

## **6. Expanded Application of Dry Grinding System for Concrete Surfaces - System Modifications and Results of On-site Applications -**

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In work involving structural repairs and reinforcement, fragile surface layers are typically removed using water jets, sandblasting, disc grinders, or other methods. Such work tends to be performed repeatedly by workers who are required to assume uncomfortable positions in environments filled with scattered dust. These factors raise several issues, including lower working efficiency, variations in the quality of the resulting surfaces, and degradation of the work environment. As part of efforts to automate this grinding work, we developed five types of grinding devices.

In the study described here, we applied a Dry Grinding Device for Concrete Surfaces to peeling prevention work in the Tamagawa Tunnel on the Metropolitan Expressway Bayshore Route. However, because the working height of the device proved insufficient, we switched to general-purpose lifting equipment. This change reduced the structural weight and size of the overall grinding configuration. This change increased the working height to 7 meters, making it possible to operate not only on vertical slopes of roads but also on cross slopes, thus improving the quality of the grinding surface and the working environment. We believe the method will have broad applications and improve work efficiency.

**Key words:** repairs, peeling prevention, grinding, automation, efficiency, preventing dust scattering