CUTTING BOOK
PETpanel

AKOPANEL

www.AKOpanel.nl

V24.1

INTRODUCTION

This Cutting Guide is designed as a comprehensive manual for cutting techniques that can be used to optimally shape acoustic PETpanel. The supplier of high-quality acoustic solutions recognizes that not only the functional properties of PETpanel are important, but aesthetics also play a crucial role in its application. Using advanced cutting techniques, unique designs can be created that meet the client's visual requirements while enhancing acoustic performance.

Before starting the cutting process, the delivery specifications must be carefully reviewed. This helps to gain a good understanding of the capabilities of PETpanel, ensuring the correct cutting technique is chosen. There are more than ten different cutting options available, so thorough knowledge of the techniques is required to ensure that the final result aligns both technically and aesthetically with the client's expectations.

With the knowledge gained from the Cutting Guide, clients can be effectively advised, and communication with suppliers can be streamlined. This will make the procurement process more efficient, reduce errors, and ensure smooth project execution. Through this collaboration, consistent quality can be delivered.

TABLE OF CONTENTS

GENERAL SUBMISSION SPECIFICATIONS	3
NESTING + CUTTING OPTIONS 9 MM	4
CUTTING OPTIONS 18 AND 25 MM	5
CUTTING TECHNIQUE INSTRUCTION	6
DOVETAIL	7
CUT AND REPLACE	8
CUT IN AND REPLACE	9
RIBS	10
90-DEGREE ANGLE	11
60-DEGREE ANGLE	12
45-DEGREE ANGLE	13
30-DEGREE ANGLE	14
FOLDING ANGLE 90 DEGREES	15
COVE	16
BENDING NOTCH	17
V-GROOVE BEND NOTCH	18-19
CONTINUOUS DECORATIVE GROOVE	20
DECORATIVE GROOVE	21
CURVES	22
SLIDE INTO EACH OTHER	23
HOLE PATTERN	24
BEND PATTERN	25
CUT THROUGH TEXT	26
ENGRAVE TEXT	28
BETWEEN RIBS	30

AKOPANEL

GENERAL SUBMISSION SPECIFICATIONS

It is important that the files meet certain requirements to ensure that the product can be cut accurately. Therefore, please adhere to the following submission specifications:

- Files should be provided in one of the following vector file formats:
  .dxf | .dwg | .ai
  Pixel-based files are not workable for us

- Units should be in millimeters (mm)

- Drawings must be to scale 1:1
  - Or clearly indicate the scale used
  - Or specify the dimensions of the objects

- If nesting is to be facilitated by AKOpanel, please provide each component in a separate file

- Assign each file a unique and logical name

- Drawings should not contain duplicate lines

- Drawings should not contain open lines; all lines of an object must be connected

- Texts must be converted to outlines

- Indicate cutting techniques using the following colour codes:
  Black = cut through
  Orange = engrave *(specify depth)*
  Red = v-groove folding *(specify angle and depth; standard angle is 90 degrees, non-standard angles incur an additional charge)*
  Purple = decorative groove *(specify angle and depth; standard angle is 90 degrees, non-standard angles incur an additional charge)*
  Green = Chamfer edge *(specify angle and depth; standard angle is 45 degrees, non-standard angles incur an additional charge)*

IMPORTANT:

- For each panel thickness, please provide the following variables with your order: (see Excel example on page 5)
  - Quantity
  - Panel thickness (9/18/25 mm)
  - Colour code
  - Type of cutting technique(s) and settings used

AKOPANEL

GENERAL SUBMISSION SPECIFICATIONS

File name: Cloud 1

File name: Cloud 2

File name: Cloud 3

						Decorative groove		Chamfer edge	
File name	Quantity	Thickness	Colour(code)	Engrave	V-groove fold	Angle	Depth	Angle	Depth
Cloud 1	5	9 mm	Light Blue/14						
Cloud 2	7	9 mm	Dark blue/01			45	3 mm		
Cloud 3	3	9 mm	Silver grey/12					45	3 mm
		9 mm							

Example excel parts list

At the bottom of this page, you can download the Excel file for the Parts List. Use this list when requesting multiple components. Each component must be provided in a separate cutting file.

1 Enter the details in the appropriate table: 9, 18, 9+9, or 25 mm (as indicated in column 3 'Thickness')
2 Column 1-> Assign a unique file name to each component and enter it
3 Column 2-> Enter the desired quantity
4 Column 4-> Specify the colour of the PET felt
5 Column 5-> Enter the depth of the engraving, if applicable
6 Column 6-> Enter the desired angle of the V-groove, if applicable
7 Column 7-> Enter the desired angle and depth of the V-groove, if applicable
8 Column 8-> Enter the desired angle and depth of the V-groove, if applicable

XLXS. Download the parts list here

AKOPANEL

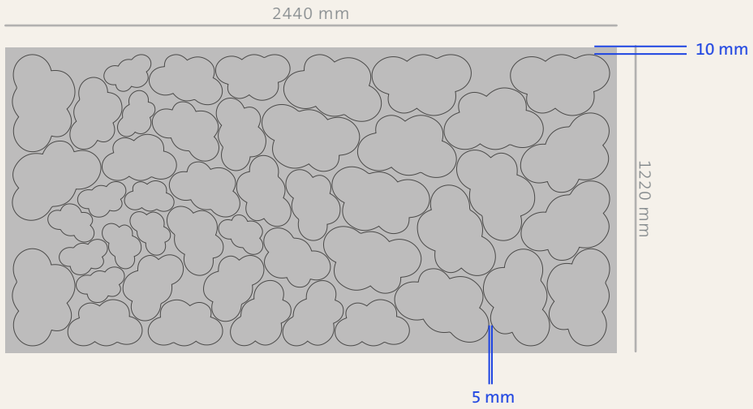
NESTING

Panel Size: 2440 x 1220 mm

Maximum usable area: 2420 x 1200 mm (a 10 mm border must be kept clear around the edges)

For nesting: maintain a 5 mm gap between components

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9



Nesting can be facilitated by AKOpanel. We have software that calculates the most efficient layout, minimizing material waste.

AKOPANEL

CUTTING OPTIONS FOR 9 MM

The overview below shows which line colour to use in the working drawing

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			2 t/m 7
V-groove fold		30, 45, 60, 80, **90***	8,5
Decorative groove		30, 45, 60, 80, **90***	2 t/m 7
Chamfer edge		15, 22.5, 30, 40, **45***	2 t/m 8

Minimum radius for rounded corners	3 mm
Minimum diameter of circle	6 mm

* = standard angle; non-standard angles incur an additional charge

AKOPANEL

CUTTING OPTIONS FOR 18 MM/9+9 MM

The overview below shows which line colour to use in the working drawing

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			18
Engrave			3 t/m 16
V-groove fold		30, 45, 60, 80, **90***	17,5
Decorative groove		30, 45, 60, 80, **90***	3 t/m 16
Chamfer edge		15, 22.5, 30, 40, **45***	3 t/m 18

Minimum radius for rounded corners	3 mm
Minimum diameter of circle	8 mm

* = standard angle; non-standard angles incur an additional charge

AKOPANEL

CUTTING OPTIONS FOR 25 MM

The overview below shows which line colour to use in the working drawing

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			25
Engrave			3 t/m 23
V-groove fold		30, 45, 60, 80, **90***	24,5
Decorative groove		30, 45, 60, 80, **90***	3 t/m 23
Chamfer edge		15, 22.5, 30, 40, **45***	3 t/m 25

Minimum radius for rounded corners	3 mm
Minimum diameter of circle	8 mm

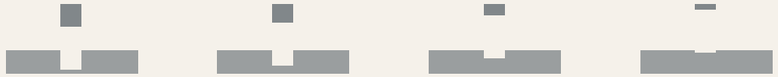
* = standard angle; non-standard angles incur an additional charge

AKOPANEL

EXPLANATION CUTTING TECHNIQUES

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

Cutting technique	Line colour	Angle in degrees	Depth in mm
Engrave			8, 6, 4, 2

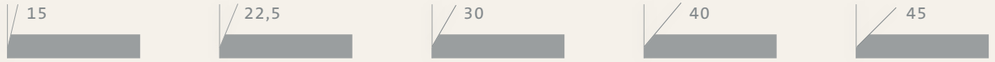


EXPLANATION V-GROOVE TECHNIQUES

Cutting technique	Line colour	Angle in degrees	Depth in mm
V-groove fold		30, 45, 60, 80, **90***	8,5

Cutting technique	Line colour	Angle in degrees	Depth in mm
Decorative groove		30, 45, 60, 80, **90***	5

Cutting technique	Line colour	Angle in degrees	Depth in mm
Chamfer edge		15, 22,5, 30, 40, **45***	5

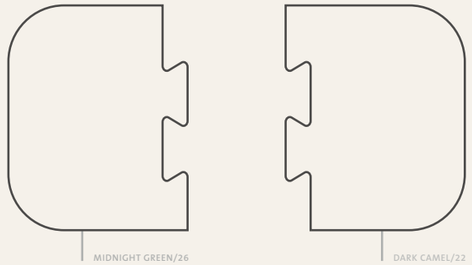


* = standard angle; non-standard angles incur an additional charge

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



INFO AND TIPS!

1 The dovetail joint is an excellent method for connecting two panels together.
2 When using a dark-coloured PET felt, this joint will be almost invisible.

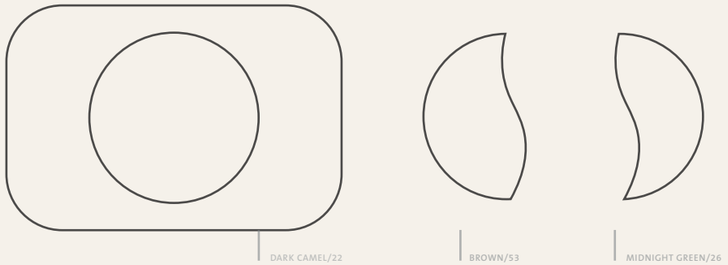
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



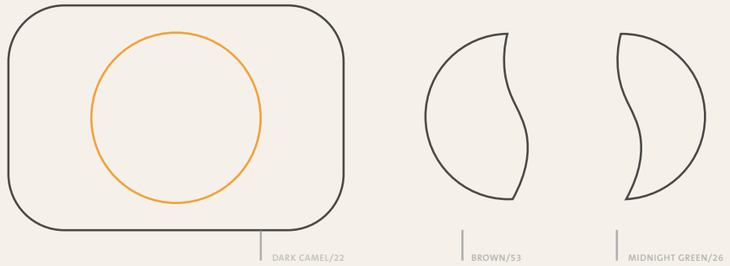
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5

CUTTING FILE



INFO AND TIPS!

1 After cutting into the material, the cut section can be removed, as the material consists of thin layers of fibres. Do note, that the area where a layer has been removed will have a slightly fuzzy appearance.

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

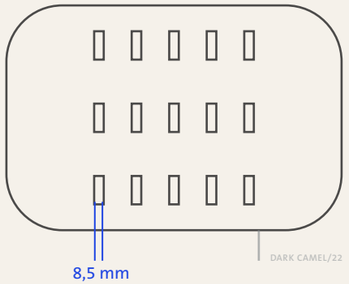
DARK CAMEL/22

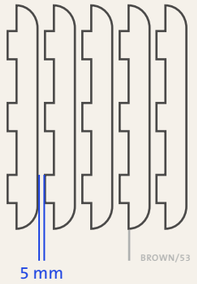
BROWN/53

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE





INFO AND TIPS!

1 The panel thickness is 9 mm; when the groove is 8.5 mm wide, the rib will fit securely into the panel.

2 There should be a 5 mm gap between the components.

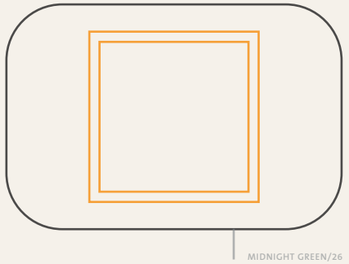
Submit cutting file as: .dxf | .dwg | .ai

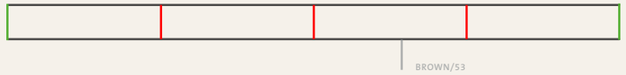
AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		90	8,5
Chamfer edge		45	9

CUTTING FILE





INFO AND TIPS!

1 The square in the base plate is cut 5 mm deep and removed.
2 The V-groove is cut so that it can be folded at a 90-degree angle.
3 The bevelled edge is cut at a 45-degree angle.

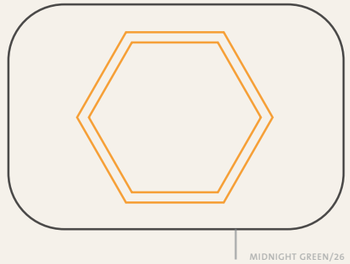
Submit cutting file as: .dxf | .dwg | .ai

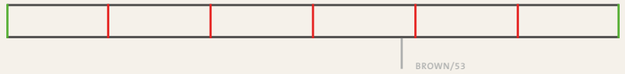
AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		60	8,5
Chamfer edge		30	9

CUTTING FILE





INFO AND TIPS!

1 The hexagon in the base plate is cut 5 mm deep and removed.
2 The V-groove is cut so that it can be folded at a 60-degree angle.
3 The bevelled edge is cut at a 30-degree angle.

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

45-DEGREE ANGLE

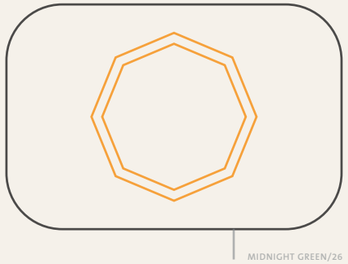
BROWN/53

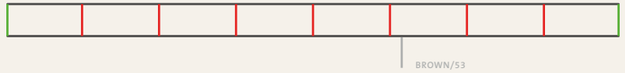
MIDNIGHT GREEN/26

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		45	8,5
Chamfer edge		22,5	9

CUTTING FILE





INFO AND TIPS!

1 The octagon in the base plate is cut 5 mm deep and removed.
2 The V-groove is cut so that it can be folded at a 45-degree angle.
3 The bevelled edge is cut at a 22.5-degree angle.

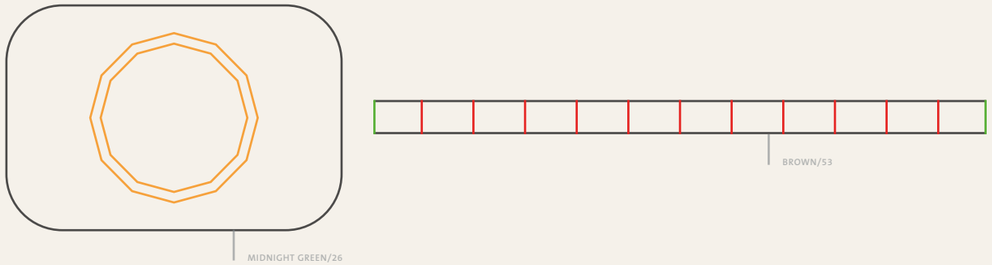
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		30	8,5
Chamfer edge		15	9

CUTTING FILE



INFO AND TIPS!

1 The dodecagon in the base plate is cut 5 mm deep and removed.
2 The V-groove is cut so that it can be folded at a 30-degree angle.
3 The bevelled edge is cut at a 15-degree angle.

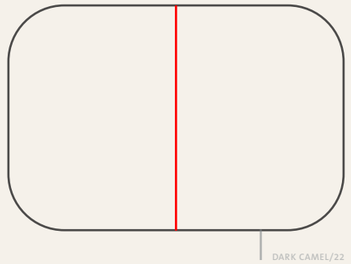
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
V-groove fold		90	8,5

CUTTING FILE



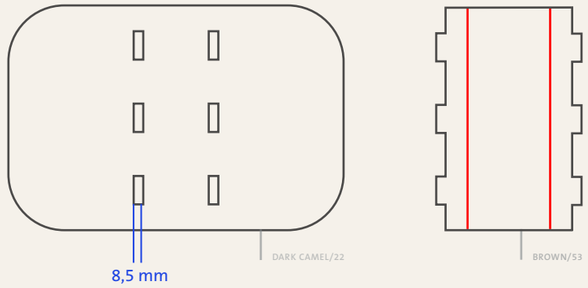
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
V-groove fold		90	8,5

CUTTING FILE



INFO AND TIPS!

1 The panel thickness is 9 mm; when the slot is 8.5 mm wide, the molding will fit securely into the panel.

2 The V-groove is cut to allow it to be folded at a 90-degree angle.

Submit cutting file as: .dxf | .dwg | .ai

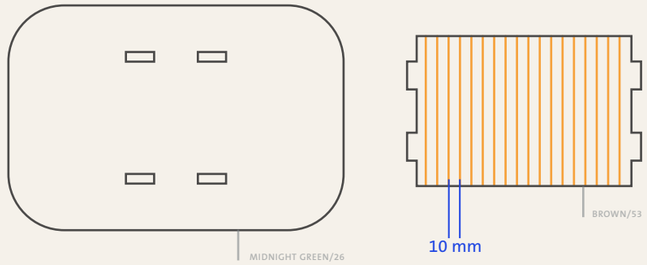
AKOPANEL

BENDING NOTCH

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			7

CUTTING FILE



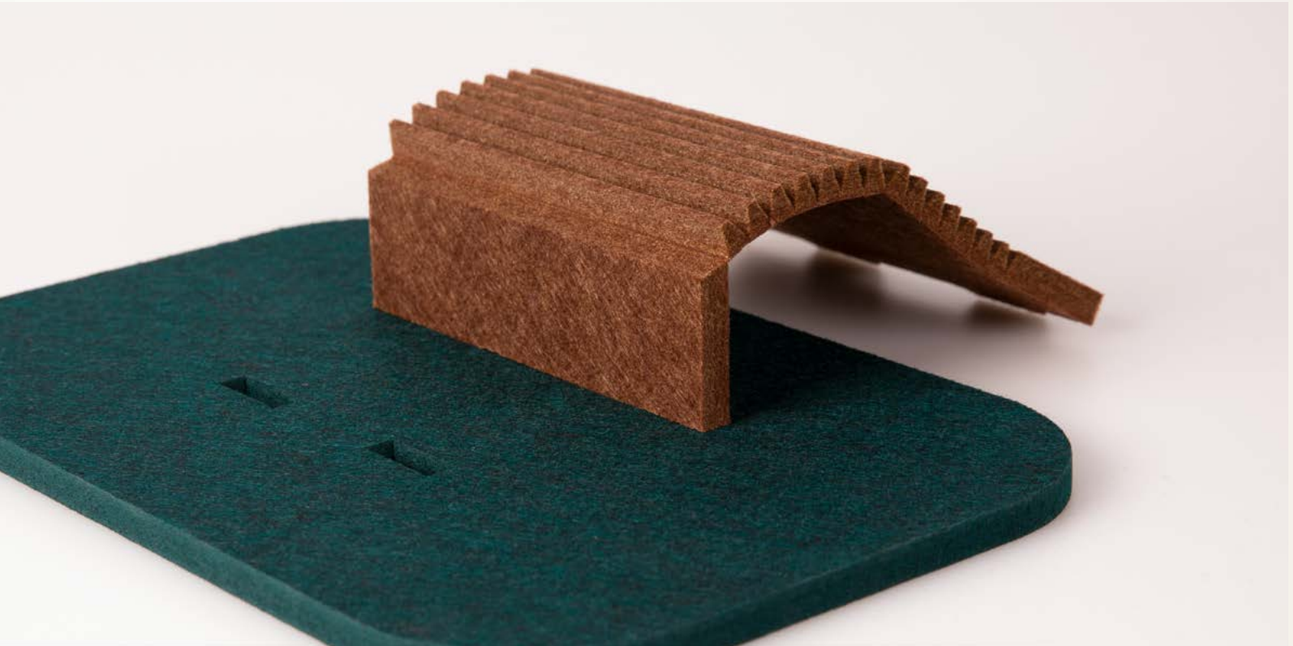
INFO AND TIPS!

1 Place the cuts closer together to allow bending with a smaller radius (minimum distance between cuts is 3 mm).

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

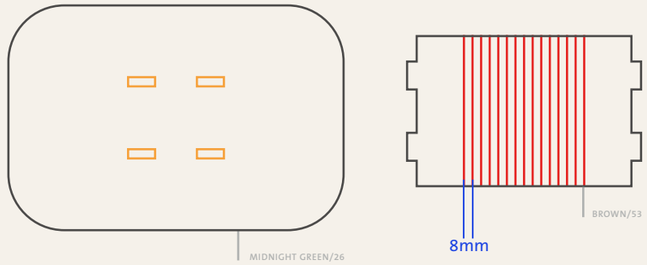
V-GROOVGE BEND NOTCH



CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		30	8,5

CUTTING FILE



INFO AND TIPS!

1 Place the cuts closer together to enable bending with a smaller radius.
2 The V-groove is cut so that it can be folded inwards; this technique is particularly suitable for bending a small radius.

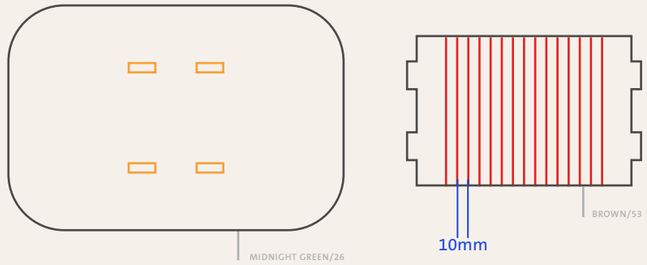
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			5
V-groove fold		30	8,5

CUTTING FILE



INFO AND TIPS!

1 Place the cuts closer together to enable bending with a smaller radius.
2 The V-groove is cut so that it can be folded inwards; this technique is particularly suitable for bending a small radius.

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

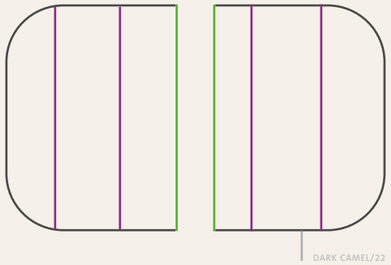
CONTINUOUS DECORATIVE GROOVE

DARK CAMEL/22

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Decorative groove		30	3
Chamfer edge		15	3

CUTTING FILE



INFO AND TIPS!

1 A decorative groove with a 15-degree angle creates a beautifully deep, subtle groove.

2 By cutting a bevel along the edge of the panel, the panels can be joined inconspicuously.

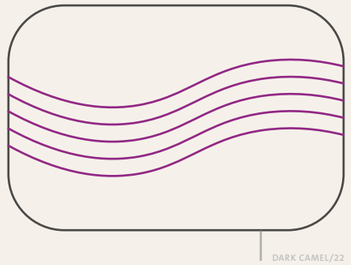
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Decorative groove		90	6

CUTTING FILE



INFO AND TIPS!

1 For the decorative groove, we recommend a minimum depth of 3 mm, as the groove will otherwise be barely visible.

2 The decorative groove can be applied in many different designs.

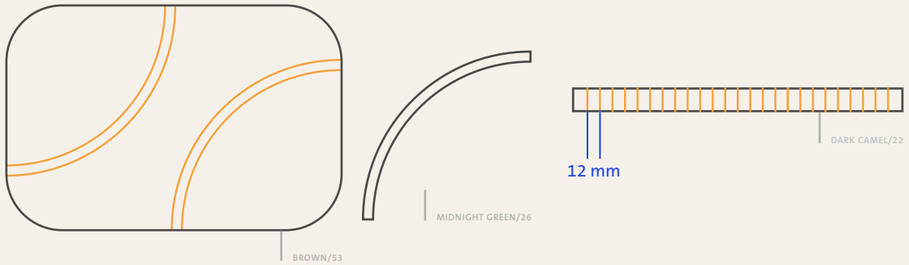
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave (base panel)			5
Engrave			7

CUTTING FILE



INFO AND TIPS!

1 Place the cuts closer together for bending with a smaller radius (minimum distance between cuts is 3 mm).

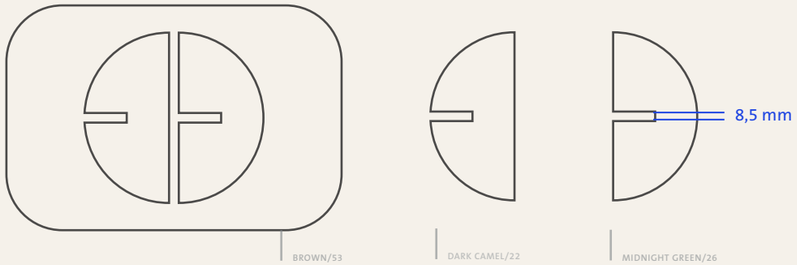
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



INFO AND TIPS!

1 The panel thickness is 9 mm; when the groove is 8.5 mm wide, the two parts will fit together securely.

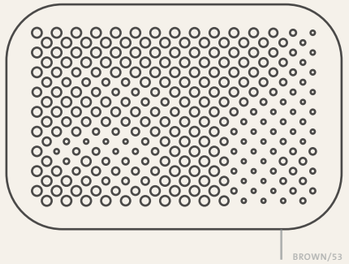
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



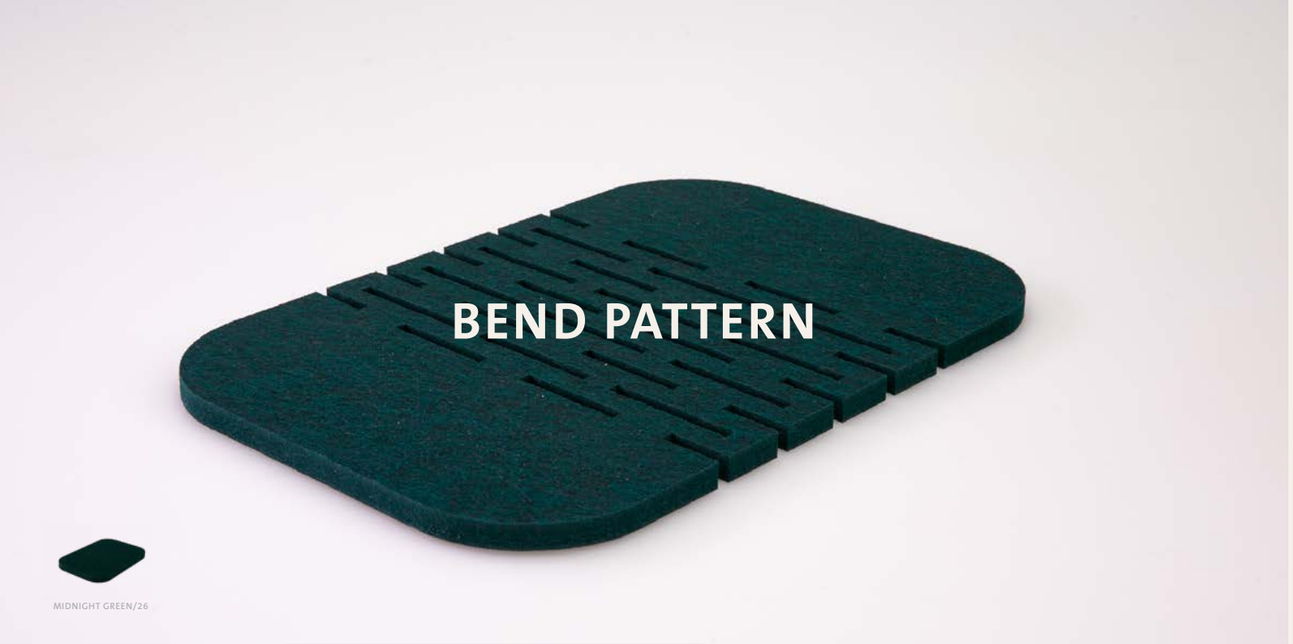
INFO AND TIPS!

1 Panel thickness 9 mm -> minimum diameter of circle 6 mm.

2 Panel thickness 18-25 mm -> minimum diameter of circle 8 mm.

Submit cutting file as: .dxf | .dwg | .ai

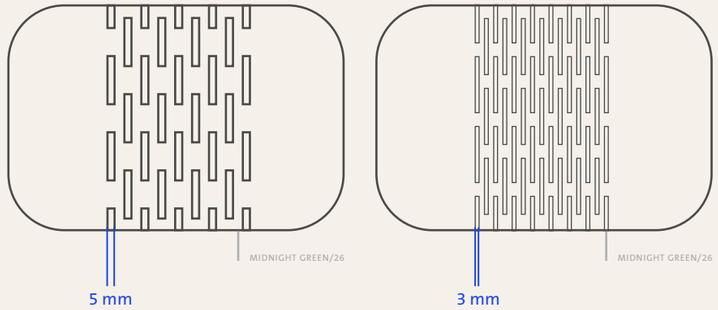
AKOPANEL



CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



INFO AND TIPS!

1 Make the cutouts narrower and the space between them smaller to allow bending with a smaller radius (minimum width and distance between cutouts is 3 mm).

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUT THROUGH TEXT

MIDNIGHT GREEN/26

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE

MIDNIGHT GREEN/26

INFO AND TIPS!

1 Ensure that the thickness of the letters is at least 3 mm throughout.
2 Convert the text to outlines.
3 For letters such as a, e, o, and p, make sure to provide a connection so that the central part remains attached to the panel.

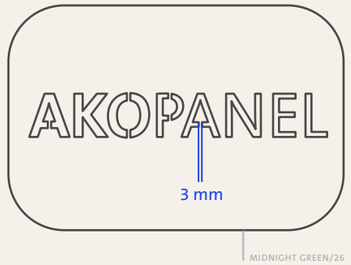
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9

CUTTING FILE



INFO AND TIPS!

1 Ensure that the thickness of the letters is at least 3 mm throughout.
2 Convert the font to outlines.
3 When cutting, ensure that the inside part of the O and A remains attached to the panel.

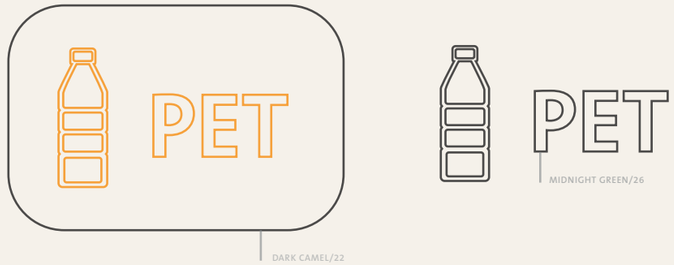
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			7

CUTTING FILE



INFO AND TIPS!

1 Ensure that the thickness of the letters is at least 3 mm throughout.
2 Convert the text to paths.

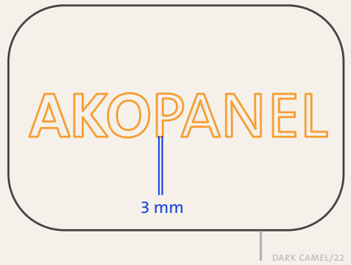
Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			7

CUTTING FILE



INFO AND TIPS!

1 Ensure that the thickness of the letters is at least 3 mm throughout.
2 Convert the font to outlines.

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

BETWEEN RIBS

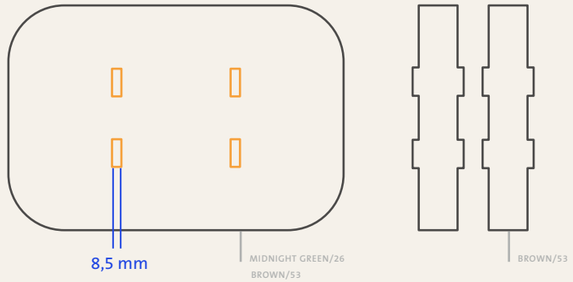
BROWN/53

MIDNIGHT GREEN/26

CUTTING TECHNIQUE 9 MM

Cutting technique	Line colour	Angle in degrees	Depth in mm
Cut through			9
Engrave			7

CUTTING FILE



INFO AND TIPS!

1 The panel thickness is 9 mm; when the groove is 8.5 mm wide, the rib will fit securely into the panel.

Submit cutting file as: .dxf | .dwg | .ai

AKOPANEL

CUTTING BOOK PETpanel

- Panels are always packaged between cover sheets measuring 1250 x 2500 x 10 mm.
- The cut parts remain in the raw panel for transport safety reasons.
- If post-processing is required, the delivery time will be extended.
- Standard custom work delivery time is 5-10 working days.
- For further inquiries, please contact us.

AKOpanel
De Singel 26
7722RR Dalfsen
+31 (0)85 48 69 500
www.akopanel.nl
info@akopanel.nl

AKOPANEL