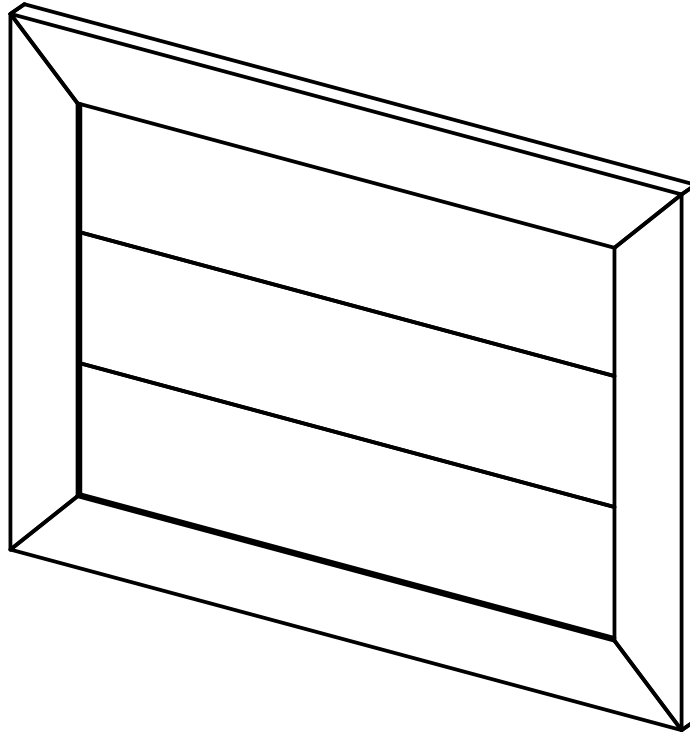


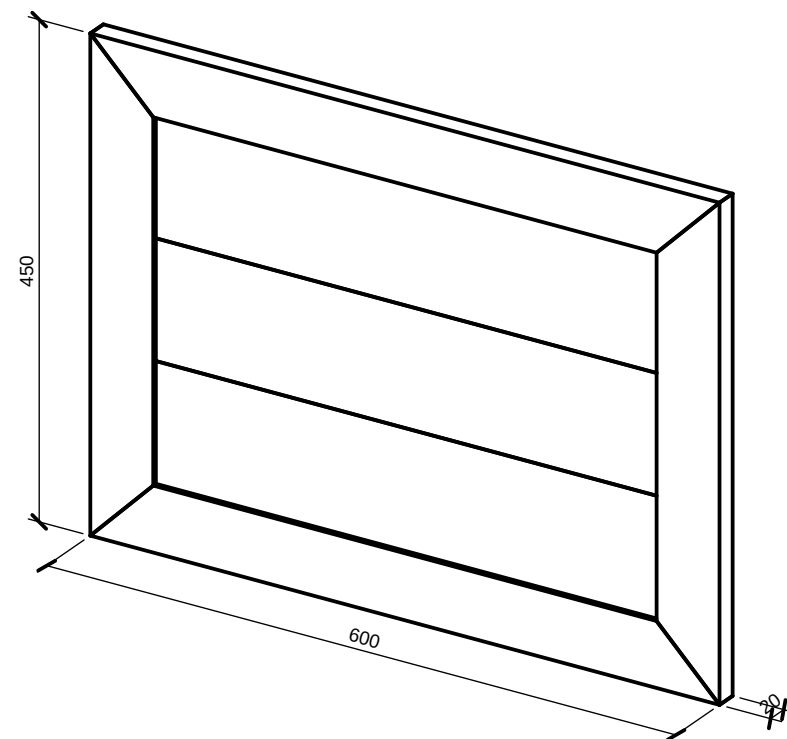
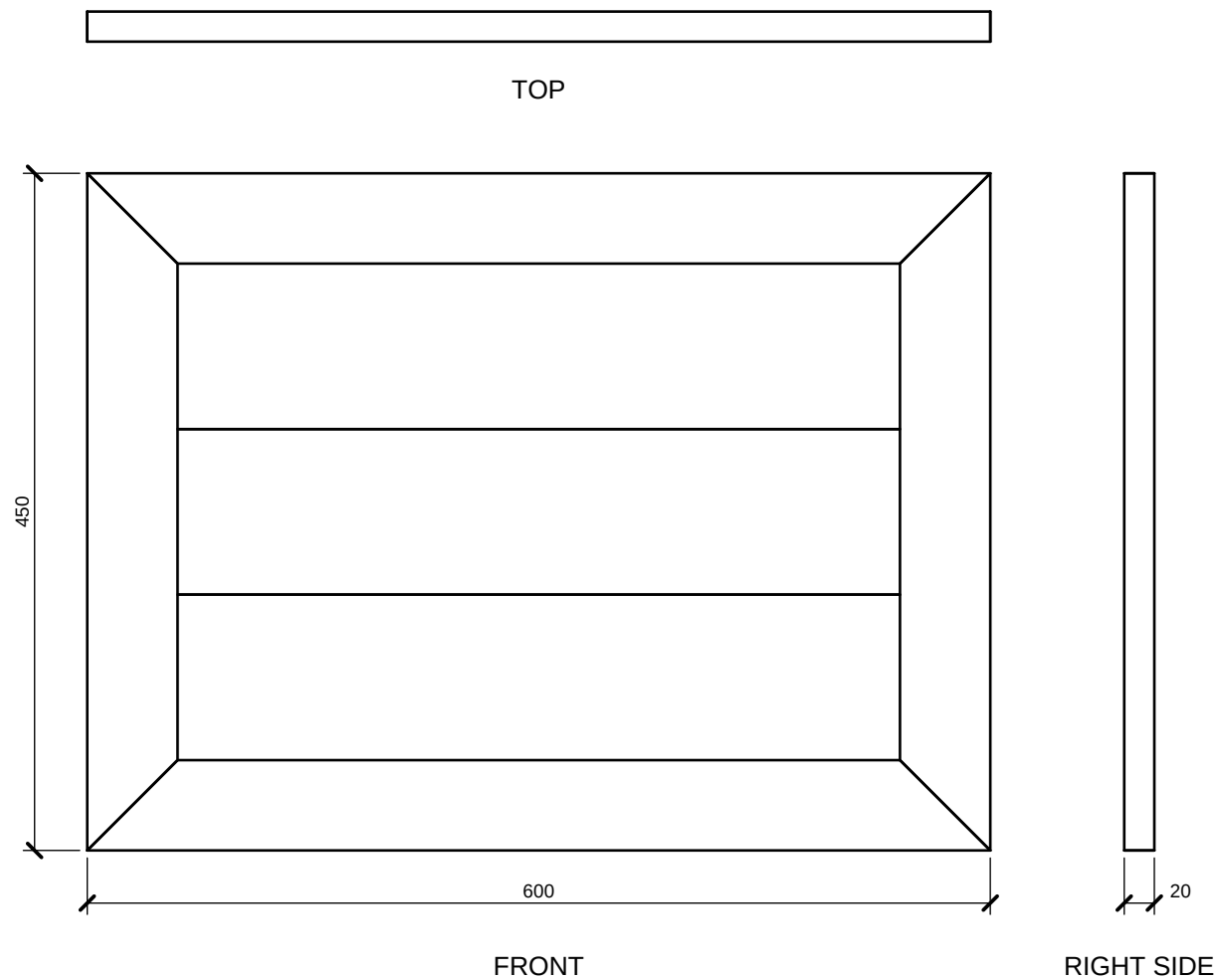
Mitred frame and panel



parts	7 (4 different)
overall	600 x 20 x 450 (W x D x H)
material	oak
date	2026-10-25
made with	woodwright 0.9.0

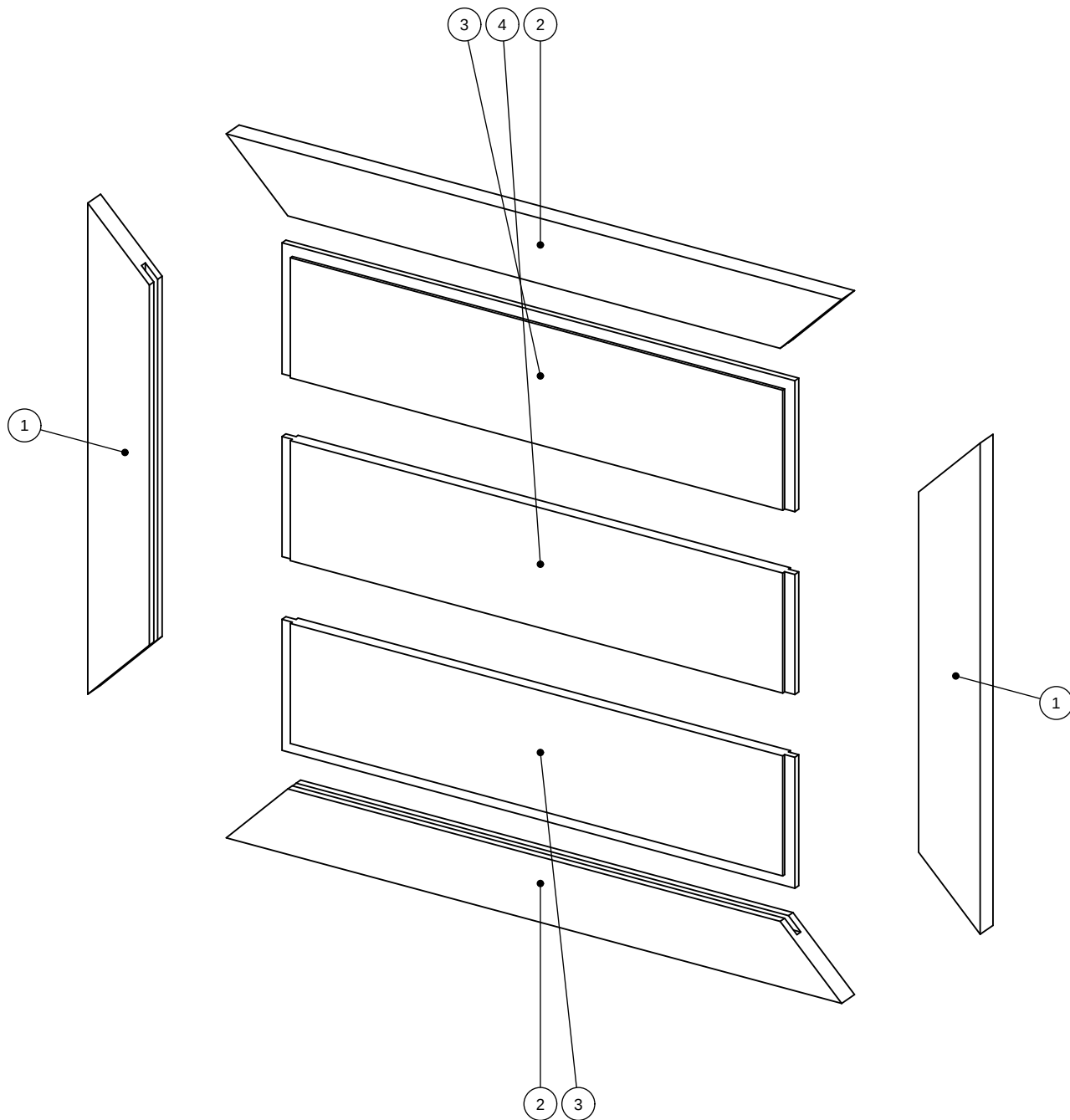
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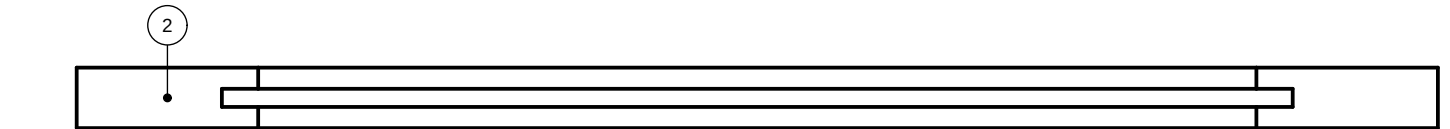
ISOMETRIC

assembly	mitred_frame_and_panel
parts	7 (4 different)
overall	600 x 20 x 450 (W x D x H)
material	oak
scale	1:5, mm

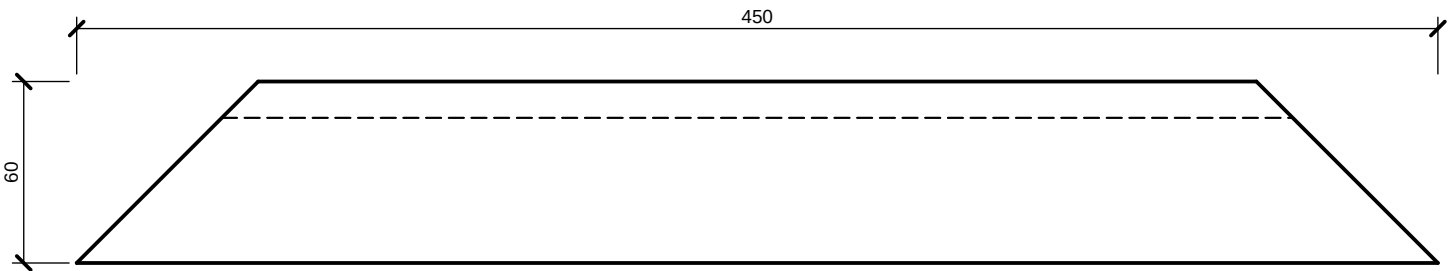


no.	part	qty	cut size (L x W x T)	material
1	left_right	2	450 x 60 x 20	oak
2	top_bottom	2	600 x 60 x 20	oak
3	panel	2	500 x 120 x 12	oak
4	panel_2	1	500 x 110 x 12	oak

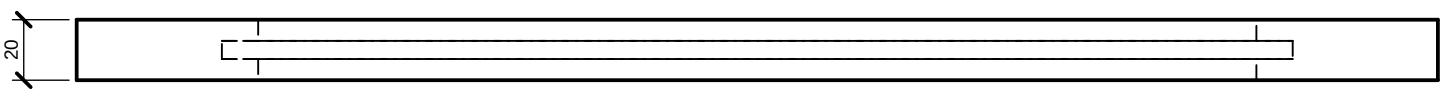
assembly	mitred_frame_and_panel
parts	7 (4 different)
overall	600 x 20 x 450 (W x D x H)
material	oak
scale	not to scale, mm



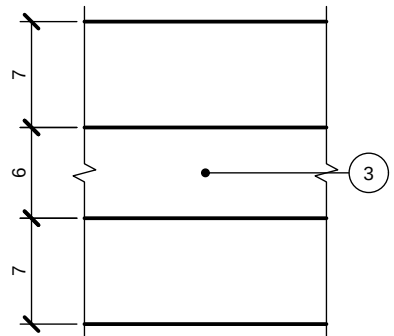
BACK EDGE



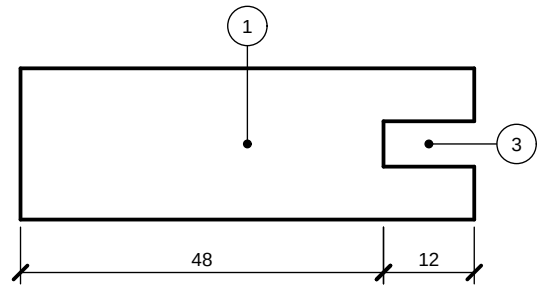
TOP FACE



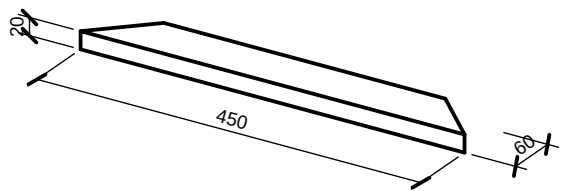
FRONT EDGE



BACK EDGE: 3 2:1



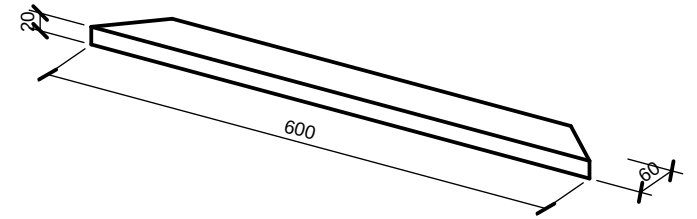
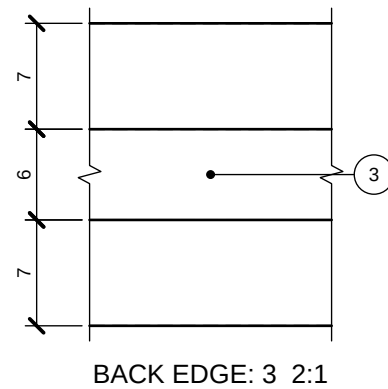
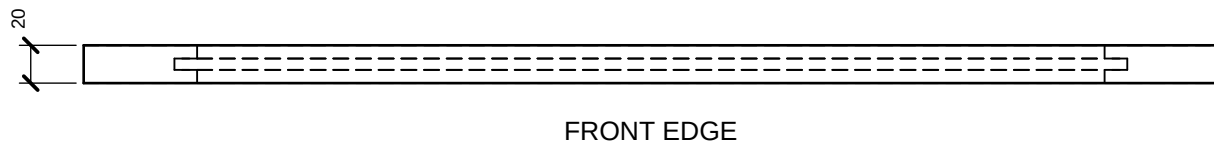
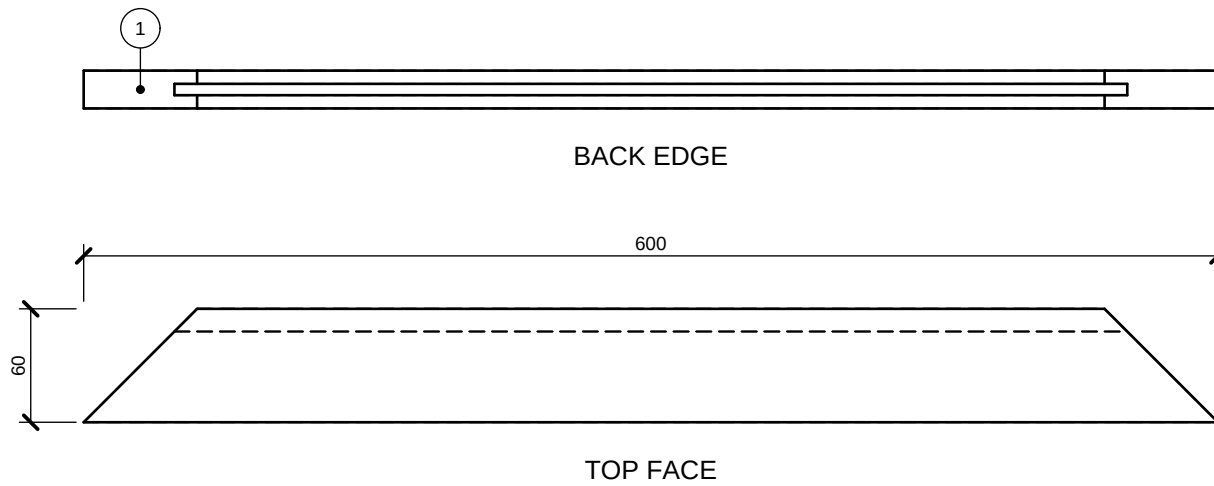
RIGHT END 1:1



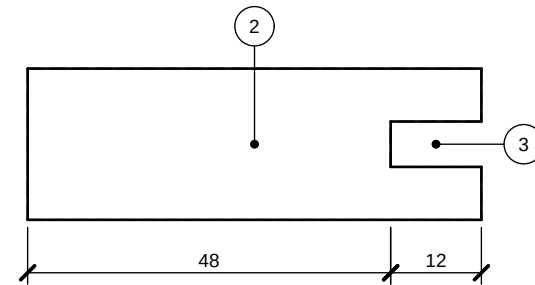
ISOMETRIC

- 2 pieces: left, right
- 1 mitre 45 deg on right_end, back_edge inside
 - 2 mitre 45 deg on left_end, back_edge inside
 - 3 groove 6 mm, 12 deep, in back_edge

part	left_right
of	mitred_frame_and_panel
make	2
cut size	450 x 60 x 20
material	oak
scale	1:2.5, mm



ISOMETRIC

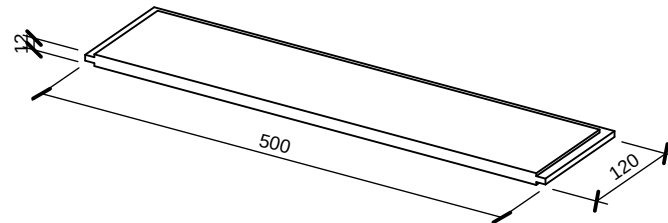
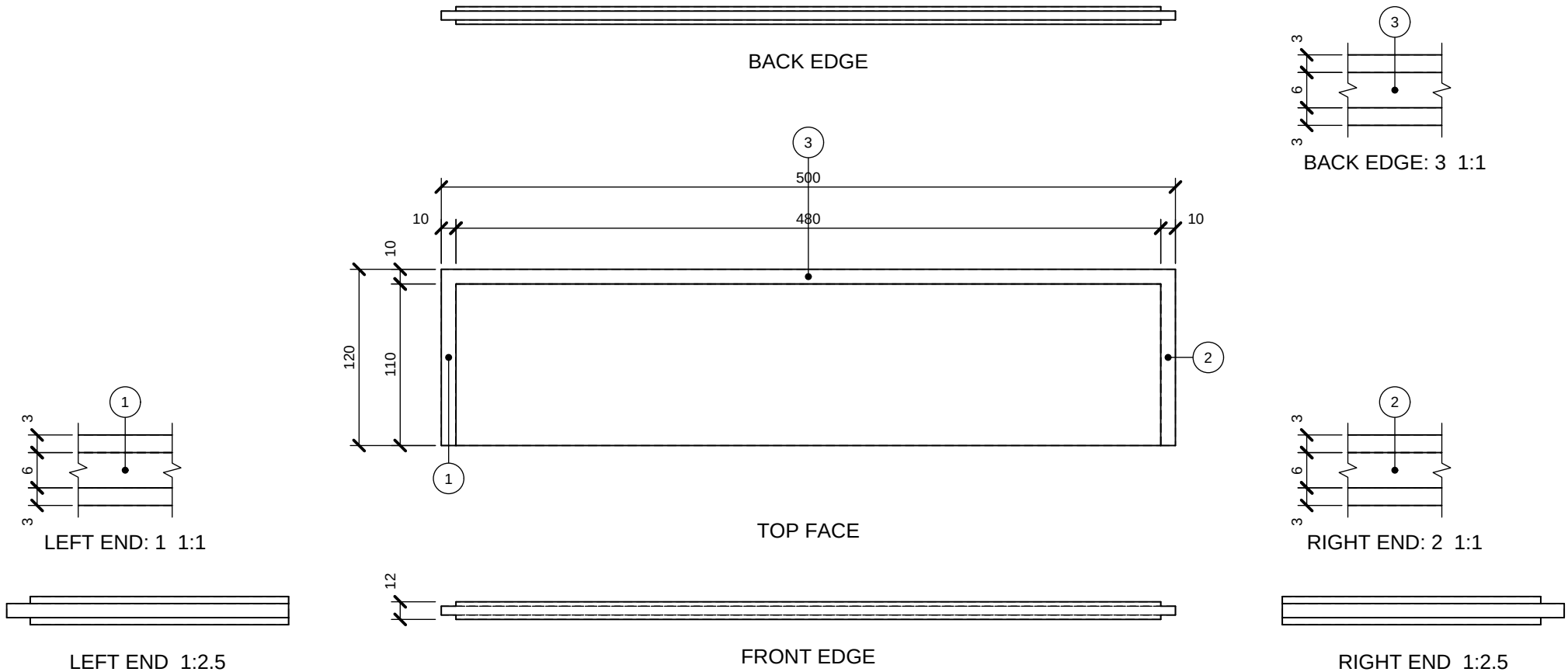


RIGHT END 1:1

2 pieces: top, bottom

- 1 mitre 45 deg on left_end, back_edge inside
- 2 mitre 45 deg on right_end, back_edge inside
- 3 groove 6 mm, 12 deep, in back_edge

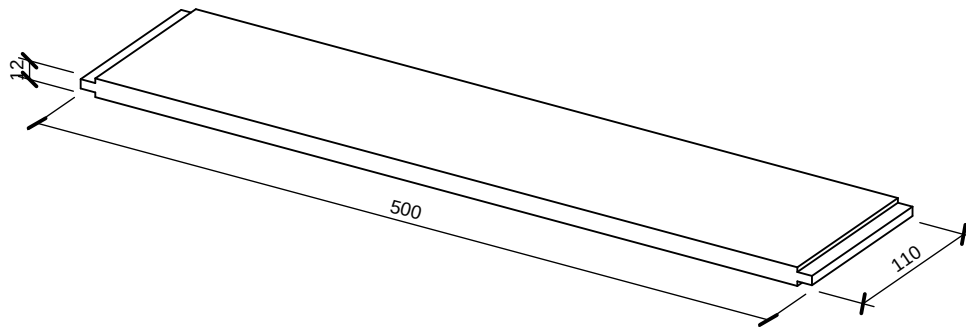
part	top_bottom
of	mitred_frame_and_panel
make	2
cut size	600 x 60 x 20
material	oak
scale	1:4, mm



ISOMETRIC

- 2 pieces: panel_1, panel_3
- 1 tongue 6 mm thick, 10 long, on left_end
 - 2 tongue 6 mm thick, 10 long, on right_end
 - 3 tongue 6 mm thick, 10 long, on back_edge

part	panel
of	mitred_frame_and_panel
make	2
cut size	500 x 120 x 12
material	oak
scale	1:4, mm



ISOMETRIC

- 1 tongue 6 mm thick, 10 long, on left_end
- 2 tongue 6 mm thick, 10 long, on right_end

part	panel_2
of	mitred_frame_and_panel
make	1
cut size	500 x 110 x 12
material	oak
scale	1:4, mm

Cut list

left_right 450 x 60 x 20 mm oak, 2 pieces: left, right
- mitre 45 deg on right_end, back_edge inside
- mitre 45 deg on left_end, back_edge inside
- groove 6 mm, 12 deep, in back_edge

top_bottom 600 x 60 x 20 mm oak, 2 pieces: top, bottom
- mitre 45 deg on left_end, back_edge inside
- mitre 45 deg on right_end, back_edge inside
- groove 6 mm, 12 deep, in back_edge

panel 500 x 120 x 12 mm oak, 2 pieces: panel_1, panel_3
- tongue 6 mm thick, 10 long, on left_end
- tongue 6 mm thick, 10 long, on right_end
- tongue 6 mm thick, 10 long, on back_edge

panel_2 500 x 110 x 12 mm oak
- tongue 6 mm thick, 10 long, on left_end
- tongue 6 mm thick, 10 long, on right_end

Appendix: source

Made with woodwright 0.9.0, build123d 0.13.0, Python 3.14.4.

To make these plans again:

```
uvx --python 3.14 woodwright==0.9.0 export frames.mitred_frame_and_panel
```

frames.mitred_frame_and_panel, in woodwright/examples/frames.py

```
def mitred_frame_and_panel(
    width: float = 600,
    height: float = 450,
    member_width: float = 60,
    boards: int = 3,
    tongue_length: float = 10,
    clearance: float = 2,
    stock: Stock = OAK,
    panel_stock: Stock = SIDE_OAK,
) -> Assembly:
    """A frame mitred at the corners, a panel glued up from `boards` boards
    tongued into a groove along its inside edges; outside sizes.

    The members are mitred as in a picture frame; the grooves run through
    them and out at the mitres, where they meet and are hidden. The boards
    run along the width, butt-joined edge to edge; the ends of all of them
    and the outer edges of the outer ones are tongued into the grooves. The
    panel's design size is the opening of the frame, the tongues add to it;
    it is centered in the frame's thickness and not glued in, the grooves
    `clearance` deeper than the tongues so that it can swell.
    """
    asm = Assembly("mitred_frame_and_panel", root_location=STANDING)
    left = asm.add(Board("left", stock, length=height, width=member_width))
    top = asm.add(Board("top", stock, length=width, width=member_width))
    right = asm.add(Board("right", stock, length=height, width=member_width))
    bottom = asm.add(Board("bottom", stock, length=width, width=member_width))
    members = [left, top, right, bottom]
    # Going round from the bottom of the left member, the back edges inside.
    for a, b in zip(members, members[1:] + members[:1], strict=True):
        asm.join(MitreCorner(a.right_end, b.left_end, a.back_edge, b.back_edge))
```

```

board_width = (height - 2 * member_width) / boards
panel = [
    asm.add(
        Board(f"panel_{i + 1}", panel_stock, length=width - 2 * member_width, width=board_width)
    )
    for i in range(boards)
]
# The boards' front edges up (their reference faces are at the back).
for a, b in itertools.pairwise(panel):
    asm.join(Butt(a.front_edge, b.back_edge))

def tongue(edge: SideRef, groove: SideRef, position: Position = CENTERED) -> None:
    asm.join(
        TongueAndGroove(
            tongue=edge,
            groove=groove,
            tongue_length=tongue_length,
            position=position,
            across=CENTERED,
            clearance=clearance,
        )
    )

# From the bottom up; the left member's left end is at the bottom, the
# right member's right end.
for i, board in enumerate(panel):
    below = member_width + i * board_width
    tongue(board.left_end, left.back_edge, offset(below, left.left_end))
    tongue(board.right_end, right.back_edge, offset(below, right.right_end))
tongue(panel[0].back_edge, bottom.back_edge)
tongue(panel[-1].front_edge, top.back_edge)
return asm

```