Updated as at 24 July 2026

Index of Provisionally Approved Mix Designs
K. Wah Asphalt Limited

I. Normal Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10WC/KWA/GH/001	10WC/KWA/GH/001	23-Nov-2023	15-Jan-2024	14-Jan-2027
20mm Wearing Course	20WC/KWA/GH/001	20WC/KWA/GH/001	29-Nov-2023	15-Jan-2024	14-Jan-2027
28mm Base Course	28BC/KWA/GH/001	28BC/KWA/GH/001	05-Dec-2023	15-Jan-2024	14-Jan-2027
37.5mm Base Course	40BC/KWA/GH/001	40BC/KWA/GH/001	12-Dec-2023	15-Jan-2024	14-Jan-2027
37.5mm Roadbase (recipe mix)	40RB/KWA/GH/001	40RB/KWA/GH/001	02-Nov-2023	15-Jan-2024	--

II. Reclaimed Asphalt Pavement (RAP) Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10WC/KWA/GH/RAP15/001	10WC/KWA/GH/RAP15/001	01-Aug-2023	12-Jan-2024	11-Jan-2027
20mm Wearing Course	20WC/KWA/GH/RAP15/001	20WC/KWA/GH/RAP15/001	26-Jun-2023	12-Jan-2024	11-Jan-2027
28mm Base Course	28BC/KWA/GH/RAP15/001	28BC/KWA/GH/RAP15/001	08-Jun-2023	12-Jan-2024	11-Jan-2027
37.5mm Base Course	40BC/KWA/GH/RAP15/001	40BC/KWA/GH/RAP15/001	24-May-2023	12-Jan-2024	11-Jan-2027

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10WC/KWA/GH/RAP20/001	10WC/KWA/GH/RAP20/001	27-Feb-2023	15-Jan-2024	14-Jan-2027
20mm Wearing Course	20WC/KWA/GH/RAP20/001	20WC/KWA/GH/RAP20/001	24-Apr-2023	15-Jan-2024	14-Jan-2027
28mm Base Course	28BC/KWA/GH/RAP20/001	28BC/KWA/GH/RAP20/001	14-Apr-2023	15-Jan-2024	14-Jan-2027
37.5mm Base Course	40BC/KWA/GH/RAP20/001	40BC/KWA/GH/RAP20/001	16-Mar-2023	15-Jan-2024	14-Jan-2027
37.5mm Roadbase (recipe mix)	40RB/KWA/GH/RAP15/001	40RB/KWA/GH/RAP15/001	02-Nov-2023	17-Jan-2024	--

III. Reclaimed Asphalt Pavement (RAP) with Lime Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10WC/KWA/GH/RAP15/LIME/001	10WC/KWA/GH/RAP15/LIME/001	25-Oct-2023	15-Jan-2024	14-Jan-2027
20mm Wearing Course	20WC/KWA/GH/RAP15/LIME/001	20WC/KWA/GH/RAP15/LIME/001	22-Aug-2023	15-Jan-2024	14-Jan-2027
28mm Base Course	28BC/KWA/GH/RAP15/LIME/001	28BC/KWA/GH/RAP15/LIME/001	05-Sep-2023	15-Jan-2024	14-Jan-2027
37.5mm Base Course	40BC/KWA/GH/RAP15/LIME/001	40BC/KWA/GH/RAP15/LIME/001	11-Sep-2023	15-Jan-2024	14-Jan-2027

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10WC/KWA/GH/RAP20/LIME/001	10WC/KWA/GH/RAP20/LIME/001	18-Oct-2023	15-Jan-2024	14-Jan-2027
20mm Wearing Course	20WC/KWA/GH/RAP20/LIME/001	20WC/KWA/GH/RAP20/LIME/001	13-Oct-2023	15-Jan-2024	14-Jan-2027
28mm Base Course	28BC/KWA/GH/RAP20/LIME/001	28BC/KWA/GH/RAP20/LIME/001	10-Oct-2023	15-Jan-2024	14-Jan-2027
37.5mm Base Course	40BC/KWA/GH/RAP20/LIME/001	40BC/KWA/GH/RAP20/LIME/001	21-Sep-2023	15-Jan-2024	14-Jan-2027
37.5mm Roadbase (recipe mix)	40RB/KWA/GH/RAP15/LIME/001	40RB/KWA/GH/RAP15/LIME/001	02-Nov-2023	15-Jan-2024	--

IV. Rubberized Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Wearing Course	10RWC/KWA/GH/RAP20/TB10/001	10RWC/KWA/GH/RAP20/TB10/001	19-Dec-2023	01-Mar-2024	28-Feb-2027
20mm Wearing Course	20RWC/KWA/GH/RAP20/TB10/001	20RWC/KWA/GH/RAP20/TB10/001	02-Jan-2024	01-Mar-2024	28-Feb-2027
28mm Base Course	28RBC/KWA/GH/RAP20/TB10/001	28RBC/KWA/GH/RAP20/TB10/001	29-Jan-2024	01-Mar-2024	28-Feb-2027
37.5mm Base Course	40RBC/KWA/GH/RAP20/TB10/001	40RBC/KWA/GH/RAP20/TB10/001	15-Jan-2024	01-Mar-2024	28-Feb-2027
37.5mm Roadbase (recipe mix)	40RRB/KWA/GH/RAP15/TB10/001	40RRB/KWA/GH/RAP15/TB10/001	26-May-2025	27-Jun-2025	--

V. Polymer Modified Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Polymer Modified Friction Course	10PMFC/KWA/GH/PG/001	10PMFC/KWA/GH/PG/001	28-Oct-2023	15-Jan-2024	14-Jan-2027
3.35mm Polymer Modified Cushion Course	CC/KWA/GH/PG/001	CC/KWA/GH/PG/001	09-Nov-2023	15-Jan-2024	14-Jan-2027
10mm Polymer Modified Stone Mastic Asphalt	10PMSMA/KWA/GH/PG/ITF/75/001	10PMSMA/KWA/GH/PG/ITF/75/001	01-Nov-2023	15-Jan-2024	14-Jan-2027
6mm Polymer Modified Stone Mastic Asphalt	6PMSMA/KWA/GH&BQ/PG/ITF/75/001	6PMSMA/KWA/GH&BQ/PG/ITF/75/001	06-Nov-2023	15-Jan-2024	14-Jan-2027

VI. Highly Modified Mix

Bituminous Material	HyD Mix No.	Supplier's Mix No.	Date of Design	Approval Date	Expiry Date
10mm Highly Modified Friction Course	10HMFC/KWA/GH/001	10HMFC/KWA/GH/001	14-Nov-2023	12-Jan-2024	11-Jan-2027
3.35mm Highly Modified Cushion Course	HMCC/KWA/GH/001	HMCC/KWA/GH/001	18-Dec-2024	23-Jan-2025	22-Jan-2028
10mm Highly Modified Stone Mastic Asphalt	10HMSMA/KWA/GH/ITF/75/001	10HMSMA/KWA/GH/ITF/75/001	16-Nov-2023	12-Jan-2024	11-Jan-2027
6mm Highly Modified Stone Mastic Asphalt	6HMSMA/KWA/GH&BQ/ITF/75/001	6HMSMA/KWA/GH&BQ/ITF/75/001	18-Nov-2023	12-Jan-2024	11-Jan-2027

Remark: Mix design details are tabled in the appropriate spreadsheets.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(Normal Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μ m BS sieve)	Guan Hong Quarry, China	Crushed rock filler

2. Mix Designs :

Bituminous Material	**10mm Wearing Course**		**20mm Wearing Course**		**28mm Base Course**		**37.5mm Base Course**		**37.5mm Roadbase (recipe mix)**	
HyD Mix No.	10WC/KWA/GH/001		20WC/KWA/GH/001		28BC/KWA/GH/001		40BC/KWA/GH/001		40RB/KWA/GH/001	
Supplier's Mix No.	10WC/KWA/GH/001		20WC/KWA/GH/001		28BC/KWA/GH/001		40BC/KWA/GH/001		40RB/KWA/GH/001	
Date of Design	23-Nov-2023		29-Nov-2023		05-Dec-2023		12-Dec-2023		02-Nov-2023	
Approval Date	15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024	
Expiry Date	14-Jan-2027		14-Jan-2027		14-Jan-2027		14-Jan-2027		--	
	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Data	GS Requirement*
Binder content (%)	6.0	5.5 - 6.5	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.1	3.6 - 4.6	3.5	3.0 - 4.0
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing		% Passing	
50							100	100	100	100
37.5					100	100	98	94 - 100	97	90 - 100
28			100	100	97	93 - 100	93	86 - 100	89	70 - 94
20			96	92 - 100	88	81 - 95	83	76 - 90	78	62 - 84
14	100	100	87	80 - 94	75	68 - 82	72	65 - 79	--	--
10	95	91 - 99	79	72 - 86	62	55 - 69	62	55 - 69	58	49 - 67
5	75	68 - 82	68	61 - 75	52	45 - 59	54	47 - 61	50	37 - 55
2.36	52	45 - 59	48	41 - 55	37	30 - 44	39	32 - 46	37	27 - 43
1.18	37	30 - 44	36	29 - 43	28	21 - 35	30	23 - 37	--	--
0.60	27	22 - 32	25	20 - 30	21	16 - 26	22	17 - 27	22	13 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	15	10 - 20	14	7 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13	--	--
0.075	6.4	4.4 - 8.4 9.4[#]	6.9	4.9 - 8.9 9.9[#]	5.3	3.3 - 7.3 8.3[#]	6.2	4.2 - 8.2 9.2[#]	5.3	2.0 - 8.0 8.0[@]
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	4.5	3.0 - 5.0	4.0	3.0 - 5.0	4.5	3.0 - 5.0	4.8	3.0 - 5.0	--	--
Voids in mineral aggregate, VMA (%)	17.5	≧16	15.1	≧14	14.5	≧13	13.8	≧12.5	--	--
Marshall stability (kN)	12.5	≧10	13.8	≧10	13.9	≧10	13.9	≧10	--	--
Flow (mm)	4.0	≦4.0	3.7	≦4.0	3.9	≦4.0	3.6	≦4.0	--	--

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

[@] The precentage passing the 0.075mm BS test sieve shall not exceed 8.0%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(RAP Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μ m BS sieve)	Guan Hong Quarry, China	Crushed rock filler

2. Mix Designs :

Bituminous Material	**10mm Wearing Course**		**20mm Wearing Course**		**28mm Base Course**		**37.5mm Base Course**	
HyD Mix No.	10WC/KWA/GH/RAP15/001		20WC/KWA/GH/RAP15/001		28BC/KWA/GH/RAP15/001		40BC/KWA/GH/RAP15/001	
Supplier's Mix No.	10WC/KWA/GH/RAP15/001		20WC/KWA/GH/RAP15/001		28BC/KWA/GH/RAP15/001		40BC/KWA/GH/RAP15/001	
Date of Design	01-Aug-2023		26-Jun-2023		08-Jun-2023		24-May-2023	
Approval Date	12-Jan-2024		12-Jan-2024		12-Jan-2024		12-Jan-2024	
Expiry Date	11-Jan-2027		11-Jan-2027		11-Jan-2027		11-Jan-2027	
	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*
Binder content (%)	6.1	5.6 - 6.6	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.2	3.7 - 4.7
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing	
50							100	100
37.5					100	100	98	94 - 100
28			100	100	97	93 - 100	93	86 - 100
20			96	92 - 100	88	81 - 95	83	76 - 90
14	100	100	87	80 - 94	76	69 - 83	73	66 - 80
10	96	92 - 100	81	74 - 88	65	58 - 72	65	58 - 72
5	74	67 - 81	66	59 - 73	51	44 - 58	53	46 - 60
2.36	53	46 - 60	48	41 - 55	38	31 - 45	41	34 - 48
1.18	38	31 - 45	36	29 - 43	29	22 - 36	31	24 - 38
0.60	28	23 - 33	25	20 - 30	21	16 - 26	23	18 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	16	11 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13
0.075	6.3	4.3 - 8.3 9.3[#]	6.9	4.9 - 8.9 9.9[#]	5.3	3.3 - 7.3 8.3[#]	6.2	4.2 - 8.2 9.2[#]
	(including 15% RAP)		(including 15% RAP)		(including 15% RAP)		(including 15% RAP)	
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	4.0	3.0 - 5.0	4.7	3.0 - 5.0	4.2	3.0 - 5.0	4.3	3.0 - 5.0
Voids in mineral aggregate, VMA (%)	17.4	≧16	15.7	≧14	14.4	≧13	13.7	≧12.5
Marshall stability (kN)	10.1	≧10	14.5	≧10	15.4	≧10	17.0	≧10
Flow (mm)	3.3	≦4.0	3.0	≦4.0	3.8	≦4.0	3.4	≦4.0

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(RAP Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China	Crushed rock filler

2. Mix Designs :

Bituminous Material	**10mm Wearing Course**		**20mm Wearing Course**		**28mm Base Course**		**37.5mm Base Course**		**37.5mm Roadbase (recipe mix)**	
HyD Mix No.	10WC/KWA/GH/RAP20/001		20WC/KWA/GH/RAP20/001		28BC/KWA/GH/RAP20/001		40BC/KWA/GH/RAP20/001		40RB/KWA/GH/RAP15/001	
Supplier's Mix No.	10WC/KWA/GH/RAP20/001		20WC/KWA/GH/RAP20/001		28BC/KWA/GH/RAP20/001		40BC/KWA/GH/RAP20/001		40RB/KWA/GH/RAP15/001	
Date of Design	27-Feb-2023		24-Apr-2023		14-Apr-2023		16-Mar-2023		02-Nov-2023	
Approval Date	15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024		17-Jan-2024	
Expiry Date	14-Jan-2027		14-Jan-2027		14-Jan-2027		14-Jan-2027		--	
	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Data	GS Requirement*
Binder content (%)	6.0	5.5 - 6.5	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.2	3.7 - 4.7	3.5	3.0 - 4.0
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing		% Passing	
50							100	100	100	100
37.5					100	100	98	94 - 100	97	90 - 100
28			100	100	97	93 - 100	93	86 - 100	89	70 - 94
20			96	92 - 100	88	81 - 95	83	76 - 90	78	62 - 84
14	100	100	87	80 - 94	76	69 - 83	73	66 - 80	--	--
10	96	92 - 100	81	74 - 88	65	58 - 72	66	59 - 73	58	49 - 67
5	74	67 - 81	66	59 - 73	50	43 - 57	53	46 - 60	44	37 - 55
2.36	53	46 - 60	48	41 - 55	38	31 - 45	41	34 - 48	32	27 - 43
1.18	38	31 - 45	36	29 - 43	29	22 - 36	31	24 - 38	--	--
0.60	28	23 - 33	25	20 - 30	21	16 - 26	23	18 - 28	20	13 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	16	11 - 21	14	7 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13	--	--
0.075	6.3	4.3 - 8.3 9.3[#]	6.9	4.9 - 8.9 9.9[#]	5.4	3.4 - 7.4 8.4[#]	6.3	4.3 - 8.3 9.3[#]	6.1	2.0 - 8.0 8.0[@]
	(including 20% RAP)		(including 20% RAP)		(including 20% RAP)		(including 20% RAP)		(including 15% RAP)	
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	3.7	3.0 - 5.0	4.8	3.0 - 5.0	4.5	3.0 - 5.0	4.8	3.0 - 5.0	--	--
Voids in mineral aggregate, VMA (%)	17.0	≧16	15.8	≧14	14.5	≧13	14.2	≧12.5	--	--
Marshall stability (kN)	13.4	≧10	15.1	≧10	15.6	≧10	17.3	≧10	--	--
Flow (mm)	3.5	≦4.0	3.3	≦4.0	3.8	≦4.0	3.6	≦4.0	--	--

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

[@] The precentage passing the 0.075mm BS test sieve shall not exceed 8.0%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(RAP with Lime Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China Hydrated Lime - Great Wall Brand, China	Mixture of crushed rock filler and hydrated lime

2. Mix Designs :

Bituminous Material	**10mm Wearing Course**		**20mm Wearing Course**		**28mm Base Course**		**37.5mm Base Course**	
HyD Mix No.	10WC/KWA/GH/RAP15/LIME/001		20WC/KWA/GH/RAP15/LIME/001		28BC/KWA/GH/RAP15/LIME/001		40BC/KWA/GH/RAP15/LIME/001	
Supplier's Mix No.	10WC/KWA/GH/RAP15/LIME/001		20WC/KWA/GH/RAP15/LIME/001		28BC/KWA/GH/RAP15/LIME/001		40BC/KWA/GH/RAP15/LIME/001	
Date of Design	25-Oct-2023		22-Aug-2023		05-Sep-2023		11-Sep-2023	
Approval Date	15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024	
Expiry Date	14-Jan-2027		14-Jan-2027		14-Jan-2027		14-Jan-2027	
	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*
Binder content (%)	6.0	5.5 - 6.5	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.1	3.6 - 4.6
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing	
50							100	100
37.5					100	100	98	94 - 100
28			100	100	97	93 - 100	93	86 - 100
20			96	92 - 100	88	81 - 95	83	76 - 90
14	100	100	87	80 - 94	76	69 - 83	73	66 - 80
10	96	92 - 100	81	74 - 88	65	58 - 72	65	58 - 72
5	74	67 - 81	66	59 - 73	51	44 - 58	53	46 - 60
2.36	53	46 - 60	48	41 - 55	38	31 - 45	41	34 - 48
1.18	38	31 - 45	36	29 - 43	29	22 - 36	31	24 - 38
0.60	28	23 - 33	25	20 - 30	21	16 - 26	23	18 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	16	11 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13
0.075	6.3	4.3 - 8.3 9.3[#] (including 15% RAP & 1.5% hydrated Lime)	6.9	4.9 - 8.9 9.9[#] (including 15% RAP & 1.5% hydrated Lime)	5.3	3.3 - 7.3 8.3[#] (including 15% RAP & 1.5% hydrated Lime)	6.2	4.2 - 8.2 9.2[#] (including 15% RAP & 1.5% hydrated Lime)
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	3.7	3.0 - 5.0	4.6	3.0 - 5.0	4.3	3.0 - 5.0	4.8	3.0 - 5.0
Voids in mineral aggregate, VMA (%)	16.7	≧16	15.6	≧14	14.3	≧13	13.8	≧12.5
Marshall stability (kN)	12.7	≧10	10.0	≧10	12.1	≧10	10.8	≧10
Flow (mm)	4.0	≦4.0	3.3	≦4.0	3.8	≦4.0	3.6	≦4.0
Hydrated Lime (%)	1.5	≧1.5	1.5	≧1.5	1.5	≧1.5	1.5	≧1.5

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs

K. Wah Asphalt Limited

(RAP with Lime Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China Hydrated Lime - Great Wall Brand, China	Mixture of crushed rock filler and hydrated lime

2. Mix Designs :

Bituminous Material	**10mm Wearing Course**		**20mm Wearing Course**		**28mm Base Course**		**37.5mm Base Course**		**37.5mm Roadbase (recipe mix)**	
HyD Mix No.	10WC/KWA/GH/RAP20/LIME/001		20WC/KWA/GH/RAP20/LIME/001		28BC/KWA/GH/RAP20/LIME/001		40BC/KWA/GH/RAP20/LIME/001		40RB/KWA/GH/RAP15/LIME/001	
Supplier's Mix No.	10WC/KWA/GH/RAP20/LIME/001		20WC/KWA/GH/RAP20/LIME/001		28BC/KWA/GH/RAP20/LIME/001		40BC/KWA/GH/RAP20/LIME/001		40RB/KWA/GH/RAP15/LIME/001	
Date of Design	18-Oct-2023		13-Oct-2023		10-Oct-2023		21-Sep-2023		02-Nov-2023	
Approval Date	15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024	
Expiry Date	14-Jan-2027		14-Jan-2027		14-Jan-2027		14-Jan-2027		--	
	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Grading	GS Requirement*	Design Data	GS Requirement*
Binder content (%)	6.0	5.5 - 6.5	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.2	3.7 - 4.7	3.5	3.0 - 4.0
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing		% Passing	
50							100	100	100	100
37.5					100	100	98	94 - 100	97	90 - 100
28			100	100	97	93 - 100	93	86 - 100	89	70 - 94
20			96	92 - 100	88	81 - 95	83	76 - 90	78	62 - 84
14	100	100	87	80 - 94	76	69 - 83	73	66 - 80	--	--
10	96	92 - 100	81	74 - 88	65	58 - 72	66	59 - 73	58	49 - 67
5	74	67 - 81	66	59 - 73	50	43 - 57	53	46 - 60	44	37 - 55
2.36	53	46 - 60	48	41 - 55	38	31 - 45	41	34 - 48	32	27 - 43
1.18	38	31 - 45	36	29 - 43	29	22 - 36	31	24 - 38	--	--
0.60	28	23 - 33	25	20 - 30	21	16 - 26	23	18 - 28	20	13 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	16	11 - 21	14	7 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13	--	--
0.075	6.3	4.3 - 8.3 9.3[#]	6.9	4.9 - 8.9 9.9[#]	5.4	3.4 - 7.4 8.4[#]	6.3	4.3 - 8.3 9.3[#]	6.1	2.0 - 8.0 8.0[@]
	(including 20% RAP & 1.5% hydrated Lime)		(including 20% RAP & 1.5% hydrated Lime)		(including 20% RAP & 1.5% hydrated Lime)		(including 20% RAP & 1.5% hydrated Lime)		(including 15% RAP & 1.5% hydrated Lime)	
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	4.0	3.0 - 5.0	3.7	3.0 - 5.0	4.7	3.0 - 5.0	4.6	3.0 - 5.0	--	--
Voids in mineral aggregate, VMA (%)	17.0	≧16	14.7	≧14	14.5	≧13	13.8	≧12.5	--	--
Marshall stability (kN)	12.6	≧10	14.3	≧10	10.6	≧10	12.2	≧10	--	--
Flow (mm)	3.4	≦4.0	3.4	≦4.0	3.3	≦4.0	3.6	≦4.0	--	--
Hydrated Lime (%)	1.5	≧1.5	1.5	≧1.5	1.5	≧1.5	1.5	≧1.5	1.5	≧1.5

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

[@] The precentage passing the 0.075mm BS test sieve shall not exceed 8.0%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(Rubberized Mix)

1. Source and Type of Constituent Materials :

Constituent Material	Source	Type
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade 60/70 pen
Ground recycled tire rubber	On Fat Lung Innovative Resource Ltd.	---
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China	Crushed rock filler

2. Mix Designs :

Bituminous Material	10mm Wearing Course		20mm Wearing Course		28mm Base Course		37.5mm Base Course		37.5mm Roadbase (recipe mix)	
HyD Mix No.	10RWC/KWA/GH/RAP20/TB10/001		20RWC/KWA/GH/RAP20/TB10/001		28RBC/KWA/GH/RAP20/TB10/001		40RBC/KWA/GH/RAP20/TB10/001		40RRB/KWA/GH/RAP15/TB10/001	
Supplier's Mix No.	10RWC/KWA/GH/RAP20/TB10/001		20RWC/KWA/GH/RAP20/TB10/001		28RBC/KWA/GH/RAP20/TB10/001		40RBC/KWA/GH/RAP20/TB10/001		40RRB/KWA/GH/RAP15/TB10/001	
Date of Design	19-Dec-2023		02-Jan-2024		29-Jan-2024		15-Jan-2024		26-May-2025	
Approval Date	01-Mar-2024		01-Mar-2024		01-Mar-2024		01-Mar-2024		27-Jun-2025	
Expiry Date	28-Feb-2027		28-Feb-2027		28-Feb-2027		28-Feb-2027		--	
	Design Grading	PS Requirement*	Design Grading	PS Requirement*	Design Grading	PS Requirement*	Design Grading	PS Requirement*	Design Data	GS Requirement*
Binder content (%)	6.5	6.0 - 7.0	5.5	5.0 - 6.0	5.0	4.5 - 5.5	4.5	4.0 - 5.0	4.0	3.5 - 4.5
B.S. Sieve (mm)	% Passing		% Passing		% Passing		% Passing		% Passing	
50							100	100	100	100
37.5					100	100	98	94 - 100	97	90 - 100
28			100	100	97	93 - 100	93	86 - 100	89	70 - 94
20			96	92 - 100	88	81 - 95	83	76 - 90	78	62 - 84
14	100	100	87	80 - 94	76	69 - 83	73	66 - 80	--	--
10	96	92 - 100	81	74 - 88	65	58 - 72	66	59 - 73	58	49 - 67
5	74	67 - 81	66	59 - 73	50	43 - 57	53	46 - 60	44	37 - 55
2.36	53	46 - 60	48	41 - 55	38	31 - 45	41	34 - 48	32	27 - 43
1.18	38	31 - 45	36	29 - 43	29	22 - 36	31	24 - 38	--	--
0.60	28	23 - 33	25	20 - 30	21	16 - 26	23	18 - 28	20	13 - 28
0.30	18	13 - 23	17	12 - 22	14	9 - 19	16	11 - 21	14	7 - 21
0.15	11	8 - 14	11	8 - 14	9	6 - 12	10	7 - 13	--	--
0.075	6.3	4.3 - 8.3 9.3[#] (including 20% RAP)	6.9	4.9 - 8.9 9.9[#] (including 20% RAP)	5.4	3.4 - 7.4 8.4[#] (including 20% RAP)	6.3	4.3 - 8.3 9.3[#] (including 20% RAP)	6.1	2.0 - 8.0 8.0[@] (including 15% RAP)
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	3.3	3.0 - 5.0	4.0	3.0 - 5.0	3.8	3.0 - 5.0	4.0	3.0 - 5.0	--	--
Voids in mineral aggregate, VMA (%)	17.6	≧16	16.0	≧14	15.0	≧13	14.1	≧12.5	--	--
Marshall stability (kN)	12.3	≧10	14.2	≧10	14.1	≧10	17.4	≧10	--	--
Flow (mm)	4.0	≦4.0	3.7	≦4.0	3.9	≦4.0	4.0	≦4.0	--	--

* For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(Polymer Modified Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**			
		10PMFC/KWA/GH/PG/001	CC/KWA/GH/PG/001	10PMSMA/KWA/GH/PG/ITF/75/001	6PMSMA/KWA/GH&BQ/PG/ITF/75/001
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Grade PG76			
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)	Not applicable	Crushed rock (Granite)	
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)			
	Bontique Quarry, China	Not applicable			Crushed rock (Limestone)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China Hydrated Lime - Great Wall Brand, China	Mixture of crushed rock filler and hydrated lime			
Fibre	Iterchimica S.p.A., Italy	Not applicable		Cellulose Fibre	

2. Mix Designs :

Bituminous Material	**10mm Polymer Modified Friction Course**		**3.35mm Polymer Modified Cushion Course**		**10mm Polymer Modified Stone Mastic Asphalt**		**6mm Polymer Modified Stone Mastic Asphalt**	
HyD Mix No.	10PMFC/KWA/GH/PG/001		CC/KWA/GH/PG/001		10PMSMA/KWA/GH/PG/ITF/75/001		6PMSMA/KWA/GH&BQ/PG/ITF/75/001	
Supplier's Mix No.	10PMFC/KWA/GH/PG/001		CC/KWA/GH/PG/001		10PMSMA/KWA/GH/PG/ITF/75/001		6PMSMA/KWA/GH&BQ/PG/ITF/75/001	
Date of Design	28-Oct-2023		09-Nov-2023		01-Nov-2023		06-Nov-2023	
Approval Date	15-Jan-2024		15-Jan-2024		15-Jan-2024		15-Jan-2024	
Expiry Date	14-Jan-2027		14-Jan-2027		14-Jan-2027		14-Jan-2027	
	Design Grading	PS Requirement*	Design Grading	PS Requirement*	Design grading	PS Requirement*	Design grading	PS Requirement*
Binder content (%)	5.5	5.0 - 6.0	9.5	9.0 - 10.0	6.3	5.6 - 6.6	6.1	5.4 - 6.4
B.S. Sieve (mm)	% passing		% passing		% Passing		% Passing	
14	100	100			100	100	100	100
10	96	92 - 100			96	92 - 100	99	95 - 100
6.3	--	--	100	100	--	--	--	--
5	24	17 - 31	--	--	31	24 - 38	80	73 - 87
3.35	--	--	96	92 - 100	--	--	--	--
2.36	12	5 - 19	--	--	23	16 - 30	24	17 - 31
1.18	--	--	58	51 - 65	--	--	16	9 - 23
0.30	--	--	33	28 - 38	--	--	--	--
0.075	2.9	0.9 - 4.9 5.9[#]	15.0	13.0 - 17.0 18.0[#]	11.0	9.0 - 13.0 14.0[#]	7.1	5.1 - 9.1 10.1[#]
	(including 1.5% hydrated lime)		(including 2% hydrated lime)		(including 2% hydrated lime)		(including 2% hydrated lime)	
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	21.9	≧20	--	--	4.3	3.5 - 4.5	8.9	7.0 - 10.0
Voids in mineral aggregate, VMA (%)	--	--	--	--	18.0	≧17	21.8	≧17
Marshall stability (kN)	--	--	--	--	11.4	≧6	12.0	≧6
Binder draindown (%)	--	--	--	--	0.1	≦0.3	0.1	≦0.3
Marshall quotient (kN/mm)	--	--	0.9	0.7 - 1.2	--	--	--	--
Binder drainage test	Pass	Tmax > Binder content	--	--	--	--	--	--

***** For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.

Updated as at 24 July 2026

Summary of Provisionally Approved Mix Designs
K. Wah Asphalt Limited
(Highly Modified Mix)

1. Source and Type of Constituent Materials :

Constituent Material	**Source**	**Type**			
		10HMFC/KWA/GH/001	HMCC/KWA/GH/001	10HMSMA/KWA/GH/ITF/75/001	6HMSMA/KWA/GH&BQ/ITF/75/001
Bitumen	DongGuan TaiHe Asphalt Co., Ltd.	Polymer modified Super PG82			
Coarse Aggregate (retained on 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)	Not applicable	Crushed rock (Granite)	
Fine Aggregate (passing 5mm BS sieve)	Guan Hong Quarry, China	Crushed rock (Granite)			
	Bontique Quarry, China	Not applicable			Crushed rock (Limestone)
Filler (passing 75 μm BS sieve)	Guan Hong Quarry, China Hydrated Lime - Great Wall Brand, China	Mixture of crushed rock filler and hydrated lime			
Fibre	Iterchimica S.p.A., Italy	Not applicable		Cellulose Fibre	

2. Mix Designs :

Bituminous Material	**10mm Highly Modified Friction Course**		**3.35mm Highly Modified Cushion Course**		**10mm Highly Modified Stone Mastic Asphalt**		**6mm Highly Modified Stone Mastic Asphalt**	
HyD Mix No.	10HMFC/KWA/GH/001		HMCC/KWA/GH/001		10HMSMA/KWA/GH/ITF/75/001		6HMSMA/KWA/GH&BQ/ITF/75/001	
Supplier's Mix No.	10HMFC/KWA/GH/001		HMCC/KWA/GH/001		10HMSMA/KWA/GH/ITF/75/001		6HMSMA/KWA/GH&BQ/ITF/75/001	
Date of Design	14-Nov-2023		18-Dec-2024		16-Nov-2023		18-Nov-2023	
Approval Date	12-Jan-2024		23-Jan-2025		12-Jan-2024		12-Jan-2024	
Expiry Date	11-Jan-2027		22-Jan-2028		11-Jan-2027		11-Jan-2027	
	Design Grading	PS Requirement*	Design Grading	PS Requirement*	Design grading	PS Requirement*	Design grading	PS Requirement*
Binder content (%)	5.5	5.0 - 6.0	9.5	9.0 - 10.0	6.3	5.6 - 6.6	6.1	5.4 - 6.4
B.S. Sieve (mm)	% passing		% passing		% Passing		% Passing	
14	100	100			100	100	100	100
10	96	92 - 100			96	92 - 100	99	95 - 100
6.3	--	--	100	100	--	--	--	--
5	24	17 - 31	--	--	31	24 - 38	80	73 - 87
3.35	--	--	96	92 - 100	--	--	--	--
2.36	12	5 - 19	--	--	23	16 - 30	24	17 - 31
1.18	--	--	58	51 - 65	--	--	16	9 - 23
0.30	--	--	33	28 - 38	--	--	--	--
0.075	2.9	0.9 - 4.9 5.9[#]	15.0	13.0 - 17.0 18.0[#]	11.0	9.0 - 13.0 14.0[#]	7.1	5.1 - 9.1 10.1[#]
	(including 1.5% hydrated lime)		(including 2% hydrated lime)		(including 2% hydrated lime)		(including 2% hydrated lime)	
	Marshall Properties		Marshall Properties		Marshall Properties		Marshall Properties	
Air voids in mix, VIM (%)	22.4	≧20	--	--	4.0	3.5 - 4.5	8.7	7.0 - 9.0
Voids in mineral aggregate, VMA (%)	--	--	--	--	17.9	≧17	21.7	≧17
Marshall stability (kN)	--	--	--	--	14.2	≧6	12.3	≧6
Binder draindown (%)	--	--	--	--	0.1	≦0.3	0.1	≦0.3
Marshall quotient (kN/mm)	--	--	0.9	0.7 - 1.2	--	--	--	--
Binder drainage test	Pass	Tmax > Binder content	--	--	--	--	--	--

***** For reference only

[#] The percentage passing the 0.075mm BS sieve shall not deviate from the approved design value by more than 3%.