

## **CELLULAR SPRAYED CONCRETE FOR SIMPLE AND ECONOMIC REMIXING**

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The development of various supplementary cementitious materials (SCMs) and chemical admixtures, makes the manufacturing of high-performance shotcrete possible. The most important SCM in high-performance shotcrete is silica fume because of its effect on pumpability, high-strength and durability which lies in its Pozzolanic reaction. Furthermore, the very small particle size of silica fume reacts more quickly than other SCMs and acts as a filler which contributes to the nano-sized porosity occurring in the interfacial transition zone. On the other hand, because of the extremely small particle size of silica fume, it is used as a pre-blended type with a Portland cement for a better distribution of silica fume in concrete. This results in a high cost material. If it is possible to distribute the very fine silica fume in a ready-mixed concrete, this would results in a very simple and an economic way.

A very innovative method, which was named as Cellular sprayed concrete, was developed. Cellular sprayed concrete is a process to produce a High-Performance Concrete (HPC) by adding cellular and silica fume in ready-mixed concrete. This method enable to distribute the very fine silica fume in a ready-mixed concrete. This paper describe on the very new and innovative concept and procedures of cellular sprayed concrete.