“Baking” process using Python node in Grasshopper

To “Bake” the Breps (Segments)

Change it to “True”

Output

Rhino “Baked” segments
Model merged with Point cloud
Subsampling of Point cloud

- To reduce the number of points, I have to sub-sample the point cloud
- Here I choose the voxel subsampling with point 0.5, so that the calculation can be done easily.
Differences in point cloud – Before & After “Subsampling Process”
Computational Script creation
Computation of each Road layer

Asphalt base layer

• Minimum 25 points needs to be found in one Segment
• Only 7.8% segments detected, Green color means “Points detected”:

2nd Layer 7.8%
Voxel Subsampling 0.5
Green & Yellow
Green - Filled
Yellow - Not filled
Threshold = 25
Asphalt subbase layer

- Minimum 25 points needs to be found in one Segment
- Only 11.76% segments detected, Pink color means “Points detected”:
Ballast bearing layer
Minimum 25 points needs to be found in one Segment
- Only 82.35% segments detected, Blue color means “Points detected”:
Frostprotection layer
• Minimum 25 points needs to be found in one Segment
• Only 0% segments detected, Orange color means “Points detected”: