

Testing on laboratory benches: what the SEFA 10 document requires

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The Scientific Equipment and Furniture Association (SEFA) is an American international trade association. It consists of manufacturers of laboratory furniture, fume hoods and other related products, along with members of the design and installation professions. The Association was founded to promote this rapidly expanding industry and improve the quality, safety in accordance with customer requirements.

SEFA 10 is intended to provide designers, architects, purchasers, end users and manufacturers with workable tools for evaluating various types of adaptable laboratory furniture systems.

Testing as described in this document must be performed and documented by a SEFA-approved third party testing institute.

The list of approved testing laboratories, where the CATAS laboratory is also present, can be found at www.sefalabs.com.



Classes, configurations and categories

Laboratory benches are divided into classes, configurations and categories as below:

Classification of modular systems:

Strength and functionality are evaluated for each type of modular system, which has been divided into 8 classes:

Class 1 – Fixed floor mounted and wall supported

Class 2 – Wall rail supported

Class 3 – Self supporting frame

Class 4 – Core based

Class 5 – Panel based

Class 6 – Table based

Class 7 – Free standing workstation

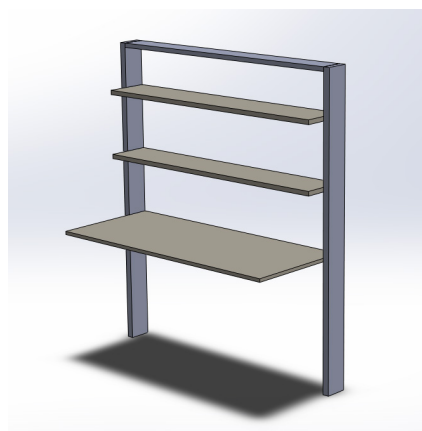
Class 8 – Mobile workstation

Configurations of modular systems

In addition to the class, the SEFA 10 specification also stipulates the configuration type, which can be of four types:

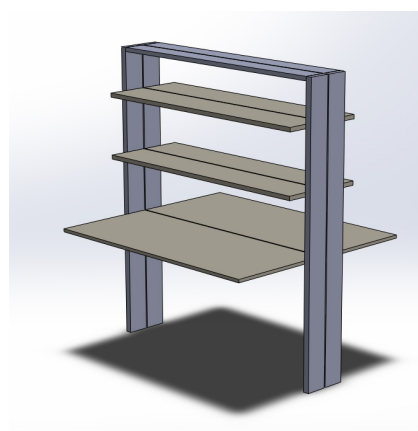
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Configuration 1:

Single sided – Cantilevered worksurface



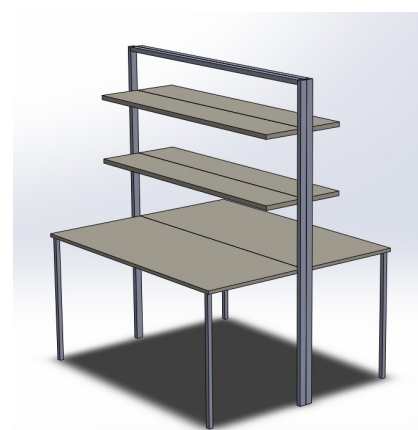
Configuration 2:

Double sided – Cantilevered worksurface



Configuration 3:

Single sided – Simply supported worksurface



Configuration 4:

Double sided – Simply supported worksurface

Categories of modular systems

There are multiple load levels divided into 4 categories, each category corresponding to a load capacity for which the cabinet was designed:

Category 1 – 200 lbs (91 kg)

Category 2 – 600 lbs (272 kg)

Category 3 – 1000 lbs (453 kg)

Category 4 – 1200 lbs (544 kg)

Tests to be performed according to SEFA specifications

Two types of tests are to be performed on the laboratory bench, one for load and one for stability.

Load test:

In the load test, masses with shape and weight as per SEFA specifications, are applied both on the table

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top according to the required category, thus from 200 lbs for category 1 up to 1200 lbs for category 4 and on the shelves with a load of 40 lbs/Ft² up to a maximum of 200 lbs by measuring the deformations of the structure at points Z, Y1, Y2 and X as shown in figure 1.

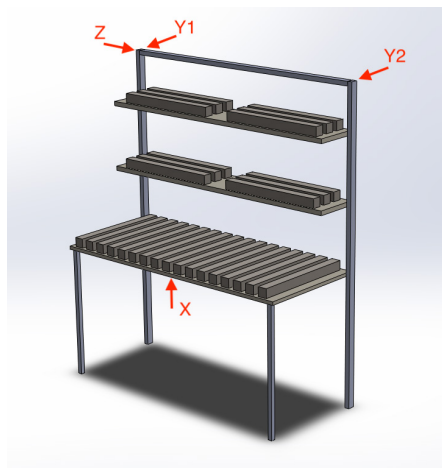


Fig. 1 Load test

The measured deformations must not exceed the maximum allowed by SEFA document 10, which are:

- point X: max 0.250 inches (6,35 mm))
- average of points Y1 and Y2: max 0.125 inches (3,175 mm)
- point Z: max 0.125 inches (3,175 mm)

Stability test

For the stability test on elements that are not fixed to the building, the bench, tilted by 10° both at the front and at the rear, must not become unbalanced and the components must not disengage (figure 2)

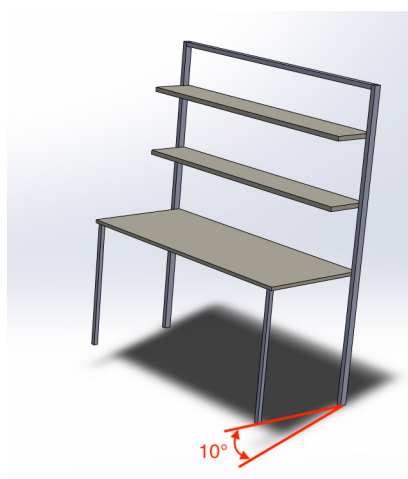


Fig. 2 Stability test

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