



Pozzocrete 100 – Product Application Report

Pozzocrete 100 is a superfine processed fly ash designed for application in high performance concrete. Generally, the use of additives like microsilica is the most common practice for high performance concrete (more than 60 Mpa). The following two tables illustrate the results of comparative concrete trial mixes for M70 grade concrete with Pozzocrete 100 against microsilica mixes.

Trial Mix 1 – Same Binder content

Particulars	Microsilica mix	Pozzocrete 100 mix
OPC	440 kg	485 kg
Microsilica	45 kg	0
Pozzocrete 100	0	120 kg
Pozzocrete 60	120 kg	0 kg
Natural Sand	730 kg	735 kg
M20	767 kg	771 kg
M10	328 kg	331 kg
Water	169 lit	157 lit
Admixture	6.05 kg	6.05 kg
% Admixture	1%	1%
w/c	0.28	0.26
Slump		
Initial	collapse	collapse
180 mm	200 mm	200 mm
Comp. strength		
1 day	20.36 Mpa	23.12 Mpa
3 days	47.55 Mpa	55.55 Mpa
7 days strength	60.81 Mpa	66.93 Mpa
28days strength	86.26 Mpa	95.82 Mpa
RCPT at 28 days		

Trial Mix 2 – Reduced Binder content

Microsilica mix	Pozzocrete 100 mix
440 kg	445 kg
45 kg	0
0	120 kg
120 kg	0
840 kg	735 kg
720 kg	771 kg
266 kg	331 kg
169 lit	136 lit
6.05 kg	5.5 kg
1%	1%
0.28	0.24
collapse	collapse
200 mm	200 mm
25.23 Mpa	24.44 Mpa
55.25 Mpa	64.70 Mpa
65.55 Mpa	71.19 Mpa
96.44 Mpa	94.89 Mpa
1625 coulombs	1596 coulombs

The following are the salient points of the above trial mixes:

- The Pozzocrete 100 mix was found to be highly cohesive and easy to work with compared to the harsh and sticky microsilica mix. The admixture dosages for both mixes were the same.
- The water demand in Pozzocrete 100 mix was reduced as compared to microsilica mix to achieve the same slump. A collapse initial slump and 200 mm on 3 hours retention were achieved for both mixes.
- The 3 days, 7 days and 28 days strengths of Pozzocrete 100 mixes were higher in the range of 10 to 14% as compared to microsilica mix.
- Further on, it was observed that even with reduced binder content, Pozzocrete 100 mix yields better compressive strength results as compared to microsilica mix.
- The RCPT result for Pozzocrete 100 was at par with the microsilica mix. The RCPT value of 1595 coulombs can be bettered with further revisions in mix design.
- The Pozzocrete 100 mix proves to be 15 to 20% more economical as compared to the microsilica mix.