

# Cutting Face Projection Mapping System

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The Cutting Face Projection Mapping System projects natural ground information, at the touch of a few buttons on the projector situated on the drill jumbo, using the cutting face as a screen. Natural ground information that can be projected include: photos of the cutting face before applying cutting face shotcrete, hardness contour diagrams that were assessed by the drill energy of drilling the shot hole or exploration drills ahead of tunnel face, cutting face observation sketches, etc.

The system projects images without distortions regardless of the shape of the cutting face by using its functionality to cooperate with surveying instruments installed inside the tunnel. Projecting images on the cutting face applied with shotcrete for safety ensures that all workers are aware and shares the condition of the tunnel face and the hardness of the natural ground, contributing to efficiency of the construction as well as safety.

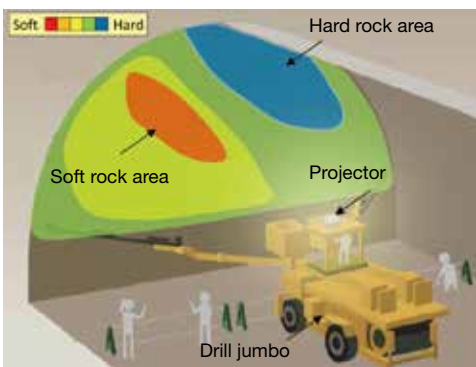


Fig. 1 Image of the Cutting Face Projection Mapping in Use



Photo 1 Projection of a Drill Hole Energy Contour Diagram



Photo 2 Projection of a photo of the Cutting Face