

VOLUMES

The volume tool in PointCab is best suited for calculating the volume of structures such as fills and pits.

Normally, the mathematical process of calculating volumes is complicated and the algorithms used are complex. But with PointCab you don't have to worry about that: with a few clicks you define the area in your project and PointCab gives you the result in no time.



In our tutorials we explain the workflow of volume calculation with PointCab and the options you have to get the best possible results and documentation. Of course, we work with practical examples.

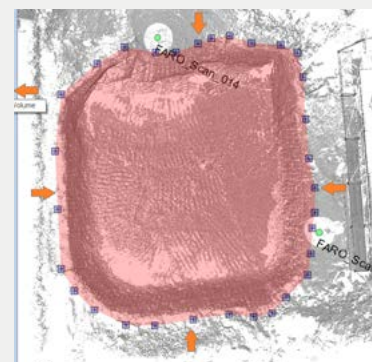
Method

The calculation of volumes in PointCab complies with the German standard REB 22013. A detailed and official description of the REB 22013 method can be found [here](#), (explanation in german), but below is the shortest explanation:

When calculating the volume, PointCab first creates a **mesh** of your chosen area, then determines a **reference horizon** that lies below the point cloud. From this reference horizon, a **base volume** to the created mesh and a **reference volume** to the area polygon you defined is determined. In the last step, the reference volume is subtracted from the base volume to calculate the actual volume.

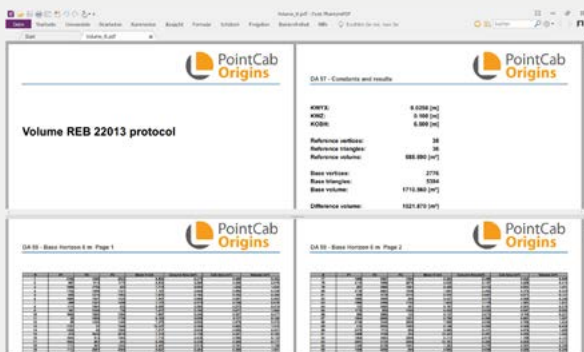
Volume of an excavation pit

We can calculate the volume of an excavation pit with the volume tool. First we activate the **volume tool** , then we mark the excavation pit or the area of the volume to be calculated. The volume of the marked area is calculated according to REB 22013. We first start the calculation in the **job list** .



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The result of the calculation is displayed directly on the standard view. With a *double click* on the job we can open the PDF protocol. Or we look at the calculated mesh in our **3D view 3D**.



Options when calculating the volume

In the Job Editor we can select different settings to adapt the desired result to our requirements.

Processing

As already mentioned, the volume is calculated based on a meshing. The **meshing accuracy** describes the maximum allowed deviation between the generated calculation areas of the mesh and the measured point cloud. The smaller this value, the more detailed the triangles are displayed. The file size consequently increases.

The **object filter** smooths the surface and omits points within a specific value. This means that if an object filter of 5 cm is selected, the points that are 5 cm above or below the surface are not taken into account. So if there is a prism pole in the terrain, it will not be included in the calculation.

The **method** of calculation can also be changed. If we already know the height of the reference horizon and want to use it, we can set the method to REB 22013 - with Z level and enter the height.

We can change the name of the job under the **File** tab.

