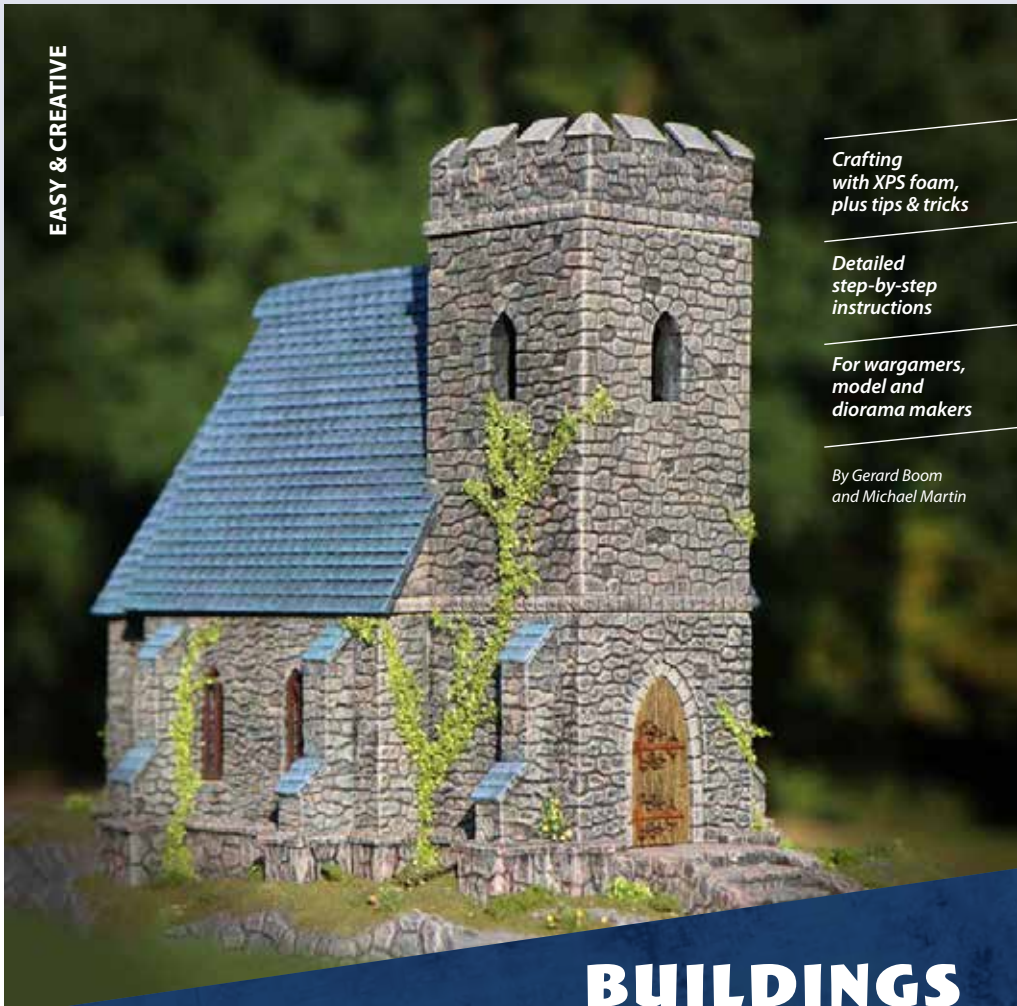


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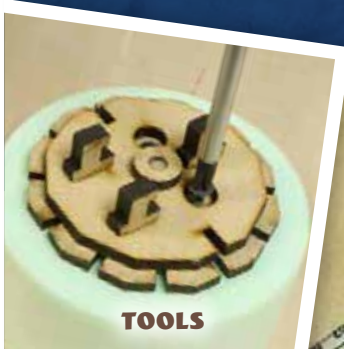
*Crafting
with XPS foam,
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*Detailed
step-by-step
instructions*

*For wargamers,
model and
diorama makers*

*By Gerard Boom
and Michael Martin*

BUILDINGS TABLETOP TERRAIN FROM XPS FOAM



TOOLS



TECHNIQUES



TIPS

This PDF contains an early look at pages 58 to 71, with two tutorials from the book **„TABLETOP TERRAIN FROM XPS FOAM: BUILDINGS“**. On these 14 pages you will find detailed step-by-step instructions to create two great pieces of terrain. All you need is the Proxxon Thermocut hot wire cutter and some helpful tools, which are listed at the beginning of each tutorial.

Please note that all page references refer to the 228 page book and are not covered by this PDF. Detailed tips and ideas for texturing and painting your buildings can be found in the finished book, which will be published at the beginning of 2021 – until then please check the YouTube channel of „Tabletop Workshop“: Just search for „TWS Styrodur strukturieren“ and „TWS Styrodur bemalen“ (German videos with English subtitles).



The Ruined Mausoleum

Weathering is popular in terrain building because – if used correctly – showing “the ravages of time” on models can help create the right mood for your gaming board. In this tutorial we will show you how, with very little effort, you can take intact brickwork and turn it into an attractive ruin.

TOOLS

| | Page |
|----------------------------------|------|
| • Proxon Thermocut | 30 |
| • Guider Pro 2.0 | 36 |
| • 3.5cm Wide Round Arch Template | 43 |
| • craft knife | |
| • ruler and pencil | |
| • protractor/set square | |
| • pins | |
| • glue/wood glue | |

TECHNIQUES

| | Page |
|-----------------------|------|
| • Cutting Out Windows | 46 |
| • Oblique Cutting | 47 |
| • On/Off Cutting | 48 |
| • One Piece Cutting | 50 |



Ruined Mausoleum

Podium

Pavilion

Bunker

Dome Pavilion

Aztec Temple

Fantasy Tower

Half-Timbered House

Octagonal Tower

Windmill

Wild West Building

Church

Sci-Fi Building

Factory

The Base

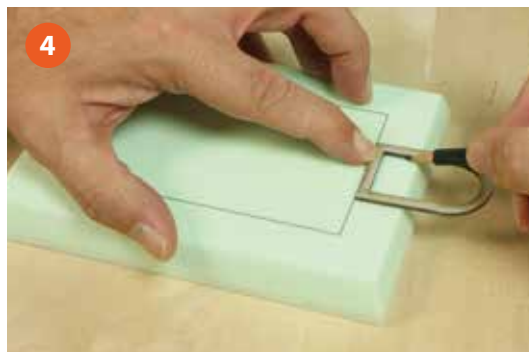
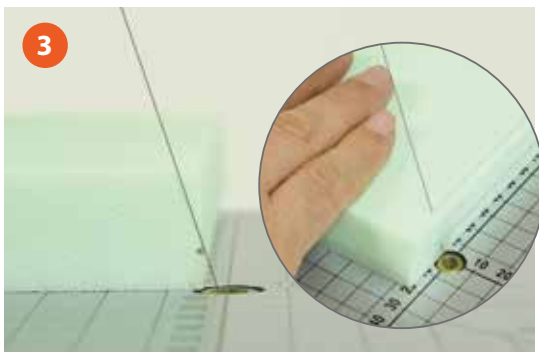
- 1 First cut a block for the solid lower part of the mausoleum walls, referred to here as the Base (see measurement chart). The two-part walls will be later placed on top of this block.
- 2 Set the wire of the Proxxon Thermocut at an angle of exactly 20 degrees. Using a set square in addition to the tips from page 30 will help. Then mark a point 0.5 cm above the ground at one corner of the Base block.

- 3 Place the Base block on the Proxxon Thermocut so that the wire is directly above (!) your marker and can cut the block diagonally. Slide the Guider to stabilise the piece and then evenly cut all four sides of the block at an angle.
- 4 Taking the top side of the now bevelled block, draw the interior with a pencil, 2 cm from all outer sides. In addition, mark a 2.5 cm wide door opening

- in the middle of one short side. **Tip:** To indicate this width, you can easily use the inside (!) measurement of the 3.5 cm wide Round Arch Template from the Template Set (see page 43), because it is exactly 2.5 cm.
- 5 Now cut out the interior from the Base block. This can be done in one go by reducing the temperature of the Proxxon Thermocut to level 2: Then use the Guider to cut straight to a corner of

- your mark from the outside and immediately switch off the Proxxon Thermocut when you reach this corner. Rotate the block to the new cutting direction and reposition the Guider. Switch on the device and continue cutting seamlessly to the next corner, etc. (Detailed tips on this technique of On/Off Cutting can be found from page 48.)
- 6 This is how your Base should look after cutting.

| Component | Qty | Length | Width | Height |
|------------|-----|--------|---------|--------|
| Base Block | 1x | 18 cm | 12.5 cm | 2 cm |





The Walls and Corner Pillars

7 Now cut all the parts for the four walls of the mausoleum. Each wall will be composed of two parts, so you will need four short and four long wall pieces, plus four corner pillars. **Note:** The width of the walls is derived from the inner dimensions of your Base. Measure out a long and a short inner side and add 1 cm each. In our case, this is 13.8 cm (12.8 + 1 cm) for the long walls and 8.6 cm (7.6 + 1 cm) for the short walls. Your measure-

ments may vary slightly depending on your cutting process (see step 3).

8 Using the 3.5 cm wide Round Arch Template from the Template Set, or a separate template for one of the Short Walls to draw a window, place the template about 8 mm from the bottom edge and in the middle of the wall. Transfer the exterior (!) outline of the template onto the wall with a pencil.

Tip: In placing the template in the middle it helps to mark the centre at its lower edge.

9 On this outline, use a sharp craft knife to cut vertically and then along the outline to create an opening in the wall. **Tip:** Cutting out windows is easier with our tips on page 46.

10 Now place this Short Wall with the window opening on a second Short Wall. Then transfer the outline of the opening with a pencil.

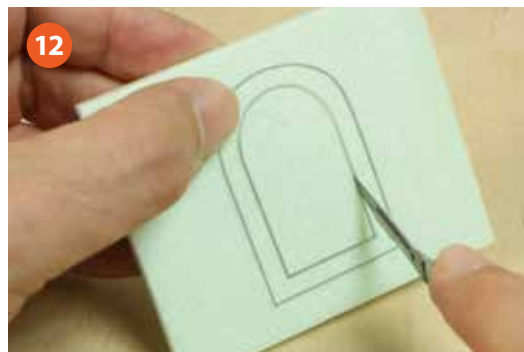
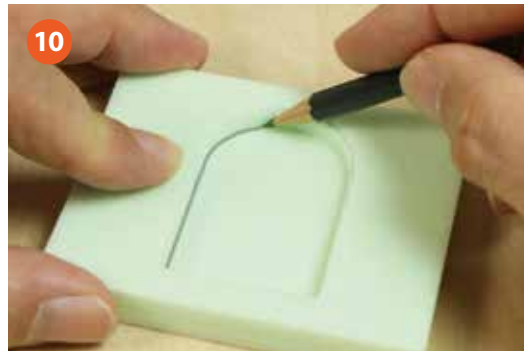
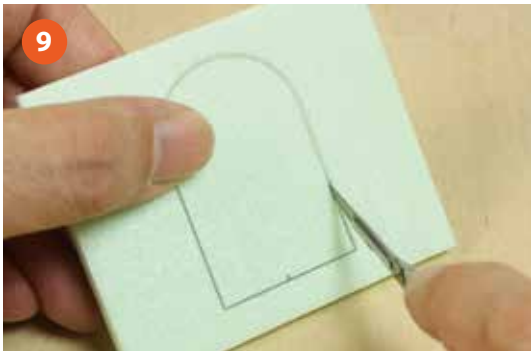
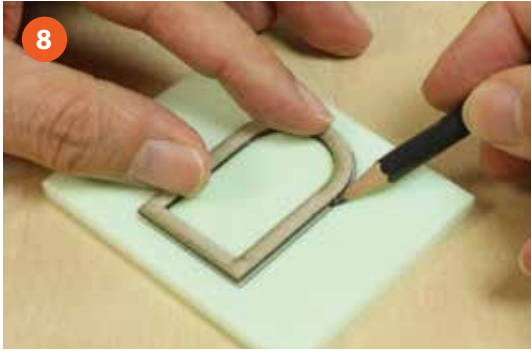
11 Then place the 3.5 cm wide Round Arch Template exactly on the outline you have just drawn. Now transfer the inner (!) outline of the template with a pencil.

12 With a sharp craft knife cut vertically along this inner outline. Doing so will give you an opening in the second wall, which is smaller than the opening in the first wall.

13 Place both Short Wall components flush above one another and glue them together. **Note:** Do not apply the glue all the way to the side edges of the walls, but leave about 0.5 cm of space (this will help you in step 20). The wall side with the larger window opening will form the outside of the ruin.

14 The two remaining Short Walls are now assembled into a single wall with a doorway. Repeat steps 8 to 12 with just one difference: For both outlines, place your template on the bottom edge of your wall components.

| Component | Qty | Height | Width | Thickness |
|---------------|-----|--------|---------|-----------|
| Long Wall | 4 × | 7 cm | 13.8 cm | 0.5 cm |
| Short Wall | 4 × | 7 cm | 8.6 cm | 0.5 cm |
| Corner Pillar | 4 × | 7 cm | 1.5 cm | 1.5 cm |



Ruined Mausoleum

Podium

Pavilion

Bunker

Dome Pavilion

Aztec Temple

Fantasy Tower

Half-Timbered House

Octagonal Tower

Windmill

Wild West Building

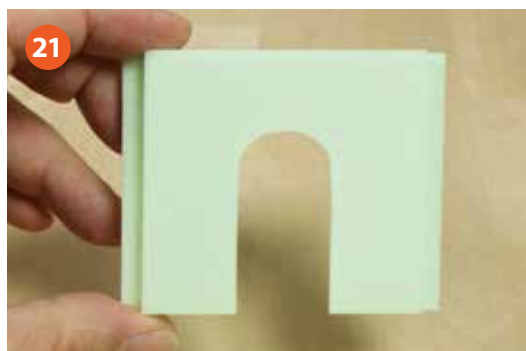
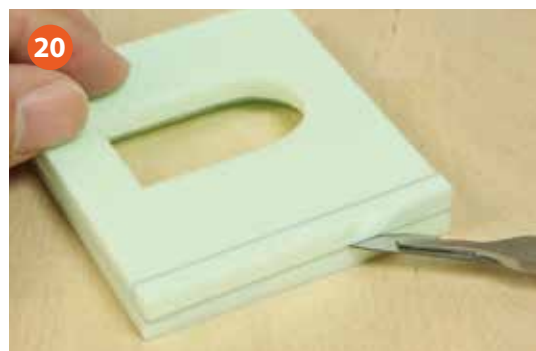
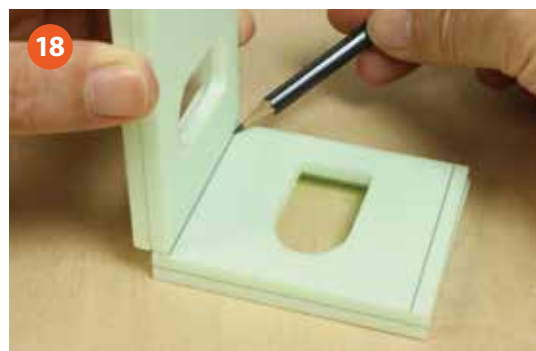
Church

Sci-Fi Building

Factory

15 Also cut to the lower edge in order to get the wall components shown in the picture. Both walls are then also laid flush on top of one another and glued together as described in step 13.

16 Repeat steps 8 to 13 twice with the four Long Wall pieces, creating two long walls. You can choose any number and position of your windows in these walls. We took a spacing of 2 cm from the outside.



19 Now carefully cut along the two marks you have drawn – only up to the middle of the Short Wall (i.e. up to the point where the two wall parts stick together). Use a guide and a sharp craft knife.

20 Now use the craft knife to make an incision along the glued seam on each side until the cut is level. Ideally, no glue was previously applied in this area (see step 13). Then remove the cut pieces.

21 Repeat steps 18 to 20 with the Short Wall where the doorway is.

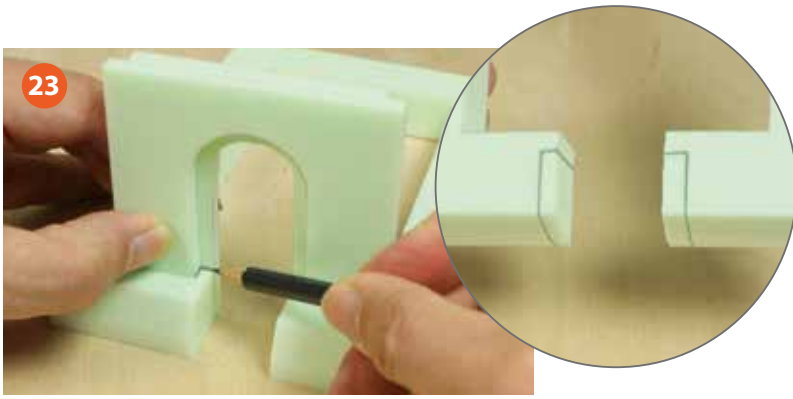
22 All short and long walls and the four corner pillars now fit perfectly into each other.



Connecting the Walls

17 Next, cut the Short Wall with the window and the Short Wall with the door opening. Doing it this way means that the Long Walls can be later glued to the Corner Pillars in an interlocked style.

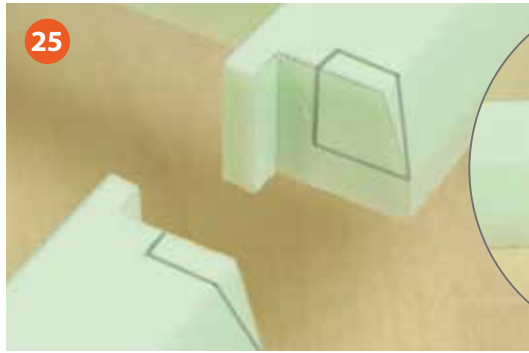
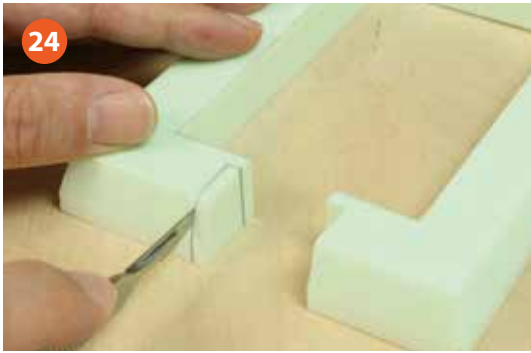
18 To do this, place the inside of a Long Wall on the inside of the Short Wall with the window – exactly so that the middle of the Long Wall meets the edge of the Short Wall (see picture). Mark this distance with a pencil on the Short Wall. Repeat the same step on the opposite side of the Short Wall.



Adjusting the Base

23 Continuing with the Base: Place the Short Wall with the door on the Base opening. Both openings must be flush, and the inside of the wall should also be flush with the inside of the Base. Then transfer the outline of the two-part

wall to the Base to mark indentations – the corners at the wall opening are already sufficient for this (see picture). Extend both outlines straight to both lower edges of the Base (see round picture).



24 Cut out the marked indentations with a sharp craft knife. **Tip:** To get best results, make several cuts and always only a few millimetres into the XPS foam.

25 Now draw two more indentations on the Base surface, each at 0.5 cm from the inner corners, and extend the lines as shown. **Note:** These indentations are cut off diagonally, like the base's outer surface, starting at 0.5 cm from the bottom (see round picture).

Distressing the Pieces

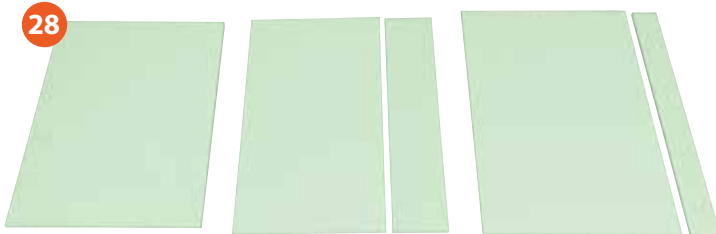
26 Place all elements in their final position to see how it all fits together, but do not glue the components yet. Instead, use a pencil to sketch where you will later distress the elements to make your mausoleum look like a ruin.

27 With a sharp craft knife cut, or cut off the components according to your sketch.

The Stepped Platform

28 Now build a stepped platform for your mausoleum. First cut three 5 mm panels (see table). Lay them on top of each other to form steps. The two larger panels 2 and 3 have to be assembled from two pieces of any size as the Proxxon Thermocut can only enable cutting XPS foam pieces up to a maximum height of 14.5 cm (which in our case is the width of the first panel).

29 Glue all the panels so that they fit together, making sure that no glue comes out at the sides.



| Component | Qty | Length | Width | Height |
|-----------|-----|---------|---------|--------|
| Panel 1 | 1 × | 21.5 cm | 14.5 cm | 0.5 cm |
| Panel 2 | 1 × | 22.5 cm | 15.5 cm | 0.5 cm |
| Panel 3 | 1 × | 23.5 cm | 16.5 cm | 0.5 cm |

Ruined Mausoleum

Podium

Pavilion

Bunker

Dome Pavilion

Aztec Temple

Fantasy Tower

Half-Timbered House

Octagonal Tower

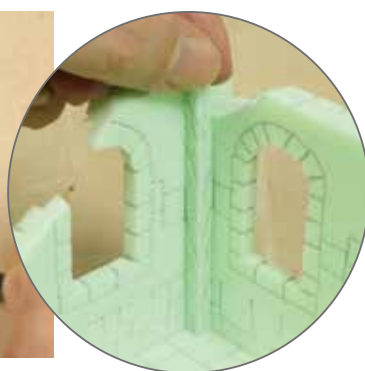
Windmill

Wild West Building

Church

Sci-Fi Building

Factory



Texturing, Assembly and Painting

30 Let's start with the Stepped Platform. We've chosen to use an irregular tile pattern, later texturing the Base surface (see page 19). **Tip:** So that you don't have to texture areas that will be covered later anyway, simply put the Base on top and draw around it as an aid.

31 Continue with the Base, the walls and texturing. We chose an irregular stone or brick texture for the outside (see from page 16). For the interior of our Ruined Mausoleum we used a plaster-effect (see page 15). We've added further texturing suggestions from page 14 onwards.

32 After texturing is complete, glue all elements together using a quick-drying wood glue for example. Use pins to fix the glued joints – ideally they should be stuck into the joints so that the resulting holes are not noticeable later.

33 Once everything is dry, you can use a sharp craft knife to create the final weathering. Simply cut off little pieces of the elements here and there, to create your final ruined look.

34 You can place decorative strips – 0.5 x 0.5 cm thick and about 9 cm long, to cover any gaps in the inner corners of the mausoleum.

After cutting them to size you can use a wooden texture (see page 15) to glue the strips into the corners of your Ruined Mausoleum and cut them to fit.

35 The final stage is to paint the mausoleum. You can find suggestions and instructions for painting stone buildings from page 24.

36 We went for a rather gloomy look, in keeping with the ruined theme. **Have fun building, then distressing and finally painting your mausoleum!**



The Podium

Often it is the smaller, finer pieces of terrain which add that special touch to a game board. This Podium, for example, is a real eye-catcher thanks to its striking round shape – and depending on how it's painted, you can use it for almost any war gaming genre.

TOOLS

| | Page |
|-------------------------------------|------|
| • Proxxon Thermocut | 30 |
| • Guider Pro 2.0 | 36 |
| • Circular Cutting Board | 37 |
| • 3.5cm Wide Round Arch Template | 43 |
| • Buttress Template | 43 |
| • craft knife | |
| • ruler and pencil | |
| • protractor/set square | |
| • glue/wood glue | |

TECHNIQUES

| | Page |
|-----------------------|------|
| • Cutting Out Windows | 46 |
| • On/Off Cutting | 48 |
| • Freehand Cutting | 52 |



The Basic Component

1 Cut a cylinder with a diameter of 14 cm out of an XPS foam block (see table for dimensions). Use the Circular Cutting Board for this. (On page 37 we describe how to use it and how to make the round cut without this tool.) If you do not have any 8 cm XPS foam, use multiple 4 cm or 5 cm pieces as we will cut through the 8 cm piece in step 8.

2 Tip: When cutting, make sure that you turn the block slowly and evenly. Once you have returned to the

starting point, turn off the hot wire cutter and continue turning the block for about a second to get a smooth transition. Do not throw away the scraps as they will be used as a guide later.

3 Now cut off a thin layer of approx. 1 to 2 mm on both the top and bottom of the cylinder to obtain a smooth surface. It is best to use the Guider for this. Make sure that the hole from the nail of the Circular Cutting Board (from step 1) is still visible as the centre mark. If you do

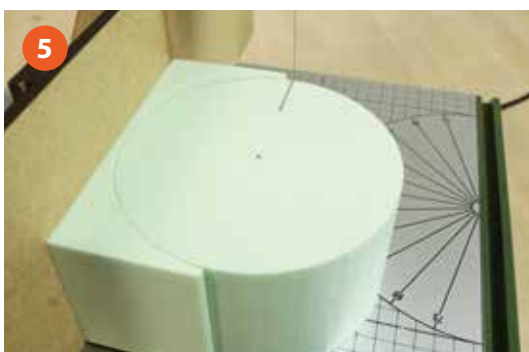
not have this tool, draw the centre point by hand.

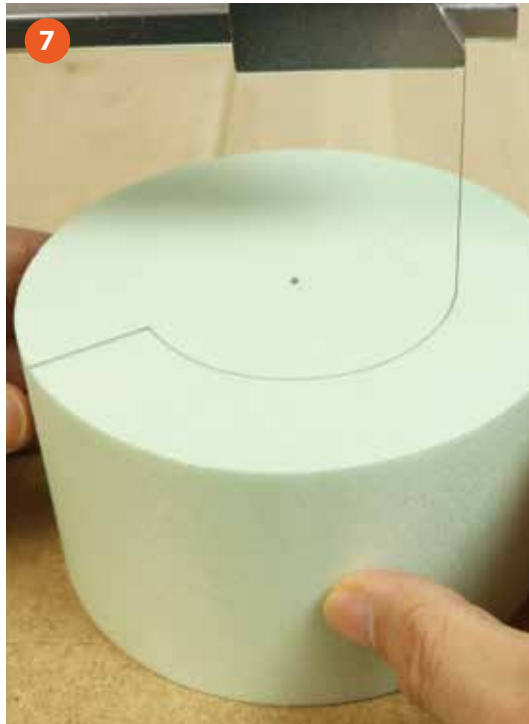
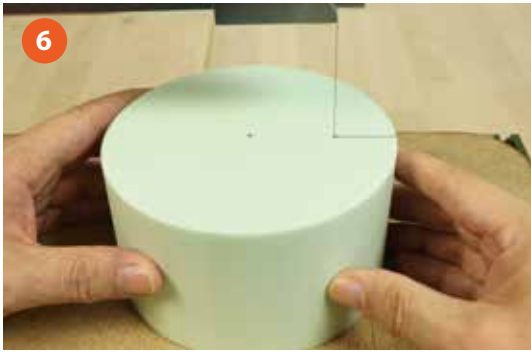
4 Using the layer cut from the bottom, mark the centre of the top of the cylinder with a pencil. Then draw a 3 cm line anywhere on the top of the cylinder from the edge towards the centre.

5 Now we need to make further cuts to the cylinder. Take the scraps from step 2 and cut them into two halves of approximately the same size. Place one half on the Guider on the Proxxon

Thermocut as shown in the picture. Place the cylinder and adjust everything so that you can cut exactly 3 cm deep and straight into the cylinder on the line previously drawn. Once the cutting depth is reached, turn off the Proxxon Thermocut and carefully guide the wire out.

| Component | Qty | Width | Depth | Height |
|-----------|-----|---------------|---------------|--------|
| Block | 1 x | approx. 15 cm | approx. 15 cm | 8 cm |





6 Now switch back to the Circular Cutting Board. Place the cylinder with its centre mark from step 1. Adjust everything so that the wire of the Proxxon Thermocut is vertical and at the inner end of the 3 cm deep cut from step 5.

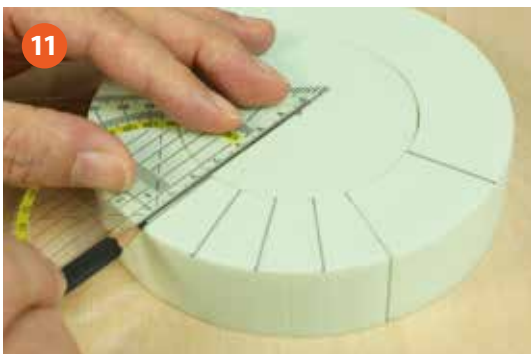
7 Turn on the Proxxon Thermocut and cut out the inside of the cylinder, creating an outer ring and an inner cylinder. Again, once you return to the starting point, turn the hot wire cutter off and continue to rotate everything for about a second to ensure a smooth transition.



8 Do not yet separate the outer ring and the cylinder from each other, but first cut a 3 cm layer from it. Doing it this way means you only need to make a single cut.



9 After cutting, you have four components in front of you: a 3 cm ring and 3 cm cylinder and an even taller ring and cylinder. The taller ring is put aside until step 14 and the taller cylinder is a leftover, but will be still needed in step 19.



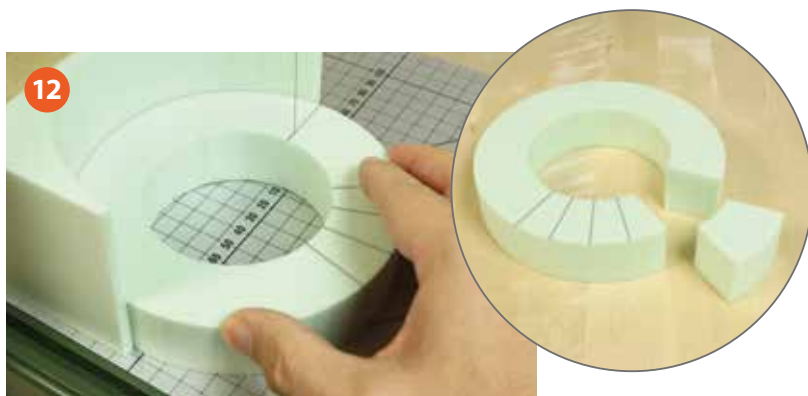
The Pedestal

10 Continue with the two 3 cm components which you will now transform step by step into a pedestal with stairs. Draw a mark on your pedestal ring, 2 cm clockwise from your incision point. Next to it, draw three more marks, each 2 cm away from

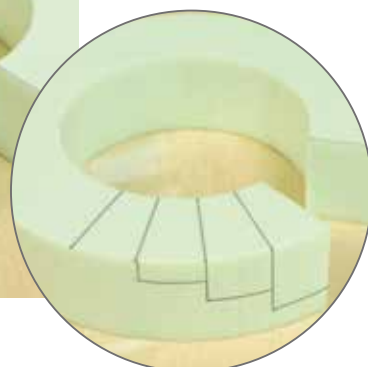
the previous mark. This makes a total of four marks, each 2 cm apart.

11 Now draw another mark: counterclockwise and at a distance of 4.5 cm from the incision point. Then from all five marks

draw a straight line towards the centre of the cylinder – but only on the pedestal ring (see picture). In order to be able to locate the centre precisely you will find it helpful to turn the cylinder with the hole from the Circular Cutting Board's nail.



12 Now back to the Proxon Thermocut: Use the scraps from step 2 as a convenient guide, insert the pedestal ring. Cut inward along your marked line, 4.5 cm from the incision point. In the following step the piece, when cut out will be cut into four equal discs of about 7.5 mm height.



13 Tip: Reduce the heat of the Proxon Thermocut to level 1 to 2 in order to cut as fine and loss-free as possible (minimal loss and a slight difference in height cannot be avoided and isn't a problem). Try out the size of your piece in advance on an extra piece of XPS foam from which you cut four test pieces. If these four test discs are the same height as your pedestal ring, the measurement is correct.

15 Back to our four cut-to-size pieces: From now on they serve as templates to draw the height of the steps. To do this, place a disc in the pedestal ring – as shown in the picture. Transfer the height of the disc onto the outside of the ring.

17 With a sharp craft knife, ideally with a long or extendable blade, cut along these lines and create the steps. **Tip:** Don't use too much pressure to guide your knife, cutting several times and always only 2 to 3 mm deep into the XPS foam – this will help you to keep full control and cut straight. The left-overs from step 2 can again be used as a helpful guide.

16 Then draw a vertical line down from your front-most mark at the top of the ring (see step 10) to the height mark you just drew. Repeat this for the next two marks from step 10 and with an additional disc each. Afterwards, the marks and lines seen in the round picture should be drawn in. You will need the last mark on top of the ring for step 18.

14 Continue to use the disc size currently set on the Proxon Thermocut. Cut a thin layer of about 7.5 mm from the taller ring from step 9. Put this layer and the taller ring aside for the time being.



The Upper Ring

18 Now we will continue cutting the taller ring from step 9 or 14: Place what we will, from now on, call the Upper Ring, on your pedestal ring – with the cut point flush with your last mark on the pedestal ring (see step 16). Then mark on the Upper Ring where the vertical edge of the pedestal ring begins, as shown: this is the overhang-mark.

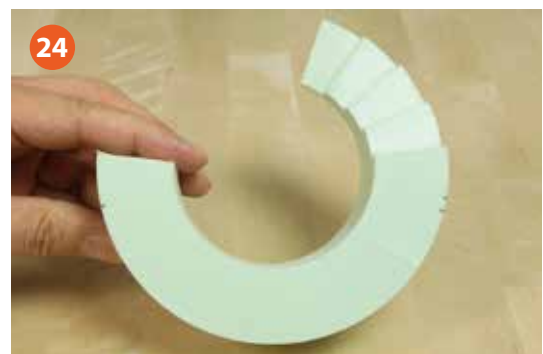
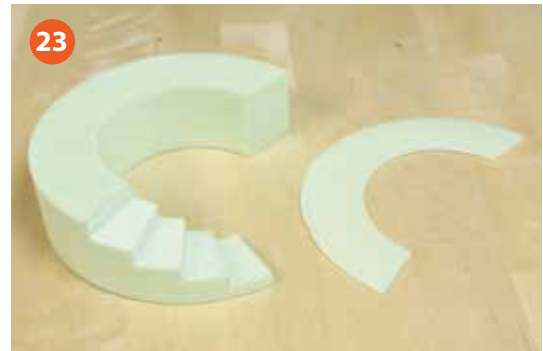
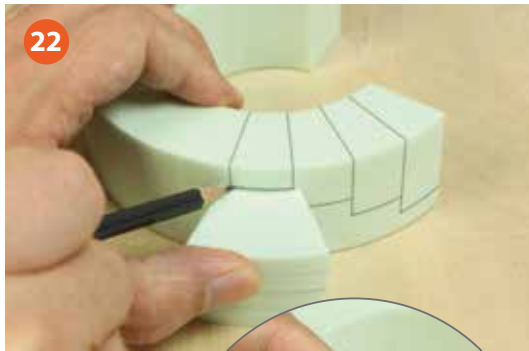
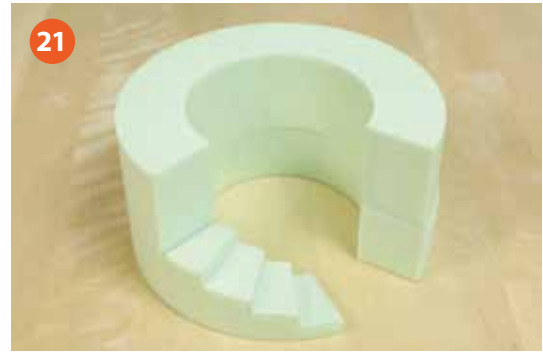
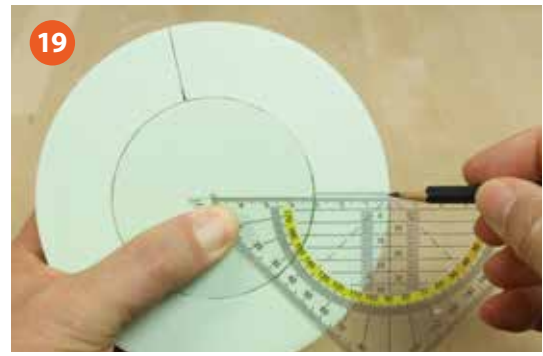
19 Now place the taller cylinder with the marked centre in the Upper Ring. Draw a line from the protrusion mark on the Upper Ring to the cylinder centre (place the cut residue from step 9 into the ring as shown). This line is also drawn only on the ring – like the lines in step 11.

20 Cut off this overhang as you did for the pedestal ring (see step 12). Again use the cutting scraps as a guide.

21 Both rings stacked on top of each other should now look like the picture.

22 Using the 7.5 mm pieces from step 13, you can now draw steps in the Upper Ring. The number of steps can vary depending on the height of your ring. Then cut off all excess areas as in step 17.

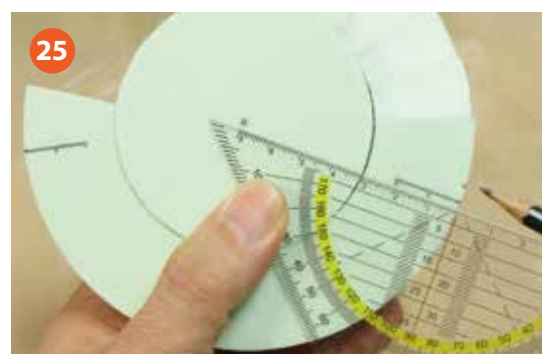
23 If the top landing no longer corresponds to a full staircase height, then simply cut off the overhang from the top of the Upper Ring.

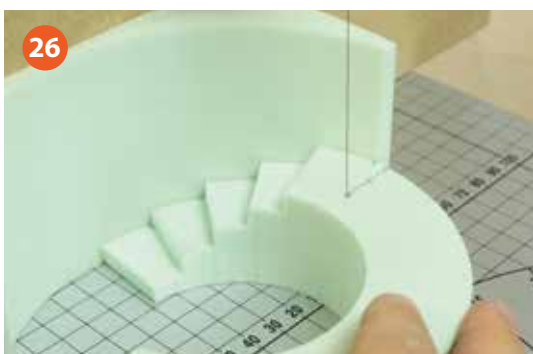


Cutting the Upper Ring

24 Draw three marks on the top of the Upper Ring: The first is 2 cm from the top edge of the top step (and is only needed in step 36). The second is placed about 2.5 cm from the top edge of the staircase, i.e. 0.5 cm next to the first. Draw the third mark at the other end of the ring, exactly 2 cm from the edge.

25 From the second and third marks, draw 2 cm long lines on the ring (!) in the direction of the centre – the use of the cylinder, with its centre mark, will help with orientation. In addition, every 1 cm set another mark inwards – as shown in the picture.





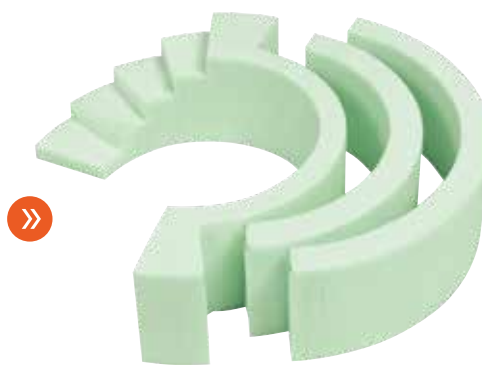
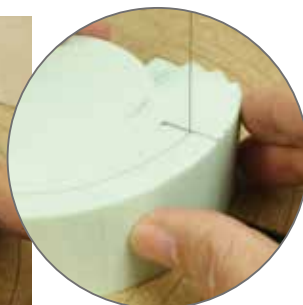
26 With the help of the scraps, use the Proxxon Thermocut to cut along the two 2 cm lines into the ring. Reduce the heat to level 1 to 2. When you reach the end of each line, switch off the device and carefully remove the ring from the wire.



27 Switch to the Circular Cutting Board. Take the pedestal cylinder and place the Upper Ring as shown. Then insert the wire from the still switched off Proxxon Thermocut into one of the incisions from the previous step – but only up to the 1 cm mark (!).

28 Switch on the Proxxon Thermocut and cut with a slow rotating movement to the other cutting line and the 1 cm mark there. Once there, turn off the Proxxon Thermocut. We will now call the cut piece Wall 1.

29 Lead the cold wire of the switched off Proxxon Thermocut to the end of the incision. Then switch on the device to cut to the end of the other cut. This will give you another layer of wall: Wall 2.



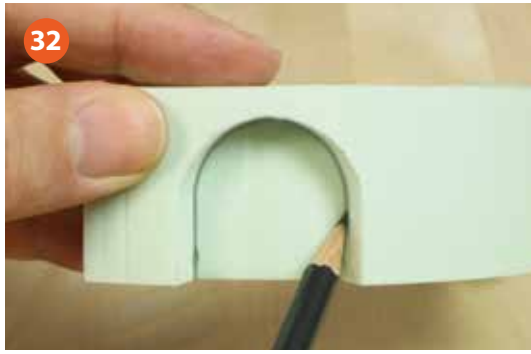
The Wall Openings

30 Take Wall 1 and any round arch template (we use the 3.5 cm wide Round Arch Template from the Template Set here). Place your template straight or vertically on the outside of Wall 1 and transfer the outer (!) outline. You are free to choose the position and number of your outlines – we have drawn two outlines at the same distance of about 2 cm from the outer edges.

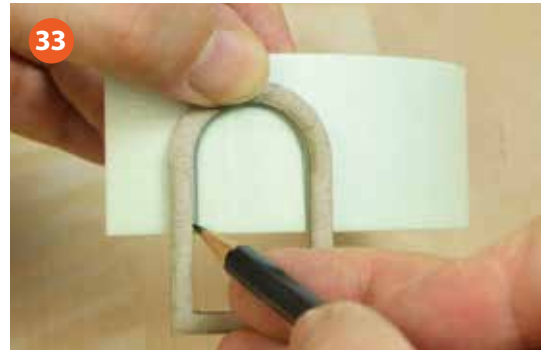


31 Now cut out along these contours with a sharp craft knife. **Note:** Due to the curvature of the wall, the opening narrows a little on the inside. After cutting out, any slight unevenness on the XPS foam can be smoothed out with a round object (such as a pencil). (Further tips for cutting out doors and windows can be found on page 46.)

32 Wall 1 and 2 are now placed flush against each other. Transfer the outlines of the openings to Wall 2.



33 Place the template on these marks to transfer the inner (!) contour to the outside of Wall 2.

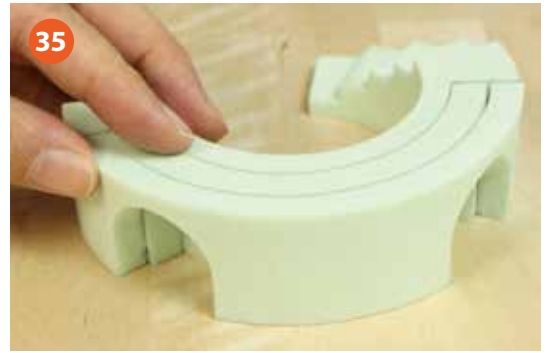


Note: As mentioned in step 31, your outer outline transferred from Wall 1 is now smaller than the outline of the Round Arch Template is. Therefore, align the template as evenly as possible with your marks.

34 Now cut out along these inner outlines with a sharp craft knife.



35 Wall 1 and 2 should be flush and glued into the ring with some wood glue.



36 Finally mount the 7.5 mm layer from step 14: Place this layer at the very top of the Upper Ring – flush with the first mark from step 24, so that another step is created. Mark the protruding end on the layer and cut it off. Then glue the layer flush with the ring.



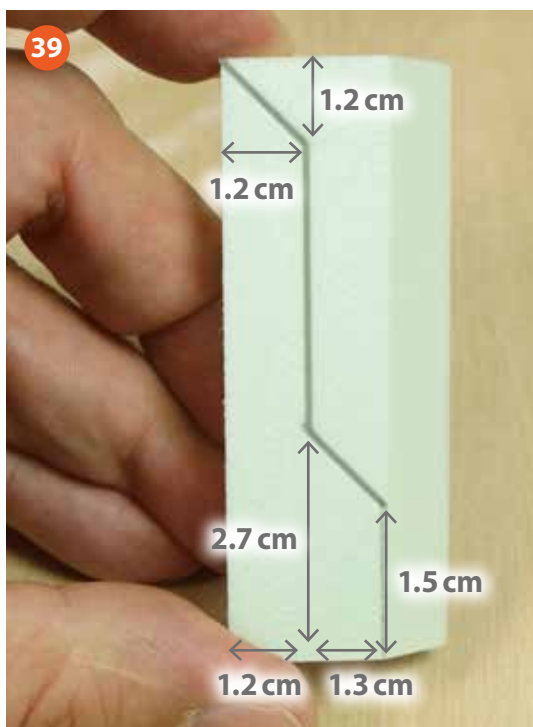
The Buttresses

37 The next step is to cut supporting pillars or buttresses that fit perfectly to the outside curve of our Podium. For this we need the 8 cm leftover pieces from step 2, specifically the thicker corner pieces. Draw two lines on these corner pieces per buttress, at least 2.5 cm long and parallel to each other at a distance of about 1.2 cm. Our model will get four buttresses, so we draw eight such lines (see picture). But you can choose your own number as you wish.



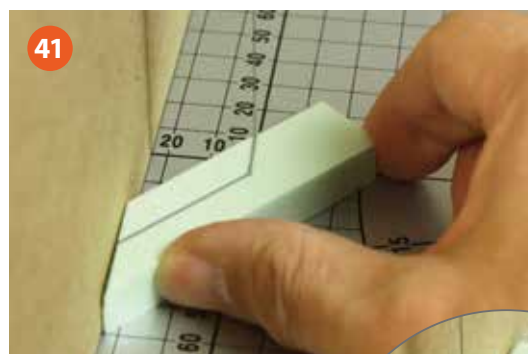
38 These buttress components are cut out freehand with the Proxxon Thermocut. **Tip:** You can also cut out the pieces a bit more generously and then use the Guide to cut them to the desired size or width. (For more information on Freehand Cutting, see page 52.)



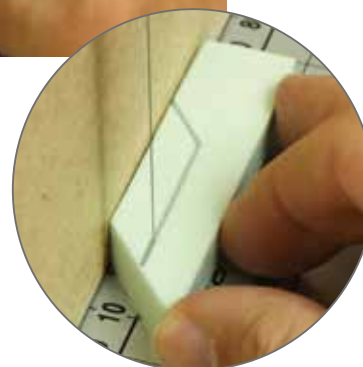


39 Then draw on one large side of each component one of these or similar individual forms. You can of course use the 7 cm tall Buttress Template from the Template Set. You will find all measurements for tracing in the photo. **Note:** Since the left-over pieces are 8 cm tall, but your podium is only about 7.5 cm due to multiple cuts, shorten your buttresses to 7 cm or less. 7 cm fits perfectly to the Buttress Template.

40 Now cut off the excess next to your outlines with the Proxxon Thermocut, set to level 2. For the first cut, place the component directly behind the wire so that the outline shown in the picture is flush with the wire. Slide the Guider up to stabilize it and then pull the component towards you through the wire.



41 For final cutting, align the component by means of the Guider so that the other short outline is flush with the wire. Then cut in as far as the corner and then switch the machine off immediately. Turn the component to the remaining line, push the Guider towards it for stabilisation and cut off the rest. (For tips on the On/Off Cutting technique, see from page 48 onwards.)



Texturing, Assembly and Painting

42 Now you can glue and add texture to your Podium. We have chosen an irregular fieldstone texture (see from page 16) and there are alternative ideas from page 14.

43 Finally you can start to paint the Podium. We've made some suggestions and painting tips for stone textures and other textures from page 24.

44 We chose light, warm stone colours. **We hope you have fun building your own Podium.**

