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EB M-14, constructed 2000, station 6+353, at joint, core A, (MTU ID 14-01).



EB M-14, constructed 2000, station 6+353, at joint, core B, (MTU ID 14-02).



EB M-14, constructed 2000, station 6+353, away from joint, core C, (MTU ID 14-03).

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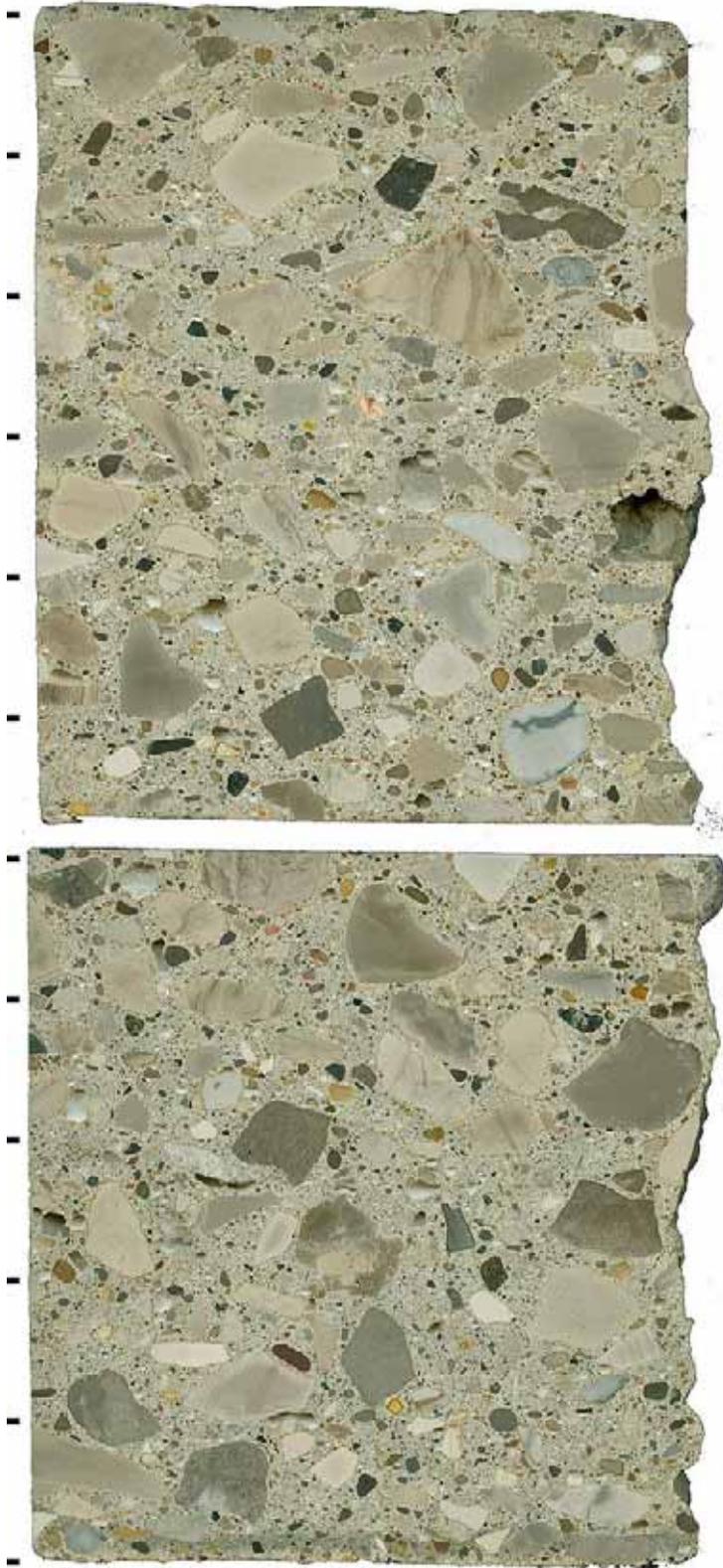


EB M-14, constructed 2000, station 6+355, away from joint, core D, (MTU ID 14-04).



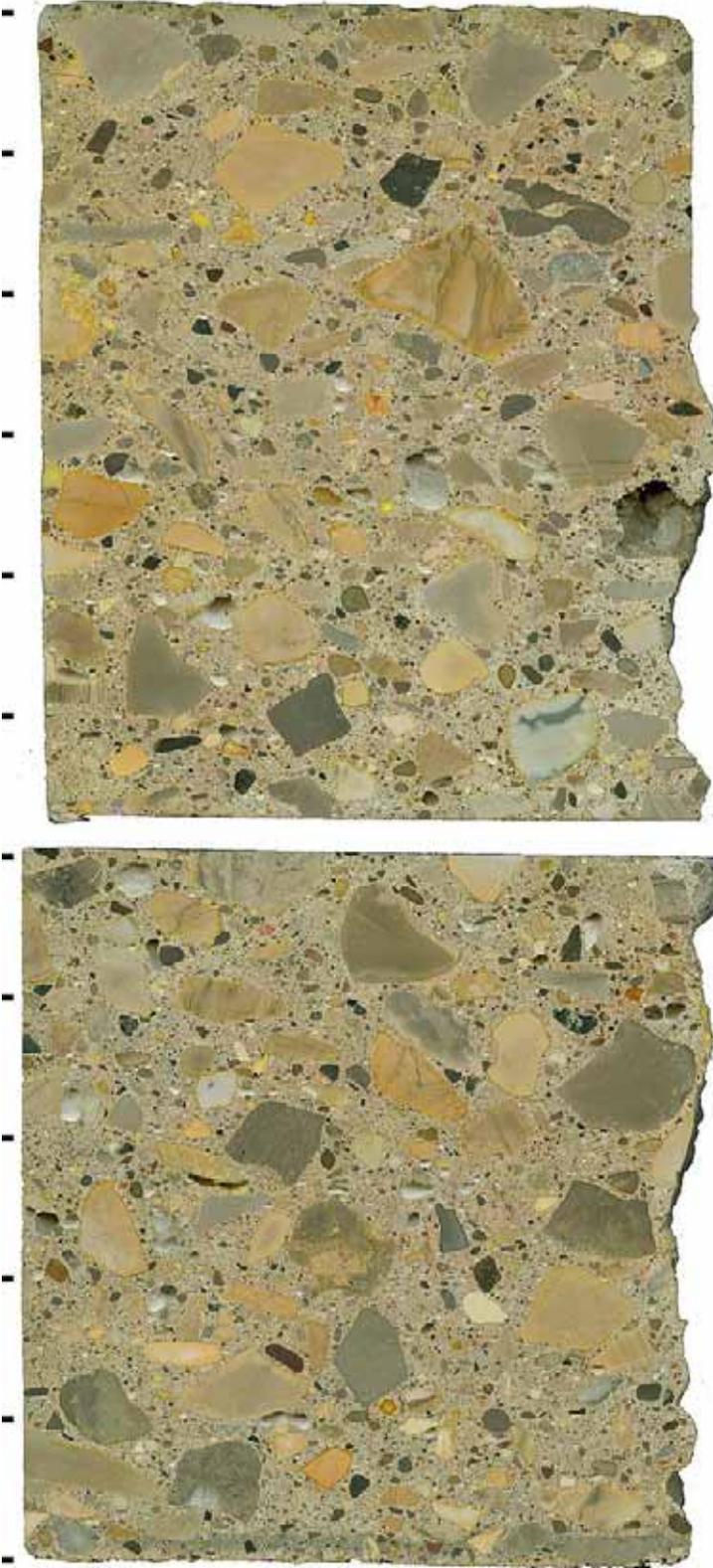
EB M-14, constructed 2000, station 6+334, at joint, core E, (MTU ID 14-05).

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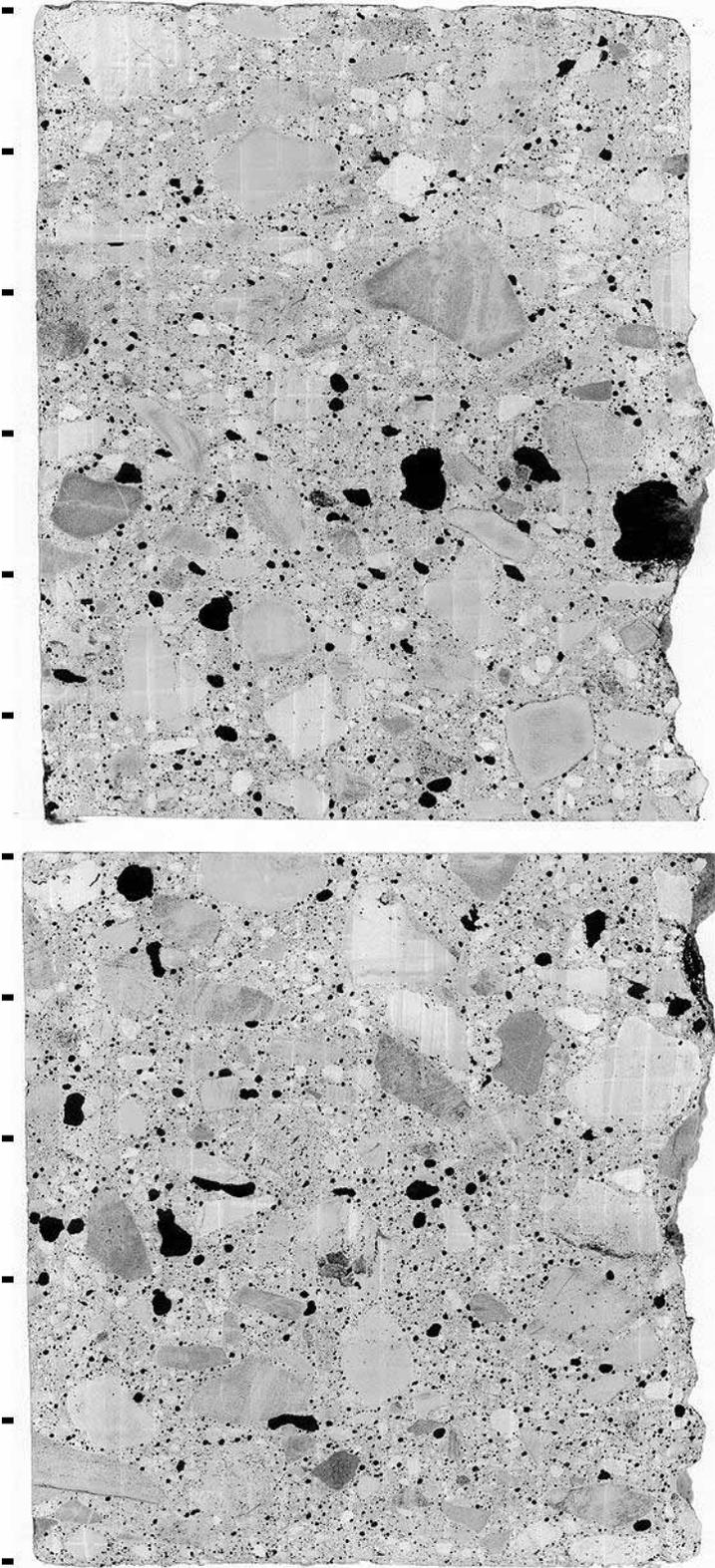
Slabs representing full cross section through pavement, as polished, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every inch.

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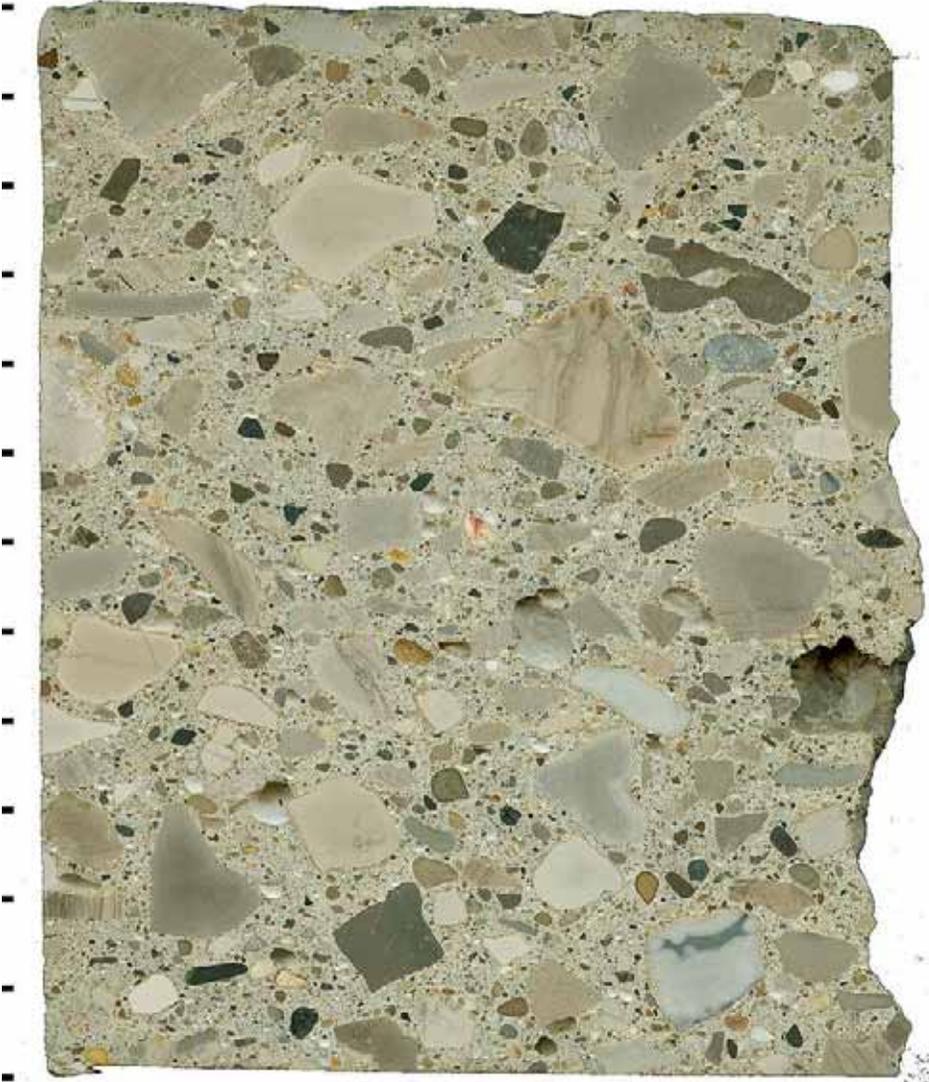
Slabs representing full cross section through pavement, after sodium cobaltinitrite stain, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every inch.

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Slabs representing full cross section through pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every inch.

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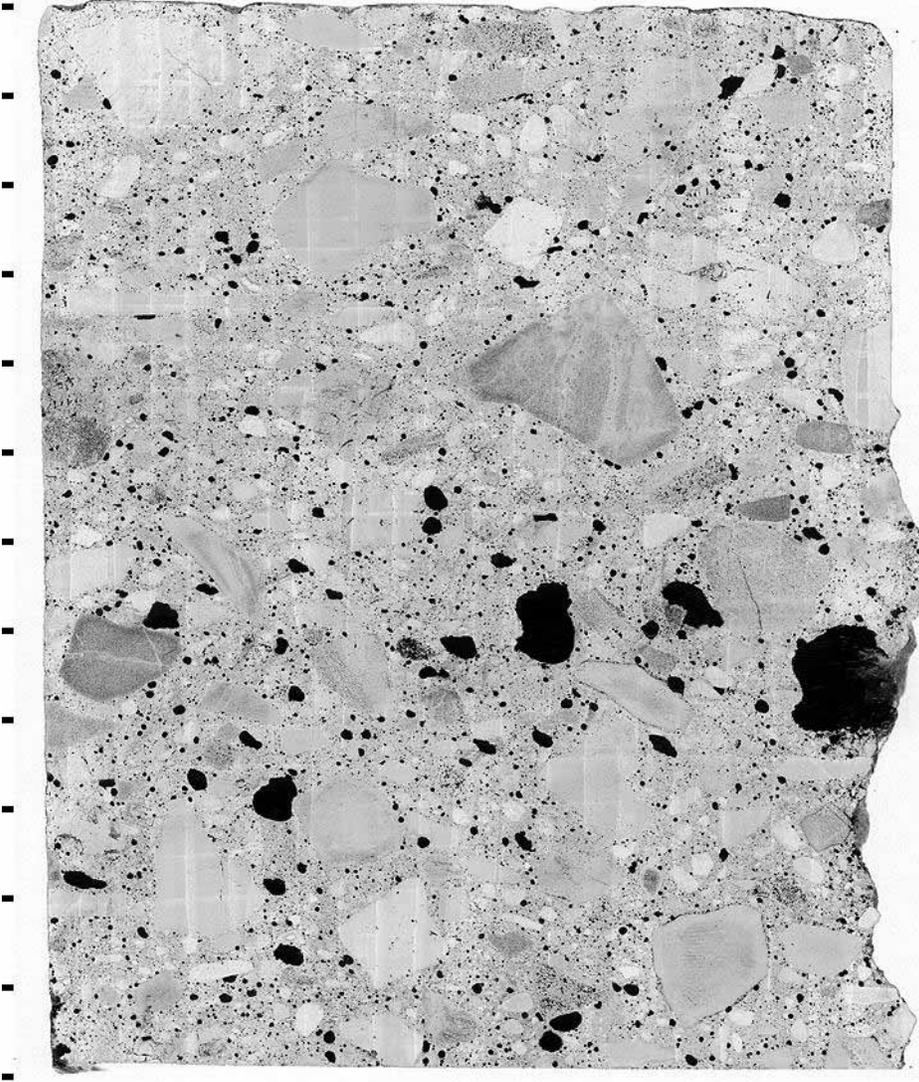
Slab representing cross section through top half of pavement, as polished, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every half inch.

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Slab representing cross section through top half of pavement, after sodium cobaltinitrite stain, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every half inch.

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Slab representing cross section through top half of pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every half inch.

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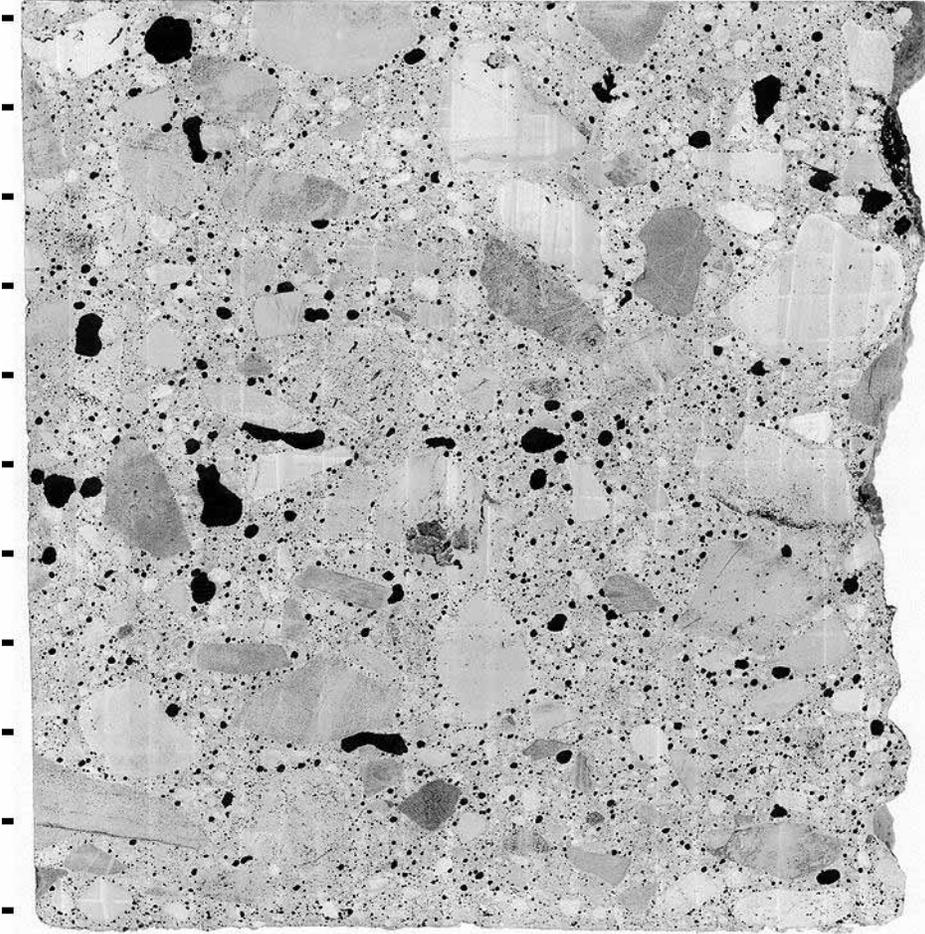
Slab representing cross section through bottom half of pavement, as polished, EB M-14, station 6+353, at transverse joint, core B, MTU ID M14-02, tic marks every half inch.

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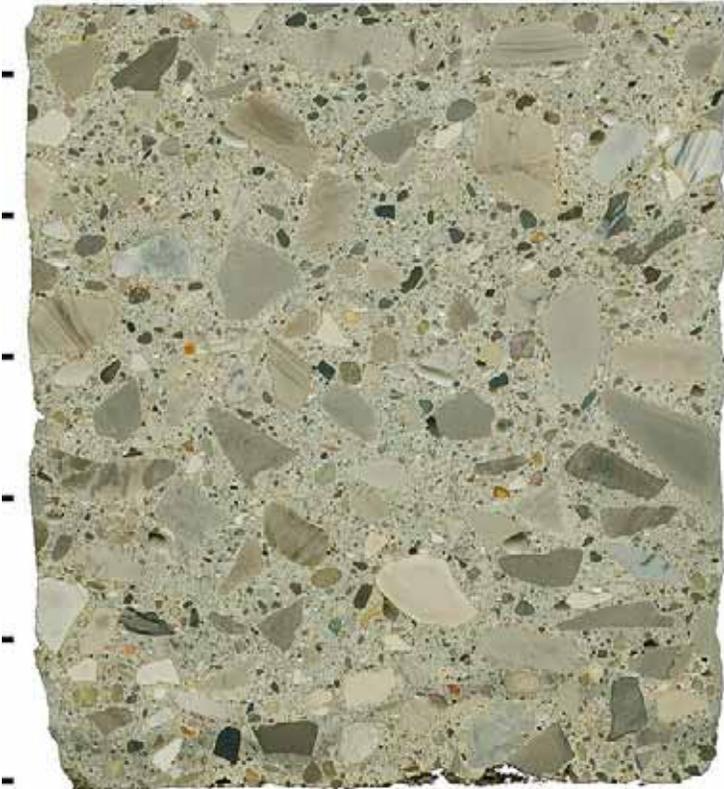
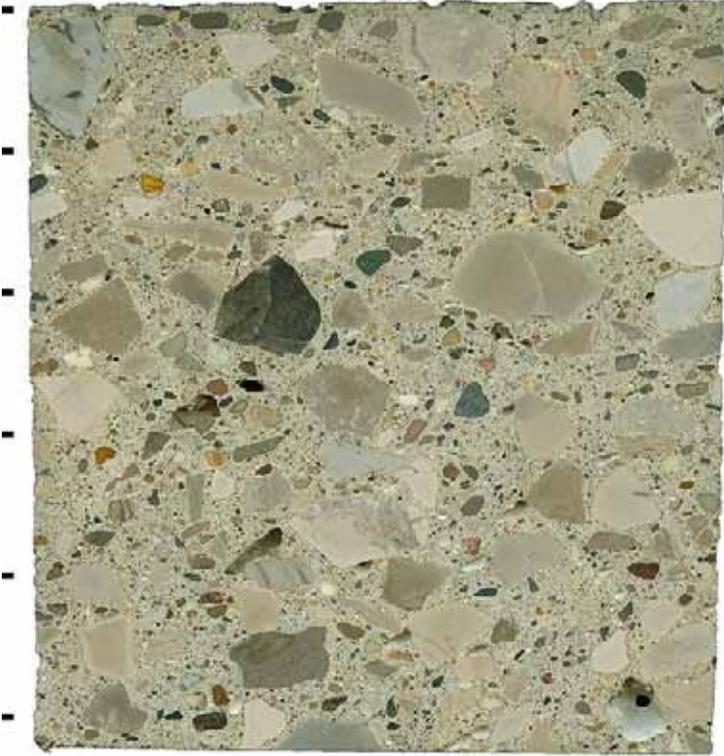
Slab representing cross section through top half of pavement, after sodium cobaltinitrite stain, EB M-14, station 6+353, at transverse joint, core B, MTU ID M59-01, tic marks every half inch.

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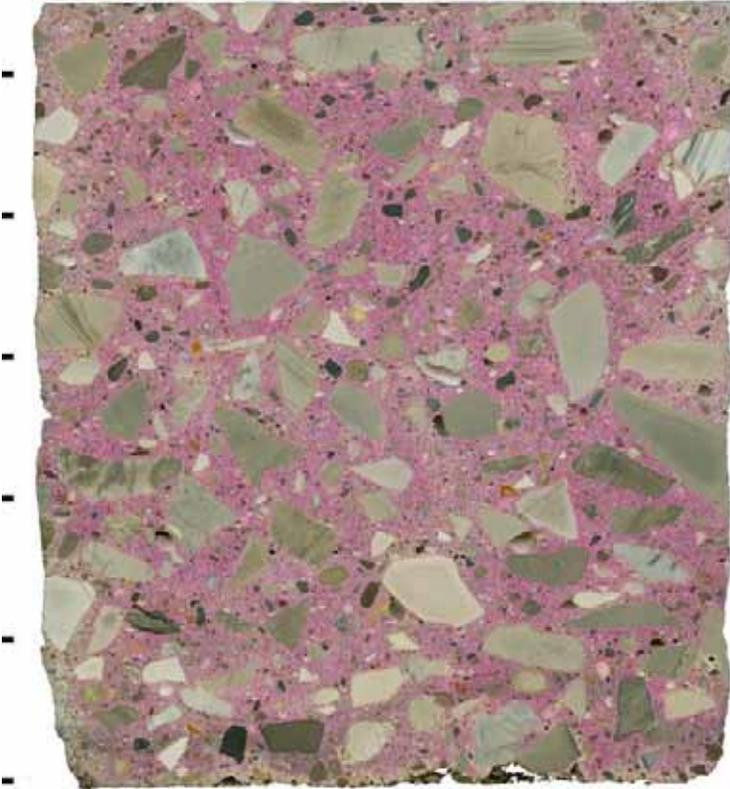
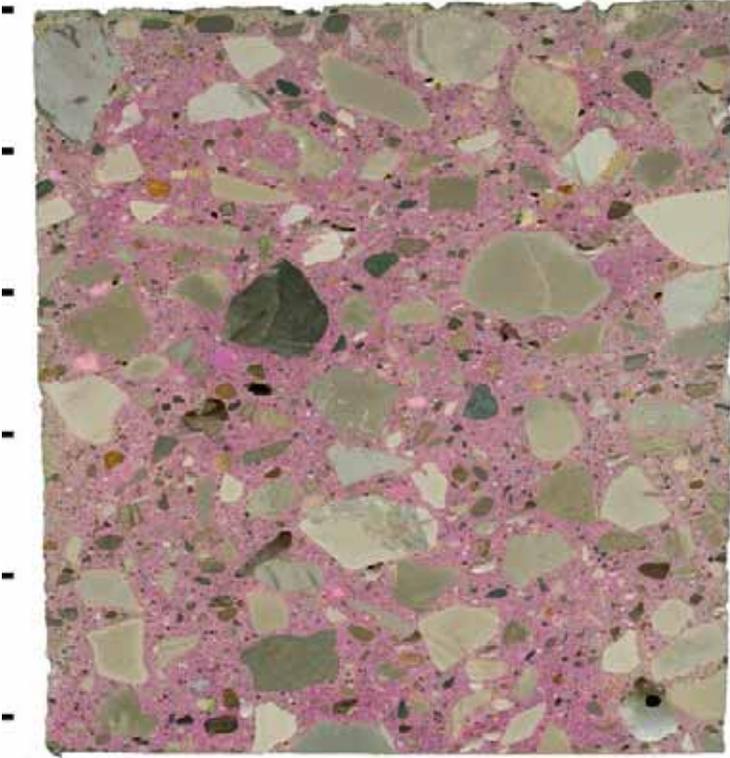
Slab representing cross section through top half of pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, at transverse joint, core B, MTU ID M59-01, tic marks every half inch.

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M-14 Core Site



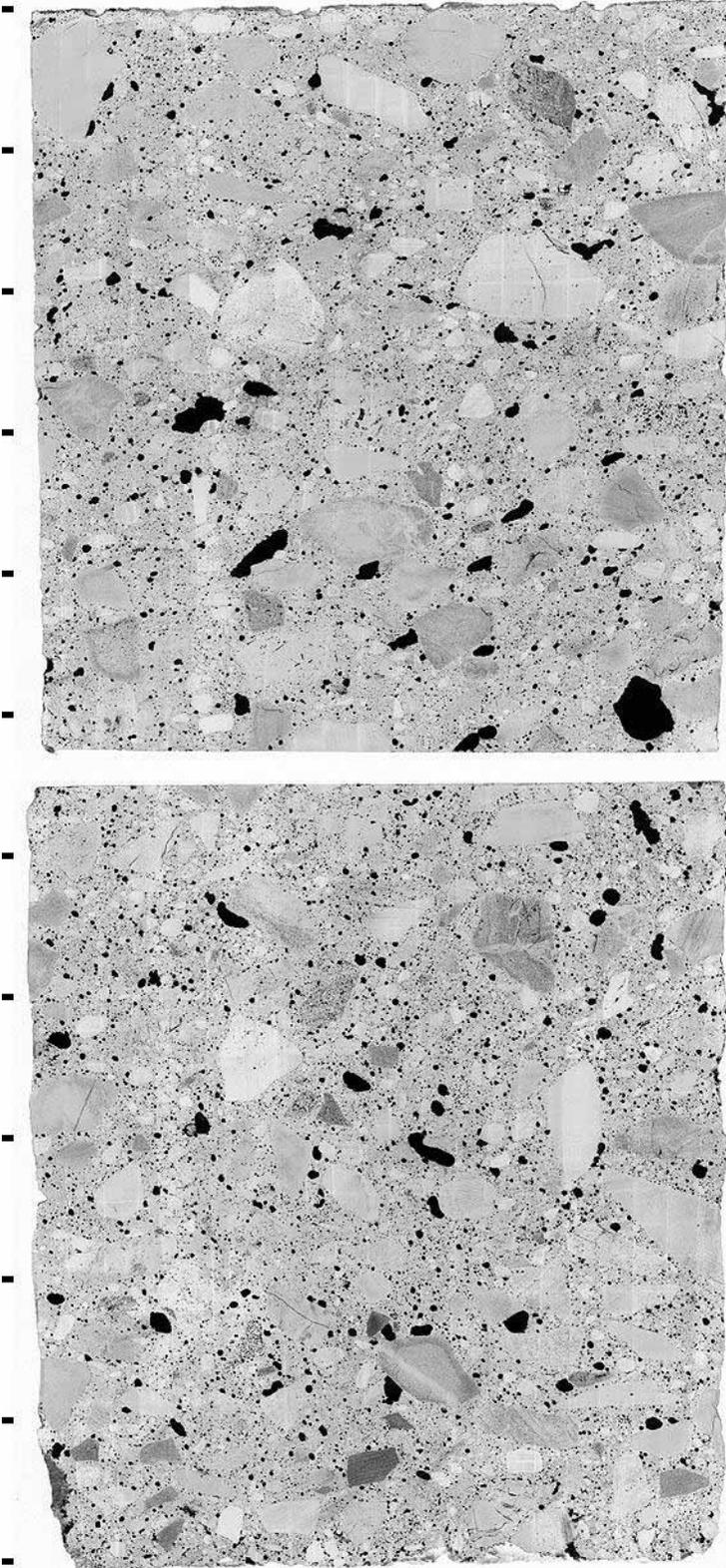
Slabs representing full cross section through pavement, as polished, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every inch.

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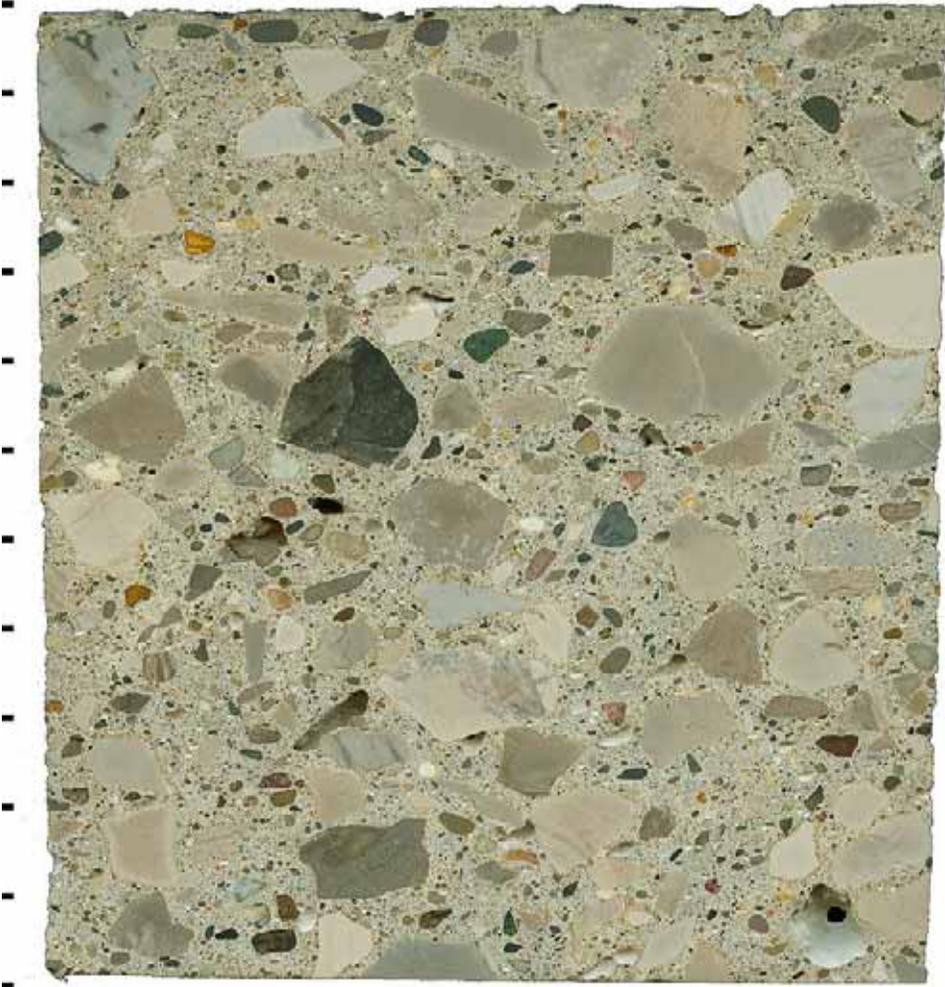
Slabs representing full cross section through pavement, after phenolphthalein stain, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every inch.

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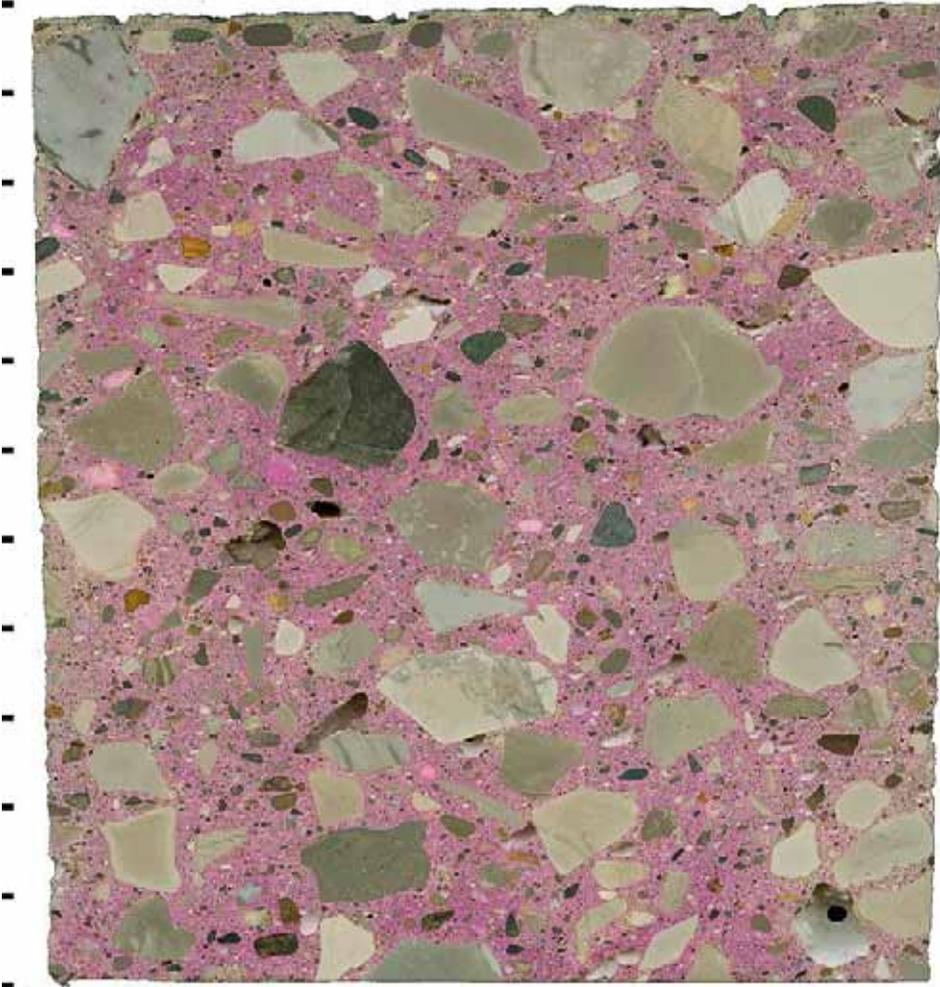
Slabs representing full cross section through pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every inch.

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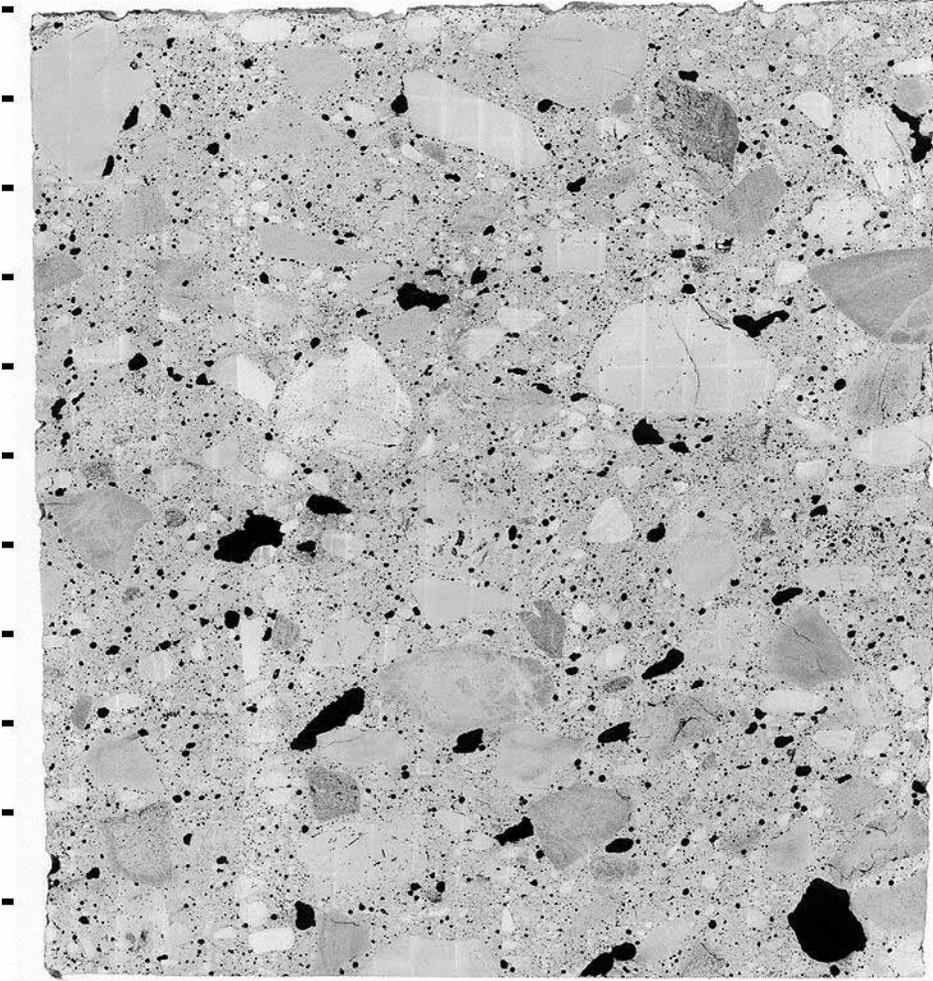
Slab representing cross section through top half of pavement, as polished, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch.

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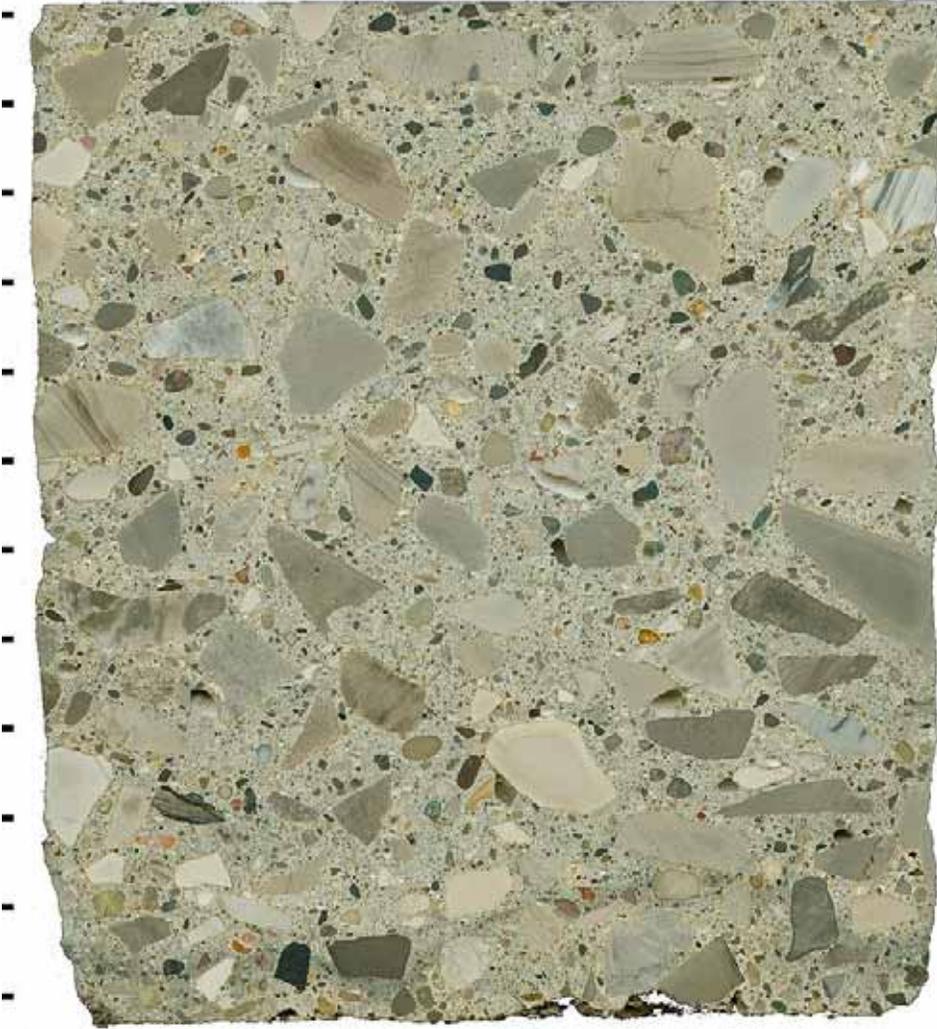
Slab representing cross section through top half of pavement, after phenolphthalein stain, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch.

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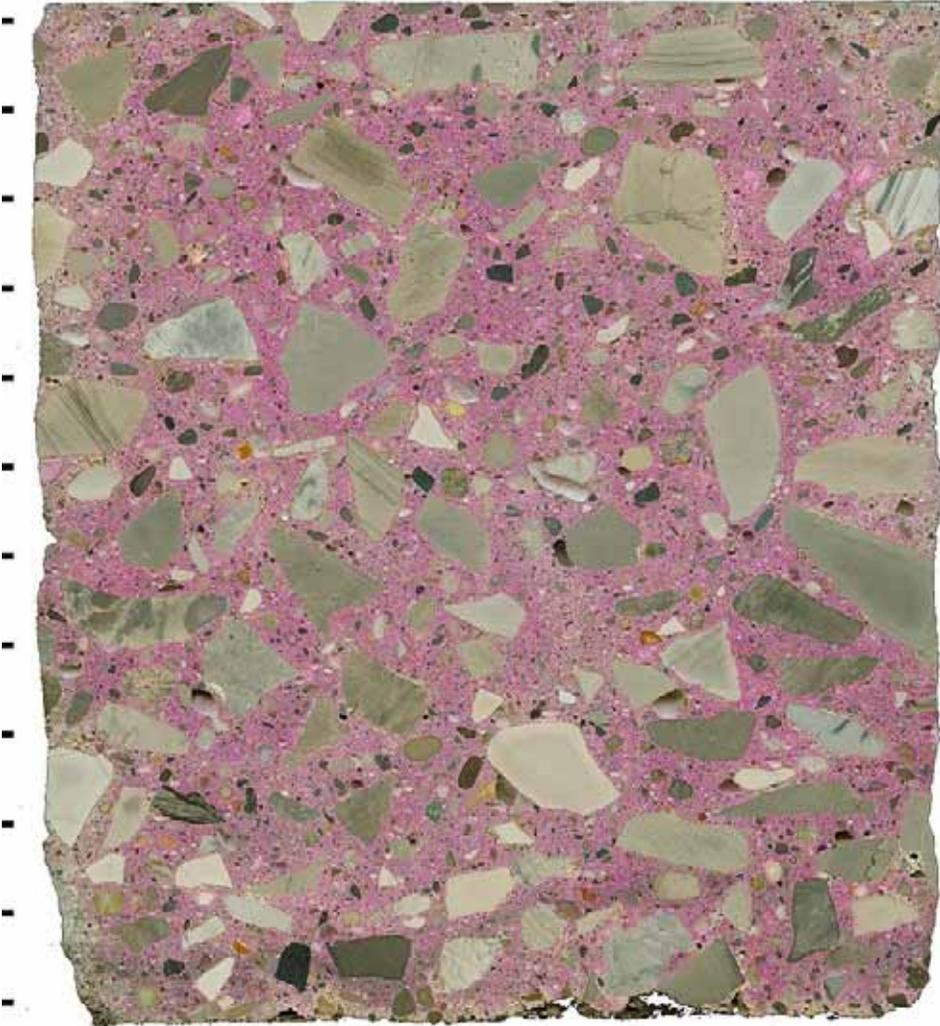
Slab representing cross section through top half of pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch.

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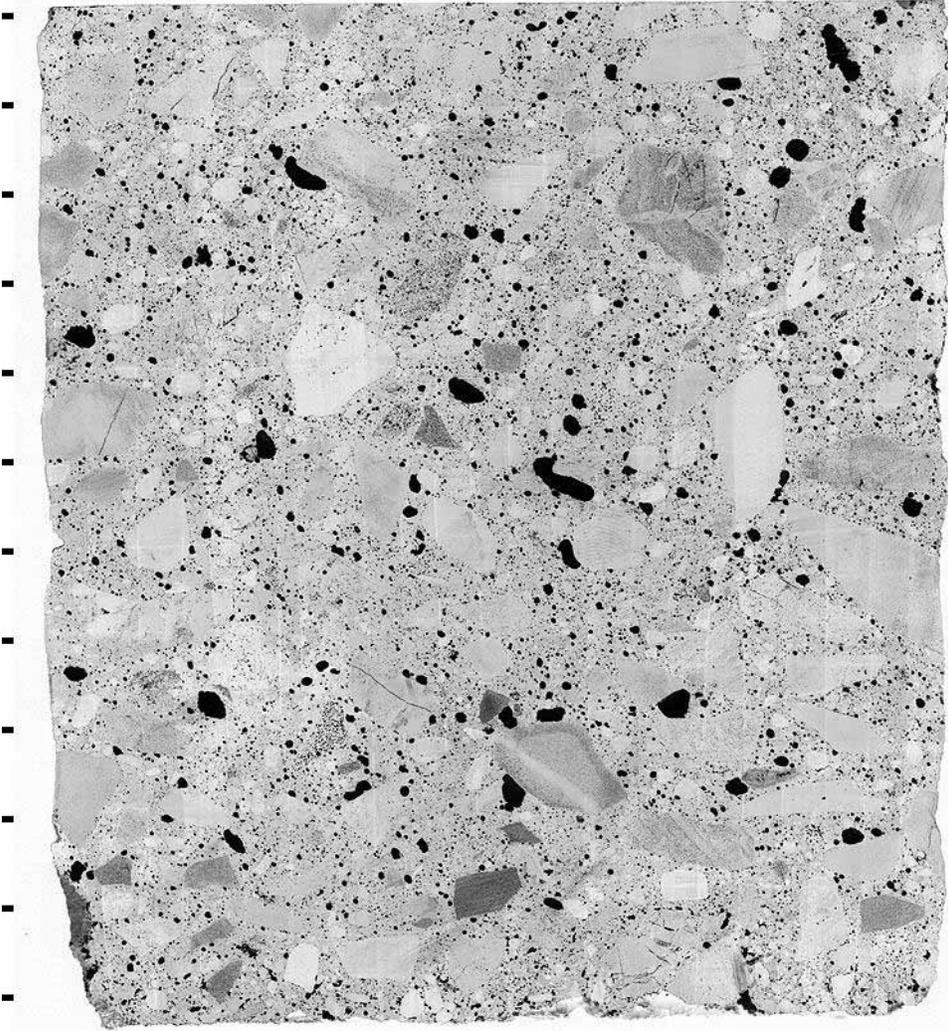
Slab representing cross section through bottom half of pavement, as polished, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch.

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M-14 Core Site



Slab representing cross section through top half of pavement, after phenolphthalein stain, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch.

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Slab representing cross section through top half of pavement, after treatment to enhance air voids and cracks, EB M-14, station 6+353, away from transverse joint, core C, MTU ID M14-03, tic marks every half inch. EB

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EB M-14, at transverse joint, core B, MTU ID M14-05

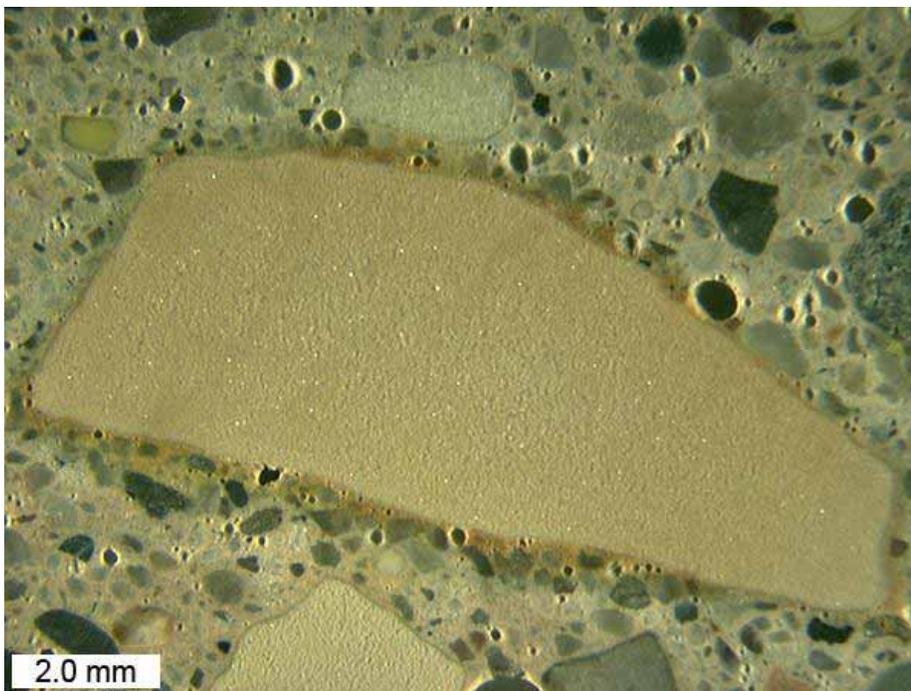
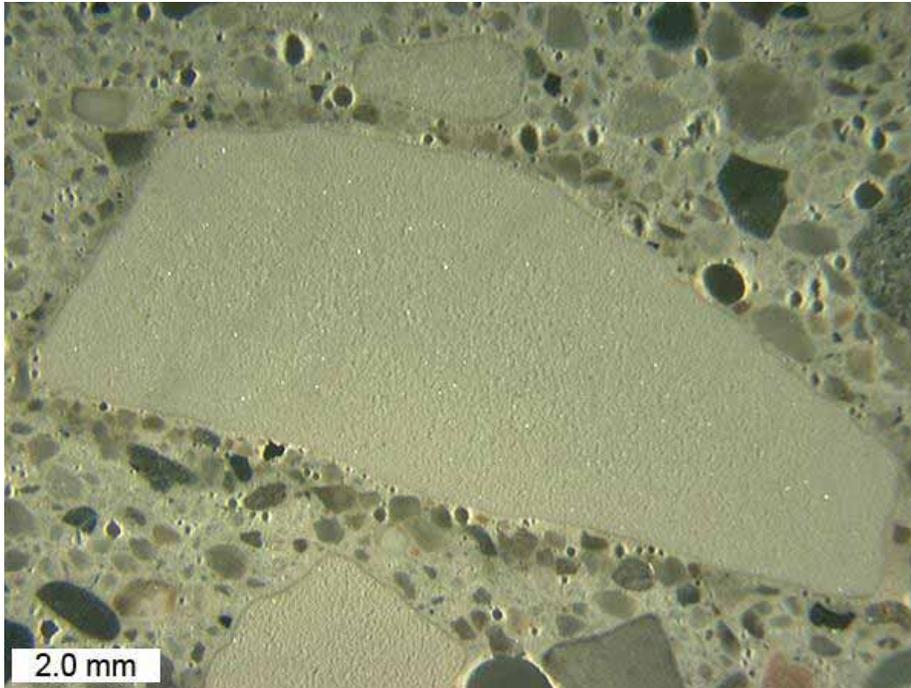
Data Analysed - 5/ 7/ 7 at 16:55			
Operator Name - matt			
Sample ID - m14-02			
Raw Data			
	bottom half	top half	summary
Total Traverse Length (mm)	1886.041	1886.041	3772.082
Total Area Analyzed (cm ²)	37.0	37.0	73.9
Air Stops	47	53	100
Paste Stops	213	210	423
Aggregate Stops	462	459	921
Secondary Phase Stops	0	0	0
Total Stops	722	722	1444
# of Air Void Intercepts	544	508	1052
# of Filled Void Intercepts	0	0	0
Results			
Air vol%	6.5	7.3	6.9
Paste vol%	29.5	29.1	29.3
Aggregate vol%	64.0	63.6	63.8
Secondary Phase vol%	0.0	0.0	0.0
Spacing Factor (mm)	0.250	0.270	0.263
Paste/Air ratio	4.53	3.96	4.23
Specific Surface (mm ² /mm ³)	17.7	14.7	16.1
Void Frequency (voids/m)	288	269	279
Average Chord Length (mm)	0.226	0.273	0.248

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EB M-14, away from transverse joint, core C, MTU ID M14-03

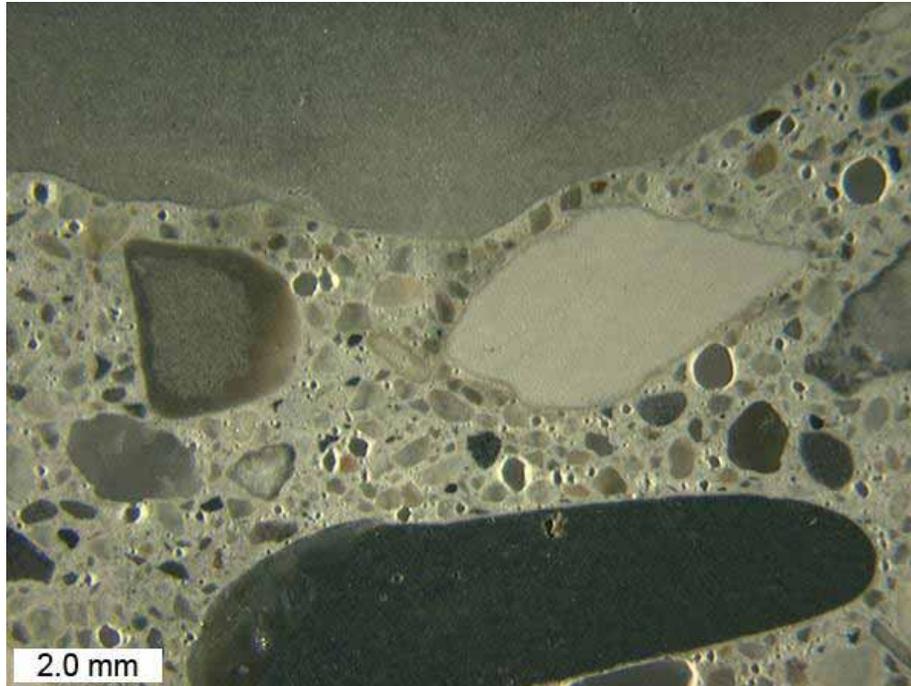
Data Analysed - 5/ 8/ 7 at 14:30			
Operator Name - Matt			
Sample ID - m14-03			
Raw Data			
	bottom half	top half	summary
Total Traverse Length (mm)	1886.041	1886.041	3772.082
Total Area Analyzed (cm ²)	37.0	37.0	73.9
Air Stops	48	46	94
Paste Stops	214	218	432
Aggregate Stops	460	457	917
Secondary Phase Stops	0	1	1
Total Stops	722	722	1444
# of Air Void Intercepts	624	615	1239
# of Filled Void Intercepts	0	1	1
Results			
Air vol%	6.7	6.4	6.5
Paste vol%	29.6	30.2	29.9
Aggregate vol%	63.7	63.3	63.5
Secondary Phase vol%	0.0	0.1	0.1
Spacing Factor (mm)	0.221	0.221	0.221
Paste/Air ratio	4.46	4.76	4.60
Specific Surface (mm ² /mm ³)	19.9	20.5	20.2
Void Frequency (voids/m)	331	326	328
Average Chord Length (mm)	0.201	0.195	0.198

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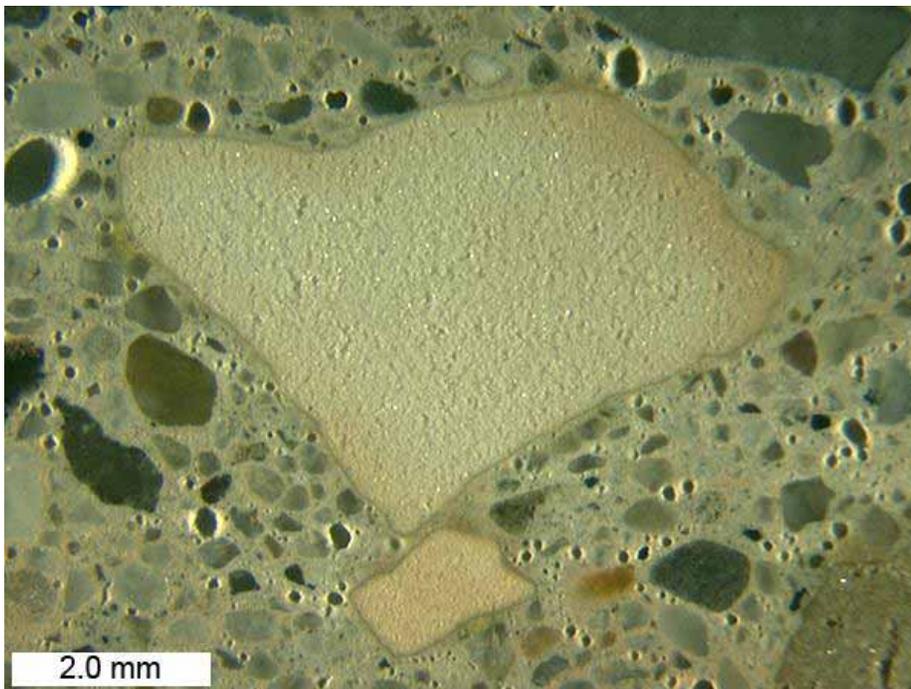
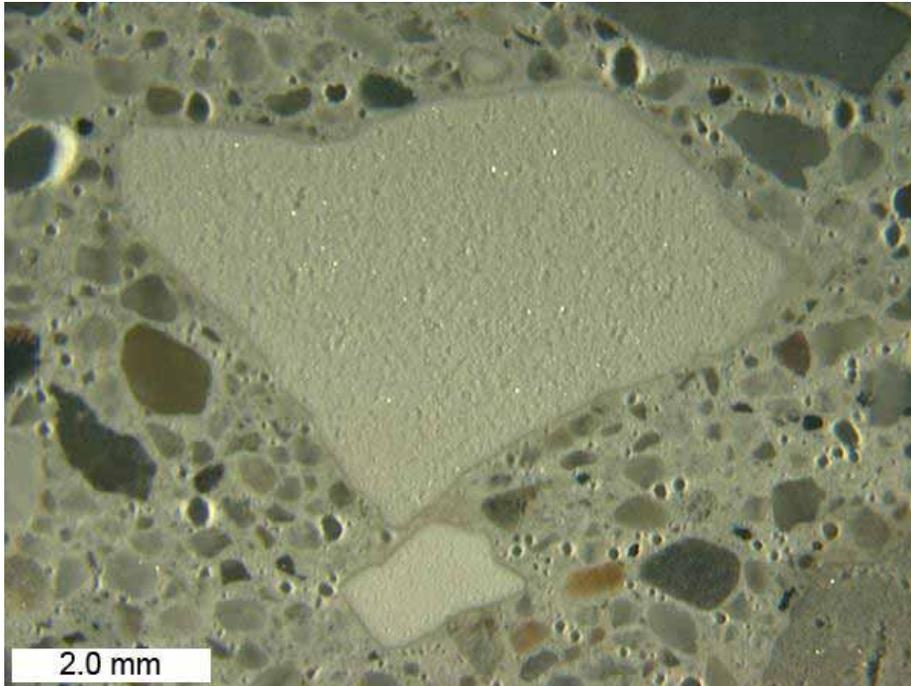
Coarse aggregate particle with darkened rim in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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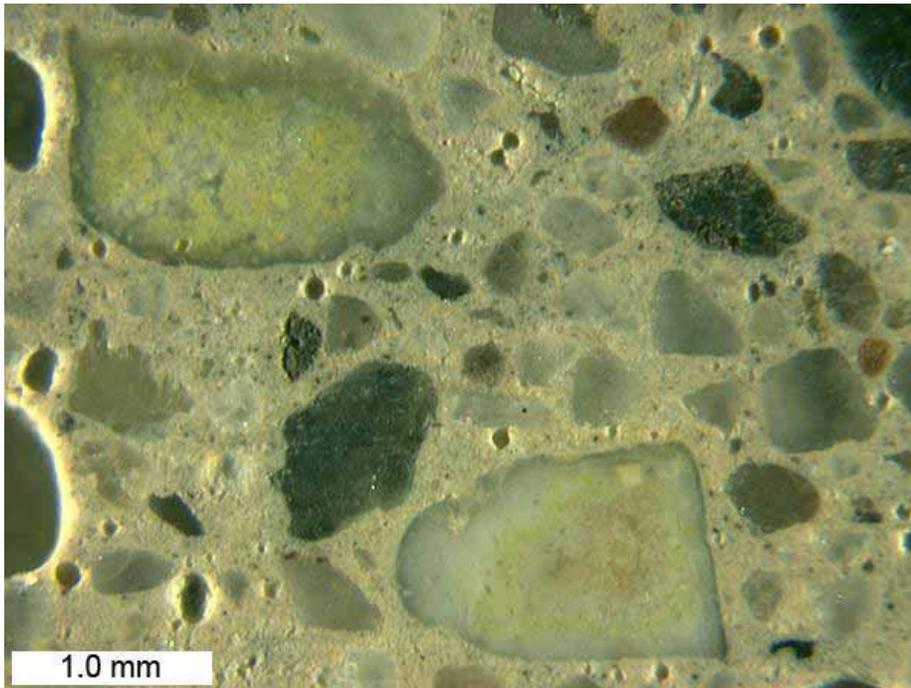
Coarse and fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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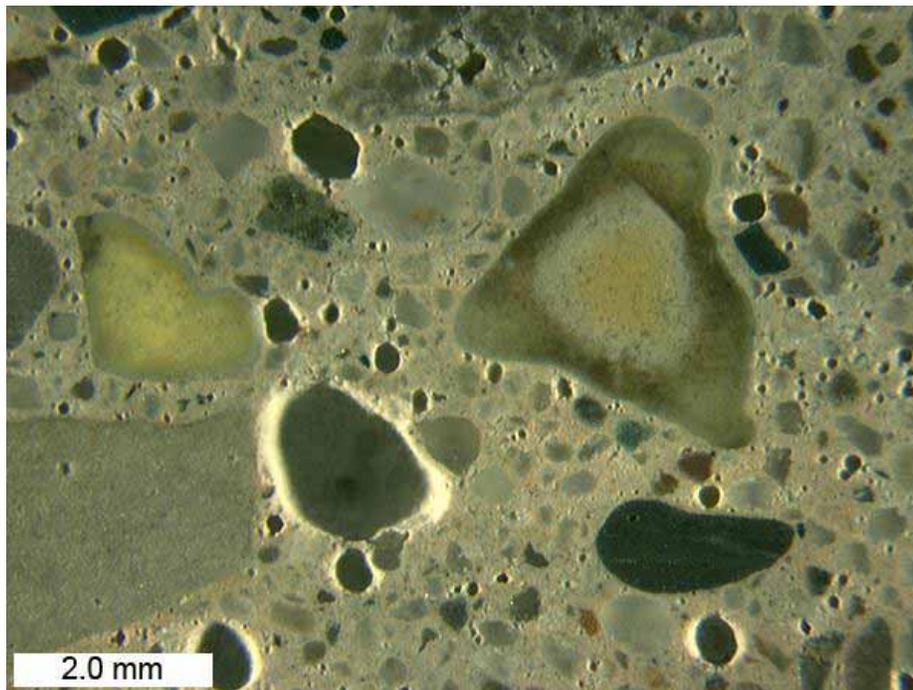
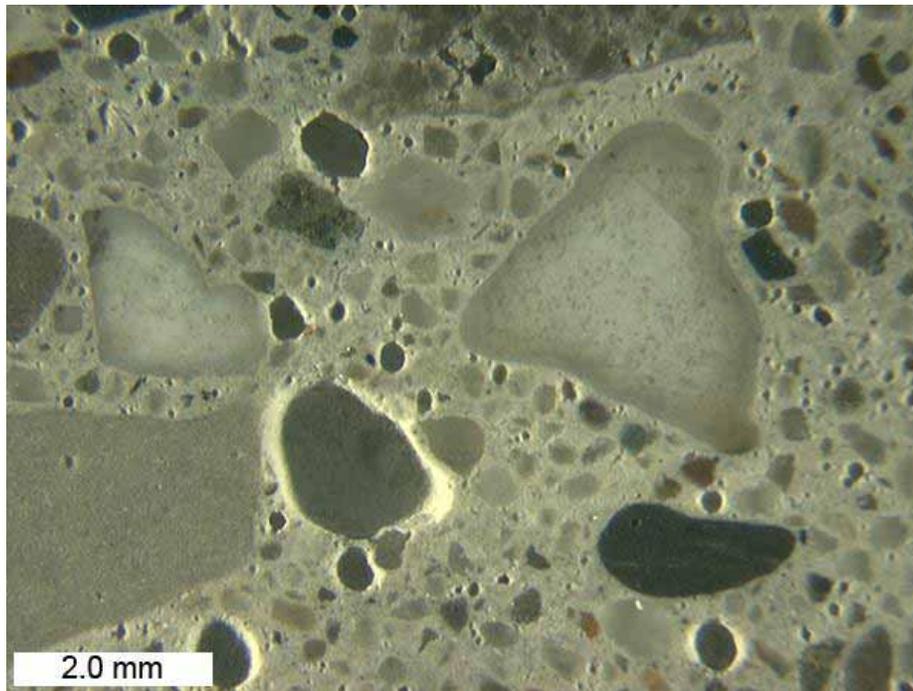
Coarse aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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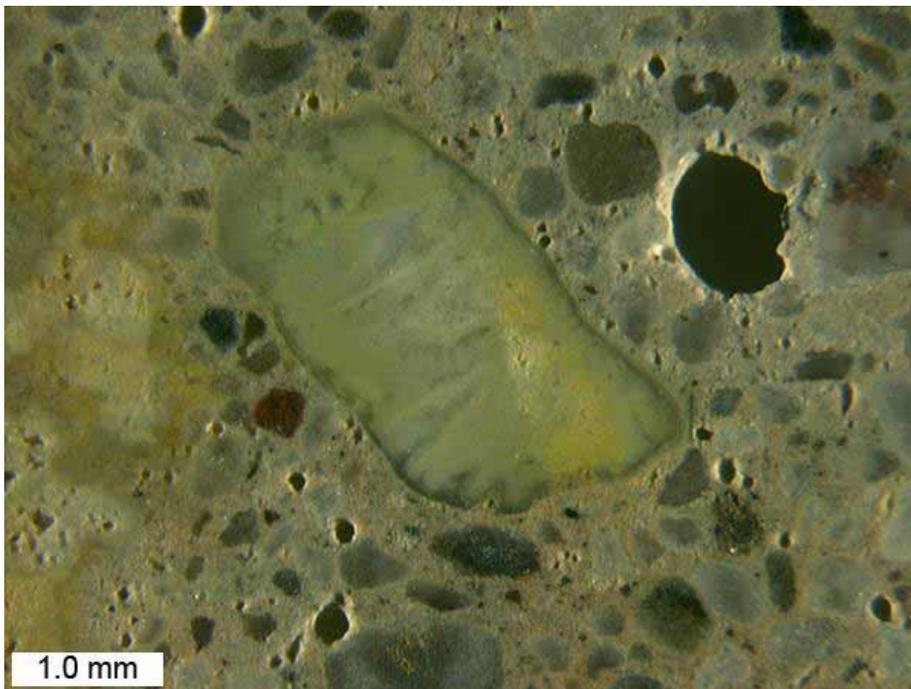
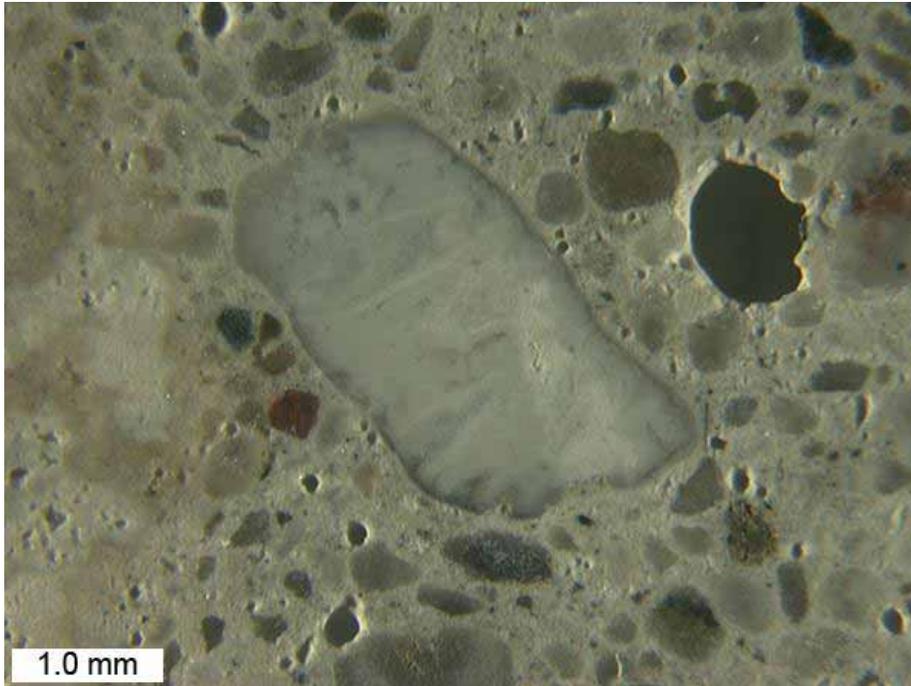
Fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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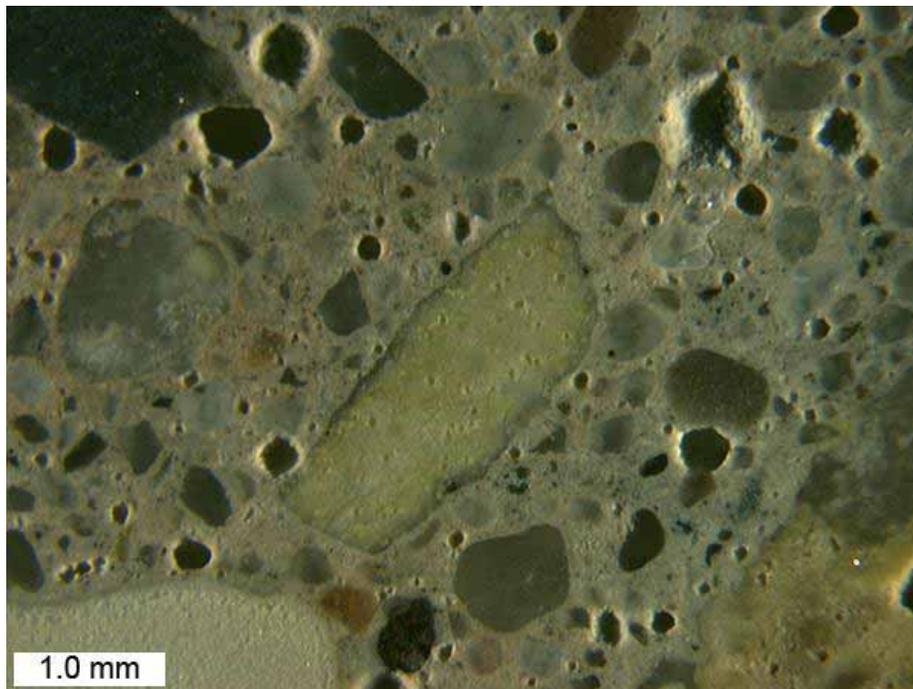
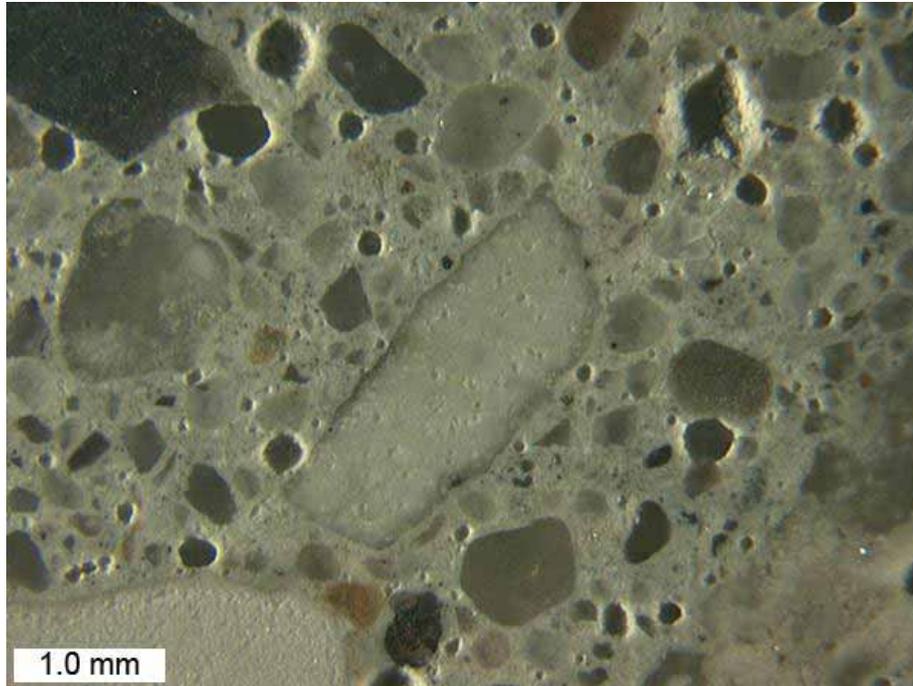
Fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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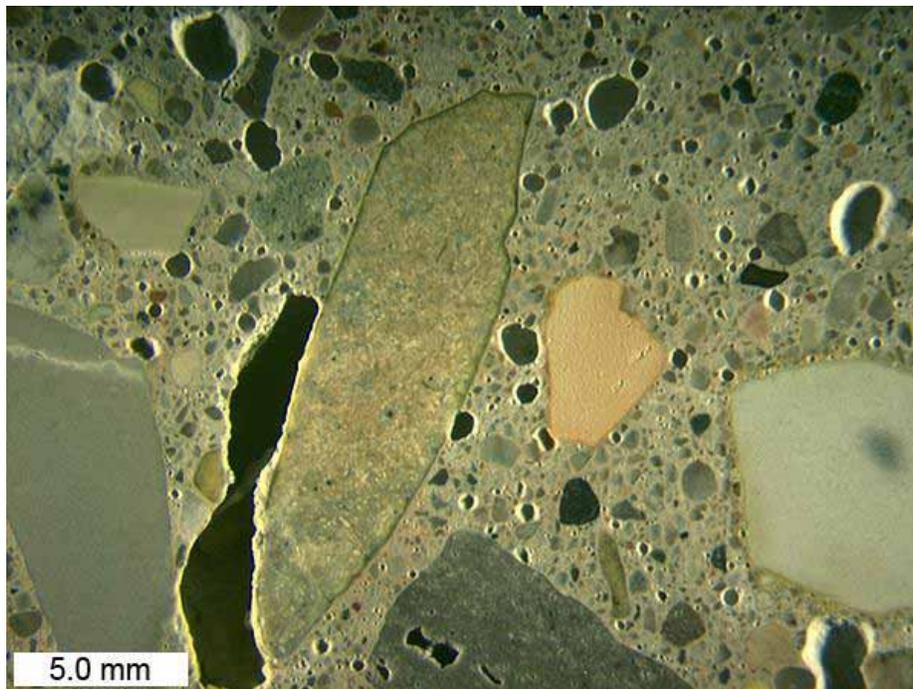
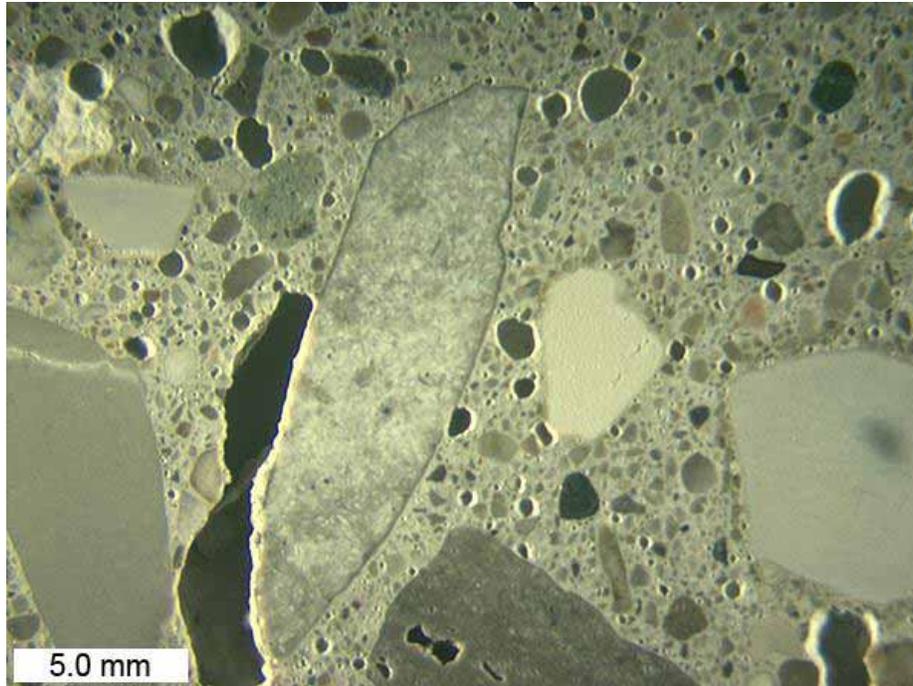
Fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, top half of core B, MTU ID M14-02.

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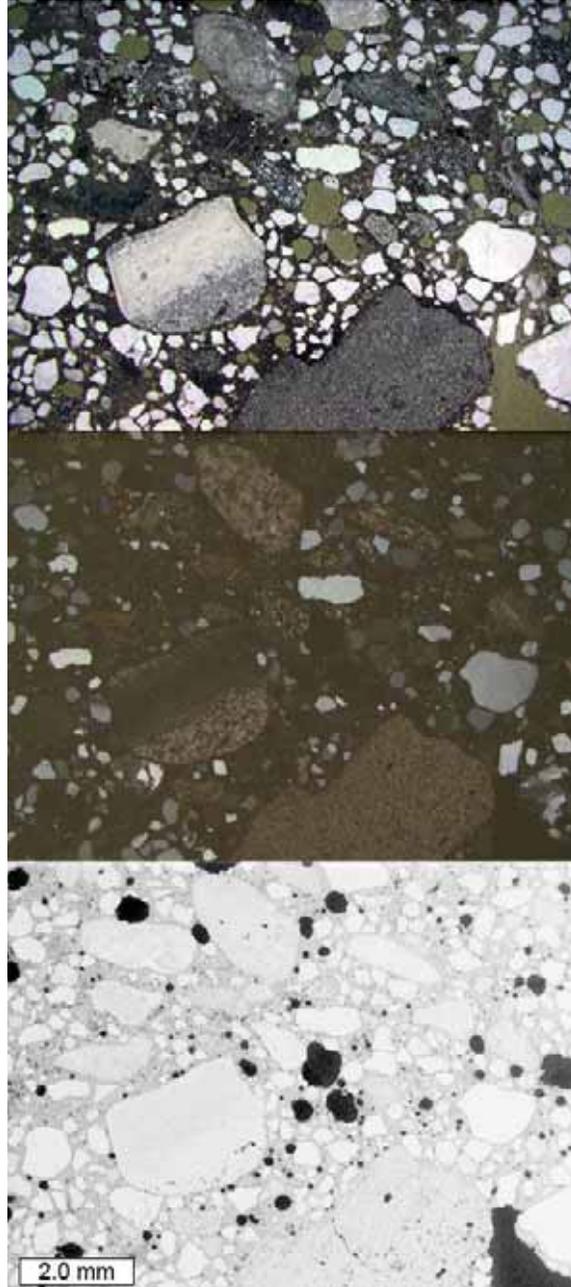
Fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, bottom half of core B, MTU ID M14-02.

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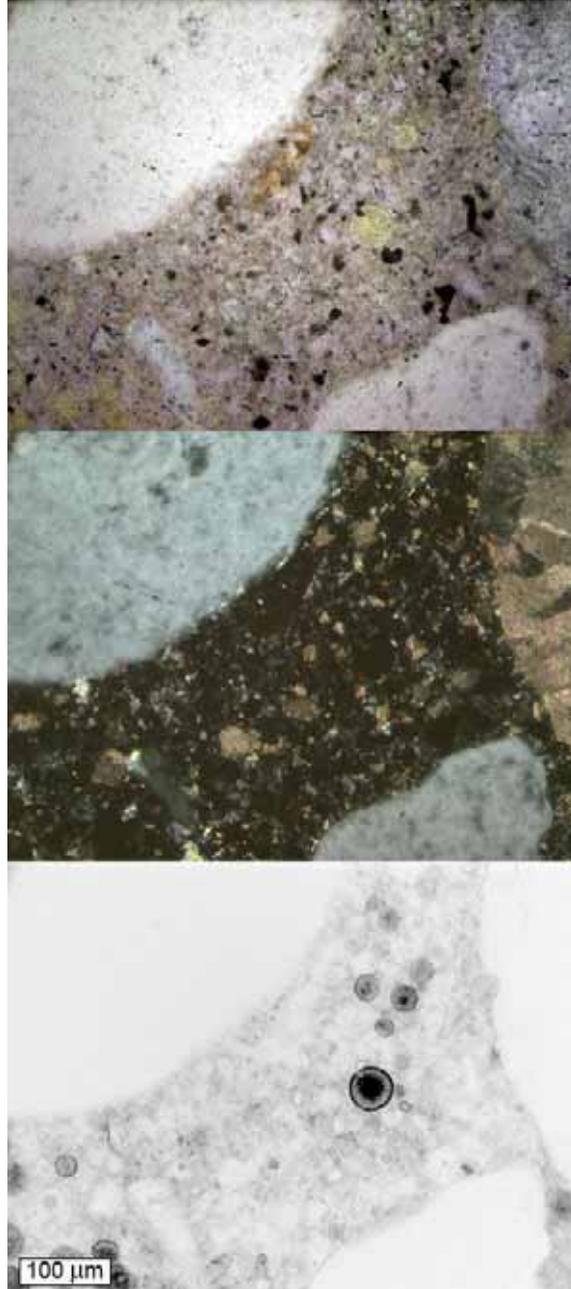
Coarse and fine aggregate particles with darkened rims in contact with the cement paste, without cracking, before and after sodium cobaltinitrite stain, polished slab from SB M-14, at transverse joint, bottom half of core B, MTU ID M14-02.

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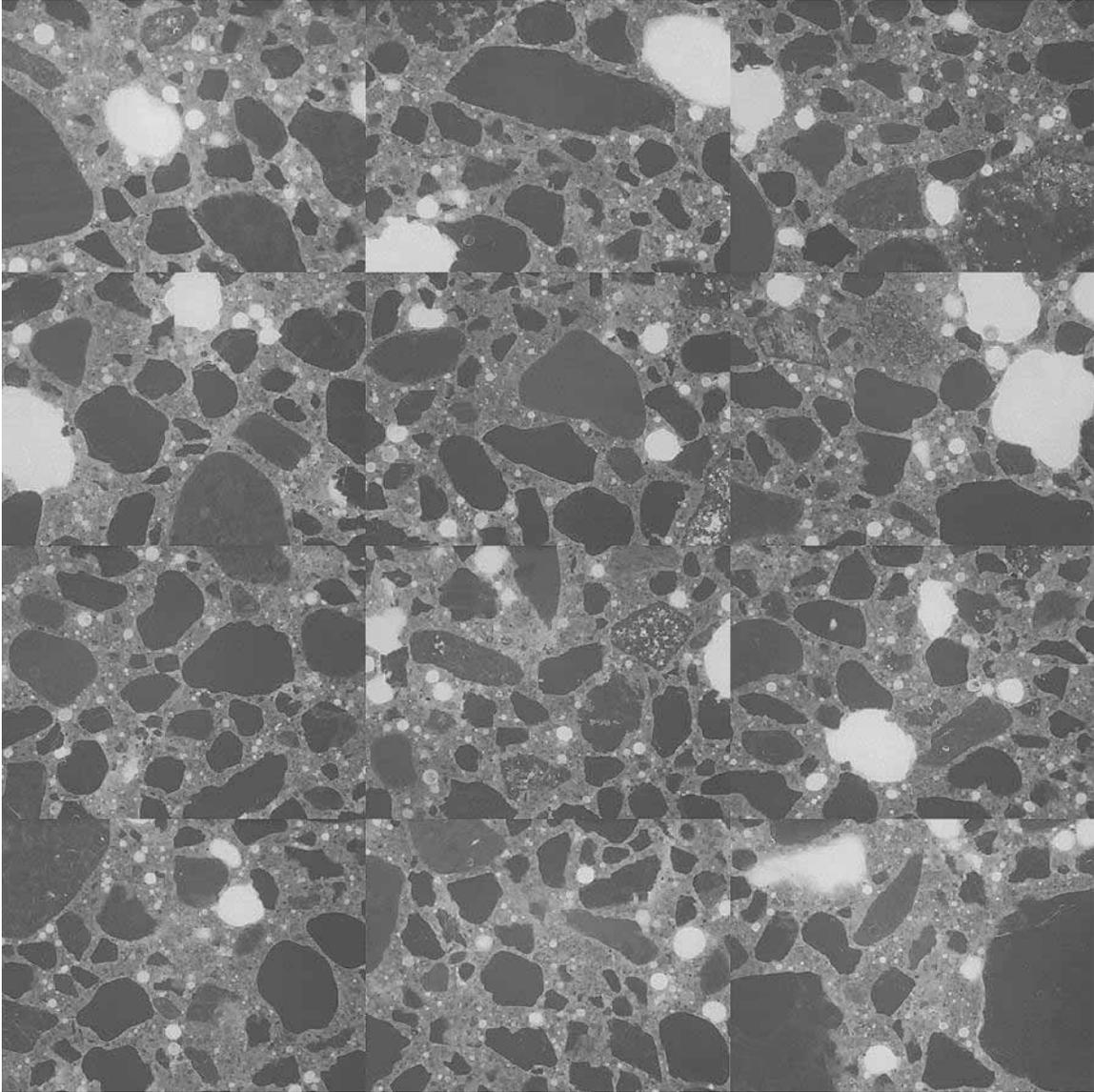
Example of chert particle without signs of deleterious alkali-silica reaction, from thin section prepared from core from M-14, away from joint, MTU ID M14-03. From top to bottom: transmitted light, crossed-polars, and epifluorescent mode images.

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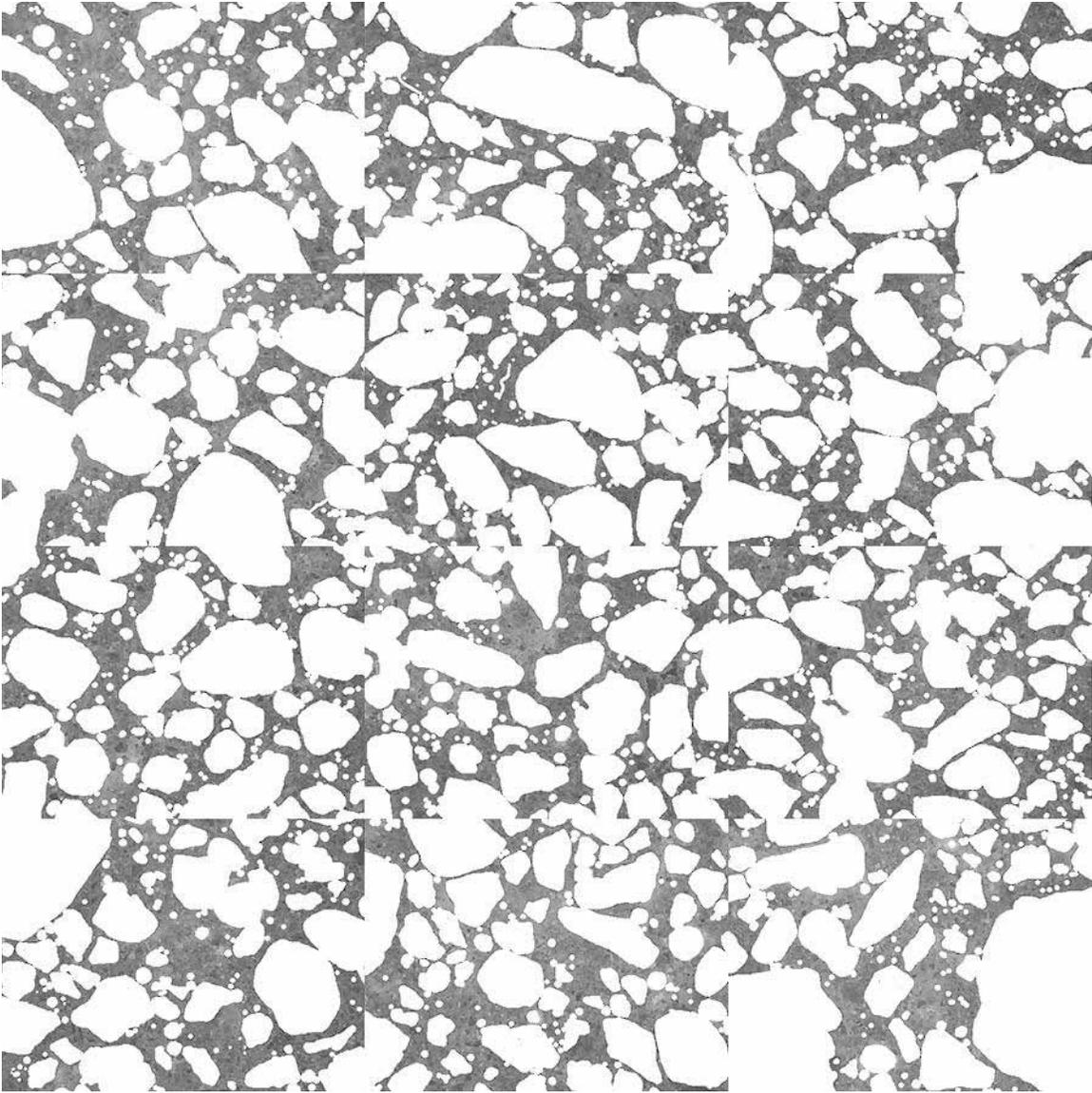
Carbonate dust in cement paste fraction in thin section prepared from core from M-14, away from joint, MTU ID M14-03. From top to bottom: transmitted light, crossed-polars, and epifluorescent mode images.

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Mosaic of 12 epifluorescent mode images collected from thin sections prepared from core from M-14, away from transverse joint, MTU ID M14-03 (each individual frame measures 2.612 x 1.959 mm).

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Mosaic of 12 epifluorescent mode images collected from thin sections prepared from core M-14, away from transverse joint, MTU ID M14-03, after masking out air voids and fine aggregate to isolate cement paste (each individual frame measures 2.612 x 1.959 mm).

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Average cement paste pixel intensities per frame, and equivalent w/c values (as compared to 28-day moist cured mortar samples) from thin section prepared from core from M-14, away from transverse joint, MTU ID M14-03.

cement paste pixel fluorescence measurements (average intensity per frame)			
84	71	61	77
63	67	68	72
69	67	79	87
equivalent w/c ($y = 0.0044x + 0.0329$)			
0.35	0.40	0.34	0.30
0.37	0.31	0.33	0.33
0.35	0.33	0.32	0.38