

The invention concerns the use of organic fibers having a melting point lower than 300°C, an average length l more than 1 mm and a diameter \varnothing not more than 200 μm , in ultra high performance concrete for improving the concrete fire resistance, the amount of organic fibers being such that their volume ranges between 0.1 and 3 % of the concrete volume after setting and the concrete having a compressive strength at 28 days of at least 120 MPa, a bending strength of at least 20 MPa, and a spread value in non-hardened state of at least 150 mm, said values being for a concrete preserved at 20°C, said concrete consisting of a particularly hardened cement matrix wherein metal fibers are dispersed.