12. On the Application of Electrostatic Spraying to Porcelain Enamel. (III)

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In the previous paper (this Bull. **26**, (1951), 71), the authors have confirmed that the uniformity of thickness can be appreciably improved by rotating the specimens when they pass through the electrostatic field. Then, the number of the spray guns were increased in order to obtain the heigher uniformity in coating. The present report contains the results of the experiments in which three spray guns were used.

A construction of the spray booth and the materials to be sprayed were the same as described in the previous report. The three automatic spray guns were set up at the entrance of the booth: Two of which placed on the left side of the conveyer line with the vertical distance of 50cm. The other, whose height corresponds to the mean value of the former two, was placed on the right side. The axises of the sprays were directed at an acute angle of about 10° to the conveyer line.

The uniformity of coating determined are shown in Table 1-(1). Table 1-(2) indicates, for reference, the result at the case in which no electrostatic field was applied.

Table 1. Uniformity of application (application weight, gr per sq. dm.)

(1) Rotated in the electrostatic field

	inside surface	outside surface
Side wall		
upper	1.2	1.7
middle	1.5	1.6
lower	1.6	1.4
Bottom wall	1.3	1.6
Total	6.5	6.5

(2) Rotated without electrostatic field

	inside wall	outside wall
Side wall		
upper	0.5	0.6
middle	0.8	1.1
lower	1.3	0.6
Bottom wall	0.8	1.1
Total	2.8	2.6

Comparing these results with those obtained in the previous work, in which only two spray guns were used, it is obvious that the increase of the number of the guns made much effect on improving the uniformity of the coating.