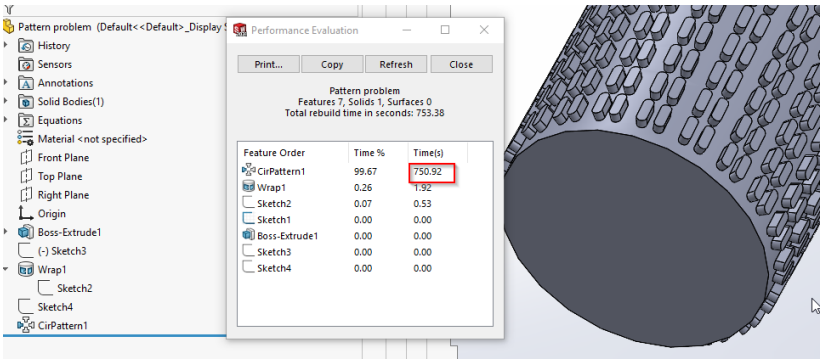
Question:

Is there a technical tip to improve the "performance" of a Circular pattern with 1000s of features?

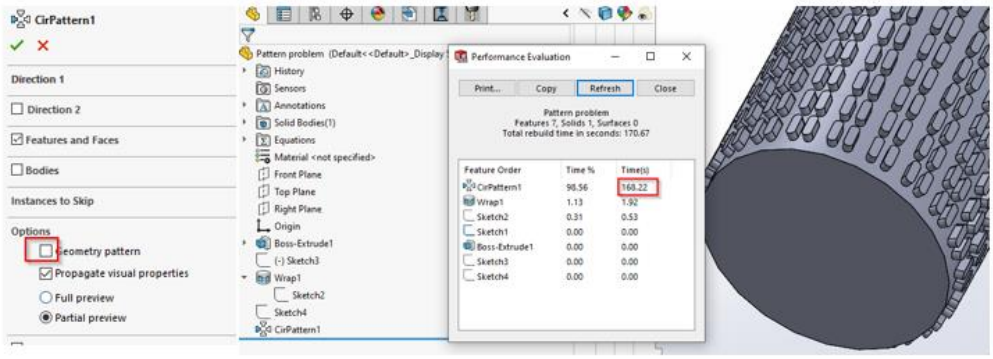
Reply*:*

One method is to limit the calculation *of the number of extrusions, and instead show a limited number as surface bodies.*

Here is an example with a roller with 2000 features, where the rebuild time is extremely long. The pins are made with a "Wrap Feature" and distributed with "Circular pattern". It is seen that the Rebuild time is 750 seconds.



If you look at the Cirpattern1 feature's Options, the "Geometry Pattern" is not activated. With this option set, the time is reduced to 160 seconds. "Geometry Pattern" does not calculate each feature as an independent extrusion, but only the location itself. This setting alone provides an improvement of a factor of 4.5



Another solution is to limit the number of features and instead display them as "Surfaces".

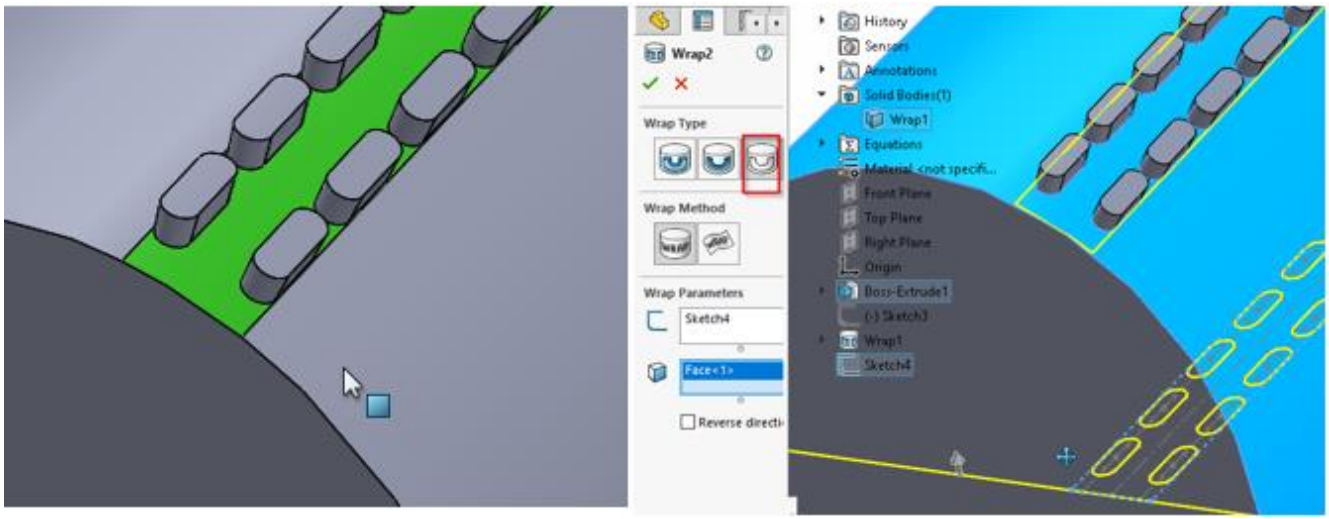
1: First make a Surface part with a set of pins

2: Insert the Surface part into the final part and make a pattern on the Surface Body.

3: Do not make "Surface Bodies" for "Solids", but just correct "Visual Properties"

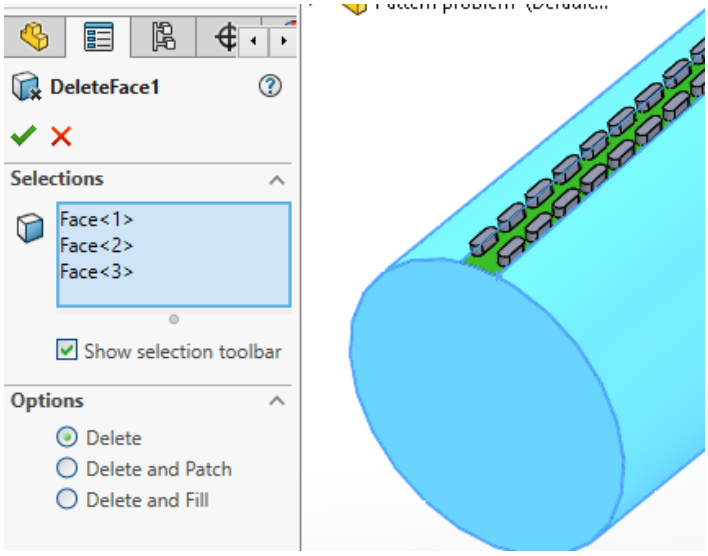
Here is an example of how this can be done.

First, a "Wrap Scripe" is used to split the Cylinder into two surfaces as shown

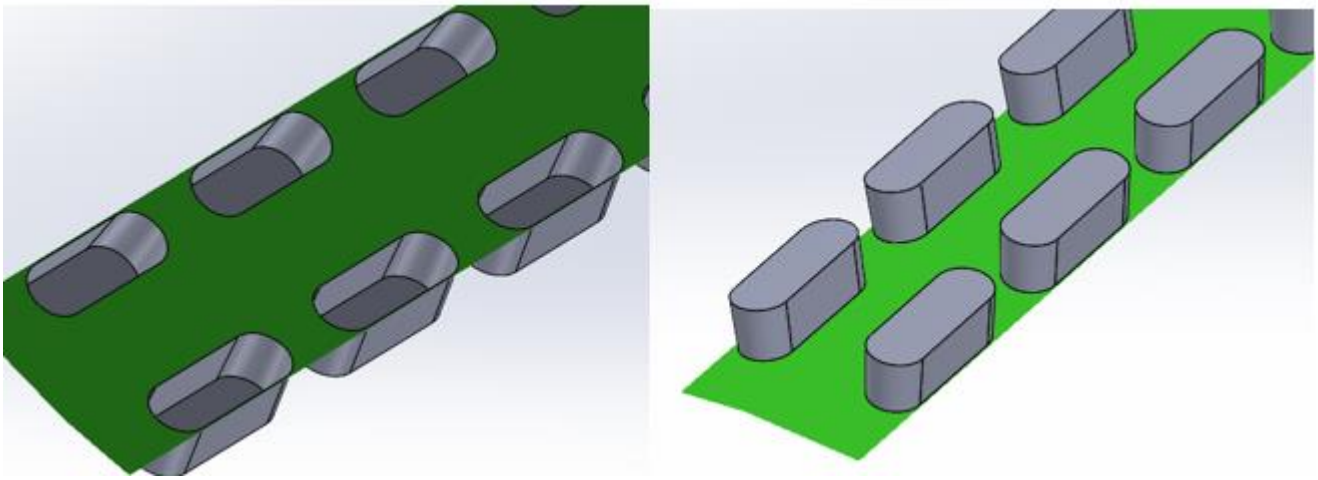


An easy method to change from "Solid" to "Surface" is to delete a surface in the "Solid"

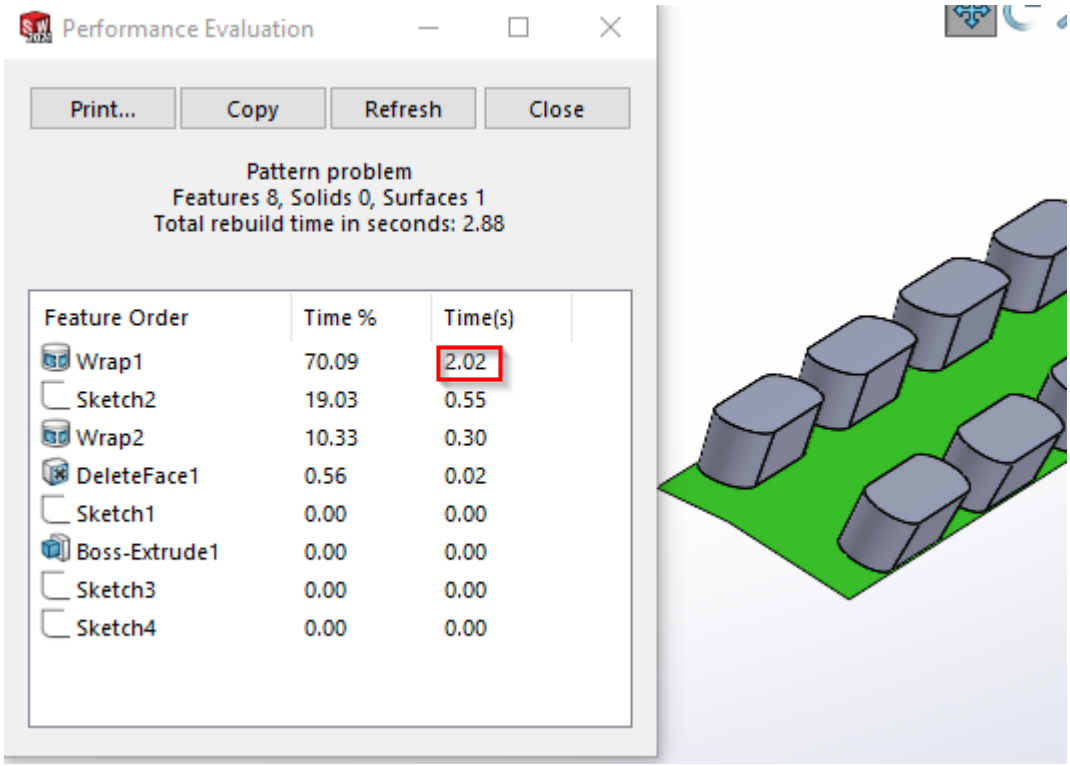
Here the two end faces and the Cylinder are selected



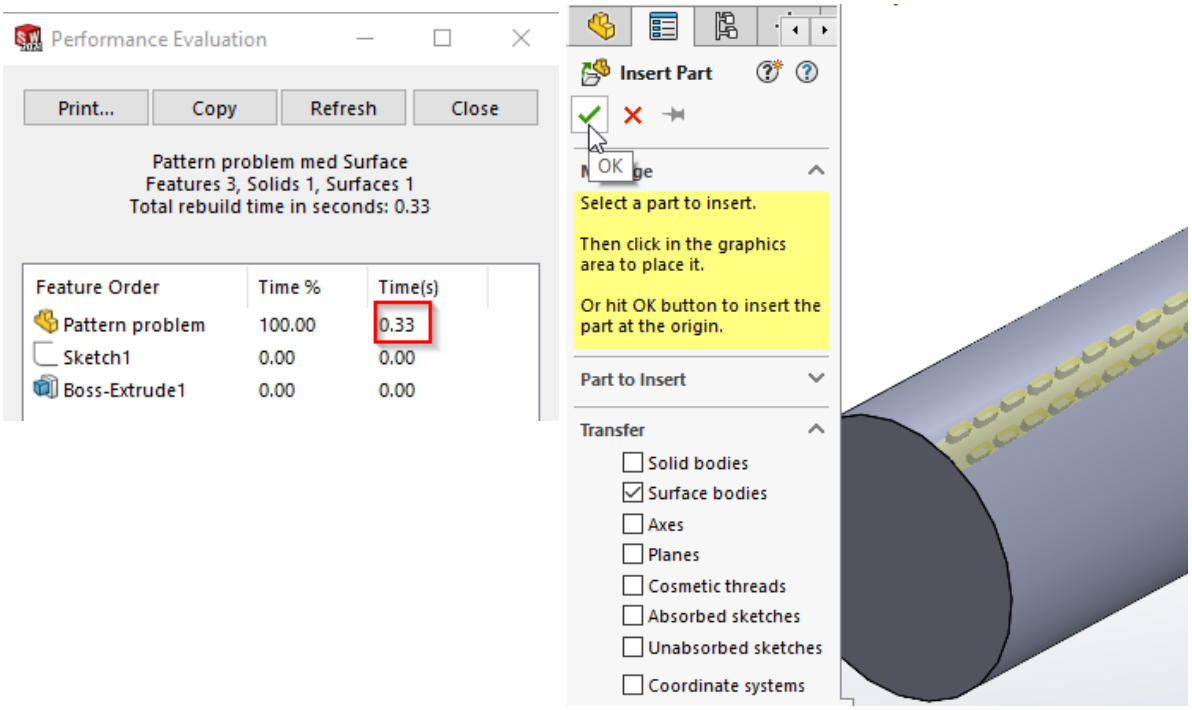
The result is a "Surface Body"



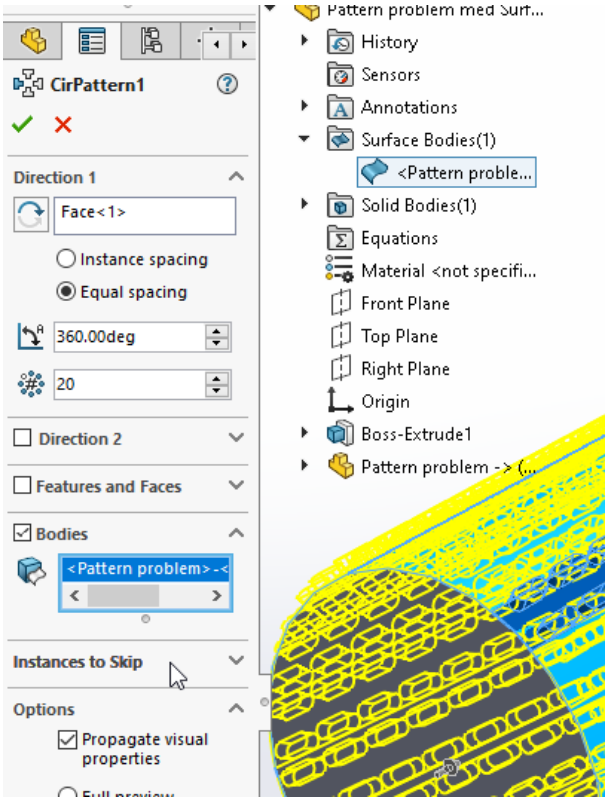
The rebuild time on this "Surface Model" is a little over 2 *seconds*



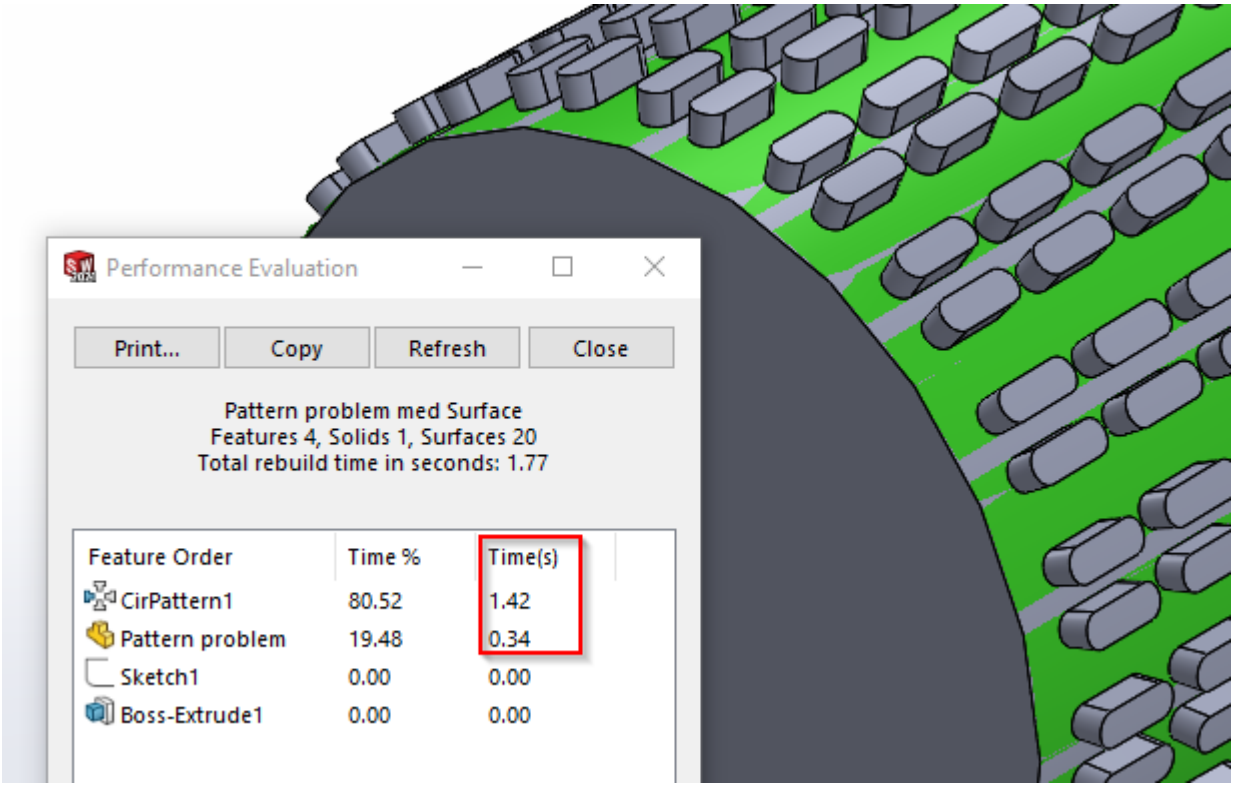
Insert the Surface part into another Part, only with the raw cylinder. By clicking "OK" it is inserted correctly on the empty "Cylinder". Rebuild time is 0.33 Seconds



Instead of performing the Pattern of a Feature, the Pattern of a "Surface Body" is now used

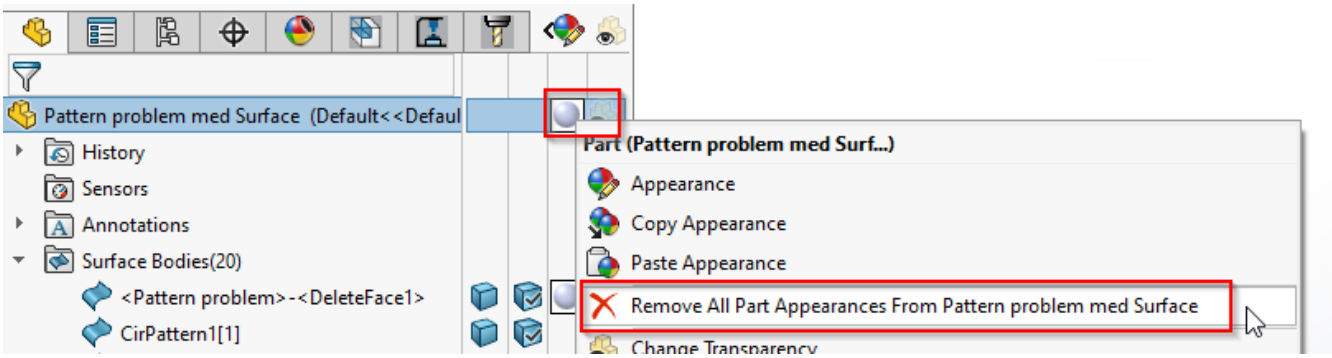


A Rebuild of about 2 seconds is the result. However, it can be seen that with this method some color problems arise.



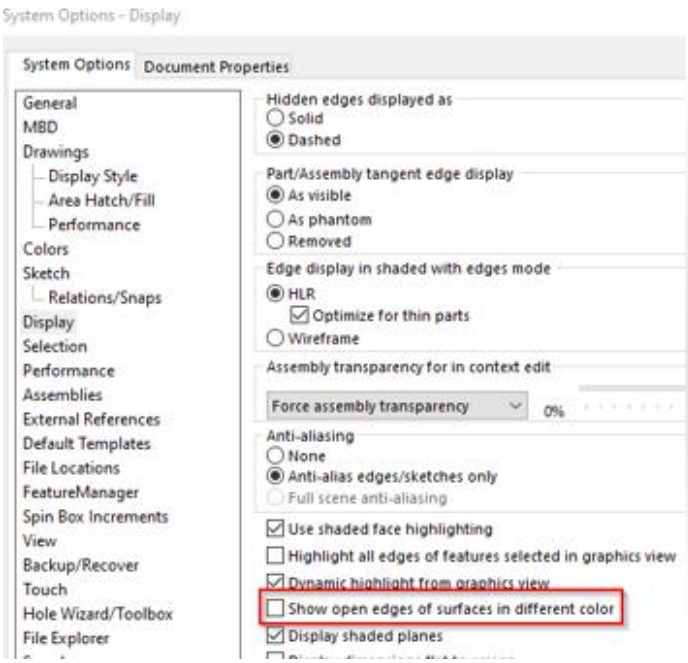
Because there are now 20 "Surface Bodies", and not 2000 features. The colors come from the "Surface part" and can of course be a challenge.

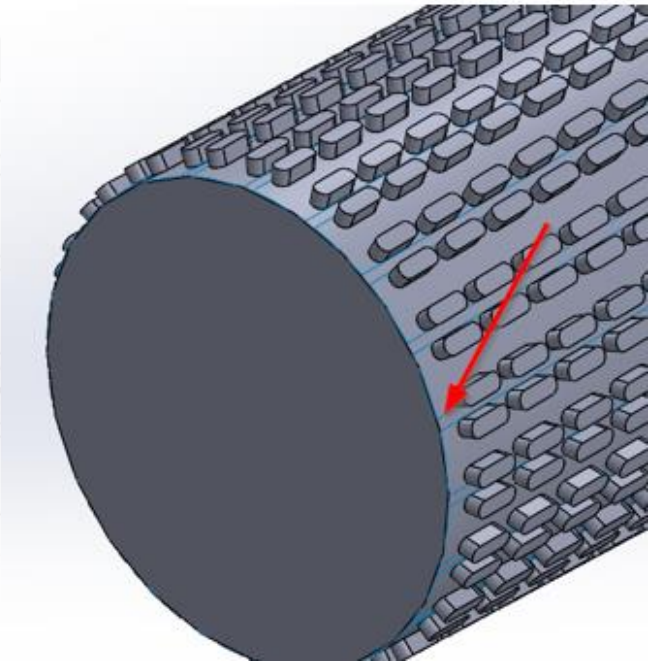
The colors are easily reset by removing "All Part Appearances" and possibly give a new color to the whole party.



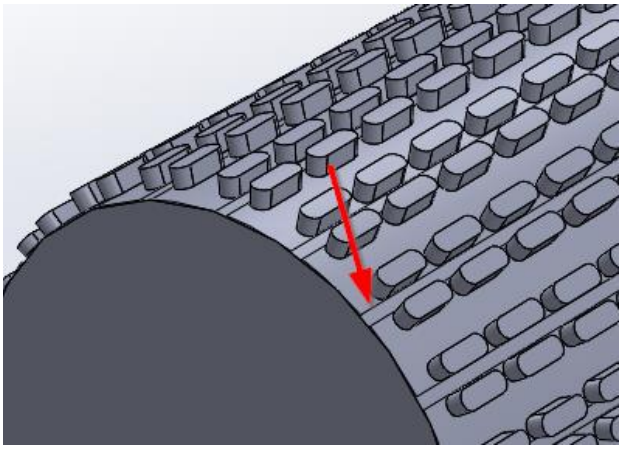
Then another challenge may arise, the open edges from "Surface Bodies" are displayed in a different color.

These color edges can be turned off in System Options as shown below..



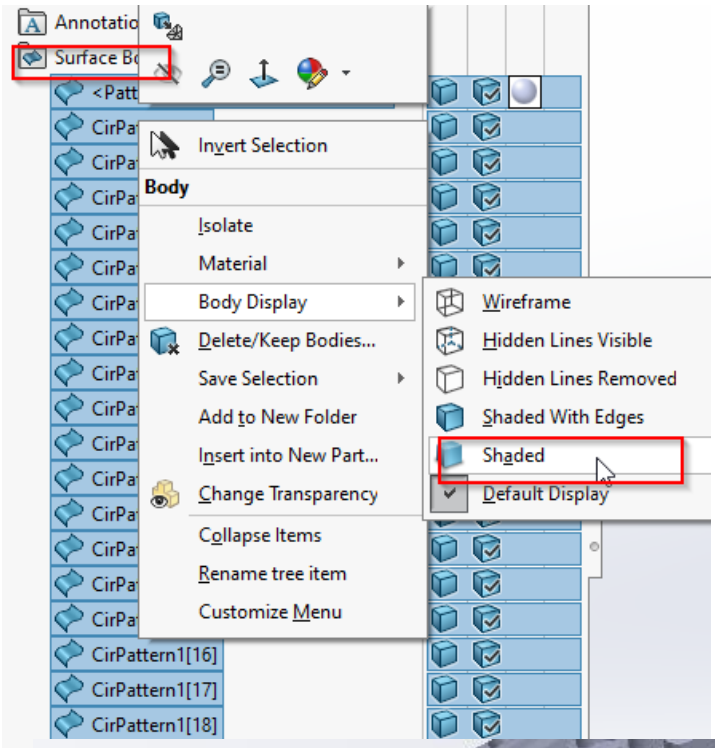


Unfortunately, open edges appear like all other edges.

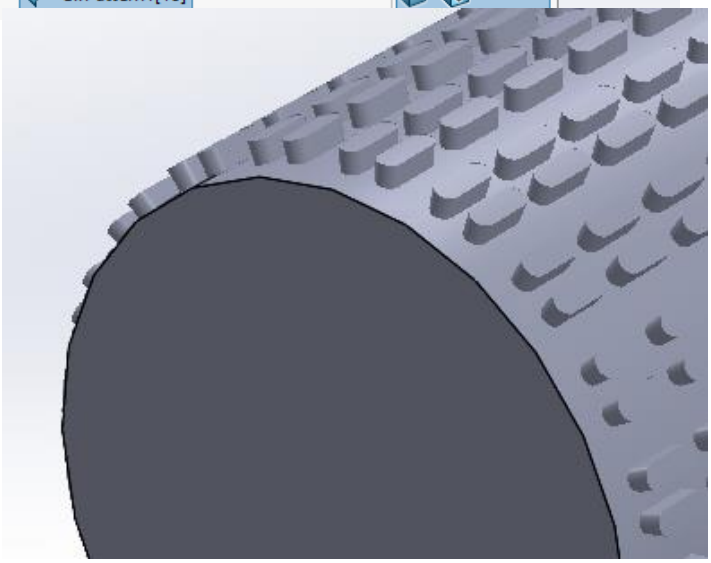


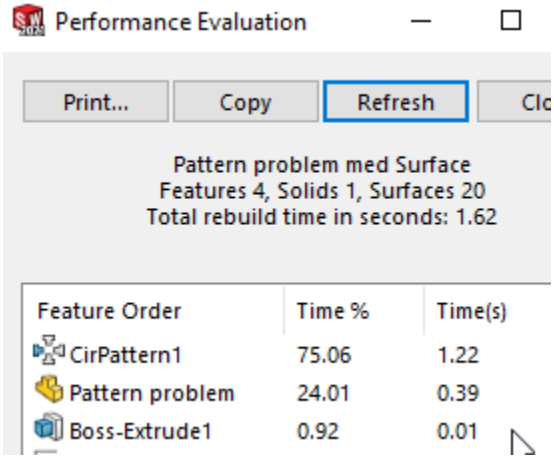
One option is to show all "Bodies" as "Shaded" without edges

Select all "Surface Bodies" right click> Body Display> Shaded

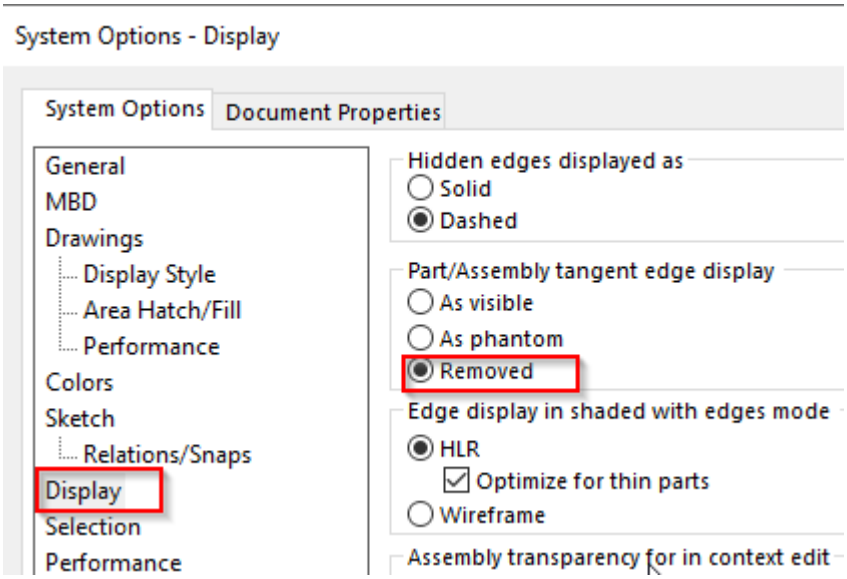


The open edges are now hided on all "Surface Bodies" but also all the edges on the many "Slots"

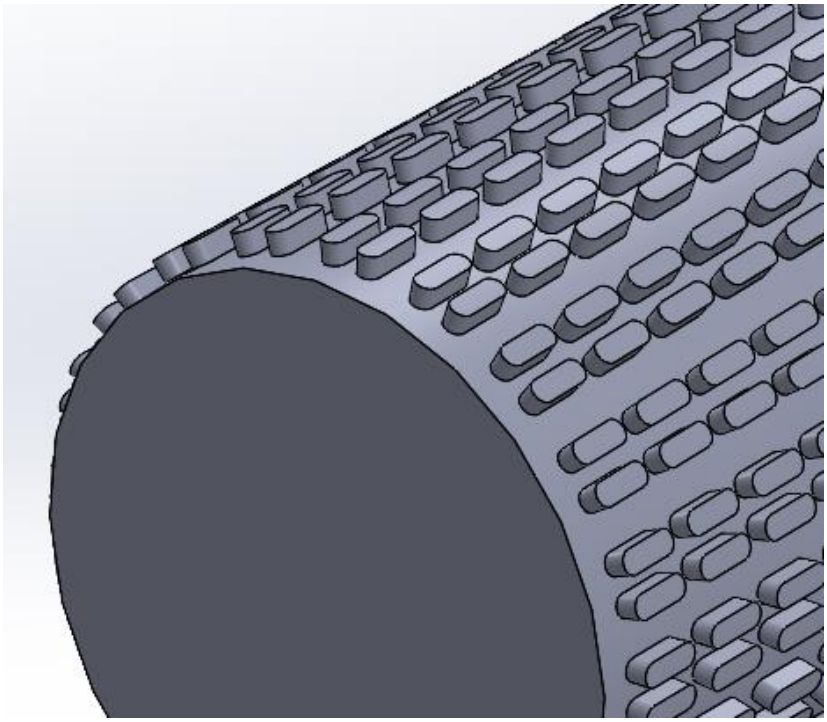




A final option is a "System Options Setting" to hide Open Edges. System Options> Display> Removed.



Now the part we want is displayed, without Open edges, but with all other edges shown.
At the same time, performance is preserved with "Pattern" as Surfaces.
However, it should be mentioned that "System Options" settings are general. Unfortunately, these settings cannot be set as model options.



Good luck with Circular performance improvement.

Jens-Ole Jensen