BEAUTY MEETS PERFORMANCE

Every room engages and impacts our senses. The first impression we gain is visual: we take in the room’s design. Then, at a more subconscious level and after some delay, we become aware of its acoustics. TOPAKUSTIK and TOPPERFO will meet all your expectations in terms of design and acoustics: products that deliver inspired listening!

You’ll find all our products in this brochure: our tried-and-tested TOPAKUSTIK range with its characteristic grooving as well as TOPPERFO with even smaller perforations so the sound absorption function becomes virtually invisible. Almost fifty photographs from ten different countries show the convincing results of the successful use of our products.

TOPAKUSTIK is far more than a mere brand name. Nearly one hundred individuals work in our planning and production departments, and our team of experienced specialists are at your disposal for advisory services, sales and distribution.

We’re looking forward to working on your project!

Georg Heggin, CEO

This ceiling, consisting entirely of triangular shapes, adds that special extra touch to the reception area at the headquarters of finance group “La Française” on Boulevard Raspail in Paris. Over 30 different triangles were first produced in our factory and then the ready-to-install elements were quickly and easily mounted on site.

HQ “La Française” Boulevard Raspail Paris
Architect: Franklin Azzi, Paris – Photo: Luc Boegly, Paris
Product: TOPPERFO Micro 2/2/0.5, Oak veneered

PHOTOGRAPHY BY LUC BOEGLY

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PHOTOGRAPHY BY LUC BOEGLY
## Technical Information

### Perforation as Required

**TOPPERFO**

A wide range of perforations for wall and ceiling finishes. Conventional M-Perforation, discrete T-Perforation or micro perforations (Clou + Micro). Available in panels and planks.

### Perforation

- **Rear Perforation**
- **Face Perforation**
- **Panels**
- **Planks**

### New Products

- NEW!

---

*1 inch = 25.4 mm; 128 mm = 5.04 inches*
The refined acoustic system for wall and ceiling finishes. Many different groove patterns are available. Narrow spaced grooves appear as a textured surface (1/2, 3/3, 9/3) – wider spaced grooves can be seen individually by the eyes (12/4, 13/3, 14/2, 19/2, 20/4). Thanks to the rear perforation pattern, the core panel remains structurally intact allowing for cutouts (programmed or field performed) to address penetrations required for lighting, HVAC and sprinkler systems.

TOPAKUSTIK / TOPPERFO sound absorption in the air cavity (e.g. only fleece, melamine absorption coefficients with other materials) are set up as described above. Additional absorption coefficients stated in this brochure were measured according to the ISO 354 standard for absorption. The absorption coefficient of our products is measured in a reverberation room in accordance with the ISO 354:1985. This provides the NRC (noise reduction coefficient) is the value specified according to the US standard ASTM C423.

**M-Perforation:** For absorption in the medium to high frequency range. TOPAKUSTIK products with M-Perforation are suited for applications in which the reverberation time is to be lowered across a broad frequency band.

**T-Perforation:** For absorption in the low to medium frequency range. The high absorption in the low frequency range is based on the combination of small holes on the visible side and larger holes on the rear.

**Reflectors:** TOPAKUSTIK products can also be used as reflectors by eliminating the perforations on the rear surface. The absorption figures are then equivalent to those of a standard reflecting panel.

**TOPAKUSTIK / TOPPERFO**

<table>
<thead>
<tr>
<th>Perforation</th>
<th>Measurements (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-Perforation</td>
<td>4080 × 1216</td>
</tr>
</tbody>
</table>

**DIMENSIONS AND MATERIALS**

**Planks**

Thanks to the precise tongue and groove connection, planks result in an attractive surface with a joint-free appearance, because the connecting joint matches the dimension of the grooves. The planks permit simple and flexible assembly. They can be installed by stapling to a timber batten or clamping to a T-bar with TOPAKUSTIK clips. (Assembly p. 24)

**Panels**

Panels are used for removable or fixed ceilings and walls with visible joints. Panels can be provided with a number of different edges (p. 22) and are also suited for cabinet fronts and room dividers.

<table>
<thead>
<tr>
<th>Perforation</th>
<th>Measurements (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-Perforation</td>
<td>4080 × 1216</td>
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</table>

**TOPAKUSTIK / TOPPERFO**

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<th>Perforation</th>
<th>Measurements (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-Perforation</td>
<td>4080 × 1216</td>
</tr>
</tbody>
</table>
NARROW GROOVING
CENTER-TO-CENTER DISTANCE = 8mm or 10.66 mm

This grooving is less visible as the interaction of light and shadow occurs regularly due to the close spacing of the grooves, thus creating a 2-dimensional effect. The narrow grooves require perfect assembly, as even the smallest differences in the surface are visible.

See page 5 for dimensions and materials
See page 20/21 for surfaces

Type 6/2 M or T

Type 8/3 M

Type 9/2 M

TOTAL THICKNESS
≈ 215 mm
≈ 53 mm

More information Page 4

Type 8/3 + 9/2: please respect 10.66 mm for planning

1. ZIM, Münster DE – Architect: HPP Düsseldorf, DE – Photo: HGEsch / Hennef, Blankenberg DE
2. Pilatus Businesscenter, CH
3. AVM Computersysteme, Berlin DE – Architect: Trucks Architekten, Berlin DE
TOPAKUSTIK®

MEDIUM-SIZED GROOVING
CENTER-TO-CENTER DISTANCE = 16 mm

The most popular TOPAKUSTIK types. High sound absorption combined with easy assembly. The grooving is visible even from a long distance.

See page 5 for dimensions and materials
See page 20/21 for surfaces

Type 14/2 M

Type 13/3 M or T

Type 12/4 M or T

The most popular TOPAKUSTIK types. High sound absorption combined with easy assembly. The grooving is visible even from a long distance.

See page 5 for dimensions and materials
See page 20/21 for surfaces
These grooves are the ideal solution for standard absorption requirements. As with all centre-to-centre distances, the wide grooving comes with 2mm, 3mm and 4mm grooves, as laid out in this and page 11.

See page 5 for dimensions and materials
See page 20/21 for surfaces
COMPOSING A MASTERPIECE

Should you require each panel to be a different shape or a standard solution is preferred – we can manufacture both. For products that are easier to use such as our TOPAKUSTIK planks, you can decide how the surface will look. You can choose any RAL/NCS colour, any commercially available wood veneer or perhaps you prefer a decorative melamine resin finish, with many being available. Whatever your choice, we’ll be delighted to play our part in composing your «MASTERPIECE».

This auditorium is naturally dominated by the gigantic screen that extends across its entire front. But all the other walls are covered with TOPAKUSTIK planks to ensure that the acoustics are perfect! Another benefit: the warmth emanated by the genuine wood veneer provides a pleasant counterbalance to the otherwise cool interior.
**TOPAKUSTIK**

**SPECIAL GROOVES**

Would you like the grooving to be something special? How about our type Caro, or the type HR 9/2 M with its semicircular grooves? Many more variations are possible, for instance, the distance between the grooves can be widened to 64 or 96 mm. Absorption values are available.

---

### Caro M

<table>
<thead>
<tr>
<th>Grooving</th>
<th>Surface</th>
<th>Euro NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/4 M</td>
<td>Fire retardant B-s2,d0</td>
<td>0.82</td>
</tr>
<tr>
<td>29/3 M</td>
<td>Fire retardant B-s2,d0</td>
<td>0.83</td>
</tr>
</tbody>
</table>

### HR 9/2 M

<table>
<thead>
<tr>
<th>Grooving</th>
<th>Surface</th>
<th>Euro NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>215 mm</td>
<td>Fire retardant B-s2,d0</td>
<td>0.82</td>
</tr>
<tr>
<td>66 mm</td>
<td>Fire retardant B-s2,d0</td>
<td>0.85</td>
</tr>
</tbody>
</table>

---

### Fire category core panel:

- Type Duo
- Type Trio

---

**Formats / Dimensions:**

- Panels max. 3640 × 1250 mm
- Planks max. 3800 × 128 mm

---

**TOPAKUSTIK-R**

**NEW!**

Type R has an irregular grooving pattern that repeats itself systematically every 128 mm. Two Type Duo, or even three Type Trio differently grooved planks increase the irregularity, especially when its assembly happens randomly. On panels, the grooving repeats itself only every 592 mm, which would not be noticed.

---

**Surface:**

- Only paint

---

**Grooving:**

- 28/4 M + 29/3 M
- HR 9/2 M

---

**R-Planks**

- **Solo**
- **Duo**
- **Trio**

---

**R-Panels**

- **Solo**
- **Duo**
- **Trio**

---

**Topakustik-R**

- **Solo**
- **Duo**
- **Trio**

---

**Surface:**

- **Topakustik-R**

---

**Grooving:**

- 28/4 M + 29/3 M
- HR 9/2 M

---

**Fire category core panel:**

- Fire retardant B-s2,d0 (US = Class A) and standard MDF D-s2,d0 (US = Class C)

---

**Formats / Dimensions:**

- Panels max. 3640 × 1250 mm
- Planks max. 3800 × 128 mm

---

**Theater Agora, Lelystad NL – Architect: UNStudio, Amsterdam NL**

**EPFL, Lausanne CH – Architecte: Richter-Dahl Rocha & Associés architectes SA, Lausanne CH – Photo: EPFL, Lausanne**

**Family Lodge + Spa, Melchsee-Frutt CH – Architect: Architekturwerk AG, Sarnen CH – Photo: Sibylle Kathriner Fotografie, Stans CH**

---

**Surface:**

- **Topakustik-R**

---

**Grooving:**

- 28/4 M + 29/3 M
- HR 9/2 M

---

**Fire category core panel:**

- Fire retardant B-s2,d0 (US = Class A) and standard MDF D-s2,d0 (US = Class C)

---

**Formats / Dimensions:**

- Panels max. 3640 × 1250 mm
- Planks max. 3800 × 128 mm
The perforation is barely visible thanks to the deep grooving and the black MDF board. The grooves create the effect of individual bars. The product can be promoted as no added Formaldehyde.

ARIA-Plus
Topakustik 28/4 M
see page 11

ARIA-Plus
Topakustik 12/4 M
see page 9

ARIA-Plus
Topakustik RL 4
see page 15

ARIA-Pure
Topakustik RL3
see page 15

ARIA-Pure
Topperfo-Micro
see page 30

ARIA-Pure
Topperfo-M 16/16/6
see page 36

A RIA -Plus
Topakustik 28/4 M
see page 9

A RIA -Plus
Topakustik RL 4
see page 11

A RIA -Pure
Topakustik RL3
see page 15

A RIA -Pure
Topperfo-M 16/16/6
see page 36

A RIA -Pure
Topperfo-Micro
see page 30

A RIA -Pure
Topperfo-M 16/16/6
see page 36

For ceilings, glazed surface treatment provides protection against yellowing; for walls, we recommend an additional coat of water-based paint. Other glazed paint finishes in various colours are also available.
**MEDIUM DENSITY FIBREBOARD (MDF)**

TOPAKUSTIK and TOPPERFO products are manufactured from medium density fibreboard (MDF) as a standard. Thanks to the homogeneous structure, MDF is well suited for this application. MDF panels are produced from soft and hard wood fibers with added binding agents. Only panels meeting the international emission values E1 are processed. Panels are also available in No added Formaldehyde and FSC certified upon request.

**FIRE STABILITY ACCORDING TO EUROCLASS EN 13501-1**

<table>
<thead>
<tr>
<th>Designation</th>
<th>Fire category</th>
<th>Suitable for humid rooms</th>
<th>Basic sizes of core materials</th>
<th>Maximum expansion due to humidity increase for 1000 mm length in air conditioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESAP® A1 (RF 1)</td>
<td>A1</td>
<td>4</td>
<td>9</td>
<td>9000 (\times) 1250</td>
</tr>
<tr>
<td>Cement A2 (RF 2)</td>
<td>A2</td>
<td>4</td>
<td>9</td>
<td>2600 (\times) 3100 (\times) 1250</td>
</tr>
<tr>
<td>Particle board B2 (RF 3)</td>
<td>B2</td>
<td>4</td>
<td>9</td>
<td>2600 / 3100 (\times) 1250</td>
</tr>
<tr>
<td>Flakeboard OSB B2 (RF 3)</td>
<td>B2</td>
<td>4</td>
<td>9</td>
<td>2600 / 3100 (\times) 1250</td>
</tr>
<tr>
<td>Plywood B2 (RF 3)</td>
<td>B2</td>
<td>4</td>
<td>9</td>
<td>2600 / 3100 (\times) 1250</td>
</tr>
<tr>
<td>Blockboard B2 (RF 3)</td>
<td>B2</td>
<td>4</td>
<td>9</td>
<td>2600 / 3100 (\times) 1250</td>
</tr>
</tbody>
</table>

**CONTENT OF UREA-FORMALDEHYDE**

We only use class E1 panels or panels glued without any addition of urea formaldehyde whatsoever. An overview of the panels we use is provided here.

<table>
<thead>
<tr>
<th>Finish</th>
<th>No add. urea formaldehyde</th>
<th>Class E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veneered</td>
<td>On request</td>
<td>Products</td>
</tr>
<tr>
<td>Colour or white lacquered</td>
<td>Standard products</td>
<td>Special products</td>
</tr>
<tr>
<td>Eco (melamine finish)</td>
<td>Standard products</td>
<td>Special products</td>
</tr>
</tbody>
</table>

TOPAKUSTIK, with MDF fibreboard bonded without formaldehyde, has been examined for volatile pollutants as per ISO 1600: it was awarded the best possible classification (A+).
WOOD VENEERED SURFACES:
The TOPAKUSTIK products are veneered in all customary types of wood. The veneer is processed individually for each order. This helps to obtain the most even appearance possible for colour and pattern. Furthermore, the veneer appearance is influenced by the cut and the composition of the veneers. Since wood is a natural product, the matching of the veneer must be done in connection with each individual order.

<table>
<thead>
<tr>
<th>Oak Europe</th>
<th>Knotty Oak</th>
<th>Maple Europe</th>
<th>Maple US</th>
<th>Birch</th>
<th>Ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>... and many other types of wood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can use our configurator to choose your veneer and perforation. The effect can be seen immediately. See <a href="http://www.topakustik.com">www.topakustik.com</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VARNISH:
A high quality, clear, flat varnish is provided on all orders unless otherwise specified. Light kinds of wood such as maple or birch are varnished with a slight lightening effect as a matter of principle.

NM = natural, gloss varnish
AM = lightening, gloss varnish

PAINT SURFACES:
Matching is available for any manufacturer’s colour specification (RAL/NCS/...). The application is done with the latest generation spray robotics, providing a guaranteed even application. Due to the grooves and perforations of the products, the colour appearance is different from that on smooth surfaces. If TOPAKUSTIK products are finished by the client, please remember that an even paint application, even in the grooves, is absolutely necessary for a good final result.

eco plus collection: Further melamine finishes for quantities above 150 m² upon request.

HPL coating: All customary HPL laminate coatings are possible. Contact the factory for details.

MELAMINE (eco)
Details for eco:
- 10 different cutting-edge Decors
- All panels are classified as no added urea formaldehyde NAUF
- Short delivery times; all decors in stock NH
- Both fire classes available D-s2,d0 and B-s2,d0 (FR)
- FSC mix possible on request (depending on quantity)
EDGES

TOPAKUSTIK-planks edge details:

Longitudinal edges with tongue and groove.
If requested an extra groove can be inserted for fitting with a mounting clip.
Transverse edges are cut industrially and at a 90 degree angle. When planks of multiple lengths are requested, the perforations are visible on the front edge.

If requested, perforations on the transverse edges are set back. Edge varnished.
The rear stress relief grooves are necessary for stability and are visible.

If requested, the first and last plank may have a visible edge without tongue or groove.
It may also be veneered or painted.

Product tolerances
Planks: TOPAKUSTIK planks are supplied with a industrial 90 degree angle cut as a standard. The length tolerance amounts to +/- 2 mm. If requested, the planks can be supplied to a «fixed» dimension with a reduced tolerance of approx. +/- 0.25 mm per m1
This is only recommended for lengths shorter than 2 m because of the potential for greater expansion and contraction of core materials.
Panels: TOPAKUSTIK panels are produced on computer controlled machinery with tolerances of +/- 0.5 mm per m1.
TOPAKUSTIK products are delivered with small tolerances as above. By grooving and perforating, the surface area is increased by a factor of two or three, depending on the design. Therefore TOPAKUSTIK products can react quickly to varying humidity and temperature conditions. Size differences can occur before installation caused by expansion and contraction of core materials during storage and acclimatization. (> page 18)

TOPAKUSTIK-panels edge details:

Visible edge, perforation set back (Edge finished in coloured paint version!)
4 mm tongue or groove joint.
– Panel joints need to be shown
For blind edges, perforations are visible
Groove interrupted at edge
Female rabbet joint 4 mm deep for a spline joint

CEILING FINISHES FOR PLANKS + PANELS

Topakustik Planks Edge Details

Various types of edge mouldings are shown.

CEILING FINISHES FOR PANELS

Types of visible edges for panels.

CUTOUTS

On site or factory cut produce with interrupted grooves
Inserts for planks 128/256/384 mm

WALL CORNERS AND TERMINATIONS

Types of wall corners and terminations for TOPAKUSTIK products.
**MOUNTING OF TOPAKUSTIK PLANKS**

Planks are manufactured with a precise large notch finger joint, which permits a plain ceiling design. However, individual planks or joints may be visible, in particular if dark colours or shiny varnishes are used. The planks are installed without dilation joint, which is only possible because of the narrow plank width of «just» 128 mm. However, it is mandatory to observe the installation rules regarding room climate – see page 18!

**Mounting on Wooden Battens**: The TOPAKUSTIK planks are installed like conventional tongue and groove planks. It is important that compressed air pressure used for the nailing or stapling gun is set precisely, so the staples do not protrude in the groove or penetrate too deeply.

**Mounting on Metal Ceiling Grids**: The TOPAKUSTIK plank is fitted to the suspended H-bar rail with special «twist on» mounting clips. This form of assembly is ideal for non-flammable ceiling finishes.

**ACCESS PANEL**

Closed:

Open:

... for more information see installation manual!

**LAYOUT**

Offset joints: The installation with offset joints permits a slight material expansion without it becoming visible. In combination with joint widths of about 3 mm, a clear and tidy joint appearance results.

**MOUNTING OF TOPAKUSTIK-PANELS**

Joints also have a disassembly function and as a general rule they should have twice the width of the slot on the panel... i.e. 14/2M should be a 4 mm joint and 13/3M, a 5 mm or 6 mm joint. It is extremely important to observe the installation rules regarding room climate – see page 18!

**Z-System**: Every other panel is inserted and can easily be removed by lifting. This system is suitable for all ceilings.

Panel joints: appr. double width of grooves (2 = 4, 3 = 5, 4 = 6 mm)

Recommended width of panel 640 mm (see incl. joints = 642 / 643 / 644 mm)

**G-System**: Each panel is easy to remove by lifting.

Panel joints: appr. double width of grooves (2 = 4, 3 = 5, 4 = 6 mm)

Recommended width of panel 640 mm (see incl. joints = 642 / 643 / 644 mm)

**S11**: Each panel is easy to remove.

Recommended width of panel 640 mm incl. joint* (multiple of 16 mm)

* Panel joints: appr. double width of grooves (2 = 4, 3 = 5, 4 = 6 mm)

Max. panel length = 2510 mm

Narrow grooving (Type 6/2, 8/3, 9/2) is not suitable for this system

... for more information see installation manual!

**LAYOUT**

Offset joints: The installation with offset joints permits a slight material expansion without it becoming visible. In combination with joint widths of about 3 mm, a clear and tidy joint appearance results.
For a long time, high sound absorption was equated with large open areas that also entailed large perforations. However, architects and designers wanted, and still want, to make the perforations less visible. Following the launch of our TOPPERFO-T and TOPPERFO-Clou products with smaller perforations, we have now achieved hole diameters of a mere 0.5 mm or even 0.3 mm with our TOPPERFO-Micro range. In other words, the circle has been squared: small perforations and high sound absorption combined in one and the same product!

...SMALLER AND SMALLER!

The ceiling cladding in this family home on Lake Zurich exudes cool elegance. The neutral ceiling surface enhances the tasteful decor rather than competing with it. The functioning of the room acoustics is virtually invisible.
**Systematik TOPPERFO**

TOPPERFO are perforated acoustic panels tailor made specifically for each project. Various panel sizes and hole diameters are available for selection. TOPPERFO-Micro and TOPPERFO-Clou, developed by NH, are discrete in their appearance and simultaneously very effective in sound absorption thanks to the small hole diameters. TOPPERFO panels can be provided with various edge designs.

Large perforation diameters may be problematic due to the strong light and dark contrast > risk of flickering!

Recommendation: use fine perforations for wall panels (TOPPERFO-T, -Clou or -Micro).

**The Acoustic System**

All TOPPERFO types are available with M and T perforations on the rear. This makes it possible for acousticians to match the TOPPERFO surface treatment with the required absorption. The absorption coefficients stated in this brochure were measured according to the ISO 354 standard as described previously. Additional absorption coefficients with other porous materials in the air cavity (e.g. only fleece, melamine resin foam, fiber-glass, etc.) are listed in the TOPAKUSTIK/TOPPERFO sound absorption document.

**Micro Perforation** delivers convincingly high sound absorption – but it can’t be seen! The core panel is fully perforated and the covering, veneer or coating material is micro-perforated. TOPPERFO-Micro is suitable for almost all areas, except for outdoor applications.

**Clou Perforation** in core panels with normal flammability. Developed on the basis of T Perforation, our Clou Perforation product features even smaller bore diameters, starting at 1.2 mm. The sound energy is channelled through four bores on the visible side into one larger bore on the rear side. Materials other than MDF can also be used for core panels.

**Clou Perforation** in low-flammability or non-flammable core panels. The bore on the rear side is replaced by a groove that has a slight influence on the absorption values – note the measurements. The perforation on the visible side remains the same on low-flammability panels; the minimum diameter for non-flammable core panels is 2 mm.

**T-Perforation**: For absorption in the low to medium frequency range. The absorption in the low-frequency range is based on the combination of small diameter holes on the visible side and larger diameter holes on the rear. The small perforations present an aesthetic surface suited for wall finishes.

**M-Perforation**: For absorption in the medium to high frequency range. The absorption depends on the percentage open area, the depth of the rear air cavity between the acoustic elements and the ceiling or wall and the porous absorption in the cavity.

**Reflector**: TOPPERFO products can also be used as reflectors by eliminating the perforations on the rear surface. The absorption figures are then equivalent to those of a standard reflecting panel.

**Dimensions and Materials**

**PANELS (Planks see page 42)**

<table>
<thead>
<tr>
<th>Core panel</th>
<th>Paint</th>
<th>Wood Veneer</th>
<th>Melamine</th>
<th>Paint</th>
<th>Wood Veneer</th>
<th>Melamine</th>
<th>Paint</th>
<th>Wood Veneer</th>
</tr>
</thead>
<tbody>
<tr>
<td>not fire rated D-s2,d0 (DIN B2)</td>
<td>16 mm</td>
<td>17 mm</td>
<td>16 mm</td>
<td>17 mm</td>
<td>16 mm</td>
<td>17 mm</td>
<td>16 mm</td>
<td>17 mm</td>
</tr>
<tr>
<td>fire retardant B-s2,d0 (DIN B1)</td>
<td>2648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
</tr>
<tr>
<td>non-flammable</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
<td>3648 × 1216</td>
</tr>
</tbody>
</table>

Ideal means optimal use of MDF core – custom lengths are also available.

Data 2019 – please check the current dimensions on www.topakustik.com

Montagehandbuch_alle Sprachen_V2017.indd   1

 Fire category – more information page 18/19

... or according to your specifications page 20/21
With TOPPERF0 Micro, the sound absorption function becomes almost completely invisible. The perforation measures a mere 0.5 mm (or even 0.3 mm), so it is virtually invisible from a certain distance. TOPPERF0 micro-perforation is available in various grids and diameters, depending on the required level of sound absorption. The choice of surface coverings is also virtually unrestricted. All veneers and paint colours are available, as well as CPL and HPL surfaces by arrangement.

The micro-perforation is provided in fields with a width of around 150 mm. In side-light, it is possible that the excess length between the individual fields becomes visible on UniEco decors or if a dark colour varnish is used. The grid 1.8/1.8 is therefore not recommended for these surfaces. For a grid of 2/2, we recommend to provide samples.

Micro-perforation for almost all boards! We transform industrially manufactured boards “directly” into a sound absorber! For example:
- Melamine-coated boards – see our Eco collection, page 21
- Branchless three-layer or solid boards – see support plate, page 17
- MDF boards veneered by a joinery (> 600 x 300 mm)
- painted MDF boards with colour... and many more

Graphic designs and patterns are available in every imaginable form. Would you like a portrait, or do you prefer an abstract pattern? The possibilities are virtually limitless. The back cover of this brochure shows a project featuring an abstract pattern.
TOPPERFO* - Clou

The fine Clou perforation in an 8 mm grid with a diameter of only 1.2 mm can hardly be seen at a distance. The wooden texture is therefore completely retained in its natural beauty.

Clou perforation is provided over the whole surface to add the benefit of a shine. The middle of the last perforation row should therefore be at the following distance from the board edge:

<table>
<thead>
<tr>
<th>Grid</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/8</td>
<td>max. 6.5 mm</td>
</tr>
<tr>
<td>6.4/6.4</td>
<td>max. 5.0 mm</td>
</tr>
<tr>
<td>5.3/5.3</td>
<td>max. 4.0 mm</td>
</tr>
</tbody>
</table>

TOTAL THICKNESS

≈ 226 mm
≈ 66 mm

More information Page 4

DIGITAL PRINT

Because the Clou- or Micro-perforation is almost invisible, it does not clash with the printed subject – but the surface still absorbs sound. At the Da Vinci College high school in Roosendaal (Netherlands), the pupils’ imaginative versions of the Mona Lisa were assembled to create a very unusual collage.

Photo: Petra Appelhof, Nijmegen NL

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Photo: Petra Appelhof, Nijmegen NL
The T-perforation developed and successfully used by NH Akustik + Design AG has a discreet effect, yet offers appreciable absorption. TOPPERFO-T panels are available with perforation bores of ø 3, 4 and 5 mm. Decreasing the diameter of the visible perforations, shifts the absorption maximum to a lower frequency.

See page 29 for dimensions and materials. See page 20/21 for surfaces.
TOPPERFO-M are acoustic panels in their conventional form in all materials and surfaces. Perforation-free edges and un-perforated borders for cut-outs are available as a client's choice. Other hole spacings and bore diameters are available upon request.

See page 29 for dimensions and materials
See page 20/21 for surfaces

**Hole spacings and bore diameters**

<table>
<thead>
<tr>
<th>Hole Spacing</th>
<th>Total Thickness</th>
<th>Material</th>
<th>HRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/16/6</td>
<td>≈215 mm</td>
<td>0.75</td>
<td>C 65</td>
</tr>
<tr>
<td>16/16/8 (10)</td>
<td>≈55 mm</td>
<td>0.70</td>
<td>C 61</td>
</tr>
<tr>
<td>16/16/10</td>
<td>≈55 mm</td>
<td>0.70</td>
<td>A 65</td>
</tr>
<tr>
<td>20/20/8 (6)</td>
<td>≈120 mm</td>
<td>0.60</td>
<td>C 60</td>
</tr>
<tr>
<td>20/20/10</td>
<td>≈120 mm</td>
<td>0.60</td>
<td>A 60</td>
</tr>
<tr>
<td>20/20/6</td>
<td>≈40 mm</td>
<td>0.35</td>
<td>B 30</td>
</tr>
</tbody>
</table>

… and many others!
Individual perforations are exposed to create a graphic pattern. This page shows just a few ideas, but the possibilities are almost unlimited. The only rule: the bore grid of 16 mm must always be observed. Sound absorption values are available for «minus 20 %» and «minus 40 %» of the perforation.

**UNO GRAPHIC**

Multiple bore diameters offer considerably more possibilities, but production is also more complex.

Many other designs under www.topakustik.ch/products/topperfo/graphic
COLLABORATION

We offer far more than innovative products that bring together architectural materials with acoustical performance. Our strength in systems engineering coupled with the excellent craftsmanship of our fabricators allows us to also bridge invention and reality. We offer time-tested engineering and installation strategies for the most unique projects. Early design motifs can be quickly adapted into prototyping for feasibility studies, and our design commitment maintains its endurance through the entire project lifecycle to final commissioning. Our goal is to both encourage creativity and meet its demands.

Falkonergården Gymnasium DK
Architect: Falko Arkitekter, Copenhagen – Photo: Stamers Kontor, Copenhagen
Product: TOPPERFO 16/16/8, Oak veneered

The extension built onto the Falkonergården high school in Frederiksberg, Denmark, houses a rather unusual gymnasium. The Falko Arkitekter firm created an additional space between two traditional brick buildings, providing accommodation for sports as well as meetings. TOPPERFO panels with a large M-perforation alternating with smooth veneered areas were used for the wall claddings. The installation was slightly curved.
TOPPERFO planks allow a line effect combined with circular perforation. The length can be chosen as required. All surfaces and fire categories are possible.

**Micro:**

```
128 mm
```

**Clea:**

```
128 mm
```

other types of perforations or different widths on request.

with H-profiles:

```
[Diagram]
```

with T-profiles:

```
[Diagram]
```

...or with screw clip

TOPPERFO Typ M

```
[Diagram]
```

TOPPERFO Typ M, 16/16/6

```
[Diagram]
```

Opening upwards: types A, B and C

```
[Diagram]
```

Opening downwards: type D

```
[Diagram]
```

Only available with ungrooved borders (except 29/3)

TOPPERFO planks allow a line effect combined with circular perforation. The length can be chosen as required. All surfaces and fire categories are possible.

**Sixty-System**

(U.S. = 2x2 Grid Panels)

The ceiling system offering maximum choice and extremely easy assembly. Sixty-System 2 x 2 grid panels fit into all standard T-profiles.

Opening upwards: types A, B and C

```
[Diagram]
```

Opening downwards: type D

```
[Diagram]
```

Only available with ungrooved borders (except 29/3)

TOPPERFO planks allow a line effect combined with circular perforation. The length can be chosen as required. All surfaces and fire categories are possible.

**Sixty-System**

(U.S. = 2x2 Grid Panels)

The ceiling system offering maximum choice and extremely easy assembly. Sixty-System 2 x 2 grid panels fit into all standard T-profiles.
**CABINET FRONTS**

Cabinet fronts or rear walls of cabinets can be used as sound absorbers. The following products are most suitable: TOPAKUSTIK 14/2, 19/2, 6/2, TOPPERFO Micro/-T and Clou.

In conjunction with the fleece attached to the inside (RK 280), the acoustic surface ensures an absorption across the entire frequency band. The fleece developed by NH is tear-proof and set back from the hinges and handles.

→ 3 point-lock must be used!

### Duplex

Duplex is particularly suited to large hinged or sliding doors. These have invisible, integrated absorptive panels.

→ 3 point-lock must be used!

### Formed Shapes

For ceiling clouds, curved walls and other shapes TOPAKUSTIK and TOPPERFO elements can be used for shaped wall and ceiling finishes without significant additional effort. For radii above 10 metres, the standard TOPAKUSTIK planks are assembled on the round sub-construction in a segmented way. For smaller radii, the planks or panels can be made flexible by deeper relief grooving on the rear side. In this way, the panels can simply be adapted to the curved sub-construction.

<table>
<thead>
<tr>
<th>Type</th>
<th>m²</th>
<th>Euro</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK 9/2 M</td>
<td>0.50</td>
<td>D</td>
<td>0.56</td>
</tr>
<tr>
<td>RK 14/2 M</td>
<td>0.80</td>
<td>H</td>
<td>0.80</td>
</tr>
</tbody>
</table>

**Topakustik:**

<table>
<thead>
<tr>
<th>Type</th>
<th>m²</th>
<th>Euro</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK Clou 6/6/1.2</td>
<td>0.35</td>
<td>L/H</td>
<td>D</td>
</tr>
<tr>
<td>RK Micro 2/0/0.5</td>
<td>0.7</td>
<td>C</td>
<td>0.52</td>
</tr>
</tbody>
</table>

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<td>RK 14/2 M</td>
<td>0.80</td>
<td>H</td>
<td>0.80</td>
</tr>
</tbody>
</table>

**Topperfo:**

<table>
<thead>
<tr>
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<th>m²</th>
<th>Euro</th>
<th>NRC</th>
</tr>
</thead>
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<td>C</td>
<td>0.52</td>
</tr>
</tbody>
</table>

### Cabinet Fronts

- Roof Clouds or curved walls of cabinets can be used as sound absorbers.
- Topakustik 14/2, 19/2, 6/2, Topperfo Micro/-T, and Clou are suitable.
- In conjunction with RK 280, the acoustic surface ensures absorption across the entire frequency band.
- Fleece is tear-proof and set back from hinges and handles.
- 3 point-lock is required.

### Formed Shapes

- Ceiling clouds, curved walls, and other shapes are possible with TOPAKUSTIK and TOPPERFO.
- For radii over 10 m, standard TOPAKUSTIK planks are assembled on a round sub-construction.
- Smaller radii allow for flexible panels with deeper relief grooving on the rear side.

<table>
<thead>
<tr>
<th>Radius</th>
<th>Machining</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 10 m</td>
<td>Assembled in segments</td>
</tr>
<tr>
<td>&gt; 5 m</td>
<td>Grooved on the back</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radius</th>
<th>Machining</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 8 m</td>
<td>Grooved on the back</td>
</tr>
<tr>
<td>&gt; 1 m</td>
<td>Prepared as shapes in the factory</td>
</tr>
</tbody>
</table>
GYMNASIA

Wall and ceiling finishes are subjected to high impacts in gymnasia. TOPAKUSTIK and TOPPERFO finishes, in combination with the subconstruction systems specifically developed for sports venues, fulfil the high requirements with regard to physical impact and room acoustics. Various TOPAKUSTIK and TOPPERFO products have been tested and certified to DIN 18 032 part 3.

SWIMMING POOLS

For acoustic finishes in high humidity rooms, requirements corresponding to the application are to be fulfilled, e.g.:

- Ceilings and walls constructed to local code requirements
- Rear ventilation of wall and ceiling finish
- Use of corrosion-proof subconstruction materials
- Use of specific, moisture-resistant core panels in production
- Use of specific varnishes or impregnations
- Consideration of the (extraordinary) shrinkage and swelling properties of the core panels
- Water-repellent absorbers such as polyester fleece

The use of acoustic surfaces in damp areas is highly complex. Please contact us with your project and we shall be happy to assist you with developing it.
QUALITY IS NEVER A COINCIDENCE

What we do, we do perfectly: to the highest quality for our customers, with respect for the environment, with products that comply with EN standards and with world-wide patent protection for our inventions.

TOPA KU STIK*  CH PATENT  No 683 112
TOPPA RFO*  USA PATENT  No 5,362,793
RESAP*  EU PATENT  No 2504257

are registered brands of NH Akustik + Design AG

FSC products are marked

EN 13986 WOOD-BASED PANELS
EN 13501-1 FIRE CLASSIFICATION
EN 20354 SOUND ABRASION

41  KKL, Luzern CH  Architect: Jean Nouvel, Paris FR
42  Reichstag Berlin DE  Architect: Foster + Partner, London GB
44  Burj Khalifa 828 m, UAE  Architect: Adrian Smith SOM, Chicago USA

WOOD-BASED PANELS
EN 13986
SOUND ABRASION
EN 13501-1

USA-PATENT  No 5,362,793
EU-PATENT  No 2504257

VISIT OUR PLANT IN LUNGERN

Our company headquarters and the Production site in Lungern are 30 minutes south of Lucerne, accessible by rail or road.

TOPAKUSTIK-SERVICE

Basic sample box
Contains 4 samples
Eco sample box
17 different samples including 5 different veniers
ARIA-Plus sample box

Deluxe sample box
(subject to a nominal charge)

AS sample from stock:

…more than 250 different samples available immediately from our stock! Special samples within 2 weeks + shipping (nominal charge)

---

TOPPERFO®
Beech
Maple
European Birch
Oak
Oriental Birch
Am. Walnut
Maple
Canadian White Birch
B3002 LP
Light Gray
L4068LP
Oak
3280NTL
Ash
M3965NTL
Maple
M2106NM
Beech
M112NM
Walnut
M4462NM
Cherry
M760NM
Acacia
M4451NTL
Thermo
M6222NTL Micro 2/2/0.5
Micro 3/3/0.5
Clou 8/8/1.2
Clou 8/8/2
T 16/16/10-3
T 16/16/10-4
T 16/16/10-5
M 16/16/6
M 16/16/8
M 16/16/10
M 20/20/8
Typ R

... more than 250 different samples available immediately from our stock! Special samples within 2 weeks + shipping (nominal charge)

VISIT OUR PLANT IN LUNGERN

Our company headquarters and the Production site in Lungern are 30 minutes south of Lucerne, accessible by rail or road.

TOPAKUSTIK installation manual with sub-constructions, guidelines and tips for the tried and tested TOPAKUSTIK installation systems. For specific installation solutions, please contact our technical department.

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MORE INNOVATIVE DESIGNS AT
WWW.TOPAKUSTIK.COM

TOPAKUSTIK®
IS A BRAND OF:

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OBSEESTRASSE 11
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SWITZERLAND

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