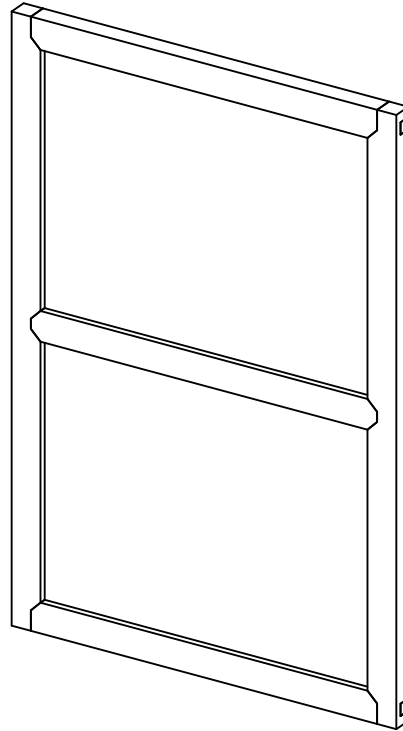


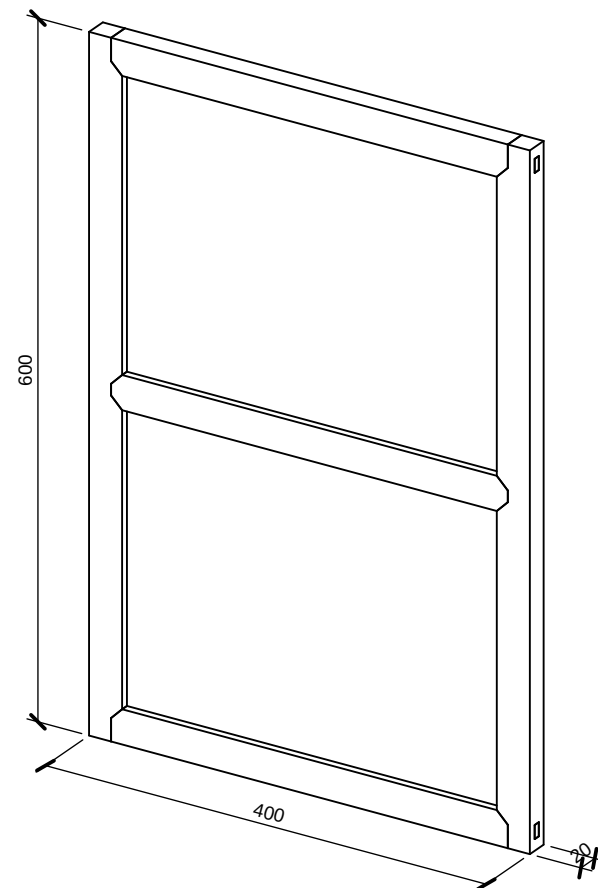
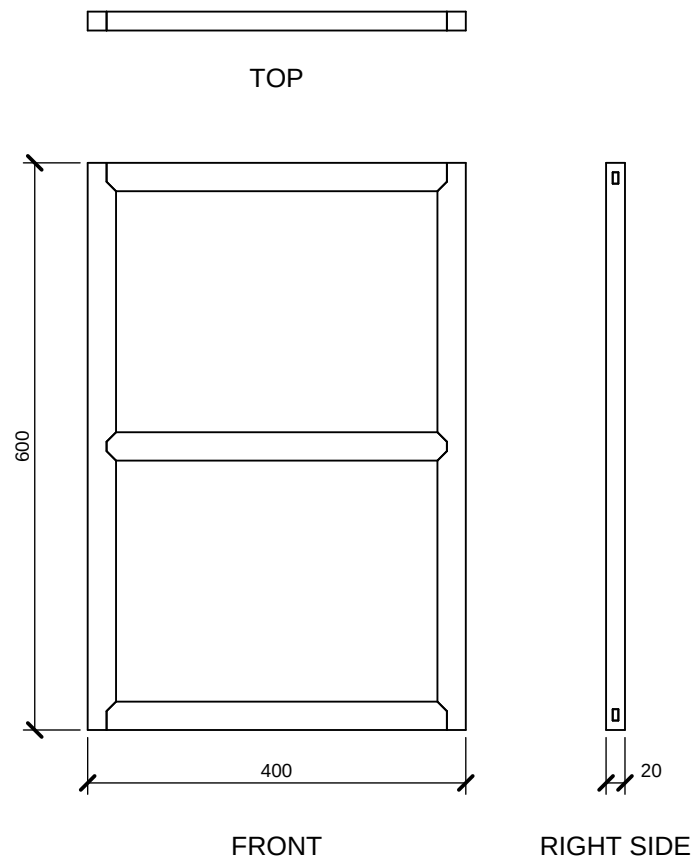
Cabinet door



parts	7 (5 different)
overall	400 x 20 x 600 (W x D x H)
material	glass, oak, plywood
date	2026-10-25
made with	woodwright 0.9.0

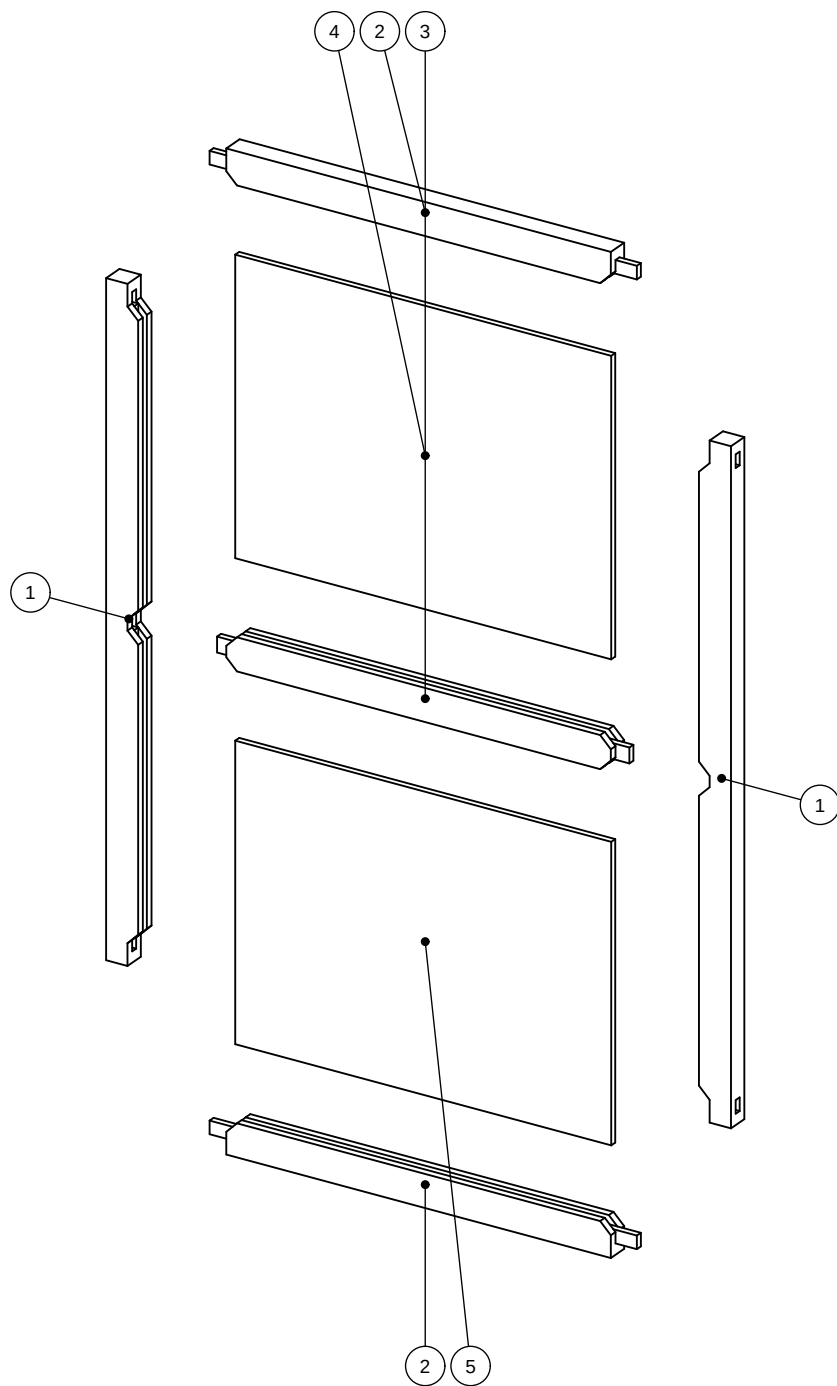
Contents

Drawings	3
Assembly	3
Parts	4
1 stile	5
2 rail	6
3 rail_middle	7
4 panel_top	8
5 panel_bottom	9
 Cut list	 10
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ISOMETRIC

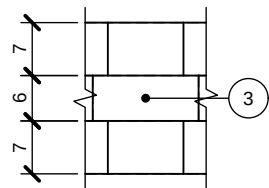
assembly	cabinet_door
parts	7 (5 different)
overall	400 x 20 x 600 (W x D x H)
material	glass, oak, plywood
scale	1:8, mm



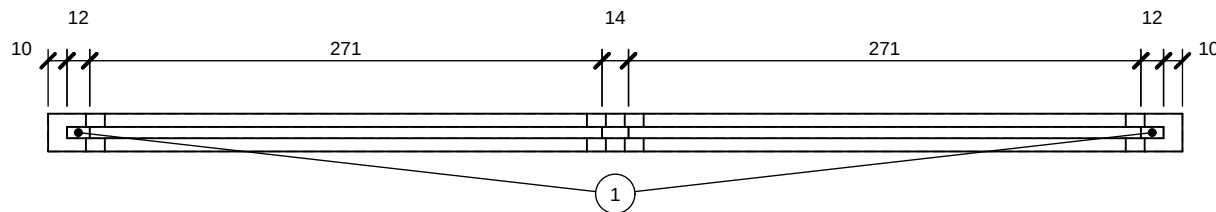
EXPLODED

no.	part	qty	cut size (L x W x T)	material
1	stile	2	600 x 30 x 20	oak
2	rail	2	400 x 30 x 20	oak
3	rail_middle	1	386 x 30 x 20	oak
4	panel_top	1	352 x 267 x 6	glass
5	panel_bottom	1	352 x 267 x 6	plywood

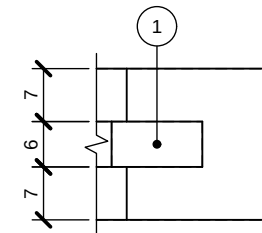
assembly	cabinet_door
parts	7 (5 different)
overall	400 x 20 x 600 (W x D x H)
material	glass, oak, plywood
scale	not to scale, mm



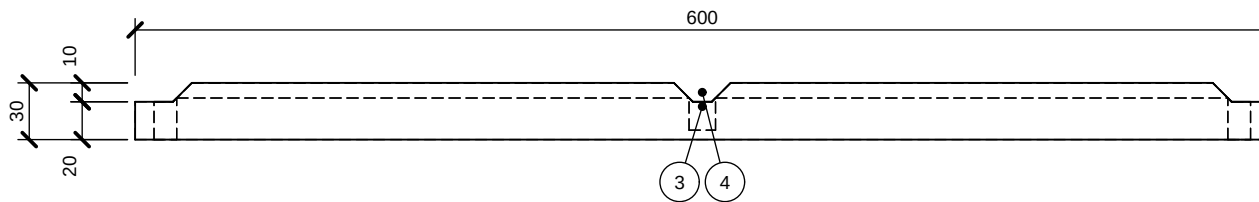
BACK EDGE: 3 1:1



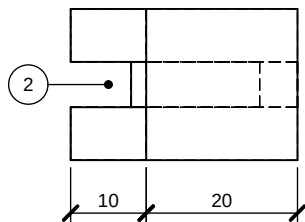
BACK EDGE



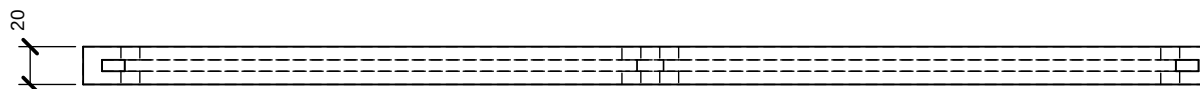
BACK EDGE: 1, 5 1:1



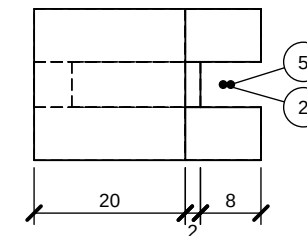
TOP FACE



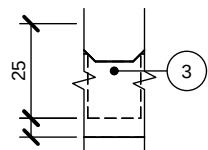
LEFT END 1:1



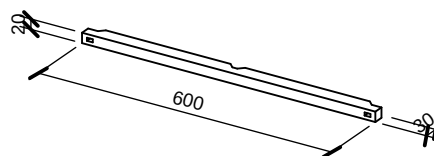
FRONT EDGE



RIGHT END 1:1



TOP FACE: 3 1:2



ISOMETRIC

2 pieces: stile_left, stile_right

1 2 x through mortise 12 x 6 mm in back_edge

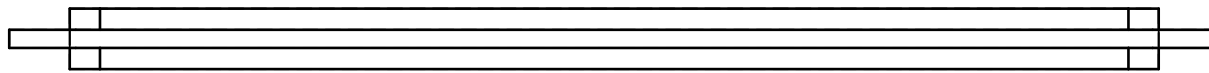
2 2 x notch 30 long, 10 deep, mitred at one end, in back_edge

3 mortise 14 x 6 mm, 25 deep, in back_edge

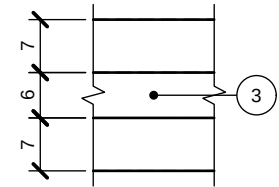
4 notch 30 long, 10 deep, mitred at both ends, in back_edge

5 groove 6 mm, 8 deep, in back_edge

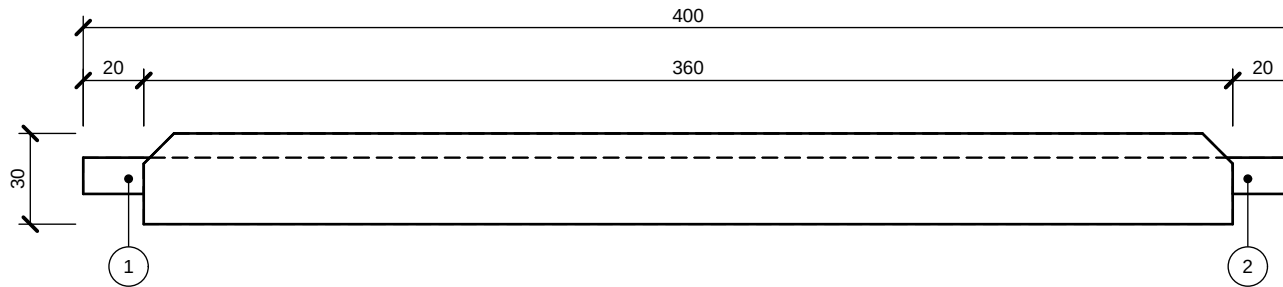
part	stile
of	cabinet_door
make	2
cut size	600 x 30 x 20
material	oak
scale	1:4, mm



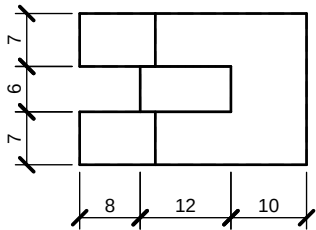
BACK EDGE



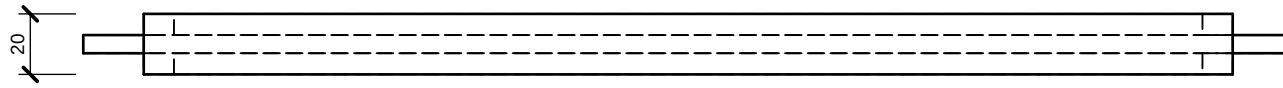
BACK EDGE: 3 1:1



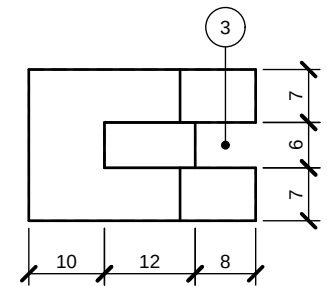
TOP FACE



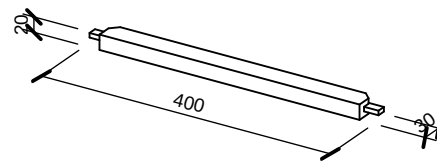
LEFT END 1:1



FRONT EDGE



RIGHT END 1:1

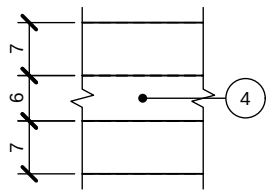


ISOMETRIC

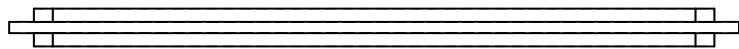
2 pieces: rail_top, rail_bottom

- 1 tenon 12 x 6 mm, 20 long, reaching 10 beyond the shoulder, mitred at back_edge, on left_end
- 2 tenon 12 x 6 mm, 20 long, reaching 10 beyond the shoulder, mitred at back_edge, on right_end
- 3 groove 6 mm, 8 deep, in back_edge

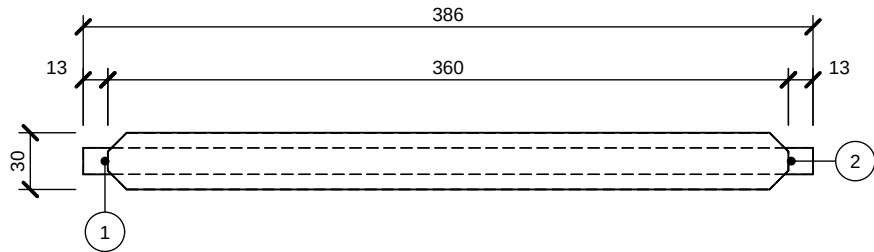
part	rail
of	cabinet_door
make	2
cut size	400 x 30 x 20
material	oak
scale	1:2.5, mm



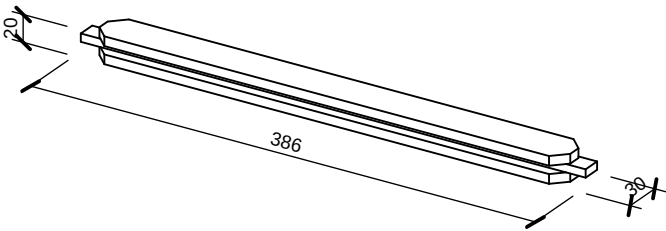
BACK EDGE: 4 1:1



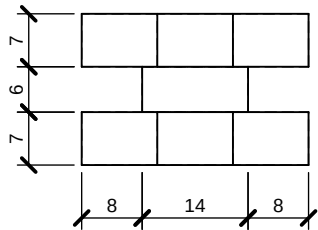
BACK EDGE



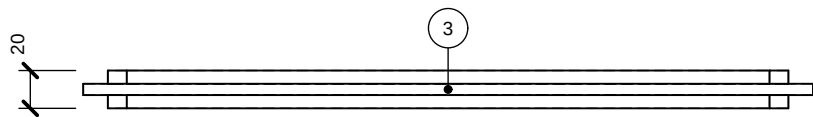
TOP FACE



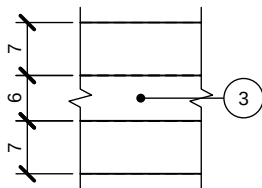
ISOMETRIC



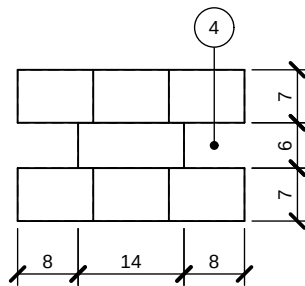
LEFT END 1:1



FRONT EDGE



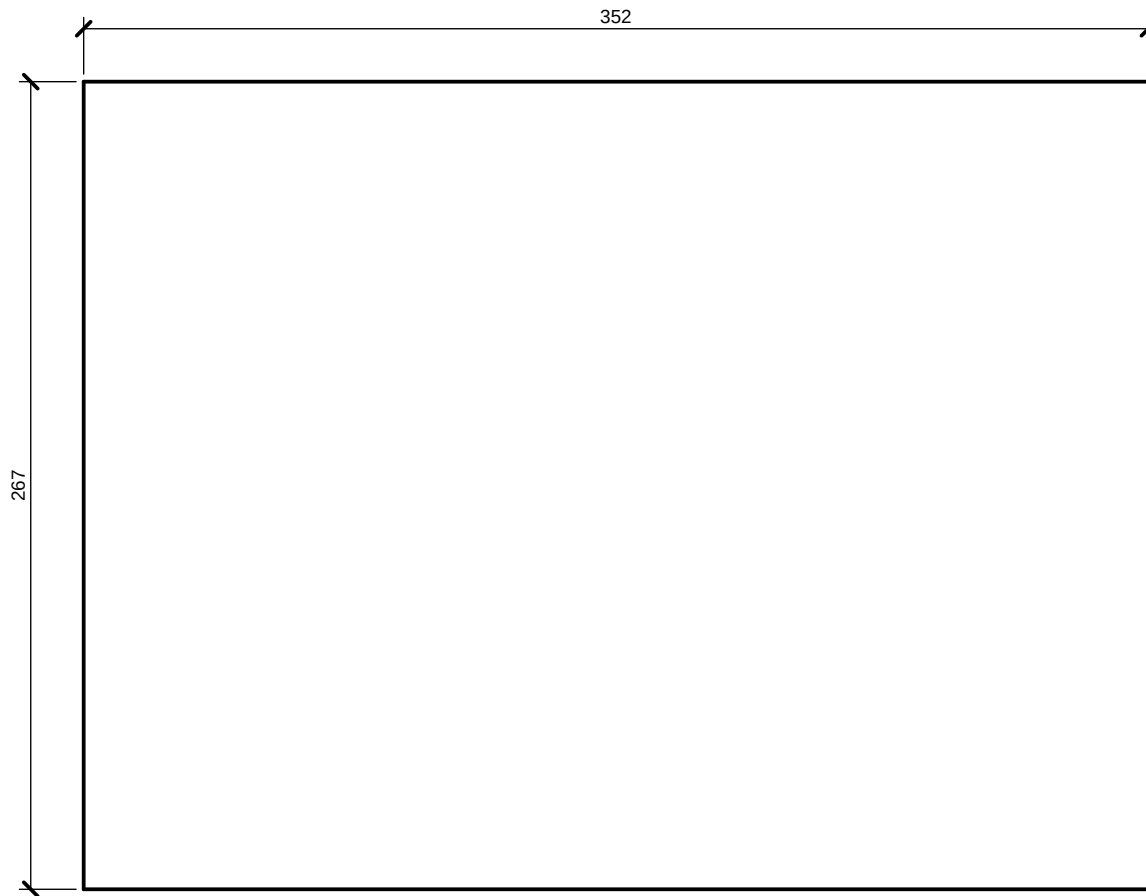
FRONT EDGE: 3 1:1



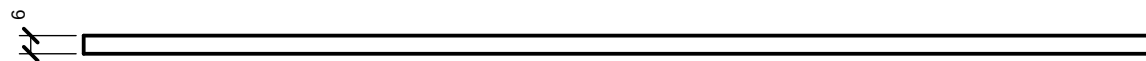
RIGHT END 1:1

- 1 tenon 14 x 6 mm, 13 long, reaching 10 beyond the shoulder, mitred at front_edge, back_edge, on left_end
- 2 tenon 14 x 6 mm, 13 long, reaching 10 beyond the shoulder, mitred at front_edge, back_edge, on right_end
- 3 groove 6 mm, 8 deep, in front_edge
- 4 groove 6 mm, 8 deep, in back_edge

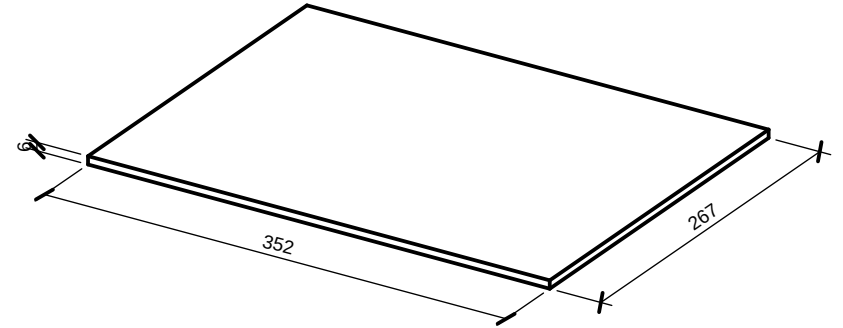
part	rail_middle
of	cabinet_door
make	1
cut size	386 x 30 x 20
material	oak
scale	1:4, mm



TOP FACE

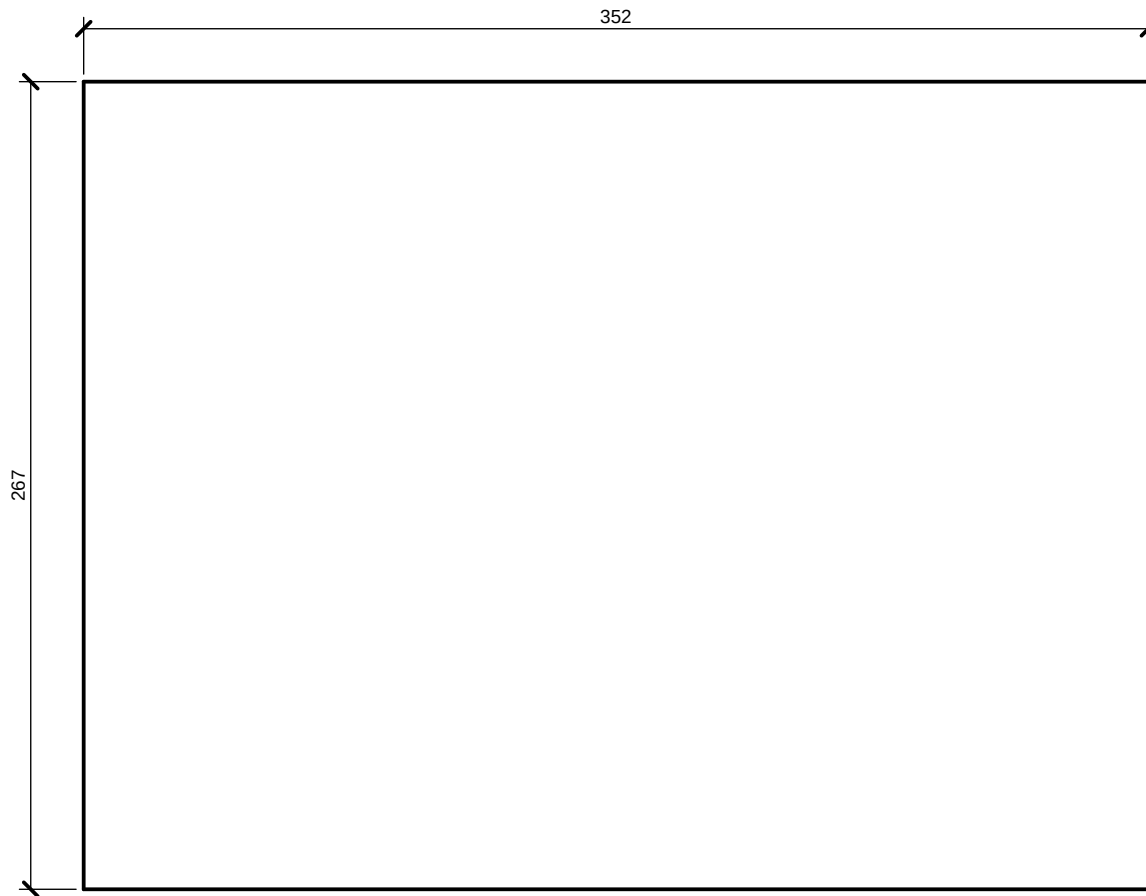


FRONT EDGE

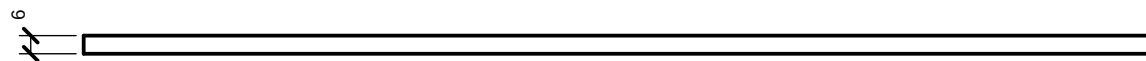


ISOMETRIC

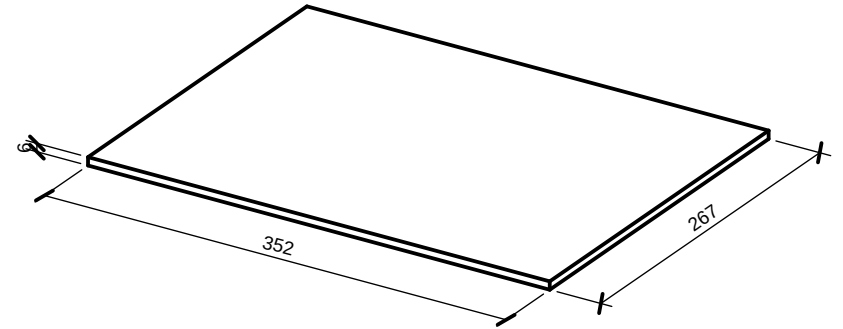
part	panel_top
of	cabinet_door
make	1
cut size	352 x 267 x 6
material	glass
scale	1:2.5, mm



TOP FACE



FRONT EDGE



ISOMETRIC

part	panel_bottom
of	cabinet_door
make	1
cut size	352 x 267 x 6
material	plywood
scale	1:2.5, mm

Cut list

stile	600 x 30 x 20 mm oak, 2 pieces: stile_left, stile_right
	- 2 x through mortise 12 x 6 mm in back_edge
	- 2 x notch 30 long, 10 deep, mitred at one end, in back_edge
	- mortise 14 x 6 mm, 25 deep, in back_edge
	- notch 30 long, 10 deep, mitred at both ends, in back_edge
	- groove 6 mm, 8 deep, in back_edge
rail	400 x 30 x 20 mm oak, 2 pieces: rail_top, rail_bottom
	- tenon 12 x 6 mm, 20 long, reaching 10 beyond the shoulder, mitred at back_edge, on left_end
	- tenon 12 x 6 mm, 20 long, reaching 10 beyond the shoulder, mitred at back_edge, on right_end
	- groove 6 mm, 8 deep, in back_edge
rail_middle	386 x 30 x 20 mm oak
	- tenon 14 x 6 mm, 13 long, reaching 10 beyond the shoulder, mitred at front_edge, back_edge, on left_end
	- tenon 14 x 6 mm, 13 long, reaching 10 beyond the shoulder, mitred at front_edge, back_edge, on right_end
	- groove 6 mm, 8 deep, in front_edge
	- groove 6 mm, 8 deep, in back_edge
panel_top	352 x 267 x 6 mm glass
panel_bottom	352 x 267 x 6 mm plywood

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 projects.cabinet_door
```

projects.cabinet_door, in woodwright/examples/projects.py

```
def cabinet_door(
    height: float = 600,
    width: float = 400,
    member_width: float = 30,
    mitre_depth: float = 10,
    groove_width: float = 6,
    groove_depth: float = 8,
    clearance: float = 2,
    stock: Stock = CABINET_DOOR_OAK,
    bottom_panel_stock: Stock = PLYWOOD,
    top_panel_stock: Stock = GLASS,
) -> Assembly:
    """A small cabinet door of 2 x 3 cm stock with mitred shoulder tenons,
    a plywood panel below the middle rail and a glass one above; outside sizes.
```

Two stiles, a top, a middle and a bottom rail. A groove runs through along the inside edges of all of them, centered in the thickness, the panels as thick as it is wide. Each rail reaches `mitre\_depth` into a notch in the stile, mitred at 45 degrees at its inside edges, where the grooves meet like in a mitred frame; the notch is deeper than the grooves, so they don't show at the ends of the stiles. The tenons are as thick as the grooves are wide and keep out of them, reaching only a little under the mitres. At the corners, mitred only inside, they go through the stiles, with full shoulders towards the ends; the middle rail, mitred at both edges, has a hidden stub tenon.

The panels don't move with moisture, but are set `clearance` short of the bottoms of the grooves all round, e.g. for glazing putty at the glass. The frame has to be glued up round them.

```
"""
```

```

rail_length = width - 2 * member_width

def corner(rail_end: SideRef, stile_edge: SideRef, position: Position, outer: SideRef) -> Joint:
    rail = rail_end.part
    inner = rail.back_edge if outer == rail.front_edge else rail.front_edge
    shoulders = (mitre_depth, groove_depth)
    return MitredShoulderTenon(
        tenon=rail_end,
        mortise=stile_edge,
        position=position,
        mitre_depth=mitre_depth,
        mitred=(inner,),
        shoulder=shoulders if outer == rail.front_edge else shoulders[::-1],
        tenon_thickness=groove_width,
        tenon_length=member_width - mitre_depth, # through
    )

asm, (stile_left, stile_right, rail_top, rail_bottom) = _frame(
    "cabinet_door", corner, height, rail_length, member_width, stock
)
# The rails' front edges are at the top.
rail_middle = asm.add(Board("rail_middle", stock, length=rail_length, width=member_width))
for rail_end, stile_edge, stile_end in [
    (rail_middle.left_end, stile_left.back_edge, stile_left.left_end),
    (rail_middle.right_end, stile_right.front_edge, stile_right.left_end),
]:
    asm.join(
        MitredShoulderTenon(
            tenon=rail_end,
            mortise=stile_edge,
            position=offset((height - member_width) / 2, stile_end),
            mitre_depth=mitre_depth,
            shoulder=groove_depth,
            tenon_thickness=groove_width,
            tenon_length=13, # leaving 5 mm behind the mortise
        )
    )

opening_height = (height - 3 * member_width) / 2
reach = groove_depth - clearance
# Lying like the rails, the front edges up.

```

```

for name, panel_stock, above, below, stile_end in [
    ("top", top_panel_stock, rail_top, rail_middle, "right_end"),
    ("bottom", bottom_panel_stock, rail_middle, rail_bottom, "left_end"),
]:
    if panel_stock.thickness != groove_width:
        raise ValueError(f"the {name} panel must be as thick as the groove is wide")
    panel = asm.add(Board(f"panel_{name}", panel_stock, rail_length, opening_height))
    for side, groove, position in [
        (panel.left_end, stile_left.back_edge, getattr(stile_left, stile_end)),
        (panel.right_end, stile_right.front_edge, getattr(stile_right, stile_end)),
        (panel.front_edge, above.back_edge, None),
        (panel.back_edge, below.front_edge, None),
    ]:
        asm.join(
            TongueAndGroove(
                tongue=side,
                groove=groove,
                tongue_thickness=groove_width,
                tongue_length=reach,
                cut_tongue=False,
                position=CENTERED if position is None else offset(member_width, position),
                across=CENTERED,
                clearance=clearance,
            )
        )
return asm

```