



NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECTS DRAWINGS FOR INFORMATION ONLY (NOT SCALE) TO BE USED WHERE A CONFLICT OF DIMENSIONS EXISTS OR IN ANY DOUBT - ASK!
- CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.

NOTES

- ALTERNATIVE BASE COURSE MATERIAL:** AS AN ALTERNATIVE TO ASPHALTIC CONCRETE BASE COURSE THE CONTRACTOR CAN USE AN STANDING CONCRETE MIX '312' 150mm THICK STANDARD CONCRETE MIX '312' SHALL CONFORM TO BS 2038-1, BS 8000-1, BS 8000-2 & IS EN 13187-1. CURING OF LEAN-MIX ROAD BASE SHALL BE BY BUTYROMOUS SPRAYING TO CLASS 900 MIN SPECIFICATION FOR ROAD WORKS.
- USE OF BASE COURSE FOR CONSTRUCTION TRAFFIC:** THE BASE COURSE MAY BE USED FOR CONSTRUCTION TRAFFIC PROVIDED IT IS REINFORCED IN THIS MANNER AND SURFACE FINISHED WITH SURFACE DRESSING SHOULD BE CARRIED OUT IN ACCORDANCE WITH CLAUSE 319 AND 322 OF THE SPECIFICATION FOR ROADWORKS. THE BINDER SHOULD BE CUTBACK BITUMEN OR CATIONIC BITUMEN DALSOL, COMPLYING WITH THE SPECIFICATION, OTHER BINDERS MAY BE USED, SUBJECT TO APPROVAL.
- THE DEPTH OF THE SUB-BASE AND CAPPING LAYERS WILL VARY WITH THE SUBGRADE STRENGTH, AS INDICATED BY THE CBR TEST RESULTS. THE THICKNESS OF THE SUB-BASE LAYER SHOULD BE 150mm FOR ALL FORMS OF ROADWAY CONSTRUCTION.

LOWEST SUBGRADE CBR (%)	MINIMUM CAPPING LAYER THICKNESS (mm)
< 2-5	450-250
2-5	250-150
MORE THAN 15	NO CAPPING LAYER REQUIRED

IF THE CONTRACTOR PROPOSES TO USE THE SUB-BASE FOR CONSTRUCTION TRAFFIC HE SHOULD SEEK APPROVAL FROM THE ENGINEER TO DO SO. SUCH APPROVAL WILL ONLY BE GIVEN IF THE SUB-BASE IS ANTICIPATED TO BE USED IN THIS MANNER. EXTRA SAMPLES MAY BE REQUIRED BY THE LOCAL AUTHORITY WHICH INDICATES A SIGNIFICANT VARIATION IN SOIL TYPE. IN PREPARING THE TEST SPECIMENS THE METHOD OF COMPACTION SHOULD BE THE STATIC COMPACTION METHOD 2, AS SPECIFIED IN PARAGRAPH 7.2.3.1 OF BS 1377-2.

MATERIAL SPECIFICATION FOR SUB-BASE AND CAPPING LAYER:

(a) SUB-BASE SUB-BASE MATERIAL SHOULD COMPOSE TYPE B GRANULAR MATERIAL, IN ACCORDANCE WITH CLAUSE 804 OF THE SPECIFICATIONS FOR ROADWORKS. THE MATERIAL SHOULD BE WITHIN THE GRADING LIMITS SET OUT IN TABLE 4.1 BELOW.

TABLE 4.1 SUB-BASE MATERIAL - PERCENTAGE BY MASS PASSING	100 sieve size	Overall grading range	Super declared value	Grading range	Tolerance
35.5	100	NR	NR	NR	NR
16	55-85	NR	NR	NR	NR
8	35-65	63-77	+/-8	43-57	+/-8
4	22-50	30-42	+/-8	15-30	+/-8
2	15-40	22-33	+/-7	10-20	+/-5
1	10-35	15-30	+/-5	0-7	NR
0.5	0-20	5-15	+/-5	0-7	NR
0.075	0-7	NR	NR	NR	NR

PARTICLE SIZE DISTRIBUTION SHOULD BE DETERMINED BY THE WASHING AND SIEVING METHOD OF IS EN 12361. ALL MATERIAL USED SHOULD BE FREE FROM FINE PARTICLES.

(b) CAPPING LAYER THE CAPPING LAYER SHALL BE CONSTRUCTED WITH CLASS F1 OR F2 CRUSHED GRAVEL OR CRUSHED CONCRETE. THE MATERIAL SHOULD HAVE A MAXIMUM SIZE OF 100mm AND THE MAXIMUM ALLOWABLE FINES SHALL BE 10%. THE MATERIAL SHOULD BE WELL GRADED THROUGHOUT ALL SIZES.

PAVING QUALITY CONCRETE WHICH MEET THE ABOVE REQUIREMENTS MAY ALSO BE SUBJECT TO APPROVAL.

CONCRETE FOR ROAD SURFACINGS:

PAVING QUALITY CONCRETE SHOULD BE CLASS F1 OR F2 CRUSHED GRAVEL OR CRUSHED CONCRETE. THE MATERIAL SHOULD HAVE A MAXIMUM SIZE OF 100mm AND THE MAXIMUM ALLOWABLE FINES SHALL BE 10%. THE MATERIAL SHOULD BE WELL GRADED THROUGHOUT ALL SIZES.

TABLE 5.1 CONSTITUENTS FOR PAVING QUALITY CONCRETE	MINIMUM	MAXIMUM
CEMENT CONTENT	340kg/m ³	
FREE WATER/CEMENT RATIO	0.45	
MAXIMUM AGGREGATE SIZE	20mm	
MINIMUM STRENGTH CLASS	C32/40	
MINIMUM AIR CONTENT	4.5%	
SUMP CLASS	S3	

- SAWING OF JOINT GROOVES SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE AFTER THE CONCRETE HAS HARDENED SUFFICIENTLY TO ENABLE A SHARP GROOVE TO BE PRODUCED, WITHOUT DAMAGING THE CONCRETE AND BEFORE RANDOM CRACKS DEVELOP IN THE SLAB. THIS WOULD BE WITHIN 4 TO 24 HOURS AFTER THE CONCRETE IS POURED. THE GROOVES SHOULD BE BETWEEN 1/4 AND 1/2 THE DEPTH OF SLAB AND OF ANY CONCRETE WITH NOT LESS THAN 3mm. THE GROOVE CAN BE WIDENED BY SAWING AT THIS STAGE, OR LATER, TO ACCOMMODATE THE JOINT SEALANT.
- EXPANSION JOINT FILLER SHOULD BE COMPRESSIBLE BOARD 25mm THICK, FOR THE FULL DEPTH OF THE CONCRETE. THE TOP OF THE FILLER BOARD SHOULD BE PROTECTED BY A COVER OF 25mm, IN ORDER TO RECEIVE THE JOINT SEALANT.
- DOWEL BARS AND THE BARS SHOULD BE 8000S STEEL, COMPLYING WITH BS EN 1377-2, AND SHOULD BE FREE FROM OIL, GREASE, THE MINIMUM WEIGHT OF REINFORCEMENT SHOULD BE 2.61kg/m³. THE REINFORCEMENT SHOULD HAVE 20mm MINIMUM COVER FROM THE SURFACE AND SHOULD TERMINATE BETWEEN 250 AND 300mm FROM THE JOINT. THE REINFORCEMENT BETWEEN 250 AND 300mm FROM THE JOINT SHOULD BE BETWEEN 40 AND 60mm FROM A LONGITUDINAL JOINT. THE REINFORCEMENT SHOULD TERMINATE WITHIN THE LAST COMPLETE MESH OF THE PREVIOUS MAT AND THE OVERLAP SHOULD BE AT LEAST 40mm. TRANSVERSE CONTRACTION JOINT SPACING FOR VARIOUS MESH SIZES SHOULD BE AS FOLLOWS:

LONG MESH REINFORCEMENT	MAXIMUM SPACING (m) OF JOINTS
C283	15m
C385	20m
C203	25m

ISSUE	DATE	DESCRIPTION	BY	CHKD	APP'D
PL4	18.04.19	ISSUED FOR PLANNING			
PL3	18.01.19	ISSUED FOR PLANNING			
PL2	07.01.19	DRAFT ISSUED FOR PLANNING			
PL1	02.11.18	DRAFT ISSUED FOR PLANNING			
P1	23.08.18	ISSUED FOR COMMENT			

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DEVELOPMENT 8
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PL4
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