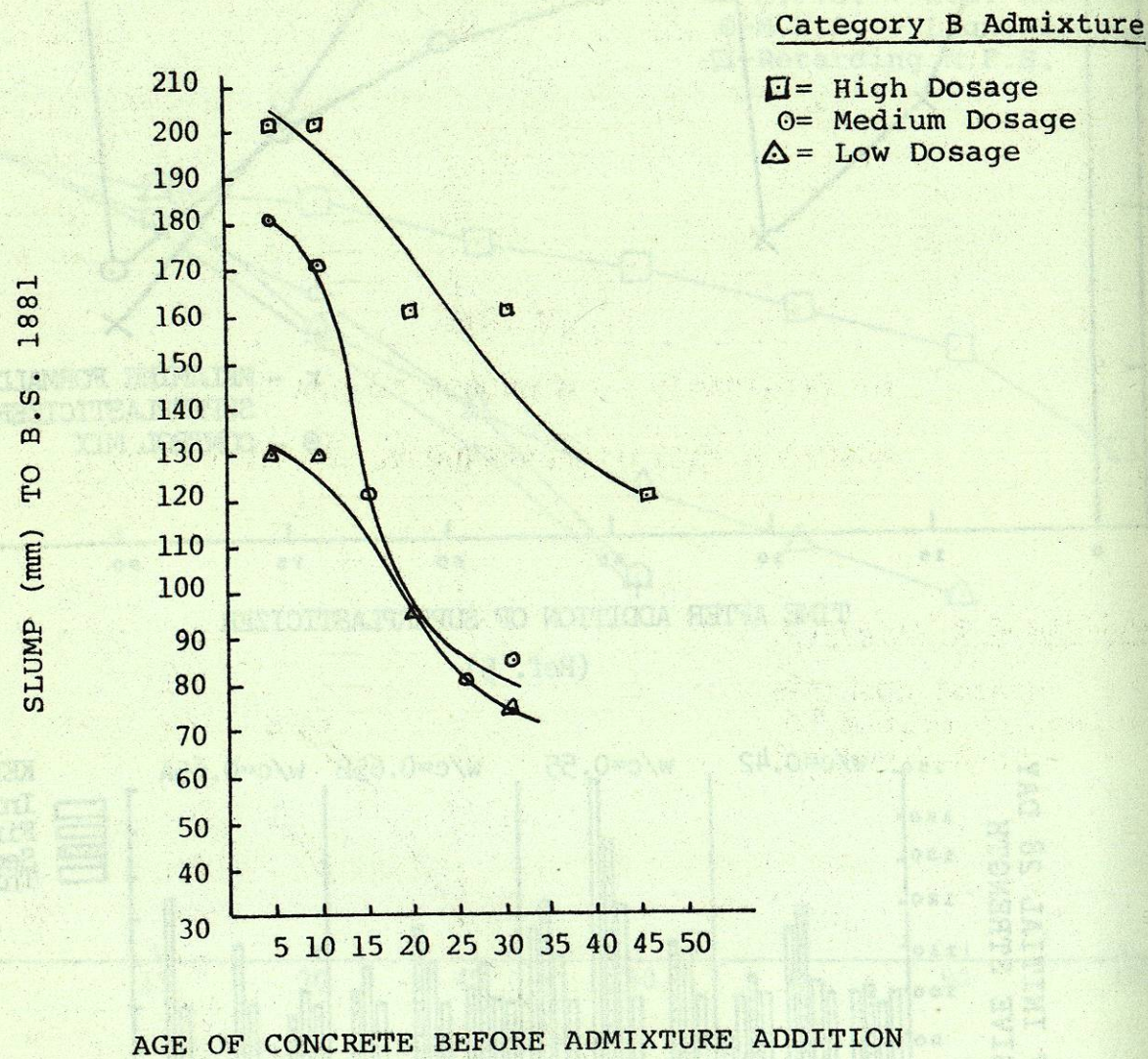


FIG. VI
EFFECT OF AGE OF CONCRETE ON CAPABILITY TO
BE FLUIDIFIED BY SUPERPLASTICIZER ADDITION



(Ref. 10)

FIG. VII
PERMEABILITY AS AFFECTED BY WATER/CEMENT RATIO
(TROXEL, DAVIS AND KELLY (1968) (Ref. 14)

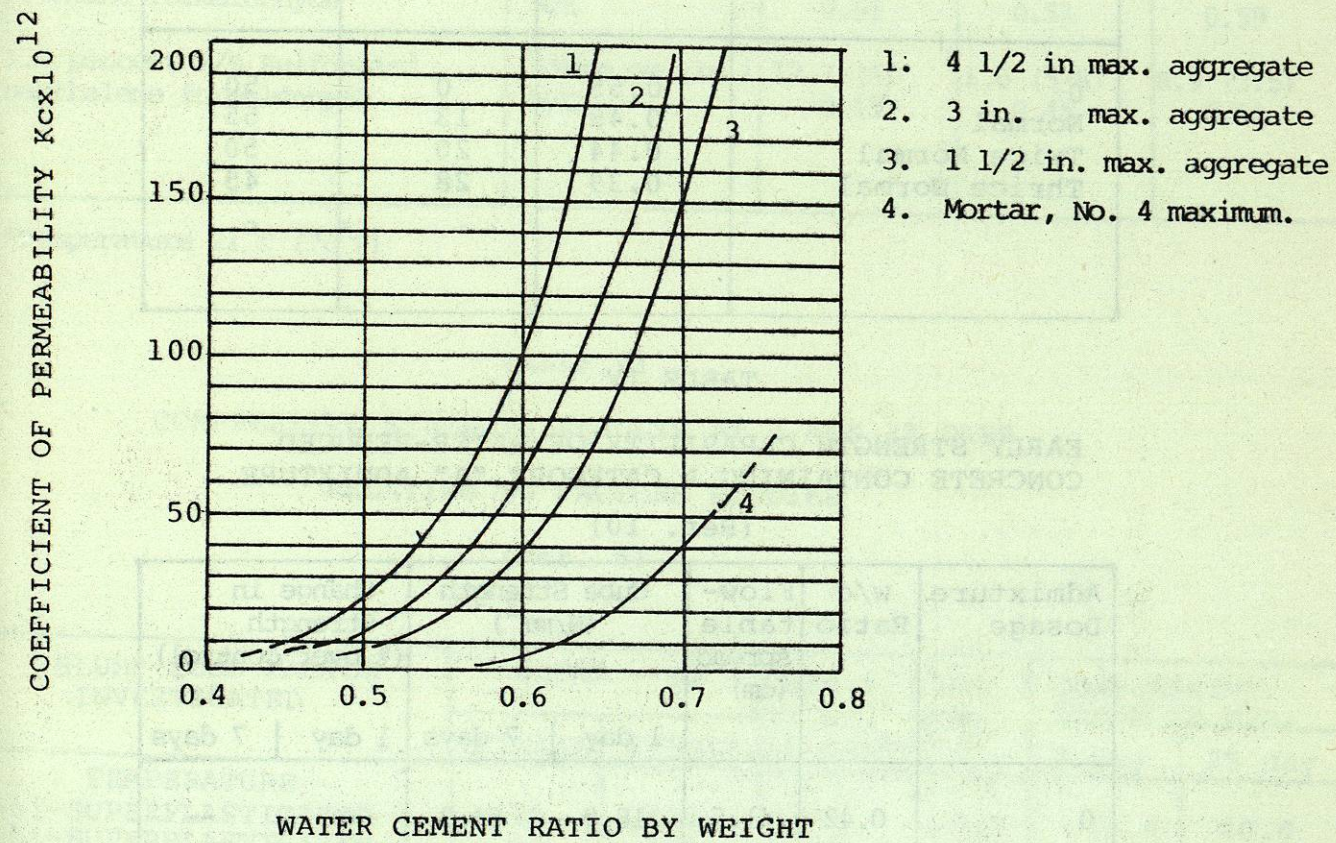


TABLE III

WATER REDUCTIONS USING A CATEGORY B SUPERPLASTICIZER

(Ref. 10)

Admixture Dosage	w/c ratio	Water reduction %	Slump mm
Normal	0.57	5	100
Twice Normal	0.52	15	100
Thrice Normal	0.48	20	100
0	0.55	0	50
Normal	0.48	13	55
Twice Normal	0.44	20	50
Thrice Normal	0.39	28	45

TABLE IV

EARLY STRENGTH CAPABILITY OF WATER-REDUCED CONCRETE CONTAINING A CATEGORY "A" ADMIXTURE

(Ref. 10)

Admixture Dosage	w/c Ratio	Flow-table spread (cm)	Cube Strength (N/mm ²)		Change in Strength (% over control)	
			1 day	7 days	1 day	7 days
			0	0.42	41.5	18.0
Normal	0.36	42.0	38.0	62.5	+111	+14
Double	0.33	51.0	49.6	76.3	+176	+39
Quadruple	0.32	43.0	49.1	75.8	+173	+38

TABLE V

EFFECT OF WATER-REDUCING ADMIXTURES ON RETEMPERING

(Ref. 7)

CEMENT B*		Time min.		
		10	120	126
Reference	Slump cm (in.)	13.3 (5 1/4)	3.5 (1 3/8)	9.8 (3 7/8)
	W/C	0.58	0.58	0.66
1.0 percent s/s sulfonated melamine formaldehyde	Slump cm (in.)	11.4 (4 1/2)	2.9 (1 1/8)	8.6 (3 3/8)
	W/C	0.51	0.51	0.59
1.0 percent s/s sulfonated naphthalene formaldehyde	Slump cm (in.)	12.7 (5)	1.6 (5/8)	8.9 (3.5)
	W/C	0.45	0.45	0.54

*Temperature 21°C (70°F)

TABLE VI

COMPRESSIVE STRENGTH RESULTS AT 7 AND 28 DAYS

RELATING TO FACTORS STUDIED

(Ref. 5)

SLUMP LOSS FACTOR INVESTIGATED	SLUMP - mm		DOSE % BY WT. OF CEMENT	MIX TEMP. °C	COMPRESSIVE STRENGTH MPa.	
	INITIAL	FINAL*			7 day	28 day
TEMPERATURE						
M-L1-SUPERPLASTICIZER	75	230	1.5	15.5	33.4	40.0
M-L1-SUPERPLASTICIZER	75	220	1.5	22.0	32.2	38.0
M-L1-SUPERPLASTICIZER	75	230	1.5	32.0	29.7	34.3
M-R1-SUPERPLASTICIZER	75	250	1.5	32.0	33.1	35.5
REDOSAGE						
M-L1 STANDARD	75	230	1.5	32.0	30.4	35.1
	--	230	---	32.0	18.8	23.9
COMBINED ADMIXTURES						
CLS (0.45%)+M-L1(1.5%)	75	220	1.5	23	36.7	39.5
HCR (0.2%)+M-L1(1.5%)	75	240	1.5	22	37.1	39.5
M-L1	75	220	1.5	22	32.2	38.0
M-R1	75	250	1.5	23	32.0	35.9

INITIAL SLUMP 75 ± 10 mm FOR MOST MIXES TAKEN JUST BEFORE ADDITION OF SUPERPLASTICIZER.

CYLINDERS CAST AFTER ADDITION OF SUPERPLASTICIZER.

* FINAL SLUMP DENOTES THAT MEASURED AFTER ADDITION OF SUPERPLASTICIZER.

* M-R1 RETARDING SUPERPLASTICIZER (1.5% BY WEIGHT OF CEMENT)

