SBS Proposed Microplate Specifications

Revised August 2000

Standard 1a: External Microplate Dimensions

Footprint

The outside dimension of the base footprint, measured within 12.700 mm (0.500 inches) of the outside corners, shall be as follows:

- Length 127.76 mm ± 0.25 (5.030 inches ± 0.010)
- Width 85.48 mm ± 0.25 (3.365 inches ± 0.010)

The outside dimension of the base footprint, measured at any point along the side, shall be as follows:

- Length 127.76 mm ± 0.50 (5.030 inches ± 0.020)
- Width 85.48 mm ± 0.50 (3.365 inches ± 0.020)

Rigidity

Using the apparatus described in Appendix XXX, the plate shall not deflect more than YYY mm when 3 pounds of force is applied.

Corner Radius

The four outside corners of the plate's bottom flange shall have a corner radius to the outside of 3.18 mm ± 1.60 (0.125 inch ± 0.063)

External Clearance to the Plate Bottom

The minimum clearance from Datum A (the resting plane) to the plane of the bottom external surface of the wells shall be 1.00 mm (0.039 inch). This clearance is limited to the area of the wells, and is shown as WH on the figures.

Chamfers (Corner Notches)

The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 2a: Standard Height Microplates

Plate Height

The plate height, measured from Datum A (the resting plane) to the maximum protrusion of the perimeter wells, shall be 14.35 mm ± 0.25 (0.565 inch ± 0.010)

The overall plate height, measured from Datum A (the resting plane) to the maximum protrusion of the plate, shall be 14.35 mm ± 0.76 (0.565 inch ± 0.030)

Top Surface

The maximum allowable projection above the top stacking surface is 0.75 mm (0.030 inch). The top stacking surface is defined as that surface on which another plate would rest when stacked one on another. When resting on a flat surface, the top surface of the plate must be parallel to the resting surface within 0.75 mm (0.030 inch)

Standard 3a: Short Bottom-Outside Flange

Flange Height
The bottom outside flange, defined as dimension FH in the figures, shall be 2.41 mm ± 0.38 mm (0.095 inch ± 0.015). This is measured from the bottom-resting plane to the top of the flange.
All four sides must have the same flange height, and the height must be consistent around the entire perimeter.

Flange Width
The bottom flange width measured at the top of the flange, defined as dimension FW on the figures, shall be a minimum of 1.27 mm (0.050 inch).

Chamfers (Corner Notches)
The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 3b: Medium Bottom-Outside Flange

Flange Height
The bottom outside flange, defined as dimension FH in the figures, shall be 6.10 mm ± 0.38 mm (0.240 inch ± 0.015). This is measured from the bottom-resting plane to the top of the flange.
All four sides must have the same flange height, and the height must be consistent around the entire perimeter.

Flange Width
The bottom flange width measured at the top of the flange, defined as dimension FW on the figures, shall be a minimum of 1.27 mm (0.050 inch).

Chamfers (Corner Notches)
The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 3c: Tall Bottom-Outside Flange

Flange Height
The bottom outside flange, defined as dimension FH in the figures, shall be 7.62 mm ± 0.38 mm (0.300 inch ± 0.015). This is measured from the bottom-resting plane to the top of the flange.
All four sides must have the same flange height, and the height must be consistent around the entire perimeter.

Flange Width
The bottom flange width measured at the top of the flange, defined as dimension FW on the figures, shall be a minimum of 1.27 mm (0.050 inch).

Chamfers (Corner Notches)
The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 3d: Short Bottom-Outside Flange with Interruptions

Flange Height

The bottom outside flange, defined as dimension FH in the figures, shall be 2.41 mm ± 0.38 mm (0.095 inch ± 0.015). This is measured from the bottom-resting plane to the top of the flange.
All four sides must have the same flange height, and the height must be consistent around the entire perimeter except for an interruption centered along datum B.

Interruptions

Each of the long sides of the plate, parallel to datum B, shall have a single centered interruption.
The length of the interruption shall not exceed 30.0 mm (1.181 inch)
The height, FH, at the interruption, shall exceed 6.85 mm (0.270 inch)

Flange Width

The bottom flange width measured at the top of the flange, defined as dimension FW on the figures, shall be a minimum of 1.27 mm (0.050 inch).

Chamfers (Corner Notches)

The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 3e: Dual Flange Heights

Flange Height

The bottom outside flange, defined as dimension FH in the figures, shall be 2.41 mm ± 0.38 mm (0.095 inch ± 0.015) along the short sides of the plate, defined as datum B. This is measured from the bottom-resting plane to the top of the flange.
The bottom outside flange, defined as dimension FH in the figures, shall be 2.41 mm ± 0.38 mm (0.095 inch ± 0.015) along the long sides of the plate, defined as datum B. This is measured from the bottom-resting plane to the top of the flange.

Flange Width

The bottom flange width measured at the top of the flange, defined as dimension FW on the figures, shall be a minimum of 1.27 mm (0.050 inch).

Chamfers (Corner Notches)

The quantity and location of chamfer(s) is optional. If used, the chamfer must not include the flange.

Standard 4a: Well Positions for 96 Well Microplate

Well Layout

The wells in a 96 well microplate should be arranged as eight rows by twelve columns.

Well Column Position

The distance between the left outside edge of the plate and the center of the first column of wells shall be 14.38 mm (0.566 inches)

Each following column shall be an additional 9.00 mm (0.354 inches) in distance from the left outside edge of the plate.

Well Row Position

The distance between the top outside edge of the plate and the center of the first row of wells shall be 11.24 mm (0.443 inches)

Each following row shall be an additional 9.00 mm (0.354 inches) in distance from the top outside edge of the plate.

Positional Tolerance

The positional tolerance on the well centers is ± 0.25 mm (± 0.010 inches). The tolerances are non-cumulative. This is defined as follows. Each well will be within ± 0.25 mm (± 0.010 inches) of its theoretical centerline position when measured on a straight line between the first and last wells in that row or column.

Well Markings

The top left well of the plate shall be marked in a distinguishing manner.

- The top left well of the plate can be marked with the letter A or numeral 1 located on the left-hand side of the well.
- The top left well of the plate can be marked with a numeral 1 located on the upper side of the well.

Additional markings may be provided.

Standard 4b: Well Positions for 384 Well Microplate

Well Layout
The wells in a 384 well microplate should be arranged as sixteen rows by twenty-four columns.

Well Column Position
The distance between the left outside edge of the plate and the center of the first column of wells shall be 12.13 mm (0.478 inches)
Each following column shall be an additional 4.50 mm (0.177 inches) in distance from the left outside edge of the plate.

Well Row Position
The distance between the top outside edge of the plate and the center of the first row of wells shall be 8.99 mm (0.354 inches)
Each following row shall be an additional 4.50 mm (0.177 inches) in distance from the top outside edge of

Positional Tolerance
The positional tolerance on the well centers is ± 0.25 mm (± 0.010 inches). The tolerances are non-cumulative. This is defined as follows. Each well will be within ± 0.25 mm (± 0.010 inches) of its theoretical centerline position when measured on a straight line between the first and last wells in that row or column.

Well Markings
The top left well of the plate shall be marked in a distinguishing manner.

- The top left well of the plate can be marked with the letter A or numeral 1 located on the left-hand side of the well.
- The top left well of the plate can be marked with a numeral 1 located on the upper side of the well.

Additional markings may be provided.

Standard 4c: Well Positions for 1536 Well Microplate

Well Layout

The wells in a 1536 well microplate should be arranged as thirty-two rows by forty-eight columns.

Well Column Position

The distance between the left outside edge of the plate and the center of the first column of wells shall be 11.00 mm (0.433 inches)

Each following column shall be an additional 2.25 mm (0.088 inches) in distance from the left outside edge of the plate.

Well Row Position

The distance between the top outside edge of the plate and the center of the first row of wells shall be 7.86 mm (0.309 inches)

Each following row shall be an additional 2.25 mm (0.088 inches) in distance from the top outside edge of

Positional Tolerance

The positional tolerance on the well centers is ± 0.25 mm (± 0.010 inches). The tolerances are non-cumulative. This is defined as follows. Each well will be within ± 0.25 mm (± 0.010 inches) of its theoretical centerline position when measured on a straight line between the first and last wells in that row or column.

Well Markings

The top left well of the plate shall be marked in a distinguishing manner.

- The top left well of the plate can be marked with the letter A or numeral 1 located on the left-hand side of the well.
- The top left well of the plate can be marked with a numeral 1 located on the upper side of the well.

Additional markings may be provided.