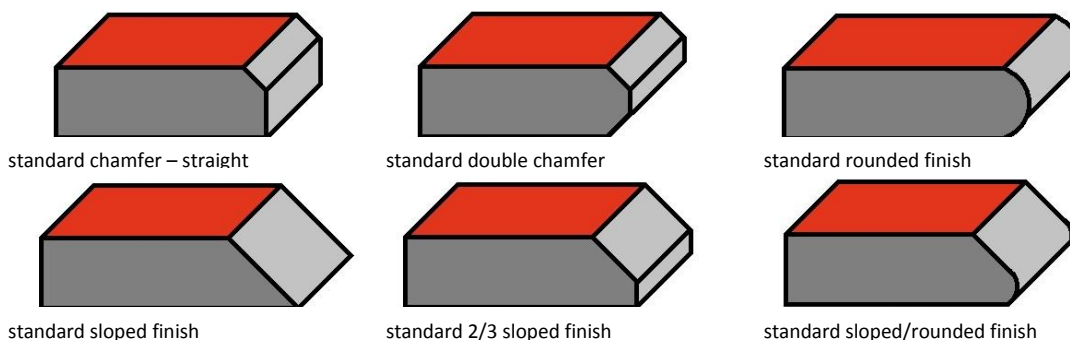
Negative shaft angle of the cutters to ensure tear-free coating when grooving, and to support workpiece clamping in the case of smaller milled parts. 5 to 8 times resharpenable with normal blunting. Short, rigid cutting part, thus being especially suitable for grooving and formatting abrasive and hard-to-machine materials.

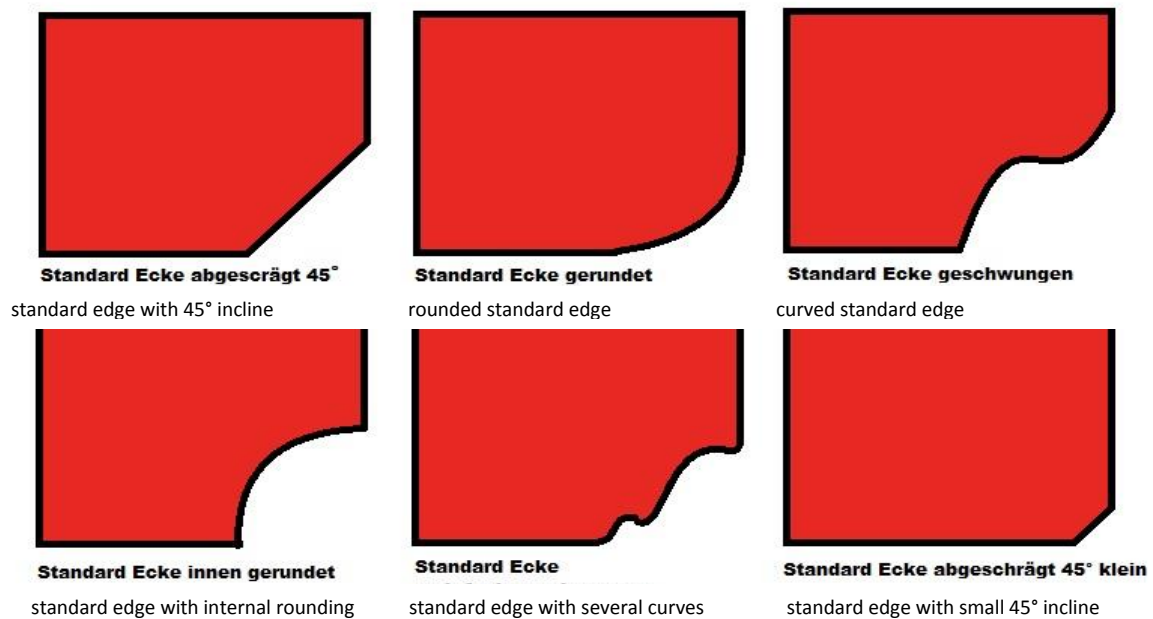
Folding and Grooving

The inner edges of the folds for **Dekodur Alu-Kompakt** boards should always be chamfered, not sharp-edged! This saves the edge of the tool (of the insert) and prevents notch effects. The tool life per height adjustment differs significantly depending on the tool type and shape, required cutting quality and backing material. We recommend using diamond-tipped tools for large-scale productions.

Edge Processing and Edge Solutions

Dekodur Alu-Kompakt boards do not require edge protection. There are many design possibilities for visible edges. A few examples are listed below:





Drilling

Solid carbide spiral or pin drills are used for drilling. When working with milling centres, we recommend using the main spindle instead of the drilling template with a rotational speed of 2000-4000 min⁻¹ and a feed rate of 1.5-3.0 m/min. The exit speed of the drill must be selected in such a way that the melamine surface of the Dekodur Alu-Kompakt boards will not be damaged. Shortly before the drill exits the workpiece with its full diameter, the feed rate must be reduced by 50%. As for through holes it has to be observed that counter-pressure is built up by hardwood or a similar material in order to keep the melamine surface from breaking.

Screw Connections

Screws must never touch the edges of the drill hole. They must have free play towards all sides in order to allow the material to work when there are fluctuations in temperature and humidity. The formation of cracks in the area of the drills and board warpage are thus avoided. If raised countersunk screws are used, rosette washers are indispensable.

Perforating Dekodur Alu-Kompakt Boards

Dekodur Alu-Kompakt boards can be perforated or cut through with different shapes and patterns. Mostly, they are perforated or slotted.

Notes: Important when used as railing panels:

- The board thickness is directly related to the mounting distances
- Mounting must be carried out in compliance with the static requirements and local building regulations. However, with perforated boards the mounting distances must be reduced by at least 20%.
- Holes or slots must never represent a climbing aid for children. Holes should never exceed a diameter of 50 mm. For gaps in Dekodur Alu-Kompakt boards, we recommend the use of Dekodur Alu-Kompakt 400 boards in accordance with the fall protection.
- Keep in mind that the board is weakened by gaps.
- Never remove more than 20% of the material if a fall protection is required.
- The bars between the holes and/or slots must be at least as wide as the diameter of the holes and/or slots. This applies accordingly to all edge distances.

Cleaning of Dekodur Alu-Kompakt Boards

In the event of unknown stains, please start with basic cleaning.

Follow **cleaning procedures 1-7** until the desired results have been achieved.

Final cleaning is required to avoid the formation of streaks.

Basic cleaning Just clean the surface with pure, hot water and use a soft sponge – DO NOT scrub with the "green" side of the sponge but use a soft cloth or soft brush such as a nylon brush.

Cleaning procedure 1 is similar to basic cleaning, but with the addition of household cleaners without abrasive ingredients. You can use washing-up liquid (Palmolive, Fairy) or glass cleaners (Ajax, Frosch).

Cleaning procedure 2 takes place when the soiling cannot be removed with cleaning procedure 1. Use a solution from soft soap and water (1:3) and let it work depending on the degree of soiling.

Cleaning procedure 3 starts with basic cleaning. However, organic solvents such as acetone, ethyl alcohol, cellulose thinner or turpentine can be used additionally. Heavier soiling must be removed mechanically. Caution: Avoid scratches, use plastic or wooden scrapers.

Cleaning procedure 4 starts with basic cleaning. However, cleaning is done with the addition of commercially available disinfectants. Steam cleaning is possible. Pay attention to the substrate (e.g. in the case of wooden material, wall panels, insulation etc.) in order to avoid moistening and wetting.

Cleaning procedure 5 Remove immediately! If required, carry out cleaning procedure 3 and final cleaning.

Cleaning procedure 6 Wipe the surface with a dry, soft cloth or a dry, soft sponge. If the soiling cannot be removed, use silicone remover (e.g. Molto).

Cleaning procedure 7 After basic cleaning, liquid cleaners with polishing chalk (CIF, ATA) can be used. Liquid cleaners with polishing chalk must only be used occasionally. Do not apply pressure in order to avoid scratches!

In the event of heavy lime scale soiling you may also use acidic cleaners (e.g. 10% acetic or citric acid).

Final cleaning: Remove the entire cleaning agent with plenty of water in order to avoid the formation of streaks. Then rinse with pure, hot water and dry. Use an absorbent cloth or paper cloth (kitchen roll) to wipe the surface dry.

Safety instructions on the use of solvents: Observe the accident prevention regulations! Open the windows! No open flame!

Disposal

Dekodur Alu-Kompakt waste can be burned in industrial combustion plants approved by the authorities.

Dekodur Alu-Kompakt waste can be deposited at waste disposal sites in accordance with the local waste legislation.

According to the German TA-Abfall (technical instructions on waste) as of March 28th 1991, Category 1, Number 571, high-pressure laminate waste is classified as "other hardened plastic waste material". Category I means that a material is similar to household waste.