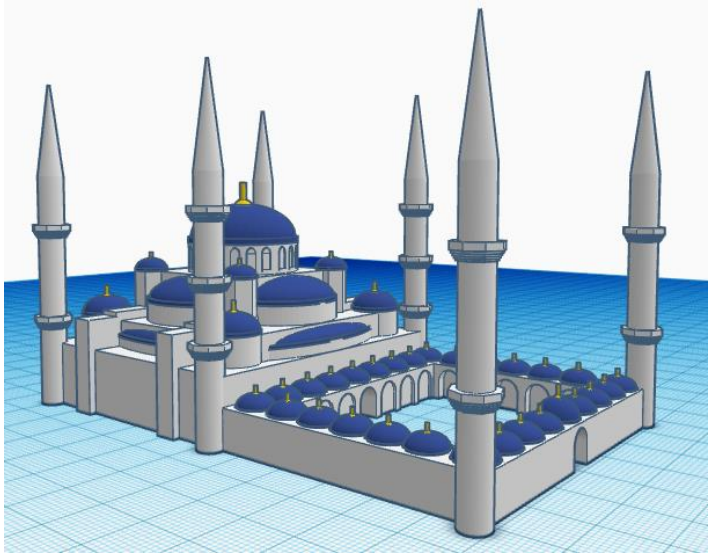
BLUE MOSQUE PRINTING PARAMETERS



Once we have finished the design of the Blue Mosque it is time to print it.

We can find different problems in this structure such us ‘’bridging’’ when printing the arches, ‘’overhanging’’ when printing the rings of the minaret or ‘’stringing’’ in all the structure.

The stringing appears when the extruder travels from one position to another extruding filament. We can solve this problem with a good postprocessing.

We define “Bridging” as the moment when our printer extrudes filaments in the air, without a support, creating imperfect layers that will affect to other layers that would be printed over them and to the final print result.

The ¨overhanging¨ refers to that part of the structure that is completely suspending in the air.

<u>How could we solve Stringing problems?</u>

To improve or delete stringing problems is recommended:

- Reduce printing temperature.
- Modify retraction.
- Modify trajectory speed.

How could we solve Bridging problems?

To improve or delete bridging problems is recommended:

- Reduce the printing speed.
- Reduce the filament extrusion temperature and increase the layer fan cooling speed.
- In the process of design, consider that the bigger the bridge distance is the higher the probabilities of something going wrong are.

How could we solve Overhanging problems?

When printing overhangs, we can find similar problems to the ones of printing bridges. To avoid it we must consider the next things:

- Use supports to create an easily removable surface, where we can lay the overhangs.
- Reduce the extrusion temperature, printing and travel speed, and increase the cooling fan speed.
- When designing models with overhang, it is recommended that they never exceed 45 degrees with respect to its horizontal.

Support settings

Support structure: Normal
Placement: Everywhere
Support overhang angle: 50.0
Support pattern: Line
Support density: 20.0

Parameters in our Blue Mosque project

Size → X:51mm Y: 80mm Z: 49mm

Layer height → 0'20mm/s

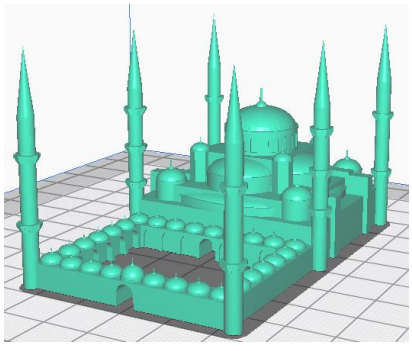
Print speed → 40mm/s

Travel speed → 50mm/s

Base → No

Infill pattern → Triangle

Infill density → 15%



Expected time → 3h 18mins