

## VeraCAD Technology Chat

Title: Explanation of Reduction and number of passes.  
Type: Basic technology  
Version: All versions  
Language: English  
Date: 1.1.2010

### Explanation of reduction and number of passes

This examples shows a 2 pass calibration sequence with 30 % of reduction in each pass.

The formula to calculate the cross-section area for each pass is shown. If we have 2 times a reduction rate of 30 % the final total reduction is not 60 %. If so, the final cross-section area would be 400 mm<sup>2</sup>. But it is 490 mm<sup>2</sup> what gives a total reduction of 51 %. From this simple example we can see, that later passes are less effective than first passes. If we use more and more passes, the last pass can only provide 4 % in total reduction. See the table of possible total reduction in relation to no. of passes.

From this rule we can learn that a process with 2 passes only is very effective. If possible, we should use a minimum number of passes.

