

Topics Fukushima introduces JAEA's activities related to Fukushima.

## **Decontamination of children's playgrounds, greater efficiency using ultra-high pressure water decontamination technology**

JAEA held a demonstration test from September 10 to 14 in "Mizuiro Park" in Motomiya City, Fukushima Prefecture, highlighting the high-efficiency decontamination of interlocking blocks, a type of concrete block used for pavement, as part of "research for the enhancement of ultra-high pressure water decontamination technology". The demonstration test was aimed at improving efficiency by optimizing decontamination parameters and increasing the number of cleaning units for maximum utilization of the capacity of ultra-high pressure pumps. The test will be utilized to develop cleaning devices that can be used in locations where existing ultra-high pressure water cleaning could not be applied.

Test results showed that work efficiency could be improved three-fold by using three cleaners for each pump by optimizing decontamination parameters. Possibility of decontamination was also confirmed with compact ultra-high pressure water cleaners used for cleaning places under benches and corners. Furthermore, more than 90% of water used for the decontamination was collected, and reused after sufficient reduction in its radiation levels was confirmed.

### **Three-fold improvement in work efficiency**



Fig. 1 A three-fold improvement in work efficiency was observed when using three cleaners for decontamination at the same time

\* Note that efficiency varies depending on the surface contamination conditions and work area.

Table 1 Representative point of decontamination effects  
(water volume 10L/min, suction airflow 15 m<sup>3</sup>/min)

175MPa	200MPa	225MPa
2180→43cpm (98.1%)	1792→23cpm (98.7%)	1860→14cpm (99.2%)

\* Measurement values are after subtracting background values.

Measurements are conducted by measuring the background value first with a 30 mm lead plate around the measurement area, and 7 mm lead plate between the ground surface and the detector, and then removing the 7 mm lead plate to obtain the actual value. The measurement value was determined by subtracting the background value from the actual value.

### Testing devices that can be used in various locations



Fig. 2 Development of compact ultra-high pressure cleaners used for cleaning places under benches and corners that could not be decontaminated by existing cleaners.





Fig. 3 Decontaminated place (upper pictures) and the surface of the pavement (lower pictures) of before and after decontamination. The left row is before decontamination, the right row is after decontamination. The old mortar joint sand was removed by decontamination, and white mortar joint sand was newly poured after decontamination.

Scenes from this testing is available on the Ministry of the Environment homepage ([http://josen-plaza.env.go.jp/info/rebirth/rebirth\\_19.html](http://josen-plaza.env.go.jp/info/rebirth/rebirth_19.html)) and the Motomiya City homepage (<http://www.city.motomiya.lg.jp/soshiki/14/jyosen-mizuirokouen.html>).