# Asian Digital Modeling Contest 2017
# Instructions on Preparation of Entries and
# Precautions in Data Creation

◆**Printer used**

   Entries that have passed the screening process will be modeled using the PolyJet 3D printer * (made by Stratasys Ltd.) . Table setting size is max. 250mm x 250mm × 200mm.

   ※  The formal name of 3D printers is "Additive Manufacturing".
      In Asian Digital Modeling Contest 2017, it will be called "3D printers".

◆**Flow to printing using 3D printer**

① Build the 3D model using a modeling software such as 3D CAD. Type of file format is STL.
② Cut the 3D model data in the horizontal direction at the same thickness to prepare the slice data (The thickness of the equipment used in this contest is 0.016㎜ or 0.03㎜).
③ Form thin coatings using resin with the same shape as the slice data, and laminate in order from the bottom to build the 3D model with the same shape as the 3D model data.
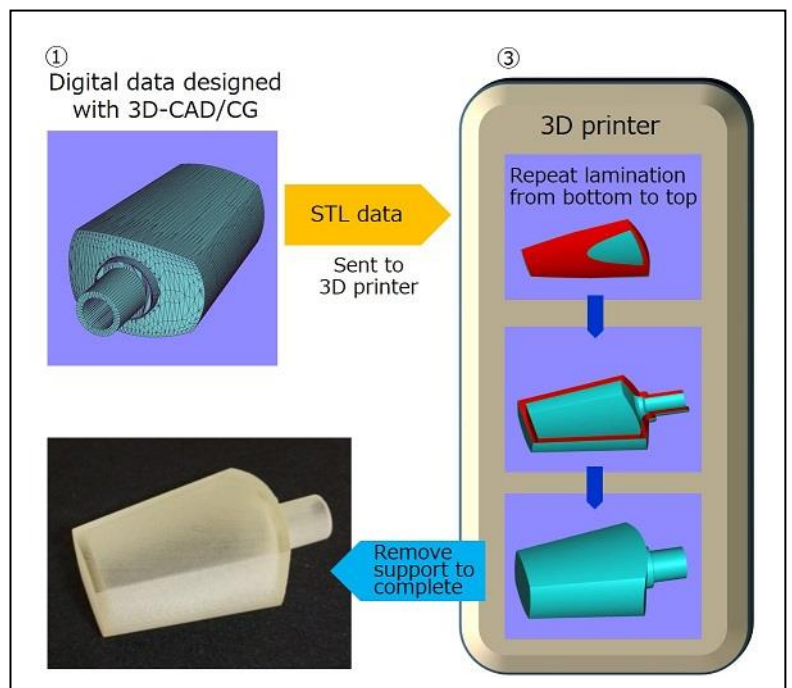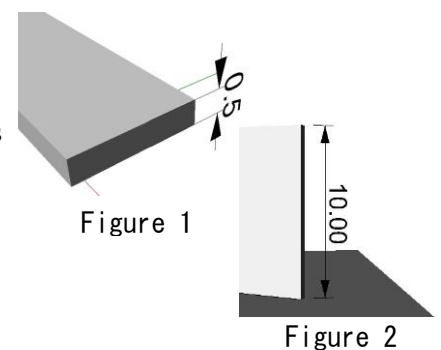


◆**Precautions on preparing 3D model**

   The following values are estimates.

   It may be difficult to remove the support depending on the model built.

   Determine if support can be removed from the 3D model data.

   (The model cannot be built if the part of 3D model data is too thin.)

   ・ Set the clearance above 0.3mm.
   ・ The thinnest part of the model must be 0.5mm at the least (Figure 1).
     For thin structures, set height of about 10mm (Figure 2) for a thickness of 0.5mm.



Figure 1

Figure 2

- Set the tolerance (resolution) to 0.01mm.
- Do not create space inside the model unless there is an opening.

◆Precautions on building 3D models with 3D CG software

- The 3D model data must be a solid with structure on a consistent shape and enclosed by polygons.
- At places where the polygons are adjoining each other, they must be separated by more than 0.5mm or the model cannot be formed properly. (Figure 3)
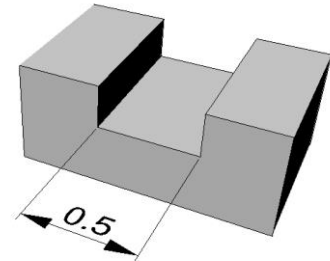


Figure 3

- Make sure that polygons which are configured three-dimensionally do not intersect or overlap with each other.

◆**File format**

- The file format must be STL.
  - ※ Any 3D CG software with function to export to STL format or 3D CAD can be used to create 3D model data in STL.
  - ※ If your software does not have a function to export to STL, use other conversion software to convert to STL.

◆**File size**

- Data volume：Less than 50MB
  - ※ If the STL file size is over 50MB, convert to and submit in XVL format or magics format.
  - ※ For details on file compression, please see "STL data compression method" at the How to Enter page.

◆Maximum model size

- Set to 100mm x 100mm x 100mm (volume).
- The maximum size can be exceeded slightly if the volume is within the required range.
  - ※ Entries which have passed the judgment process exceeding the maximum size will be modeled in a different size.

◆Others

- The Executive Committee may contact the applicant if there are problems such as data file cannot be opened, etc. at the email address registered for entry. Please make sure that emails can be received at this address.
- The unit is "mm" where not indicated in the explanation of entries.

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**Data check**

Please conduct final checks to make sure that there are no problems with your 3D model structure.

In any of the following cases, use the repair function, etc. of 3D CAD and 3D printers to edit the problems.

☐ Defect can be found in the structure and there are missing polygon (there are unintended holes).

☐ There are no holes, but some polygons are inverted in the normals direction.

☐ Sheet-shaped 3D models are thin.

☐ When polygons are intentionally built apart, the distance between them is not over 0.5mm

☐ The external shape of the created 3D model is very small.