EXSYS Case Study

Equipment Selection for Highway Construction

American Association of State Highway and Transportation Officials

One of the most common methods used in stabilizing earth fills is to compact soil in thin layers by using compacting equipment. Choosing the most appropriate compactor under a given set of job conditions is a typical problem that construction or highway engineers face when working on highway or other earth-moving projects.

A knowledge automation system was developed that helps the construction or highway engineers choose the most appropriate compactor under a given set of job conditions. Selecting a suitable compactor is affected by numerous field variables. The knowledge automation system is well suited for formulating and organizing this type of experience-based knowledge. The system takes into consideration:

- The degree of compacting required
- Job size
- Soil type
- Plasticity
- Moisture conditions
- Breakage of aggregates

The knowledge automation system recommendations specify standard AASHTO densities to jobs, and is used as a tutorial tool for inexperienced personnel. The information provided is enhanced by scanned images of various types of equipment.