

## Automatic Spreading System of Long Waterproof Sheets

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There are concerns that Japan will face a shortage of mountain tunnel engineers and skilled laborers as the population declines with the falling birthrate and the increasing ageing population. Obayashi Corporation is working to develop an automated mountain tunneling system that can be applied to all types of mountain tunnel construction sites, to respond to needs for automated technologies that will further improve productivity. One of these technologies is the "automatic long tarpaulin spreading system," which was developed as a "tarpaulin spreading technology" in the field of lining technology. By using a 10.4-meter-wide long sheet, this system can reduce the welding length at the construction site to one-fifth of the conventional length, thus ensuring the quality of waterproofing. In addition, a newly developed special device can ensure the adequate margin required when spreading the waterproof sheet.

After folding the tarpaulin, the roll of tarpaulin (Photo 1) is pulled up on the curved base of the work truck, and then the truck is moved forward to spread the tarpaulin, which is then automatically spread by pressing it against the wall surface with a balloon (Fig. 1).

This system enables rapid and labor-saving installation of tarpaulins in mountain tunnels, while ensuring the quality of the work. It has been confirmed that the use of automatic spreading and long tarpaulins has improved work efficiency by about twofold.



Photo 1 Rolled Waterproof Sheet (pulling up)

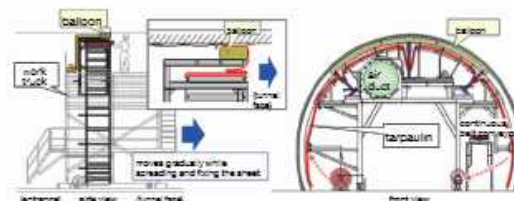


Fig. 1 System Outline