

## **Structural Performance Of Prefabricated Utility Tunnel Based On Health Monitoring**

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Health monitoring technology is widely used in civil engineering. The utility tunnel (UT) is an important urban underground infrastructure, as its safety has direct influence on the daily operation of various municipal pipelines inside. This paper conducts a research on the structural performance of a prefabricated UT in Shanghai, China using health monitoring technology. Focusing on the life cycle structural safety of the UT, health monitoring sensors are installed inside and on the inner wall of the prefabricated segment to monitor the steel strain, the structural displacement, the rotation angle and other parameters 24h a day. By the analysis of monitoring data and the finite element simulation, the structural performance of the prefabricated UT is analyzed under the influences of factors such as the compaction of the backfill soil, the upper load, and the foundation settlement. Finally suggestions are put forward.