

## **Discharge – Impulse Influence**

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One of the most perspective methods of influence on the hardening cement paste or concrete mixture is discharge – impulse influence. Discharge – impulse influence is influence on the disperse systems by the series of powerful electric discharges, causing development of the electrohydraulic effect (hydraulic impact).

Discharge – impulse influence was realized on the laboratory discharger with the energy of one impulse 29.4 J. The Portland cement M500 of the Magnitogorsk Cement Works was chosen for the investigations.

When the discharge–impulse influence is applied 3–5 minutes after mixing, the growth of compressive strength of the samples after discharge–impulse influence (as compared with samples of normal hardening) is 150 % after 1 day of hardening and 46 % after 28 days. When discharge – impulse influence is applied in 20 minutes after mixing analogous growth of the strength is 56 and 10 %, in 30 minutes – 48 and 10 %, respectively. Thus, efficiency of the discharge – impulse influence reduces as the time of application removes towards the end of the period of the coagulative structure existence.

Disperse systems can be manipulated by these impulses so that specific material properties can be set after hardening.