

**Asphalt and Soil Compaction Modeling** – One of the innovative and powerful R&D tools coming out of TransTech’s Soil Quality Indicator (SQI™) development program is the modeling of soil compaction for typical utility cut and repair backfill operations. Our engineers and scientists are on the cutting edge of this technology and are working closely with the FemLab multi-physics software by Comsol. The ability to fully understand exactly what happens to the various types of engineering soils used in these applications and to understand the effects of the compaction device and boundary conditions on these soils is paramount to ensuring that our sensor design is optimized for the most accurate and repeatable readings possible. This technology also has major ramifications for the Hot Mix Asphalt (HMA) road construction and repair industry. The same modeling techniques can also be used to study HMA compaction and the effects of the various types of compaction devices currently utilized (rollers, screeds, etc.). It is expected that virtually all of TransTech’s current and future production line will benefit from this powerful tool, as will any OEMs that partner with us to improve their equipment. This particular topic has been given a boost by the recent problem statement issued by NAPA that is calling for more in-depth study of the HMA compaction modeling issue. It is felt that getting back to the first principles of physics is necessary in order to fully understand this complex interaction of aggregate, asphalt binder, air voids and compaction. TransTech welcomes this effort and fully intends to lead the way by partnering with NAPA , NCAT, Comsol and others that are at the forefront of this effort.