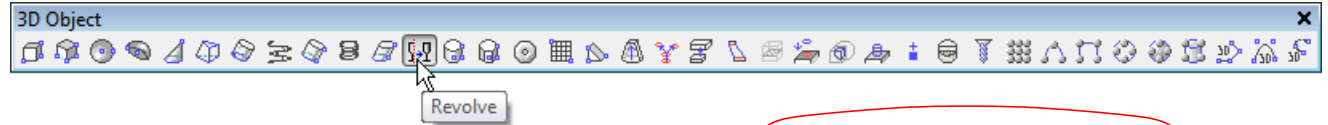
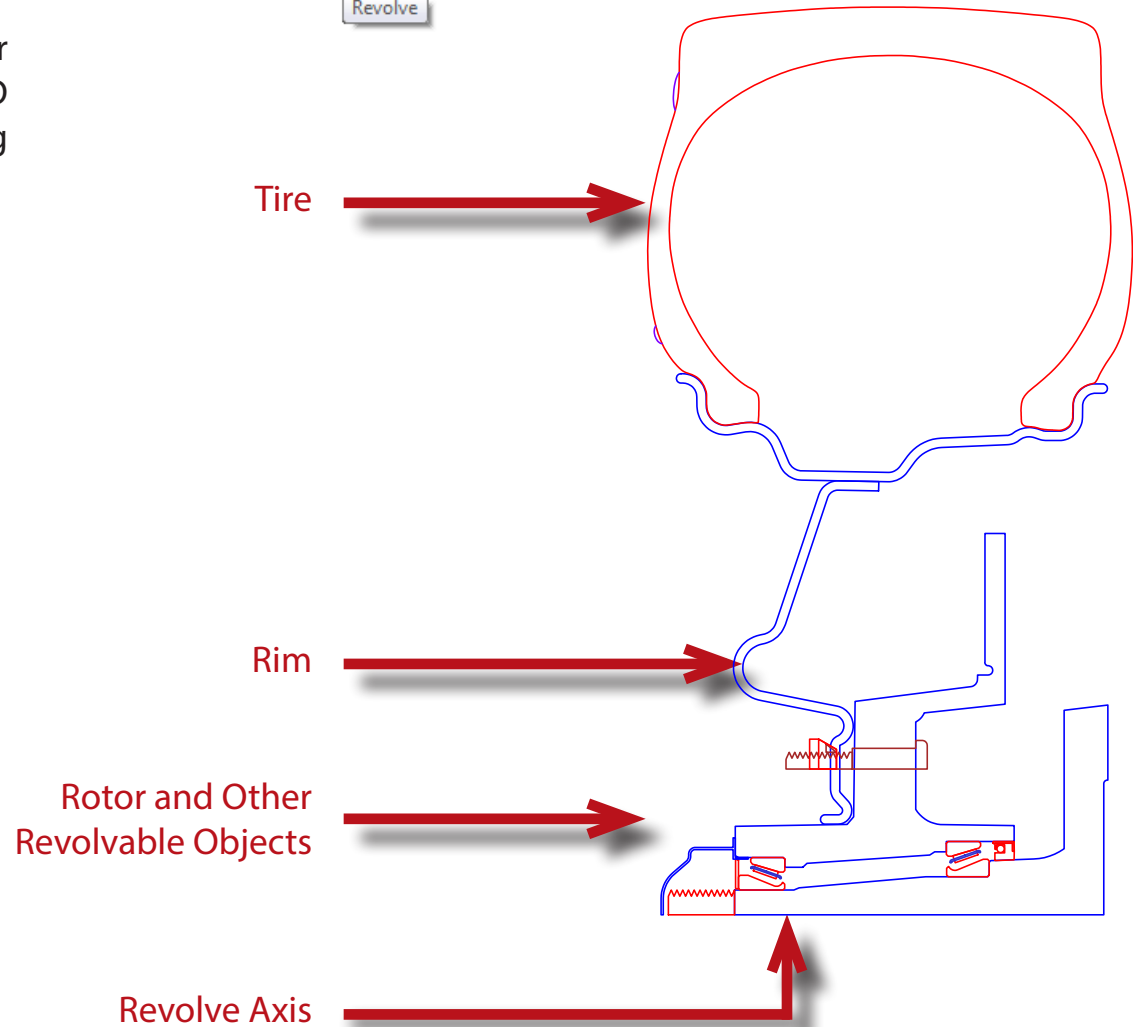


At some point in the drawing process, for some project along the way, almost every TurboCAD user will need to create a wheel rim and tire. With a little planning and a few TurboCAD tools the task is relatively easy.

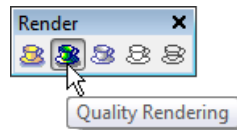




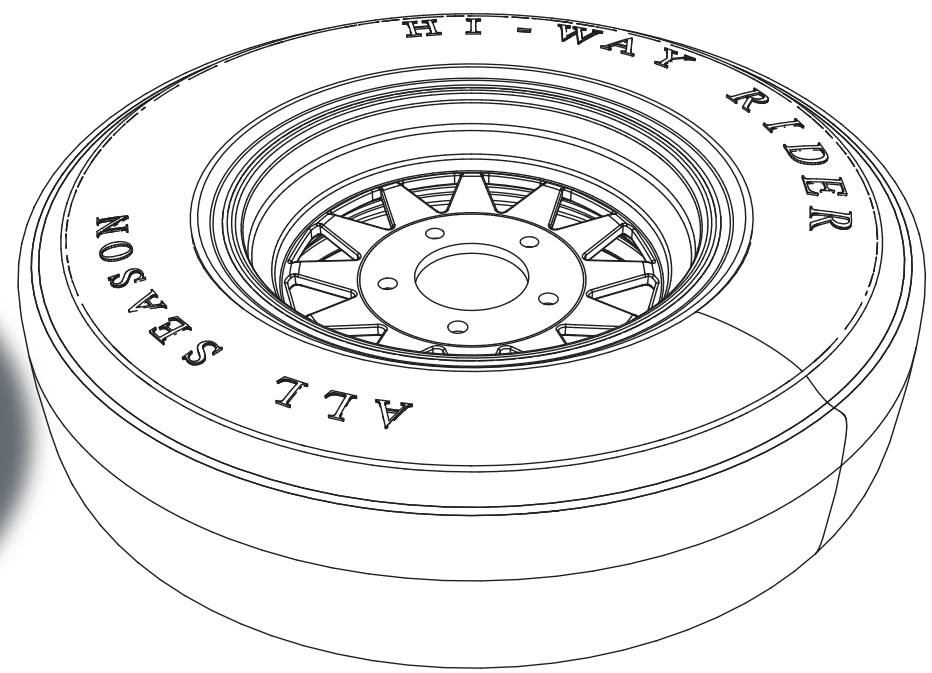
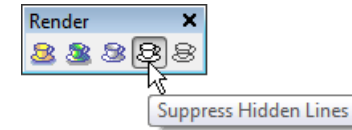
The wheel rim and tire, as well as many other related parts, are usually created by revolving 2D profiles to get the basic shape and then adding or subtracting details to suit.



Tire tread is most often created using one of two methods. The first method is to use an image texture bump map. No physical tread is created so it may not be suitable for render modes such as suppress hidden lines. But it is ideal for a quality render that is not inspected too closely.



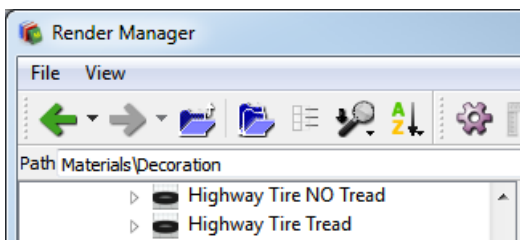
LightWorks Quality Render



LightWorks Suppress Hidden Lines Render

Using a bump map texture requires the use of an image that simulates the tread. It should be seamless so that it can be wrapped without inconsistencies around the tire.

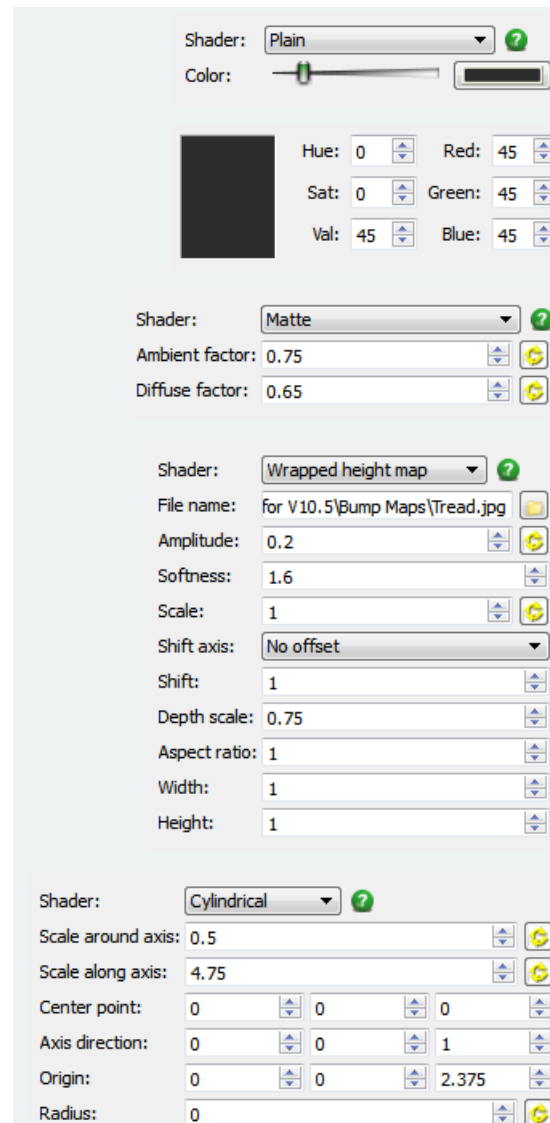
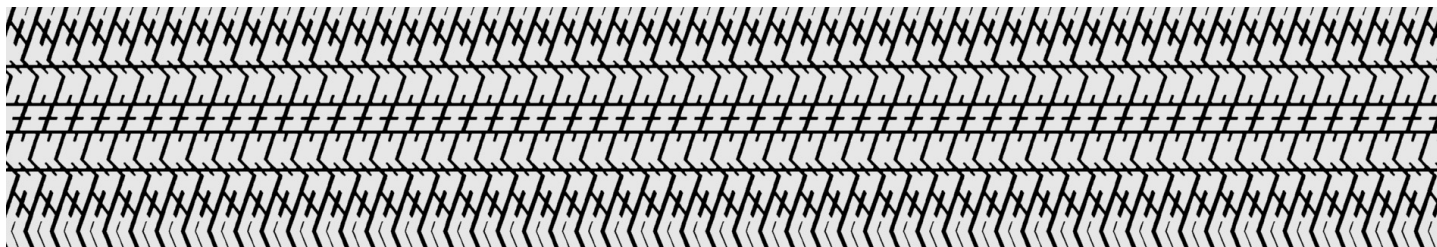
The tire can be 3D sliced, or manipulated by other Boolean operations, to produce two side walls and a center tread area. The center area receives the bump map while the side walls get a copy of the same material with the bump map excluded. In this way the whole tire is the same color and finish.



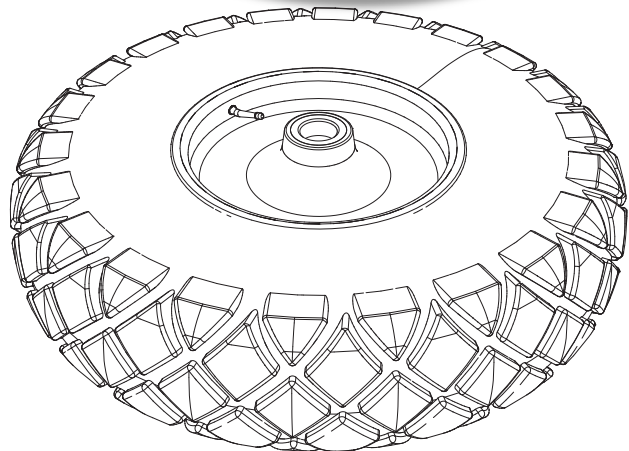
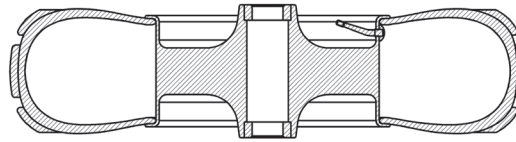
See Don Cheke's TurboCAD Tip #2 for info about Cylindrical wrapping.



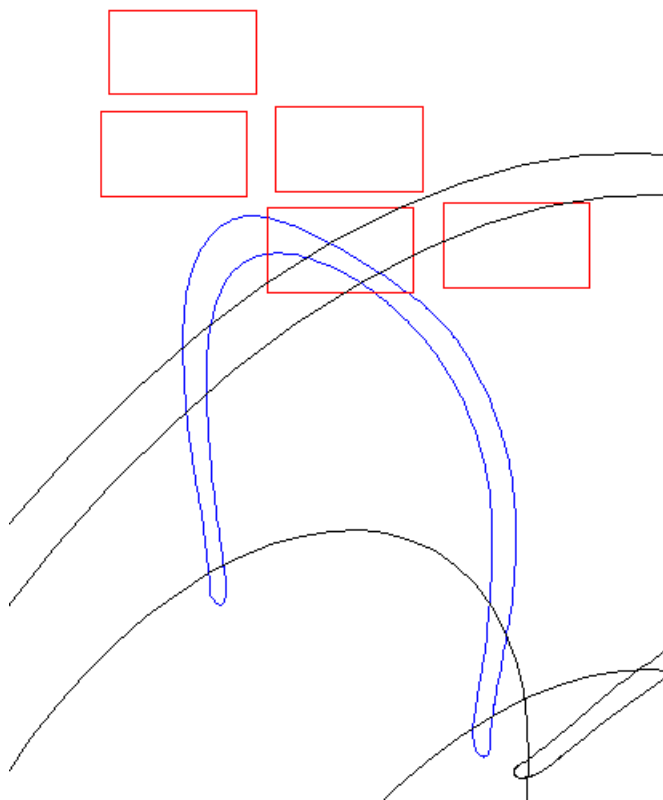
Bump Map Image Texture



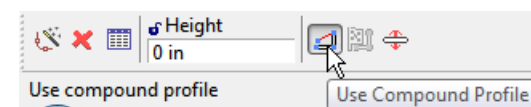
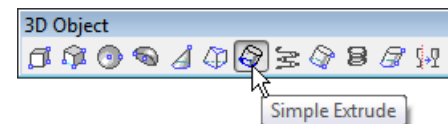
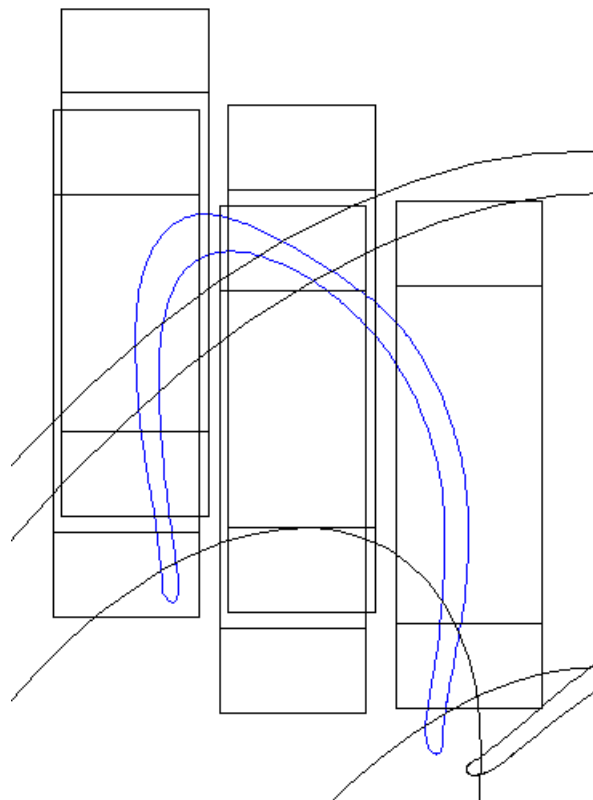
The second method to create treads is to 3D model them. This can be a bit more difficult and time consuming but the result can be quite spectacular in any render mode. Users must be aware that 3D modeled treads can be more computer resource intense, but this is not so much a concern since 64-Bit computing became the norm.



To create the 3D treads start with a small sample set. In this case 5 rotated squares were placed parallel to the top of the tire.

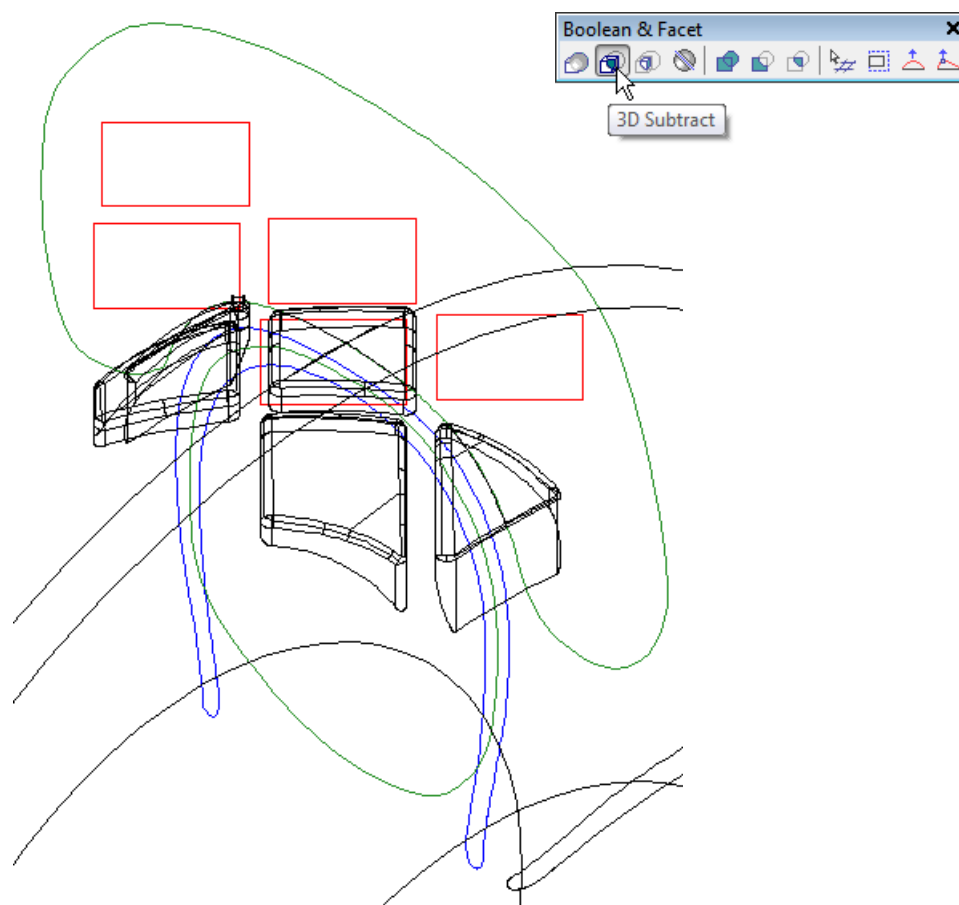
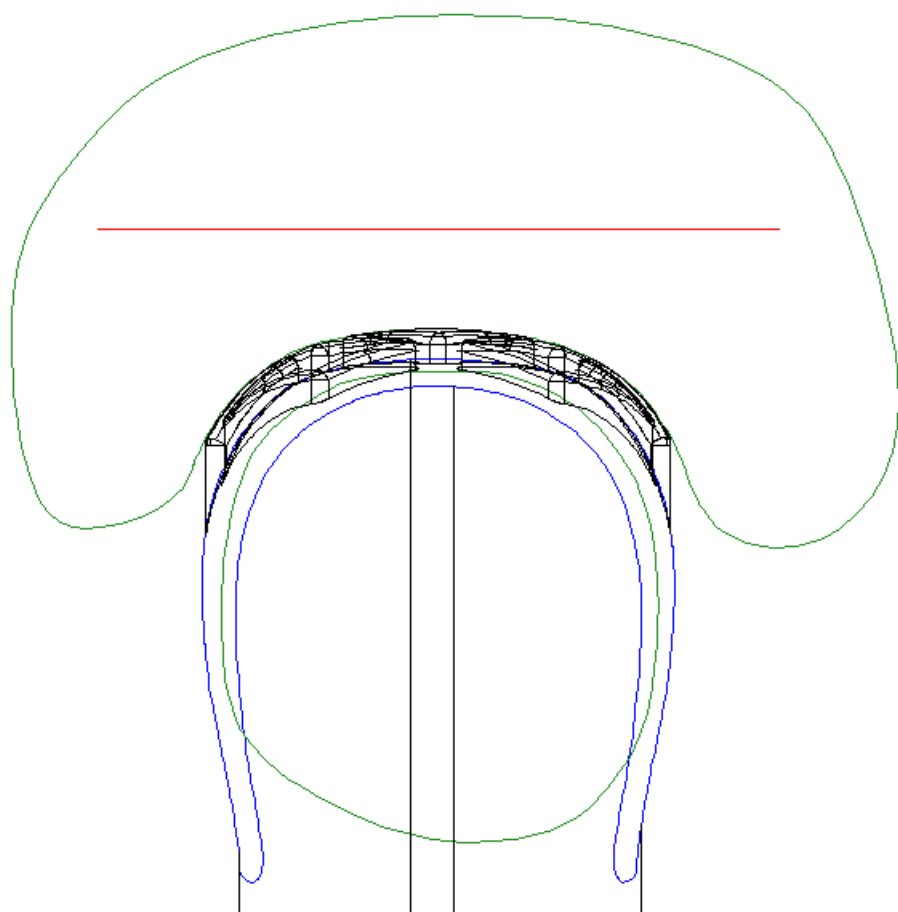


The profile was then extruded into the original treadless revolved tire using the Simple Extrude tool and the Use Compound Profile option.

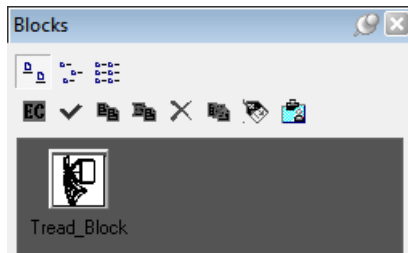


To form and clean up the 3D treads consider creating additional profiles that can be revolved and 3D subtracted from the 3D treads.

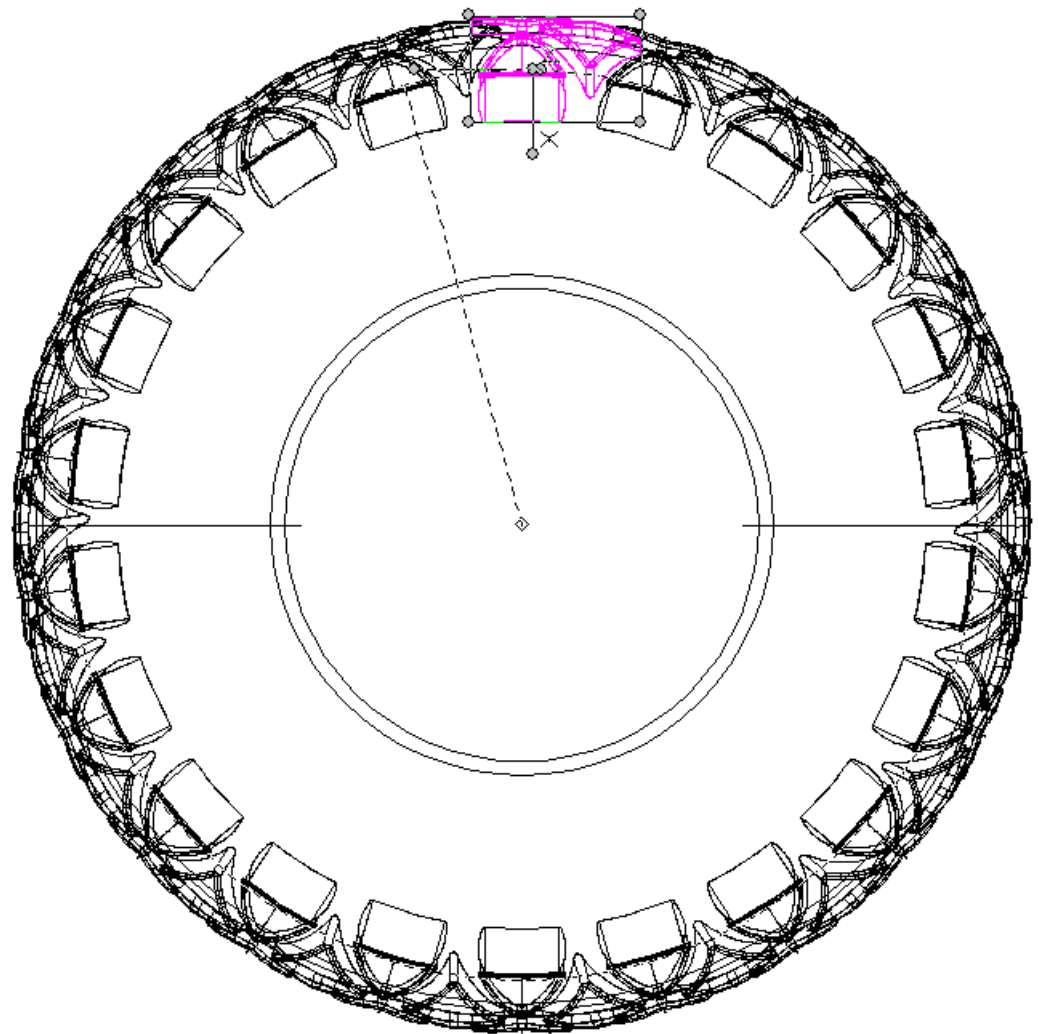
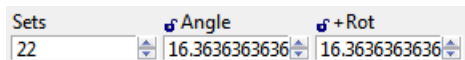
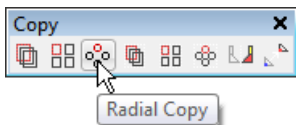
Two forest green profiles created to shape threads. Profiles revolved and subtracted from treads.



The tread set can be made into a block at this state (or after materials are applied) and the tread block can be radial copied to complete the entire tire.



In this case 22 copies we required. It may require a couple tries to get the best fit.



Don't be surprised how often a wheel or two are required.



If you found this TurboCAD tip helpful, please consider purchasing a full Textual Creations TurboCAD project tutorial that will lead you through an entire project, keystroke by keystroke. You won't be disappointed! Visit the [Textual Creations Shopping Page](#)