

Case history

Industry	Infrastructure
Project	Mumbai Pune Expressway. Client - MSRDC
Location	Mumbai to Pune
Completion date	Y1997



Section A

Consultant	STUP
Contractor	IJM - SCL
Products	Conplast RP264- 1.5 lakh litres Conplast SP430SRV - 2.2 lakh litres Concure WB - 1 lakh litres Conbextra EP10(M) - 500 packs Conbextra GP2

Section B

Consultant	ICT, Mumbai
Contractor	HCC
Products	Conplast SP430A1 - 3.5 lakh L Concure WB - 1.2 lakh L Nitoseal 200 - 5 MT Colpor 200 - 1 MT Conbextra GP2 - 10MT

Section C

Consultant	Freshman Prabhu
Architect	-
Contractor	L & T ECC
Products	Conplast SP430A1 - 70,000 litres Concure WB - 175000 litres

Section D

Consultant	Sir Owens Williams
Architect	-
Contractor	VM Jog
Products	Conplast RP264

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Project

Mumbai Pune expressway is the first concrete expressway with pavement quality concrete.

The minimum concrete grade requirement was M40 grade. The slump requirements at site was 25-40mm. This is not easy to achieve. The paving was done by special pavers and any slump less than 25mm, the concrete cannot be paved and if it exceeds 40mm, it collapses as the paver moves forward. The distance of batching plant from site of application would sometimes be a few KM and concrete was to retain its workability for about 30-45 minutes. Curing was achieved by using Concure WB curing compound.

Based on the site conditions and variations in aggregates, different admixtures worked at different sites. Typical mix designs for pavement quality concrete (PQC) is enclosed.

	HCC	L&T (Pimproli)	IJM-SCL
Cement	390 kgs(L&T 53)	385(L&T 53)	400 (ACC 53)
20mm	752	818	
10mm	413	351	
c.sand	564	215	
r.sand	150	501	
Water	159.9	154	160
W/C	0.41	0.4	0.4
Admixture	Conplast SP430A1	Conplast SP430A1	Conplast SP430SRV
Dosage by weight of cement	0.9% to 1.2%	1.3%	1.0%
Initial slump	65mm	65mm	50mm
Retention	30mm (45 mins.)	30mm(45 mins)	25mm (45 mins)



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	ACC (Prakash)	L&T (Kandala-bypass)
Cement	400 kgs(ACC53)	390 kgs
20mm		834.12
10mm		271.6
c.sand	21% of total agg.	310.4
r.sand	21% of total agg.	512.15
Water	160	140.4
W/C	0.4	0.36
Admixture	Conplast SP430A1	Rheobuild PQC
Dosage by weight of cement	1.3%	1.0%
Initial slump	50mm	60mm
Retention	20mm (45 mins)	25mm(45 mins)