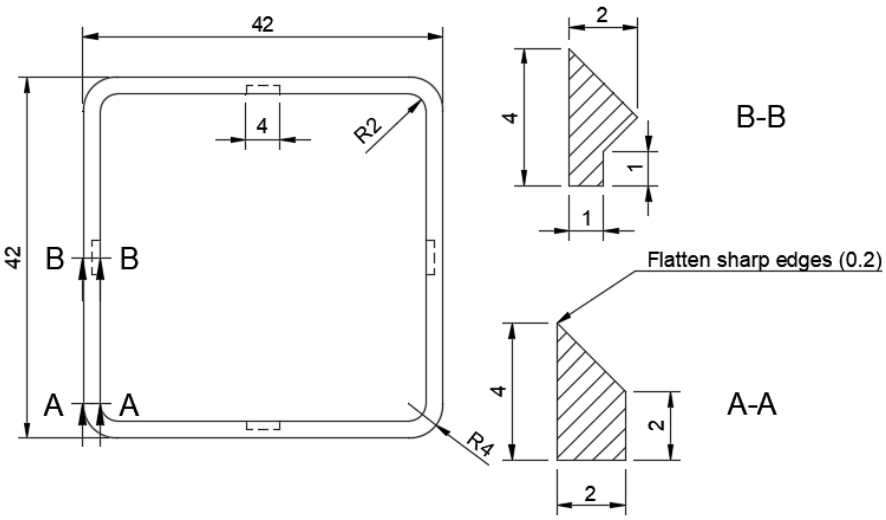
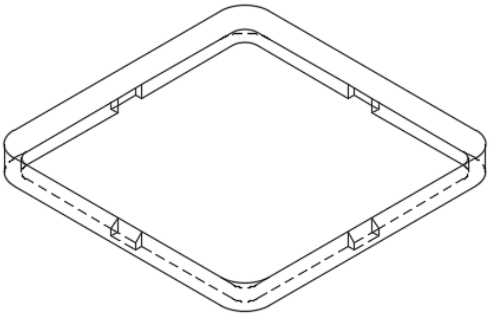
Gridfinity "Snapfit"

Open standard (version 2023-1)

(1) Unit cell

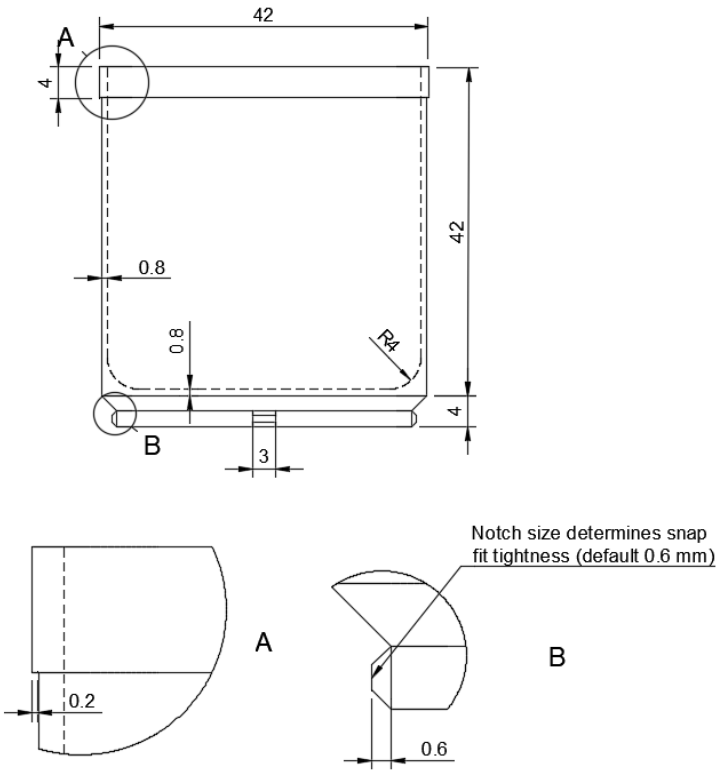
A unit cell is a 1x1 grid, and is defined as a 42x42 mm square which can be expanded infinitely to form a larger grid. Note the notches allow snap-locking bins.



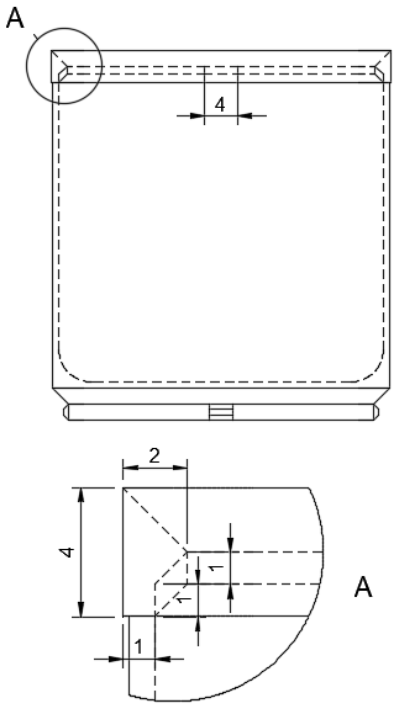


(2) Unit bin

A 1x1x1 bin is defined as a bin that fits a 1x1 grid and is 1 "unit" high (also 42mm). Bins can scale in 3 dimensions. Fractions can be used to stack bins: e.g. a bin sized 1x1x1[2 is 42x42 mm wide and 21 mm (+4 mm footer) high.



Notched footer + regular header 1x1x1



Notched footer + notched header 1x1x1

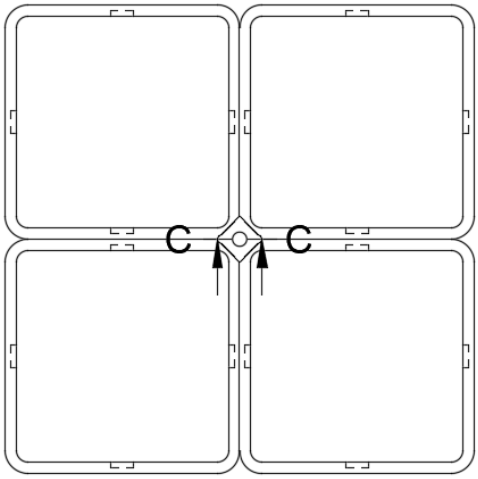
Footer notches ensure a snap-fit and are optional for all bins. The header notch geometry is identical to the grid, allowing snap-fit bin stacking.

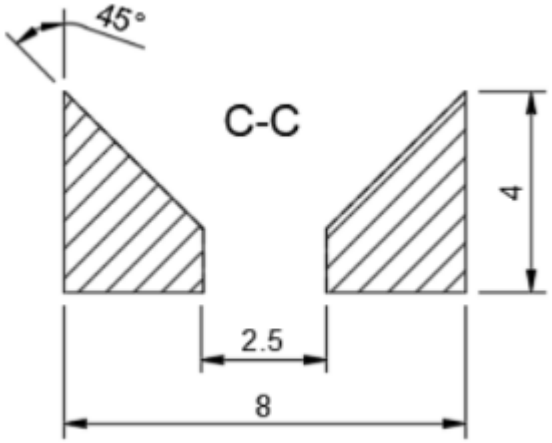
Gridfinity "Snapfit"

Open standard (version 2023-1)

(3) Grids

Grids are multiple unit cells rectangular unit cells that form a rectangle or square. Inside all internal corners (where 4 cells meet), a chamfered hole is present to house a countersunk screw for fastening the grid onto a plate or wall.

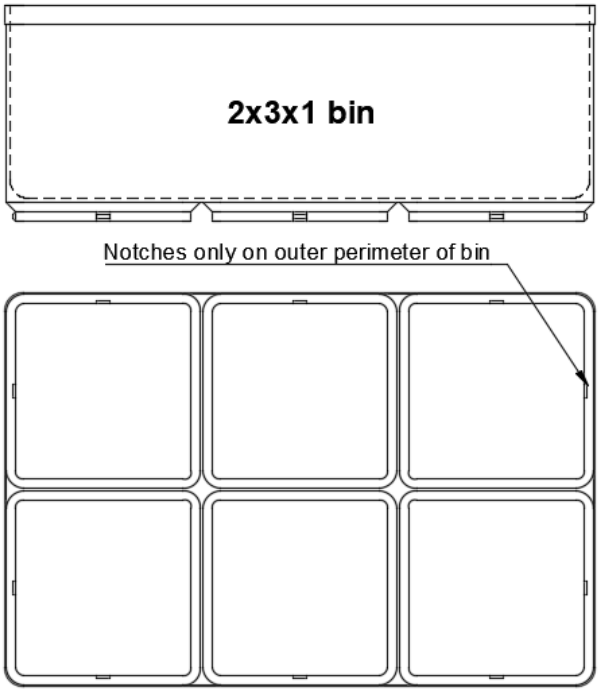


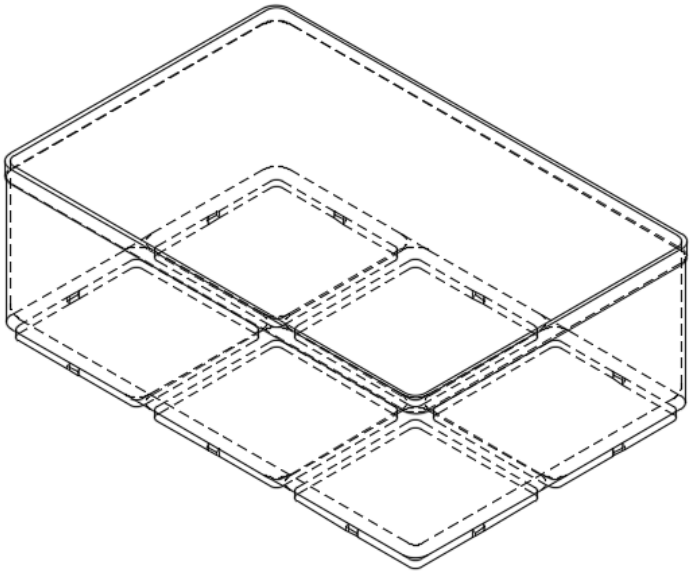


Grids can be any integer number of rows and columns

(4) Larger bins

Bins can be any integer number of unit bins in width and height to form a rectangular or square base that fits the grid. The height can be any integers multiple or fraction of the unit bin. For example, 1x7x1/2, 3x4x1/3, 2x2x2 and 8x8x1/4 are all valid sizes.





The smallest practial bin is a 1x1x1/6 (42x42x7mm), and while there is no upper size limit, if you need boxes larger than 10 units, it is recommended to scale the system.

Gridfinity "Snapfit"

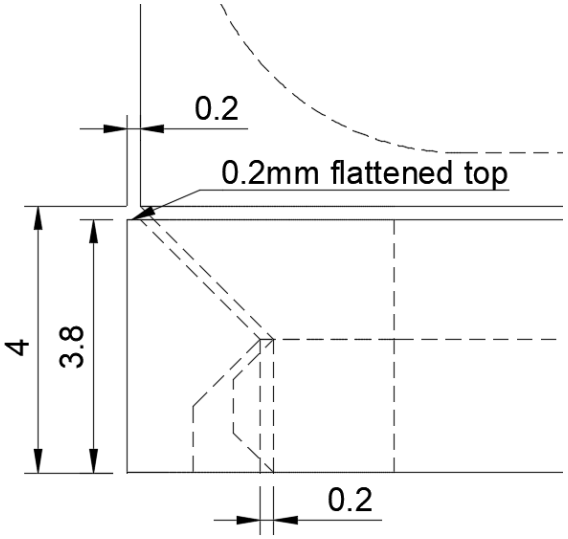
Open standard (version 2023-1)

(5) Details

There is a 0.2 mm horizontal spacing between the grid and bin. This means that the bins footer is a square with 42 - 2(2 + 0.2) = 37.6 mm sides.*

The grids flattened top ensures there is no volume conflict between grid and bins.

A tighter snap-fit can be realized by resizing the notch outward (with a maximum of 1 mm)



(6) Scaling

The fundamental scale of 42mm is arbitrary (inspired by the answer to life). As a result, some containers may not fit an integer number of cells. While it is still best practice to leave edge padding, it is possible for bespoke applications to scale the fundamental dimension to one that accomodates an integer number of cells.

Please use the naming convention "base-XX" or "base-YY%" to denote a scaled snapfit system, where XX refers to the fundamental size in mm or YY% the relative scaling with respect to 42 mm. A "base-42" denotation is implied by default and strongly recommended to allow for univseral applicability and ease of sharing.

(7) Size naming conventions

Grid sizes should be named smallest dimension first, e.g. 4x5. Bins follow a similar convention, naming the smallest horizontal dimension first, but the vertical (z) always comes last: e.g. 1x3x6 and not 3x1x6. Fractions should be denoted with a right bracket: "[" to prevent filename issues: e.g. 2x2x1[2 instead of 2x2x1/2.

(8) Manufacturing

Most people will use 3D printing to manufacture the grids and bins. Common grid and bin sizes are available free to download as STL via snapfit.nl. These designs include the recommended flattened and chamfered edges, and should be turn-key.

(9) About

Gridfinity "snapfit" is obviously a fork of Gridfinity Original (gridfinity.xyz) While both systems are somewhat compatible, Snapfit's goal is to simplify and remove excess geometry and minimize material usage, while providing an additional "snap-fit" feature.

-- Snapfit.nl