

## List of Tables

1.1	Mix design made in September 1987	1 – 9
2.1	World Wide Survey of Abrasion Test	2 - 23
3.1	General manufacture plan – identification of the 48 mixes	3 - 9
4.1	Laboratory testing programme	4 - 3
5.1	Laying plan for paved road and sidewalk at Westgate installed on 22 <sup>nd</sup> and 23 <sup>rd</sup> -September 1987	5 – 4
6.1	Laboratory testing programme	6 - 3
6.2	Summary of tests	6 - 5
6.3	Ratio of compressive strengths	6 – 14
6.4	Average compressive strengths results – MA20	6 – 25
6.5	Average tensile splitting strength results to ISO 4108	6 – 28
6.6	Ratio : Average compressive /TSS	6 – 28
6.7	Average abrasion resistance indices	6 – 31
6.8	Mix designs (Relative proportions by mass %)	6 – 35
6.9	Average MA20 compressive strength relative to control	6 – 36
6.10	Wettest MA20 compressive strength relative to control	6 – 37
6.11	Average tensile splitting strength relative to control	6 – 38
6.12	Wettest tensile splitting strength relative to control	6 – 39
6.13	Wettest abrasion resistance relative to control	6 – 42
6.14	Wettest abrasion resistance relative to control	6 – 42
6.15	Summary of results - critical ratios of strength criteria	6 – 44
6.16	28 day strength design values for different binder contents	6 – 48
6.17	28 day strength design values for different binder types	6 – 48
7.1	Results of compression testing	7 – 5
7.2	Average results of compression tests	7 – 6
7.3	Summary of variations in compression tests	7 – 15
8.1	Regression analysis of mvd vs mcd	8 – 38
8.2	Quantifying degrees of abrasion in terms of mcd and mvd	8 – 41
8.3	Classification of concrete pavers in terms of degrees of abrasion.	8 – 44
8.4	CMA research into abrasion resistance of cbp	8 – 47
9.1	Regression analysis data for three mixes	9 – 26
9.2	Correlation of abrasion indices with average compressive strength	9 – 33
9.3	Correlation Coefficients for Various MA20 Abrasion Indices	9 – 37
9.4	Hardness values for common abrasive particles and phases or constituents of steels and cast irons	9 – 40
9.A	Comparison of three ball bearing tests	9 – 44
9.5	Various forms of Rolling Steel Ball Abrasion Tests and investigating Authors.	9 – 52
10.1	Correlation of wirebrush abrasion indices with compressive strength.	10 – 17
10.2	Classification of cbp surfaces in terms of limiting criteria – wirebrush test.	10 – 21
10.3	% Coefficient of variation	10 – 22
11.1	Correlation between "average" compressive strength and ASTM C418 abrasion test	11 – 12
12.1	Critical comparison of three abrasion tests	12 – 3
12.2	Relationship between compressive strength and abrasion resistance in cm <sup>3</sup> .	12 – 15
12.3	Summary of regression analysis of AVG-MPa vs abraded volume	12 – 17
12.4	Average % coefficients of variation for tests	12 – 24

12.5	R <sup>2</sup> Correlation Coefficients indicating the correlation between 6-year site-wear and 28-day abrasion indices.	12 - 31
13. 1	Correlation of ASTM-C140 absorption test and SABS-0164 (ISAT) with "average" compressive strength, dry density and abrasion resistance	13 - 6
14.1	Six year wear at Westgate	14 - 5
14.2	Summary of 1987 Laboratory Results and 1993 wear measurements at Westgate	14 - 13
14.3	Degree of correlation between mvd and laboratory tests	14 - 21
14.4	28 day limiting criteria for three abrasion tests	14 - 31
14.5	Average R <sup>2</sup> coefficients of 6 water contents/mix designs for all 6 mix designs	14 - 44
15.1	MA20SA indices - taken from design graphs, corresponding to mvds of 0,5 mm and 1,0 mm	15 - 3
15.2	Abrasion resistance mix design selection chart	15 - 8
15.3	Framework schedule for internal quality control on concrete roadpaving blocks according to NEN 7000	15 - 21