

If you have any questions regarding the approved lists please contact the person/section indicated.

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(1) AIR-ENTRAINING ADMIXTURES – (Physical Lab)**AASHTO - M154**

The following list of air-entraining admixtures is approved for use in hydraulic cement concrete.

Manufacturer	Product	Code
Addiment Inc.	AEC	44
	LPI	45
Axim Italcementi Group	Catexol A.E. 260	62
	Catexol A.E. 360	73
BASF, Inc./ Master Builders	EverAir	76
	MB AE 90	54
	MB-VR Standard	3
	Micro-Air	30
	Pave-air	39
Chryso, Inc./Pro Mix Technologies	Chryso Air R2	
	Chryso Air 260	79
	ProAir 260	72
The Euclid Chemical Company	AEA-92	55
	Air Mix 200	56
	Euco Air Mix	46
	Eucon Air 30	58
	Eucon Air 40	59
Fritz-Pak Corp.	Air Plus L	63
Great Eastern Technologies, L.L.C.	Setcon 6A	67
W. R. Grace & Company	Airalon 3000	
	DARAVAIR-M	26
	DAREX AEA	1
	DAREX II AEA	41
	DARAVAIR AT60	65
	DARAVAIR 1000	52
	DARAVAIR AT30	70
Hunt Process Corp. - Southern	Air In (12 Solids)	47
	Air-In-XT	57
Premiere Concrete Admixtures	ConAir	
	ConAir 260	
RussTech	RVR-15	53
	RSA-10	
Sika Corp	Sika AER	12
	Sika AEA 14	66
	Sika AEA-15	49
	Sika Air	64
	Sika Multi Air	74

The following list of air-entraining admixtures is approved for use in flowable fill mixtures.

Manufacturer	Product	Code
BASF, Inc.	RHEOCELL RHEOFILL	71

List No. 2

(2) WATER REDUCING ADMIXTURES – (Physical Lab)

AASHTO-M194-TYPE A

The following list of water reducing admixtures is approved for use in hydraulic cement concrete.

Addiment	BV3, BV6, VZ4, VZ4/W, BVF
Axim Italcementi Group	Allegro 122, Catexol 800N, Catexol 800R, Catexol 1000N, Catexol 1000 SP-MN, Catexol 2000NI, Catexol 3000 GP, Catexol 3500 N, Catexol Hydronese, Superflux 2000 PC, DURAFLUX 33, DURAFLUX 66, DURAFLUX 77, Pavex, Superflux 2100 PC
BASF Admixtures, (formerly Degussa Admixtures, Inc., formerly Master Builders)	Masterpave, Masterpave-N, Pozzoloth 80, Pozzoloth 200-N, Pozzoloth 220-N, Pozzoloth 322-N, Polyheed, Polyheed 997, Polyheed-N, PS 1466, Glenium 3030 NS, Glenium 3400NV, Glenium 7500, Glenium 7700, PolyHeed 1020, PolyHeed 1025, PolyHeed 900, Glenium 7710, Glenium 7103
Boremco Specialty Chemicals	Borem 100-HML
Chryso, Inc.	Fluid Optima 203, Plast 850, Fluid Optima 200, Plast 500, Fluid Premia 180, Fluid Premia 186, Fluid Premia 190, Fluid Premia 196, CHYRSO Fluid Optima 216, Chryso Plast 209, Chryso Enviromix 380, Chryso Enviromix 340, Chryso Enviromix 728, Chryso Fluid Optima 256
The Euclid Chemical Company	Eucon NW, Eucon LW, Eucon HW, Eucon LR, Eucon SP, Eucon I X-15, Eucon NR, Eucon SPC, Eucon SPJ, Eucon 37, WR-75, WR-91, Eucon 1037, Eucon MR, Plastol Ultra 109, Eucon MRX
Fritz-Pak Corp.	Supercizer 6L, FR-2L, Supercizer 7L, FR-1L FR-3L HE
Great Eastern Technologies, L.L.C.	Chemstrong A, Chemstrong SP, Polystrong
Hunt Process	HPS-R
Premiere Concrete Admixtures	OptiFlow 50, OptiFlow 500, OptiFlow MR, OptiFlow Plus
RussTech, Inc.	LC-400, LC-400P, Finishease-NC, Superflo 440, Superflo 443, Superflo LC500, Superflo 2000RM
Sika Corp.	Plastocrete 161, Sikament 2000, Sikament FF, Sikament MP, ViscoCrete 6100, Sikament NL, Sika Viscocrete 4100, Sikaplast 500, Sika Viscocrete 2100, Sikament 686, Sikament AFM
W. R. Grace & Company	WRDA 35, WRDA 64, WRDA 79, WRDA 82, DARACEM 19, DARACEM 55, DARACEM 65, DARACEM 100, ADVA 170, ADVA Cast 500, ADVA Cast 530, MIRA 92, ADVA Flex, ADVA CAST 575, ADVA 190, EXP 950, ADVA 140M, ADVA 408, MIRA 62, Zyla 620, Zyla 640

(3) HIGH RANGE WATER REDUCING ADMIXTURES & RETARDERS - (Physical Lab)

AASHTO-M194-TYPE G

The following list of high range water reducing and retarding admixtures is approved for use in hydraulic cement concrete.

Addiment	BVS
Axim Italcementi Group	Catexol 2000Ni
The Euclid Chemical Company	Eucon 537, Plastol
Fritz-Pak Corp.	Delay Set Liquid, Supercizer 7L
W. R. Grace & Company	DARACEM-100

(4) WATER REDUCING AND RETARDING ADMIXTURES – (Physical Lab)

AASHTO-M194-TYPE D

The following list of water reducing and retarding admixtures is approved for use in hydraulic cement concrete.

Addiment	BV3, VZ4, VZ4/W, HPR
Axim Italcementi Group	Catexol 800R, Catexol 1000N, Catexol 1000R, Stop-Set L
BASF Admixtures, Inc. (formerly Master Builders)	Delvo Stabilizer, Masterpave-RI, Pozzoloth-80, Pozzoloth-82, Pozzoloth 100-XR, Pozzoloth-200N, Pozzoloth 122-R, Pozzoloth 220N, Pozzoloth 300-R, Pozzoloth 961R
Chryso, Inc.	Chryso Tard 100R
The Euclid Chemical Company	Eucon Retarder 75, Eucon Retarder 100, Eucon 537, Eucon NR, Eucon LR, Eucon RD-1
Fritz-Pak Corp.	Delay Set Liquid, FR-1L
Great Eastern Technologies, L.L.C.	Chemstrong R
Premiere Concrete Admixtures	OptiFlo 500
W. R. Grace & Company	Daratard 17, WRDA 35, WRDA 79, Recover, Daratard HC
RussTech, Inc.	LC-400R, LC-400P, LC500
Sika Corp	Plastiment

(4.1) HIGH RANGE WATER REDUCER – (Physical Lab)

AASHTO-M-194-TYPE F

The following list of high range water reducing admixtures is approved for use in hydraulic cement concrete.

Addiment	BVF, BV94, BV6
Axim Italcementi Group	Allegro 122, Catexol 1000 SPMN, Catexol Hydrosense, Superflux 2000 PC, DURAFLUX 33, DURAFLUX 66, DURAFLUX 77, Superflux 2100 PC
BASF, Inc./ Master Builders, Inc. (formerly Degussa Admixtures, Inc.)	Polyheed, Polyheed 997, Rheobuild 1000, RS 1232, PS 1248, PS 1466, Glenium 3030 NS, Glenium 3400 NV, Glenium 7700, Glenium 7500 PolyHeed 1020, PolyHeed 1025, Glenium 7710, Glenium 7103
Boremco Specialty Chemicals	Borem 100-HML
Chryso, Inc.	Fluid Optima 203, Fluid Optima 200, Fluid Premia 180, Fluid Premia 186, Fluid Premia 190, Fluid Premia 196, CHRYSO Fluid Optima 216
Euclid Chemical Co.	Eucon 37, Eucon SP, Eucon X-15, Eucon RD1, Eucon SPC, Eucon SPJ, Eucon 1037, Eucon MR, Plastol Ultra 109, Eucon MRX
Fritz-Pak Corp	Supercizer 7, Supercizer 6L, Supercizer 7L
Great Eastern Technologies, L.L.C.	Chemstrong SP, Polystrong
Premiere Concrete Admixtures	UltraFlo 2000, UltraFlo 4600
RussTech, Inc.	Superflo 443, Superflo 440, Superflo 2000RM
Sika Corp.	Sikament FF, Sikament 2000, Sikament MP, ViscoCrete 6100, Sikament NL, Sika Viscocrete 4100, Sikaplast 500, Sika Viscocrete 2100, Sikament 686, Sikament AFM
W. R. Grace & Company	Adva Cast, DARACEM 19, ADVA Cast 530, MIRA 92, ADVA Flex, ADVA CAST 575, ADVA 190, EXP 950, ADVA 140M, ADVA 408, MIRA 62, ADVA Cast 600, DARACEM ML 330

(4.2) ACCELERATING ADMIXTURES – (Physical Lab)

AASHTO-M-194-TYPE C

The following list of high range water reducing admixtures is approved for use in hydraulic cement concrete.	
Axim Italcementi Group	Catexol 2000 R.H.E.
BASF Admixtures, Inc. (formerly Master Builders, Inc.)	Pozzolith NC 534 (Dosage rate not to exceed 27 fl. Oz./100 lbs. of cement.) Pozzutec 20 Plus
Chryso, Inc	Chryso TurboCast 650A Chryso Trubo Cast NCT
Euclid Chemical Company, The	Eucon AcN
Great Eastern Technologies, LLC	Chemstrong CF
Premiere Concrete Admixtures	NitroCast 701, NitroCast K
Russ Tech, Inc.	Russ Tech RCI (Dosage rate not to exceed 32 fl. Oz./100 lbs. of cement)
Sika Corp.	Sika Rapid -1 (Dosage rate not to exceed 8-48 fl. Oz./100 lbs. of cement) Plastocrete 161 FL (Dosage rate not to exceed 24 fl. Oz./100 lbs. of cement) Sika Set NC (Dosage rate not to exceed 10 – 45 fl. Oz./100 lbs. of cement)
W. R. Grace & Company	Lubricon NCA (Dosage rate not to exceed 27 fl. oz./100 lbs. of cement) Polarset (Dosage rate not to exceed 12 fl. oz./100 lbs. of cement) Daraset HES Duraset 200 Duraset 400

(4.3) CORROSION INHIBITING ADMIXTURES – (Physical Lab)

The following list of corrosion inhibiting admixtures is approved for use in hydraulic cement concrete.	
Darex Corrosion Inhibiting Admixture DCI, DCI-S	Grace Construction Products Cambridge, MA
Catexol CN-CI	Axim Italcementi Group Middlebranch, OH
Chemstrong CI	Great Eastern Technologies, L.L.C. Lakewood, NJ
Rheocrete CNI	BASF Admixtures, Inc. (formerly Degussa Building Systems and Master Builders, Inc.)
Russ Tech RCI	Russ Tech, Inc. Louisville, KY
Sika CNI Corrosion Inhibiting Admixture	Sika Corp. Lyndhurst, NJ

(4.4) RETARDING ADMIXTURES– (Physical Lab)**AASHTO-194-Type B**

The following list of retarding admixtures is approved for use in hydraulic cement concrete.

Manufacturer Name	Product
Axim Italcementi Group	Stop-Set L, Catexol 1000N, Catexol 1000R
BASF Corporation	Pozzolith 322 N
Sika Corporation	Sikatard 930

b

(5) COARSE AGGREGATE DATA – (Physical Lab)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
ACCO Stone Corp								
2059 Blacksburg, VA	1/06	Ls. & Do	2.81	0.7		15.5		2.79
Acres Sand & Gravel								
Stuarts Draft, VA	8/08	Rv. Gvl.	2.57	1.1		39.0	42.2	2.54
Adams Stone Co.								
1003 Burdine, KY		Ls.	2.71	0.4		20.9	24.5	
Aggregate Industries								
6033 Rappahannock Farm Fredericksburg, VA	10/07	Qz.	2.61	0.9		37.0		2.63
Fredericksburg, VA #7 & 78	10/07	Qz.	2.62	0.9		37.0		2.62
6035 Hayfield, VA		QZ	2.64	0.4		37.6		
6008 Taylor Plant King George, VA	6/98	Qz.	2.63	0.7		37.0		2.61
King George, VA #7 & 78	10/07	Qz.	2.61	0.7		35.2		2.61
7060 LaPlata MD		Rv. Gvl.	2.57	1.5		34.1		2.53
4059 Doswell, VA	6/09		2.62	0.5		44.7		2.61
4100 Charles City, VA 7 & 78	3/10		2.60	0.9			35.4	2.57
Appomattox Lime Co.								
3001 Appomattox, VA		Do. Ma.	2.79	0.1	33.8	28.6		2.77
Ararat Rock Products								
2003 Mt. Airy, NC	1/06	Gn.	2.80	0.4		31.0		2.78
Austinville Limestone								
1087 Austinville, VA	3/04	Ls.	2.83	0.4		18.9		2.83
Aylett Sand & Gravel								
6018 Aylett, VA		Qz.	2.65	0.4	40.8	41.7	39.3	
6018 Aylett, VA-8P	10/04	Gvl.	2.62	0.1			39.0	2.61
Barger, C. W. & Sons								
8004 Lexington, VA	2/08	Ls.	2.72	0.4		23.0		2.71
Barrick, S. W.								
Woodsboro, MD		Ls.	2.71	0.4		24.8		2.70
Beckley Stone Co.								
1085 Beckley, W VA	3/04	Ss	2.57	1.8	36.0	33.7		2.52
Belmont Quarry								
8003 Staunton, VA		Ls. & Do.	2.70	0.7		26.7		2.68
Benchmark Carolina Aggregate Quarry, #67, Princeton, NC			2.68	0.2		16.1		

COARSE AGGREGATES (Cont.)

Producer and Location		Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
						A	B	C	
Blue Stone Quarry									
1099	Princeton, WV	3/04	Ls.	2.70	0.6	18.7	17.1		2.68
Boxley Aggregates									
2004	Blue Ridge, VA	1/06	Ls. & Do.	2.78	0.4		15.8		2.77
2009	Fieldale, VA	1/06	Gn.	2.88	0.4		24.9		2.87
3003	Lawyers Rd, Lynchburg, VA	2/09	Ar.Ma. Do., Ma., Ls.	2.74	0.4		26.0		2.73
8082	Lewisburg, WV	2/08	L.S.	2.71	0.6		18.0		2.70
8025	Lowmoor, VA	4/09	Ls. & Do.	2.73	0.4		20.0		2.72
8069	Millpoint Hillsboro, WV	3/08	L.S.	2.71	0.3		20.0		2.70
3030	Mt. Athos Plant Concord, VA	2/09	Gs.	3.04	0.4		19.0		3.03
3034	Piney River, VA	2/09	Ap	2.70	0.6		15.0		2.69
BMC Rock Inc.									
3055	Drakes Branch, VA	2/09	Gn.	2.69	0.4		22.0		2.68
Cardinal Stone Co.									
1009	Galax, VA	3/04	Bi.	2.65	1.5	21.8	22.8		2.61
1047	Atkins, VA	3/04	L.S.	2.75	0.5	19.2	19.2		2.74
1097	Smithport, NC		Gr.	3.00	0.4	48.3			
Carmeuse									
2006	Buchanan, VA	1/06	L.s. & Do.	2.82	1.1		28.2		2.79
2008	Rocky Point, VA	1/06	L.S.	2.72	0.2		28.5		2.71
8005	Strasburg	4/09	Ls.	2.70	0.5		23.0		2.68
8028	Winchester, VA	4/07	Ls.	2.72	0.3		23.0		2.71
Carolina Sunrock									
3056	Woodsdale, NC	3/11	Granite	2.97	0.5		27.1		2.96
Cedar Mountain Stone Corporation									
7001	Louisa, VA		Gr.	2.68	0.5		39.0		
7031	Mitchell, VA		Db. (Tr.)	3.03	0.6		19.9		3.01
	Mitchell, VA #8	6/05	Db. (Tr.)	3.02	0.8			26.2	2.99
Chantilly Crushed Stone Co.									
7004	Chantilly, VA	1/06	Db. (Tr.)	2.99	0.6		14.1		2.98
	Chantilly, VA #8P	12/05	Db. (Tr.)	2.96	1.0			19.4	2.93
Dillon, E. & Co.									
1064	Swords Creek, VA	3/04	Do.	2.84	0.2	17.4	17.1		2.84
Elkhorn Stone Co.									
1063	Elkhorn City, KY	3/04	Ls.	2.70	0.4	21.2	20.1		2.69
	Burdine, KY	3/04	Ls.	2.70	0.5	24.0	22.6		2.69

COARSE AGGREGATES (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
Ennstone								
6038 Aggregate Industries Kenson Plant (Rt. 692)	10/05	Gvl.	2.62	0.7	35.8		38.0	2.60
6038 Kenson, VA (8 & 8P)	7/07	Qz.	2.63	0.7			35.3	
F & M Construction Co.								
1011 Carroll County, VA	1/06	Qzi.	2.67	1.3	15.9	15.5		2.64
Frazier Quarry								
8010 Harrisonburg, VA (Waterman)	4/09	Ls.	2.70	0.3		22.0		2.69
8062 North Plant Rte.765	4/09	Ls.	2.71	0.4		22.0		2.69
The General Crushed Stone Co.								
Morgantown, PA			2.76	0.3		15.0		
Genstar Products								
Frederick, MD		Ls.	2.73	0.3		20.0		
Texas, MD		Ls.	2.82	0.4			31.4	
Hinkle Construction								
1029 Gibson Station, VA	3/04	Ls.	2.71	0.3	22.9	22.0		2.70
Holston River Quarry, Inc.								
Austinville, VA		Ls.	2.76		39.8			
2044 Dublin, VA	1/06	Ls.	2.75	0.7		15.7		2.73
Inwood Quarries,								
8092 Inwood, W. VA	3/08	Ls.	2.71	0.2		23.0		2.70
Jesse Stone Co.								
1038 Woodway, VA	3/04	Ls.	2.71	0.6	21.6	21.6		2.69
Keystone Lime Co.								
Springs, PA			2.69	0.6		18.0		2.67
King William Sand and Gravel.								
6027 Aggregates Industries Mattaponi, VA #57	2/08	Qz.	2.63	0.4		40.5		2.62
6027 Aggregate Industries Mattaponi, VA #8 & 8P	8/07	Oz.	2.63	0.4			38.5	2.61
LaFarge								
7067 Frederick, MD	10/05		2.71	0.3		20.7		2.70
LeSueur Slate								
3032 Arvonnia, VA	2/08	Sl.	2.78	0.6	23.0	21.0		2.77
Loudoun Quarry								
7011 Herndon, VA	1/06	Db.(Tr.)	2.99	0.6		19.8		2.98

COARSE AGGREGATES (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
Luck Stone Corp.								
7052 Bealton, VA		Db.	2.99	0.6		12.4		2.97
7003 Manassas, VA	7/05	Db. (TR.)	2.97	0.6		14.7		2.95
4002 Burkeville, VA		Am.Gn.& Gr	2.66	0.7		38.9	28.8	2.64
6014 Caroline, VA	10/07	Qz.	2.63	0.3		39.0	42.3	2.62
7007 Centreville, VA	6/05	Db.(Tr.)	2.85	0.8		13.4		2.82
7020 Goose Creek, VA	9/05	Db.(Gr.)	2.98	0.6		12.0		2.97
6034 King William, VA		Gr.	2.62	0.5			45.9	2.60
7010 Leesburg, VA	1/06	Db.(Tr.)	2.98	0.6		13.0		2.96
Leesburg, VA #8	1/06	Db.(Tr.)	2.95	0.9		14.2		2.93
7055 Louisa, VA		Gr.	2.68	0.5		35.0		2.67
4001 Manakin, VA	6/09	Gn.& Gr.	2.61	1.0		23.9		2.58
6042 Massaponax #57	10/07		2.69	0.5		26.7		2.64
4045 Powhatan, VA	9/06	Am.Gn.& Mmp.Gr.	2.71	0.7		21.1		2.69
4011 Rockville, VA	6/09	Qzi.& Gn.(Mmp)	2.66	0.7		20.2		2.65
7043 Ruckersville, VA		Gn. & Gr.	2.79	0.5		27.4		2.77
7005 Shadwell, VA	6/05	Gs	2.87	0.4		13.5		2.86
Shadwell, VA #8	6/05	Gs	2.85	0.7		15.7		2.83
4021 South Richmond, VA	7/09	Am, Bi., Gn.&Gr.	2.69	0.6		34.3		2.68
6040 Spotsylvania, VA	9/07	Gr.	2.74	0.4		38.2		
7006 Stevensburg, VA		Sis.	2.75	0.8		11.9		2.73
Martin Marietta Aggregates								
4054 Anderson Creek Rockville, VA	5/04		2.71	0.6		19.0		2.69
4046 Warbro Road Chesterfield, VA	12/03	Am.Gn.& Gr	2.65	0.5		26.5		2.64
4008 Doswell, VA	5/09	Db.Am.Gn & Gr.	2.75	0.6		17.8		2.73
7017 Red Hill Plant North Garden, VA	7/05	Gr.	2.80	0.5		24.7		2.79
Red Hill Plant North Garden, VA #8	7/05	Gr.	2.77	0.7			26.5	2.75
6031 Spotsylvania, VA		Gr.	2.68	0.6		12.6	31.2	2.67
8093 Williamsport, MD	3/08	Ls.	2.73	0.2		25.0		2.72
Maryland Rock								
7051 Nanjemoy, MD (Goosebay)		Rv. Gvl.	2.63	1.5		31.8		2.59
Maymead Lime Co.								
1044 Mountain City, TN	3/04	Do.	2.85	0.2		19.1	18.0	2.84
1044 Mountain City, TN	3/04	Gr.	2.68	0.5		25.0	23.2	2.67

COARSE AGGREGATES (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
Mountain Materials, Inc.								
1066 Glade Spring, VA	3/04	L.S.	2.75	0.3	19.7	19.6		2.75
1092 Saltville, VA	3/04	L.S.	2.69	0.3	22.4	22.4		2.68
1037 Castlewood, VA	3/04	Do.	2.83	0.4	19.0	18.8		2.71
1080 Mouth of Wilson, VA	3/04	Gr.	2.72	0.4	24.0	25.4		2.71
1091 Rural Retreat, VA	3/04	Ls.	2.69	0.3	24.7	21.2		2.68
Mundy, C. S.								
8007 Singers Glen, VA Broadway, VA	4/09	Ls. & Do.	2.81	0.4		18.0		2.79
8006 Forestville, VA	4/09	Ls.	2.72	0.4		20.0		2.71
Perry, Stuart M., Inc.								
8020 Berryville, VA	4/09	Ls. & Do.	2.85	0.3		17.0		2.84
8021 Winchester, VA	4/09	Ls. & Do.	2.76	0.3		16.0		2.75
Pounding Mill Quarry Corp.								
1039 Pounding Mill, VA #1	3/04	Ls.	2.71	0.5	20.9	20.2		2.70
1025 Bluefield, VA #2	3/04	Ls.	2.71	0.2	26.4	26.7		2.70
1018 Princeton, WV	3/04	Ls.	2.71	0.5	25.7	24.3		2.69
1023 Rocky Gap, VA #3	3/04	Ls.	2.74	0.4	22.6	23.0		2.73
Powell Valley Stone Co.								
1048 Dot, VA	3/04	Ls.	2.71	0.2	24.3	24.7	25.1	2.71
Rinker Materials								
1058 Abingdon, VA	3/04	Do.	2.83	0.3	17.9	16.4		2.82
Riverton Corporation								
8017 Front Royal, VA	3/09	Ls.	2.70	0.8		22		2.68
Rockbridge Stone								
8013 Glasgow, VA	4/09	Ls. & Do.	2.81	0.5		17.0		2.79
8013 Glasgow, VA	3/08	Quartzite	2.61	0.6		22.0		2.59
Rockbridge Stone Products								
8087 Monterey, VA	3/08	Ls.	2.66	0.5		30.0		2.64
Rock Products, Inc.								
Alderson, WV		Ls.	2.73	0.1		17.4		

COARSE AGGREGATES (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	L.A. Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
Vulcan Materials Co								
1076 Bristol, TN	3/04	Ls.	2.72	0.4	20.1	22.7		2.70
4015 Dale Quarry, Chester, VA	2/04	Bi.Gn.&Gr.	2.62	0.7		16.2		2.60
1094 East Stone Gap, VA		Ls.	2.73	0.4		23.9		
8067 Elkton, VA	4/09	Do. & Ls.	2.79	0.3		20.0		2.78
1040 Enka, NC	3/04	Gr.	2.73	0.6	33.7	35.7		2.72
6012 Garrisonville, VA	10/05	Gr.	2.94	0.5		17.0		3.01
6012 Garrisonville, VA #8	10/05	Gr.	2.92	0.8		17.0		2.99
4029 Glen Allen, VA	5/09	Gr. & Mmp Gr.	2.61	0.6		22.7		2.60
5016 Havre de Grace, MD		Tr.	2.81	0.5		16.1		2.79
4027 Hylas, VA	4/09	Mmp.Gr.&Phy	2.72	0.4		15.6		2.706
4016 Jack Quarry, Petersburg, VA	3/10	Bi.Gn.&Gr.	2.66	0.4		25.6		2.65
1035 Kingsport, TN	3/04	Ls.	2.75	0.4	24.0	21.0		2.74
4022 Lawrenceville, VA	7/09	Bi.Gn.&Gr.	2.71	0.4		37.2		2.63
7022 Manassas, VA		Db. (Tr.)	2.89	1.1		13.5		2.86
Manassas, VA #8	6/05	Db. (Tr.)	2.94	0.9			16.2	2.92
6030 New Post New Post, VA			2.64	0.8		38.6	39.5	2.61
1109 North Wilkesboro, NC	3/04		2.67	0.6	33.8	33.7		2.66
1093 Norton, VA	3/04	Ls.	2.71	0.3	22.5	20.7		2.70
7023 Occoquan, VA	12/05	Gn. & Gr.	2.66	0.5		28.4		2.65
Occoquan, VA #8P	12/05	Gn. & Gr.	2.64	1.1		29.7		2.61
4018 Puddledock, Petersburg, VA	1/06	Qz. Gvl.	2.60	0.8		35.0		2.57
4044 Richmond Quarry Richmond, VA	10/05	Bi.Gn.&Gr.	2.74	0.6		35.5		2.72
5004 Skippers, VA		Gr.	2.76	0.5		14.5		2.75
1095 Speers Ferry, VA	3/04	Ls.	2.76	0.4	21.4	19.9		2.75
8071 Staunton, VA	4/09	Ls.	2.71	0.4		21.0		2.70
4052 Union Level, VA	4/04		2.63	0.6		39.4		2.62
7015 Warrenton, VA	7/05	Db. (Tr.)	2.96	0.7		11.1		3.00
Warrenton, VA #8P	8/05		2.94	1.4		12.7		2.90
Westbury, Charles City, VA		Qz Gvl.	2.62	0.5		35.0	33.3	
4017 Willis Road, Kingsland Reach, VA		Qz. Gvl.	2.60	0.8		37.1		
Winston-Salem, NC			2.48	0.5				2.47
Wythe Stone Co. #2								
1082 Wytheville, VA	3/04	Ls.	2.83	0.3	19.5	18.9		2.82

(5) FINE AGGREGATE DATA (Grading A)– (Physical Lab)

The data listed herein represents the latest determinations as of publication date. All figures are subject to change, particularly the fineness modulus. They are, therefore, intended only as a guide.

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	F.M.	Soundness Loss	Percent Voids
ACCO Stone Corp							
2059 Blacksburg, VA	1/06	Ls. & Do.	2.81	0.8	3.0	4.5	50.7
Acres Sand & Gravel							
8090 Stuarts Draft, VA	1/08	N.S.	2.63	0.5	2.6	14.0	52.6
Aggregate Industries							
7034 Arlington, VA		N.S.	2.63	1.3	2.7	8.6	50.4
4100 Charles City, VA	4/10		2.59	0.5	2.9	7.8	49.7
4059 Doswell, VA Hill Carter Plant			2.64	0.5	2.7	10.3	47.3
6035 Hayfield	10/07		2.62	1.1	3.0	4.0	43.0
6029 Hickory Hill	6/06		2.63	0.4	2.7	4.0	46.8
7040 Kirby Road, MD		N.S.	2.62	0.6	2.7	4.4	48.8
6033 Rappahannock Farm Fredericksburg, VA	10/07		2.62	0.6	3.0	4.3	44.0
6008 Taylor Plant King George, VA	10/07	Qz.	2.62	1.0	2.9	5.4	46.0
7040 Kirby Road, MD		N.S.	2.62	0.6	2.7	4.4	48.8
7060 LaPlata, MD		N.S.	2.62	0.6	2.7	3.8	47.9
Allied Sand & Gravel							
5033 Branchville, VA	3/06	N.S.	2.63	0.5	2.9	6.4	51.4
American Limestone							
1058 Abingdon, VA	3/05	Do.	2.85	0.5	2.9	5.2	50.5
1046 Watauga, TN	3/05	Ls.	2.70	0.3	3.0	6.4	51.6
APAC – Thompson Arthur							
2061 Candor, NC		N.S.	2.60	1.0	2.5		48.7
Austinville Lime							
1087 Austinville, VA	3/05	Ls	2.73	0.6	2.6	4.5	52.8
Aylett Sand & Gravel							
6018 Aylett, VA	7/10	Qz.	2.62	0.2	2.9	4.4	48.3
Becker Minerals Inc.							
1053 Cheraw, SC		Qzi.	2.58	0.6	2.7	7.1	49.4
Blair-Riverton							
Blair, W. VA		Ls. & Do.	2.69	0.9	3.2	9.2	53.0
Boxley Aggregates							
2004 Blue Ridge, VA	1/06	Ls. & Do.	2.78	1.0	3.1	5.2	52.8
3034 Piney River, VA	/08	Ap.	2.75	1.1	2.8	12.1	50.6
3003 Lawyers		Ar. Ma	2.74	1.0		10.8	53.9
Branscome Sand							
4005 Charles City, VA	4/10	N.S.	2.61	0.4	2.9	9.9	49.4

FINE AGGREGATE DATA (Cont.)
(Grading A)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	F.M.	Soundness Loss	Percent Voids
Brett Aggregates, Inc.							
6029 Ark (Gloucester) VA	8/05	N.S.	2.63	0.3	2.6	4.5	47.5
4061 Meadow Road		N.S.	2.64	0.8	2.7	7.6	47.2
Commercial Ready Mix Pit #2							
5055 Pendleton, NC	3/06	N.S.	2.64	0.5	2.6	4.8	51.0
Cardinal Stone Co.							
1009 Galax, VA	3/05	Gr.	2.75	0.8	3.0	9.4	54.4
C. S. Mundy							
8007 Broadway	2/09	Do. & Ls.	2.79	0.8	3.1	14.0	53.9
Carmeuse							
8005 Strasburg, VA	2/09	Ls.	2.70	0.6	3.0	13.0	50.8
8028 Winchester, VA	2/09	Ls.	2.68	1.0	3.1	10.0	51.3
Castle Sands Co.							
2005 New Castle, VA	1/06	Ss.	2.62	0.7	1.9	9.3	
Chaney Enterprises							
7061 Waldorf, MD	5/08	N.S.	2.62	0.6	2.81	1.4	43.7
Dillon, E. & Co.							
1064 Swords Creek, VA	3/05	Do.	2.88	0.6	2.6	11.8	53.9
DBA Maryland Mineral, Accident, MD							
			2.63	0.4	2.6	12.3	49.2
D&J Sand							
3048 Candor, NC		N.S.	2.60	1.1	2.5	6.0	51.1
Elkhorn Stone Co.							
1063 Elkhorn City, NC	3/05	Ls.	2.68	0.5	3.7	8.2	52.4
Elliott Sand & Gravel							
3019 Erwin, NC	1/06	N.S.	2.63	0.8	2.8	6.1	52.7
Elmo Greer, Inc.							
1029 Gibson Station, VA	3/05	Ls.	2.68	0.9	3.1	9.2	51.4
Ennstone							
6043 Aggregate Industries Fulks	6/06	N. S.	2.58	0.6	2.8	9.8	51.1
6038 Aggregate Industries Kenson Plant (Rt. 692)	7/07	N.S.	2.61	1.3	2.8	10.0	50.5
6015 Virginia Sand & Stone	12/07	N. S.	2.64	0.2	2.7	4.6	48.8

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List No. 5 (cont.)

FINE AGGREGATE DATA (Cont.)
(Grading A)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	F.M.	Soundness Loss	Percent Voids
Fairfax Sand & Gravel							
8070 Thomas, WV	4/09	N.S.	2.63	0.5	2.8	7.0	49.3
FCR Sand & Gravel							
4053 Bottoms Bridge, VA			2.65	0.3	2.5	5.2	49.1
Frazier Quarry							
8010 Harrisonburg, VA (Waterman)	2/09	Ls.	2.70	0.7	2.8	5.0	48.3
8062 Harrisonburg, VA(north)	2/09	Ls.	2.70	0.7	3.0	8.0	48.9
G & S Materials							
3053 Candor, NC			2.63	0.5	2.3	3.9	51.2
Gardner, E. L.							
7059 Brandywine, MD		N.S.	2.63	0.2	2.7	2.0	47.5
Glover Materials, Inc.							
5029 Margarettsville, N.C	3/09	N.S.	2.62	0.7	3.0	9.4	43.8
Gudelsky Materials							
7057 Brandywine, MD		N.S.	2.63	0.4	2.8	2.2	48.4
Hanson Aggregates							
2064 Erwin, NC (Cape Fear Plant)		N.S.	2.61	0.7	2.7	7.5	50.6
3019 Erwin, NC (Elliott Plant)		N.S.	2.61	0.7	2.6	7.8	50.1
3018 Lillington, NC		Rv.	2.60	0.8	2.7	7.4	50.4
Heard Aggregate							
5072 Waverly, VA	2/06	N.S.	2.61	0.5	3.0	10.6	51.8
Howlin Concrete Co.							
7056 Mechanicsville, MD		N.S.	2.62	0.7	2.6	3.7	47.6
Kaye Construction							
7071 Seaford, DE	7/10	N.S.	2.60	0.5	2.6	7.2	47.5
Aggregate Industries							
6027 Aggregate Industries Mattaponi Pit	8/07	Gr.	2.63	0.2	2.6	5.0	48.5
Luck Stone Corp.							
6014 Caroline, VA	10/07	Qz.	2.63	0.4	2.9	5.1	49.4
6034 King William, VA		Gr.	2.63	0.6	2.6	8.4	50.4
4045 Powhatan, VA		Am.Gn.& Mmp.Gr.	2.75	1.1		15.5	

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4021	Richmond, VA		Am.-Bi.Gn. & Gr.	2.61	0.7	3.1	7.6	49.3
6040	Spotsylvania, VA	3/99		2.71	0.5	2.8	22.9	56.3

FINE AGGREGATE DATA (Cont.)
(Grading A)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	F.M.	Soundness Loss	Percent Voids
Lyalls Stone	3/05						
1080 Mouth of Wilson, VA		N.S.	2.74	0.1	2.5	12.2	56.6
M L Joseph							
5075 Georgetown Del							
Martin Marietta							
1068 Milton, KY	3/05	N.S.	2.58	1.3	3.0	6.7	44.0
6031 Spotsylvania, VA		G.R.	2.71	0.5	2.8	22.9	58.3
8093 Williamsport, MD	3/08	Ls.	2.70	0.8	3.0	14.0	51.1
7051 Nanjemoy, MD		N.S.	2.62	1.0	2.9	4.6	49.2
Mason-Dixon							
7068 Port-Deposit, MD	11/05	N.S.	2.65	0.9	2.9	3.0	50.3
Maymead Lime Co.							
1044 Mountain City, TN	3/05	Gr.	2.72	0.7	3.1	25.5	55.0
Merrick Sand & Gravel							
9001 Ingleside, MD	10/10	N. S.	2.59	1.0	2.8	12.8	70.0
Old Castle							
1037 Castlewood, VA	3/05	Do.	2.73	0.9	2.9	7.2	52.2
Patton Sand Co.							
1078 Galax, VA		Qzi.	2.66		3.2	7.7	46.1
Patuxent Materials, Inc.							
7063 Wayson's Corner, MD		N.S.	2.64	0.8	2.6	6.5	49.5
Perry, Stuart M., Inc							
8021 Winchester, VA	2/09	Ls. & Do.	2.74	0.8	2.9	4.0	48.4
Pounding Mill Quarry Corp.							
1025 Bluefield, VA #2	3/05	Ls.	2.69	0.7	3.0	6.9	50.5
1039 Pounding Mill, VA #1	3/05	Ls.	2.68	0.9	3.6	18.6	51.3
1023 Rocky Gap, VA #3	3/05	Ls.	2.69	0.9	3.5	10.3	52.3
Riverton Corporation							
8017 Front Royal, VA	4/10	Ls.	2.67	1.1	3.0	15.0	53.2
Rockbridge Stone							
8013 Glasgow, VA	2/09	Ls.	2.79	0.8	3.1	10.0	51.1
Rockydale Quarries Corp.							
2015 Roanoke, VA	1/06	Ls. & Do.	2.80	1.6	3.1	5.4	51.1
Sand Mountain Sand, Inc.							
1083 Wytheville, VA	3/05	N.S.	2.64	0.4	2.5	10.9	49.8
Seneca Quarry							

FINE AGGREGATE DATA (Cont.)
(Grading A)

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	F.M.	Soundness Loss	Percent Voids
Thomas, WV		Ls.	2.63	0.3	2.7	7.7	49.2
Nat. Resources Co. (HILLTOP)		N.S.	2.67	1.1	2.8	9.3	
Shenandoah Asphalt							
8074 Vesuvius, VA	3/08	N.S.	2.63	0.6	3.0	12.0	53.1
Sisson & Ryan Co., Inc.							
2047 Shawsville, VA	1/06	Ls. & Do.	2.77	1.1	2.9	4.7	51.8
Sloan Materials							
7062 Leonardtown, MD		N.S.	2.63	0.5	2.9	5.0	47.7
Standard Lafarge							
1096 Haverhill, OH	3/05	N.S.	2.60	1.2	2.6	8.8	45.9
Three Rivers S&G							
6036 Woodford, VA		N.S.	2.63	0.5	3.3	11.4	50.4
Vulcan Materials Co.							
4057 Amelia, VA	2/06		2.56	1.6	3.1	9.1	53.1
1043 Boone, NC	3/05	Gr.	2.71	1.1	2.9	9.7	54.6
1076 Bristol, TN	3/05	Ls.	2.71	0.5	3.3	4.5	51.3
4009 Charles City, VA		N.S.	2.63	0.3	3.1	6.8	50.0
4064 Charles City, VA (Sandy Point)	9/05		2.62	0.7	2.7	8.1	50.3
4055 Curles Neck, Rt.5 Henrico, VA	8/05	N.S.	2.62	0.7	2.90	4.0	50.0
6012 Garrisonville, VA		Gr.	3.01	0.4	3.1	11.1	57.3
1035 Kingsport, TN	3/05	Ls.	2.74	0.8	2.9	8.4	50.9
4022 Lawrenceville, VA		Bi.Gn. & Gr	2.66	0.3	2.8	11.4	54.8
7041 Leonardtown, MD		N.S.	2.63	0.5	2.8	4.9	46.1
1109 North Wilkesboro, NC	3/05		2.72	0.2	2.8	13.3	55.3
5017 Pocomoke City, MD	1/08		2.63	0.2	2.50	6.1	46.8
4018 Puddledock Petersburg, VA	8/05	N.S.	2.57	0.8	3.0	8.0	50.3
3009 Shelton, NC		Gn & Gr.	2.62	0.6	2.6	17.7	55.1
3010 South Boston, VA		Gr.	2.80	1.0	3.1	16.9	53.9
8071 Staunton, VA	2/09	Ls.	2.71	0.5	2.8	11.0	52.2
4017 Willis Rd. Kingsland Reach, VA		N.S.	2.61	0.8	2.7	9.7	50.3
Watson Gravel							
1102 Wythe Stone Co.			2.65	1.9	2.8	11.4	45.3
1082 Wytheville, VA	3/05	N.S.	2.63	0.4	2.7	5.9	49.3
1082 Wytheville, VA	3/05	Ls.	2.62	0.7	2.4	6.9	49.1
York Building Products							
9012 Belvedere Plant	3/11		2.62	.5	2.64	4.1	49.3
9013 Perryville Plant	3/11		2.63	0.4	2.62	1.3	48.5

(5) ASPHALT CONCRETE FINE AGGREGATE DATA – (Physical Lab)

The data listed herein represents the latest determinations as of this publication date. All figures are subject to change. They are, therefore, intended only as a guide. NOTE: Tests performed with No. 10 screening are indicated.

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
20/20 Sand						
5023 Murfreesboro, NC	3/06	N.S.	2.63	0.5	6.4	98
ACCO Stone Corp.						
2059 Blacksburg, VA	1/06	Ls. & Do.	2.81	0.8	4.5	84
Acres Sand & Gravel						
8090 Stuarts Draft, VA	1/08	N.S.	2.61	0.5	14.0	52.6
Adams Construction Company						
3052 Dan River	2/08	N. S.	2.59	1.4	7.7	93
Adams Stone Co.						
1003 Burdine, KY		Ls.	2.69	0.3	10.5	69
Aggregate Industries						
8086 Millville, WV #10		Ls.	2.84	0.3	2.5	91
8086 Millville B Sand			2.77	0.6	8.9	90
Allied Sand & Gravel						
5033 Branchville, VA	3/06	N.S.	2.63	0.5	6.4	88
APAC of VA						
2061 Candor, NC		N.S.	2.60	1.5	20.8	97
Ararat Rock Products						
2003 Mt. Airy, NC	1/06	Gn.	2.74	1.2	10.1	78
Arundel Corp. Baltimore, MD			2.52	0.4	9.4	63
Arundel Corp.						
5016 Havre-de-Grace, MD #10		Di.(Tr.)	2.73	0.7	8.5	81
Aylett Sand & Gravel						
6018 Aylett, VA		Qz.	2.65	0.2	5.4	98
Barker Sand Co.						
3040 Staunton River Clover, VA		Rv	2.61	1.5	20.2	93
Barrick, S.W.		L.S.	2.72	0.1	3.0	59
7066 Woodsboro, MD # 10						
Basic						
4102 New Kent, VA	3/10		2.60	1.1	8.6	28.0
Blair – Riverton Blair, W. VA.		Ls. & Do.	2.66	0.9	9.2	81

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Blue Ridge Sand 1107 Fries, VA		N.S.	2.53	2.0	16.7	88
Boxley Aggregates						
2004 Blue Ridge, VA	1/06	Ls. & Do.	2.75	1.0	5.2	73
Dan River		N.S.	2.56	1.4	22.6	95
2009 Fieldale, VA	1/06	Gn.	2.84	0.7	23.0	80
3003 Lawyers Road #10 Lynchburg, VA	2/08	Ar.Ma.	2.69	0.6	8.4	91
3003 Lawyers Road #B Lynchburg, VA	2/08	Ar.Ma.	2.70	0.8	9.6	88
3030 Mt. Athos, VA B	2/08	Gs.	2.97	0.1	13.6	86
3030 Mt. Athos, #10	2/08	Gs.	2.98	0.7	16.6	56
3030 Mt. Athos, #10A		Gs.	2.86	2.1	15.4	86
3034 Piney River, VA #10	2/08	Ap.	2.61	2.3	8.3	68
3034 Piney River, VA #10B	2/08	Ap.	2.67	1.5	11.2	100
Blue Stone						
1099 Princeton, WV	3/05	N.S.	2.62	1.6	12.8	98
Branscome Sand						
4050 Charles City, VA		N.S.	2.62	0.2	7.9	86
Brett Aggregates, Inc.						
6029 Ark (Gloucester, VA)			2.63	0.2	3.7	78
4059 Hill Carter, Doswell, VA			2.63	0.6	9.6	71
Bull Run Stone Co.						
7003 Manassas, VA #10		Db.(Tr.)	2.80	1.2	13.3	59
C & B Sand Co.						
3029 (Staunton River) Altavista, VA		N.S.	2.62	1.7	20.9	98
C. A. Padgett, Inc.						
3051 Otter Rte. 708	2/08	N.S.	2.62	1.6	18.4	90
Cardinal Stone Co.						
1009 Galax, VA	3/05	Bi.	2.75	0.9	6.4	83
Carmeuse						
8005 Strasburg, VA	2/09	Ls.	2.68	0.6	13.0	94
8028 Winchester, VA	2/09	Ls.	2.66	1.0	10.0	70
Castle Sands Co.						
2005 New Castle, VA	1/06	Ss.	2.60	0.7	9.3	78
Cedar Mountain Stone Corp.						
7001 Louisa, VA #10		Gr.	2.66		12.0	87
7031 Mitchell, VA #10	6/05	Db.(Tr.)	3.03	0.3	3.3	71
Chantilly Crushed Stone Co						
7004 Chantilly, VA #10		Db. (Tr.)	2.96	0.6	9.5	48

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Commercial Ready Mix Pit #2						
5055 Pendleton, NC	3/06	N.S.	2.64	0.5	4.8	98
Conner, D. M.						
8084 Stuarts Draft, VA (B sand)	3/08	N.S.	2.60	0.7	14.0	59
Dillion, E & CO.						
1064 Swords Creek, VA	3/05	Do.	2.81	0.7	5.6	90
Dixon Sand Co						
3012 Dillwyn, VA		Ky.	2.64	0.7	8.6	97
Elkhorn Stone Co.						
1063 Elkhorn City, KY	3/05	Ls.	2.62	1.3	15.7	60
Burdine, KY	3/05	Ls.	2.68	0.3	10.5	69
Ennstone						
6038 Aggregate Industries Kenson Plant (Rt. 692)		N.S.	2.62	0.9	12.5	89
F & M Construction Co.						
1011 Carroll County, VA	1/06	Qzi.	2.64	1.1	12.0	73
Fairfax Sand & Gravel						
8070 Thomas, WV	4/09	N.S.	2.62	0.5	7.0	90
Frazier Quarry						
8010 (Waterman) Harrisonburg, VA	4/09	Ls.	2.69	0.7	5.0	96
8062 (North) Harrisonburg, VA	4/9	Ls.	2.68	0.7	8.0	96
Genstar Corp.						
8068 Frederick, MD		Do.	2.72		8.8	71
Gill, C.M. Sand Pit						
4060 Mecklenburg, VA			2.57	1.2	20.0	89
Glover Materials						
5029 Margarettsville, NC	3/09	N.S.	2.60	0.7	9.4	96
Goodloe, P. C.						
6019 Rte. 3 Fredericksburg, VA		Qz.	2.59	1.1	15.3	78
6002 Stafford, VA	8/06		2.59	1.5	16.1	74
Gravley Sand Co.						
3016 (Dan River)Rte 1146		N.S.	2.57	1.1	16.0	92
3027 (Sandy River)Rte 750	2/08	N.S.	2.52	1.8	11.8	84
3037 (Sandy River)Rte 869	2/08	N.S.	2.56	2.1	11.4	94
Woodlawn Drive		N.S.	2.60	1.1	10.7	89

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Gudelsky Materials						
7057 Brandywine, MD		N.S.	2.61	0.5	3.3	93
Hall Sand Co.						
3023 Buffalo River Amherst, VA	2/08	N.S.	2.48	3.6	19.2	82
Holton River Quarry, Inc.						
2044 Dublin, VA	1/06	Ls.	2.69	0.7	3.6	72
Horse, David G. & Son						
5039 Laurel, DE		N.S.	2.56	1.0	9.6	94
Heard Aggregate						
5072 Waverly, VA	2/06	N.S.	2.60	0.5	10.6	84
James River S/G						
Charles City Co.		N.S.	2.62	0.7	7.5	74
Jessee Stone Co.						
1038 Woodway, VA	3/05	Ls.	2.68	0.6	10.5	69
Aggregate Industries Mattaponi, Inc.						
6027 Aggregate Industries Mattaponi Pit	2/08	N.S.	2.66	1.3	19.3	69
Lawhorne Bros., Lynchburg						
3038 (Otter River) Rte. 24	2/08	N.S.	2.60	1.9	15.7	90
3039 (Otter River) Rte. 734		N.S.	2.60	1.4	18.3	93
(Otter River) Rte. 711	2/08	N.S.	2.60	1.5	16.2	90
LeSueur-Richmond Slate (-1/2")						
3032 Arvon, VA, #2	2/08	Sl.	2.72	0.5	12.5	46
Lone Star Industries						
Alberta, VA			2.62	0.6	22.7	41
Loudon Quarry						
7011 Herndon, VA #10	10/05	Db.	2.99	0.2	5.2	76

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Luck Stone Corp.						
7052 Bealeton, VA#10	6/05	Db.	2.94	0.6	3.2	54
7003 Manassas, VA#10		Db.(Tr.)	2.88	0.7	6.1	65
4002 Burkeville, VA#10		Am.Gn. & Gr	2.65	0.3	10.0	62
Burkeville, VA B Sand			2.66	0.3	8.1	81
6014 Caroline, VA		N.S.	2.64	0.3	6.3	95
7007 Centreville, VA #10	6/05	Db.(Tr.)	2.84	0.8	4.6	65
7020 Goose Creek, VA #10		Db.(Tr.)	2.97	0.3	3.3	46
6034 King William, VA		N.S.	2.63	0.6	8.4	89
7010 Leesburg, VA B	9/05	Db.(Tr.)	2.91	0.7	8.2	47
7055 Louisa, VA #10		Gr.	2.71	0.1	7.5	73
4001 Boscobel, Manakin #10		Gn. & Gr.	2.58	1.27	14.9	75
4001 Boscobel Manakin,VA B			2.63	0.9	15.9	65
4045 Powhatan, VA #10		Am.Gn.Mmp. & Gr.	2.67	1.0	11.2	61
4021 Richmond, VA #10		Am.-Bi.-Gn & Gr. Scr.	2.84	0.5	17.6	66
4011 Rockville,VA #10		Qzi.& Mmp. Gn.	2.65	0.7	20.9	68
7043 Ruckersville, VA #10		Gr. & Gn.	2.80	0.1	14.9	75
7005 Shadwell, VA #10		Gs.	2.91	0.2	8.8	63
7005 Shadwell, VA Gr. B	6/05	Gs.	2.84	0.3	5.2	77
7006 Stevensburg, VA #10		Sis.	2.71	0.9	10.3	65
6040 Spotsylvania, VA	8/99		2.70	0.3	11.0	95
Lyalls Stone						
1080 Mouth of Wilson, VA	3/05	Gr.	2.76	0.4	12.9	71
Marshall Concrete						
3046 Dan River		N.S.	2.58	2.0	21.3	94
Martin Marietta Aggregates						
4054 Anderson Plant Rockville, VA #10			2.67	0.5	18.6	48
4008 Doswell, VA			2.72	0.6	19.4	47
8064 Fort Spring, WV	5/08	Ls.&Do.	2.67	0.9	8.4	95
7017 Red Hill Plant North Garden, VA #10	7/05	Gr.	2.79	0.1	7.7	79
6031 Spotsylvania, VA #10		Gr. Scr.	2.70	0.3	11.0	95
4046 Warbro Road Chesterfield, VA		Gr.& Am.Gn. Do. Ls	2.67	0.4	5.5	52
8093 Williamsport, MD	3/08		2.68	0.8	14.0	89
Marshall Concrete						
3046 Dan River		N.S.	2.58	2.0	21.3	94
Maryland Rock						
7051 Nanjemoy, MD (Goosebay Plant)		N.S.	2.66	0.7	3.4	85
Maymead Lime Co.						
1044 Mountain City, TN	3/05	Do.	2.77	0.7	4.1	79

1044	Mountain City, TN	3/05	Gr.	2.68	1.2	22.8	74

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
McCarty Sand Co.						
3025 (Dan River) Turbeville, VA	2/08	N.S.	2.58	1.4	16.2	84
3024 (Staunton River) Clover, VA		N.S.	2.58	1.5	17.4	99
3016 (Dan River) Danville, VA	2/08	N.S.	2.59	1.4	17.4	99
Mercer Crushed Stone						
1018 Princeton, WV	3/05	Ls.	2.77	0.9	6.6	91
Mid Atlantic Materials						
6008 Taylor Plant King George, VA		N.S.	2.62	0.9	7.3	97
6033 Rappahanock Farm Dogue, VA		N.S.	2.63	0.6	6.8	99
White Pl.		N.S.	2.56	0.6	9.6	84
Moore, Gerald						
Exmore, VA		N.S.	2.63	0.4	3.9	98
Mountain Enterprise						
1066 Glade Spring, VA	3/05	Ls.	2.70	1.1	5.7	77
1092 Saltville, VA	3/05	Ls.	2.65	1.3	7.3	55
C. S. Mundy						
8007 Broadway, VA	4/09	Do. & Ls.	2.77	0.8	14.0	91
Old Castle						
1037 Castlewood, VA #1	3/05	Do.	2.67	1.0	11.4	64
Patton Sand Co.						
1078 Galax, VA	3/05		2.55	1.9	12.7	87
Perry, Stuart M., Inc.						
8021 Winchester, VA	2/09	Ls.&Do.	2.71	0.8	4.0	89
Pounding Mill Quarry Corp.						
1039 Pounding Mill, VA #1	3/05	Ls.	2.65	1.3	14.5	88
1025 Bluefield, VA #2	3/05	Ls.	2.73	0.8	6.3	89
1023 Rocky Gap, VA #3	3/05	Ls.	2.61	1.5	14.0	73
Powell Valley Stone						
1048 Dot, VA	3/05	Ls.	2.60	1.4	13.4	77
P.R.D.S.						
Abingdon, MD			2.81	2.4	20.5	50
Prillman & Pace, Inc.						
2040 Martinsville, VA	1/06	NS	2.52	2.80	14.9	74

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Rinker Stone Co.						
1058 Abington, VA	3/05	Do.	2.82	0.5	6.2	91
1100 Elizabethton, TN		Ls.	2.70	1.5	5.7	65
Riverton Corporation						
8017 Front Royal, VA	4/10	Ls.	2.64	1.1	15	84
Rockbridge Stone						
8013 Glasgow, VA	4/09	Ls.	2.77	0.8	10.0	98
Rockydale Quarries, Corp.						
2065 Glade Hill, VA (Jacks Mountain.)	1/06	Am.	2.94	2.3	23.2	99
2015 Roanoke, VA	1/06	Ls & Do	2.75	1.6	5.4	84
7072 Charlottesville quarry #10	8/10		2.630	.3	16.3	46
Rose Bros. Grit Pit						
5065 Rich Square, NC	3/06	N.S.	2.63	0.8	5.9	84
Rose Brothers Paving						
Rich Square, NC			2.58	0.6	12.8	85
Salem Stone Company						
1062 Sylvatus, VA	1/06	Qzi.	2.64	0.8	14.4	58
Sand Mountain Sand Inc.						
1083 Wytheville, VA	3/05	N.S.	2.61	0.3	3.0	95
Seneca Quarry		Ls.	2.60	0.7	8.3	88
Seneca Quarry						
Thomas, WV		Ls.	2.62	0.3	7.7	73
Shenandoah Stone						
8074 Vesuvius, VA	3/08	N.S.	2.61	0.6	12.0	90
8076 Stuarts Draft, VA	4/10	N.S.	2.53	1.7	21.0	76
Sisson & Ryan Co, Inc.						
2047 Shawsville, VA	1/06	Ls. & Do.	2.74	1.1	4.7	89
Slate Sand Co.						
2062 Pilot Mt., NC	1/06	N.S.	2.59	1.0	10.6	95
South Central Sand						
3028 (Dan River)		N.S.	2.58	1.3	22.6	96
Templeton, M. V. & Sons, Inc.						
Lynchburg, VA						
7037 Rivanna River Columbia, VA	2/08	N.S.	2.61	1.5	14.5	84
3020 Otter Rvr Evington, VA	2/08	N.S.	2.57	2.5	11.0	91
2056 Otter River Huddleston, VA	2/08	N.S.	2.60	1.9	15.7	90

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Tharpe Sand Co.						
3043 (Staunton River) Randolph, VA	2/08	N.S.	2.60	1.9	22.7	92
Thompson's Inc.						
3052 Dan River,		N.S.	2.58	1.7	7.7	94
Tri-State Lime						
1032 Blountville, TN	3/05		2.74	1.1	9.0	79
1110 Russell County, VA	3/05		2.71	1.4	5.4	84
Virginia – Carolina						
3045 Dan River (Turbeville)	2/08	N.S.	2.58	1.4	11.4	87
Virginia Limestone						
Klotz, VA		L.s.	2.63	0.4	4.3	71
Vulcan Materials						
4057 Amelia, VA			2.55	0.8	7.3	75
1043 Boone, NC	3/05	Gr.	2.68	0.7	7.8	51
1076 Bristol, TN	3/05	Ls.	2.65	1.2	4.2	89
4055 Curles Neck, VA #10		N.S.	2.66	0.5	11.1	79
4015 Dale Quarry Chester, VA #10		Bi.Gn.&Gr.Scr	2.64	0.3	16.2	64
3009 Danville, VA #10	2/08	Gr. Gn.	2.40	4.0	14.9	85
3009 Danville, VA #10W	2/08	Gr. Gn.	2.62	0.1	11.9	89
3009 Danville, VA "B"	2.08	Gr. Gn.	2.55	1.5	8.5	65
1040 Enka, NC	3/05	Gr.	2.76	0.1	10.0	76
6012 Garrisonville, VA #10	10/05		2.88	1.1	11.1	63
6012 Garrisonville, VA B Sand	10/05		2.96	1.2	10.6	96
4029 Glen Allen, VA #10	9/06		2.57	0.8	9.3	73
4049 Greystone, NC #10	9/05		2.58	0.8	14.9	65
Hanover, PA #10			2.80	0.2	5.7	72
4027 Hylas, VA #10		Mmp.Gr. & Phy	2.65	1.1	20.1	59
4016 Jack Quarry Petersburg, VA		Bi.Gn.&Gr.Scr	2.56	0.5	18.3	71
4017 Kingsland, Willis Road Richmond, VA		N.S.	2.64	0.8	7.7	84
1035 Kingsport, TN		Ls.	2.66	1.3	11.0	63
4022 Lawrenceville, VA #10		Gr.&Bi.Gn.	2.76	0.1	11.5	60
7022 Manassas, VA #10		Db.(Tr.)	2.83	0.9	13.0	37
6030 New Post New Post, VA		Qz.	2.55	1.5	18.7	84
1109 North Wilkesboro, NC			2.73	0.1	3.7	77
1093 Norton, VA #1	3/05	Ls.	2.64	1.3	11.9	89

ASPHALT CONCRETE FINE AGGREGATE DATA (Cont.)

Producer and Location	Date Test Performed	Classification *See Legend	Dry Bulk Specific Gravity	Absorption	Soundness Loss	Sand Equivalent
Vulcan Materials (cont.)						
7023 Occoquan, VA #10	7/05	Gr.& Gn	2.65	0.6	12.8	62
5017 Pocomoke City, MD	1/08		2.62	0.2	6.1	96
4018 Puddledock Petersburg, VA		N.S.	2.60	0.8	9.2	91
4009 Providence Forge, VA		N.S.	2.65	0.2	6.8	98
4044 Richmond, VA	12/05	N.S.	2.75	1.4	25.9	43.0
5004 Skippers, VA #10	2/06	Gr.	2.69	0.2	7.3	62
3010 South Boston, VA #10		Gr.	2.61	3.3	7.5	57
3010 South Boston, VA W	2/08	Gr.	2.72	0.1	11.4	90
1095 Speers Ferry, VA #4	3/05	Ls.	2.64	1.4	21.8	69
8071 Staunton, VA	2/09	Ls.	2.69	0.5	11.0	82
4052 Union Level, VA #10			2.64	0.2	15.1	61
7015 Warrenton, VA #10	8/05	Db.(Tr.)	2.91	1.0	7.5	74
W-L Construction						
3035 Turbeville, VA	2/08	N.S.	2.58	1.4	14.7	98
Wythe Stone Co						
1082 Wytheville, VA	3/05	Ls.	2.83	0.3	9.3	73
Wytheville, VA		N.S.	2.80	1.2	8.7	88

(5) LIGHTWEIGHT AGGREGATE DATA – (Physical Lab)

Note: Lightweight aggregates must conform to section 206 of VDOT’s 2002 Road and Bridge Specifications before used for VDOT work.

Producer and Location	Date Test Performed	Classification *See Legend	SSD Specific Gravity	Absorption	LA Abrasion Loss			Dry Bulk Specific Gravity
					A	B	C	
Carolina Stalite Co. 2070 Aquadale, NC		Sl.	1.5	5.4		27.0		
Carolina Stalite Co. 2069 Gold Hill, NC		Sl.	1.50	5.4			29.7	
Solite LLC 3007 Arvonnia, VA	2/08	Sl.	1.71	13.1			32.2	

LEGEND: Refer to following list for geological classification abbreviations used in the table above.

- | | | |
|----------------------------------------------------|----------------------|-------------------|
| Am. - Amphibole | Gr. - Granite | Qz. - Quartz |
| Ap. - Aplite | Gs. - Greenstone | Qzi. - Quartzite |
| Ar. - Arch | Gvl. - Gravel | Rv. - River Sand |
| B. - Basalt | Ky. - Kynite | Scr. - Screenings |
| Bi. - Biotite | Ls. - Limestone | Sg. - Slag |
| Db. - Diabase | Ly - Limy | Sh. - Shale |
| Di. - Diorite | Ma. - Marble | Sis. - Siltstone |
| Do. - Dolomite | Mmp. - Metamorphosed | Sl. - Slate |
| Fs. - Feldspar | N.S. - Natural Sand | Ss. - Sandstone |
| Gn. - Gneiss | Phy. - Phyllite | Tr. - Traprock |
| (FT) Freeze-Thaw Method of Soundness determination | | |

(6) 2010 AGRICULTURAL LIMING MATERIALS REGISTRATION – (Chemistry Lab)

A) Agricultural Liming Materials (Pulverized or Ground Limestone):

Pulverized and Ground Limestone are paid by Ton or Metric Ton

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Mesh Screen	Percent Passing 60 Mesh Screen	Percent Passing 100 Mesh Screen
Aggregates, USA LLC Knoxville, TN	Abingdon Ground Agricultural Limestone	96.00	90.00	50.00	30.00
Amelia Sand Company Richmond, VA	ASC Liming Material	96.00	92.00	59.00	54.00
Appomattox Lime Company Appomattox, VA	Appomattox Lime	90.00	90.00	50.00	40.00
Aqua-Aid, Inc. Rocky Mount, NC	Verde-Cal	92.00	100.00	99.00	95.00
	Verde-Lawn	93.00	100.00	95.00	95.00
Austinville Limestone Company Austinville, VA	Austinville Ground Limestone - Bulk	95.00	90.00	50.00	35.00
	Ground Dolomitic Limestone	97.60	90.00	55.00	40.00
	Ground Garden Lime	97.60	90.00	55.00	40.00
	Pelletized Lawn Lime	97.60	90.00	55.00	40.00
	Pro Cal Pellets	97.20	90.00	55.00	40.00
Bailey Nurseries Inc Salem, VA	Color Me Pink Pelletized Lime	90.41	99.00	99.00	95.00
Baker Lime York, PA	Bakers AG 18 Ground Damp	105.60	90.00	60.00	50.00
	Bakers Commercial Pulverized Damp	105.60	100.00	85.00	75.00
	Bakers Premier Pellets	100.00	100.00	85.00	75.00
Boxley Materials Company Roanoke, VA	Ground Dolomitic Limestone	85.00	98.00	80.00	70.00
CS Mundy Quarries, Inc. Broadway, VA	Mundy's High Mag Ground Limestone	85.00	90.00	50.00	30.00
Carmeuse Lime Pittsburg, PA	Middletown Calcitic Limestone	94.80	99.00	97.00	90.00
Carmeuse Limestone Pittsburg, PA	Winchester Calcitic Limestone	89.7	95.00	75.00	50.00
Culpepper Farmers Coop Culpepper, VA	Ground Dolomitic Limestone	85.00	90.00	50.00	30.00
	Pulverized Calcitic Limestone	85.00	90.00	75.00	70.00
E Dillon & Company Swords Creek, VA	E. Dillon & Co. Dolomite Ag-Lime	87.00	100.00	95.00	85.00
	E. Dillon & Company Bulk Ag-Lime	87.00	90.00	50.00	30.00
Encap, LLC Greenbay, WI	Encap Lime Plus AST 2.5lbs	94.60	100.00	95.00	84.00
	Encap Fast Acting Lime 30lbs	94.60	100.00	95.00	84.00
	Encap Fast Acting Lime Pluse 40lbs	94.60	99.00	85.00	70.00
Espoma Company, The Millville, NJ	Espoma Organic Traditions Garden Lime	93.00	100.00	88.00	80.00
Frazier Quarry, Inc., The Harrisonburg, VA	Frazier Ag-Lime	85.00	95.00		70.00
Green Charger Fertilizer Co Richmond, VA	Green Charger Pelleted Limestone	93.60	90.00	55.00	35.00

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Mesh Screen	Percent Passing 60 Mesh Screen	Percent Passing 100 Mesh Screen
Greer Lime Company Morgantown, WV	Greer Pulverized Ag-Lime	96.00	100.00	98.00	90.00
Gro Tec, Inc. Covington, GA	Green Charm Pelletized Dolomitic Limestone	90.00	90.00	50.00	40.00
	Pennington Fast Acting Lime	94.60	100.00	95.00	84.00
Hyponex Corporation Marysville, OH	Hyponex Dolomitic Ground Lawn & Garden Limestone	93.00	90.00	50.00	35.00
	Hyponex Dolomitic Pelletized Lawn & Garden Limestone	103.5	100.00	85.00	75.00
Jessee Stone Company Pennington Gap, VA	Woodway Calcitic Lime	85.00	90.00	50.00	30.00
Johnson City Chemical Co Inc Johnson City, TN	JCC Pelletized Limestone	97.60	90.00	55.00	40.00
Kelly Limestone, LLC	Kelly's Capsulated Dolomitic Limestone	86.00	95.00	61.00	50.00
Kirksville, MO	Kelly's Capsulated High Calcium Limestone	93.00	95.00	61.00	50.00
Kirby Agri Inc Lancaster, PA	Pelletized Dolomitic Limestone	93.00	98.00	80.00	75.00
LeFarge Mid-Atlantic, LLC Towson, MD	Hi Calcium Agricultural Limestone, Medford MD	93.80	98.20	94.00	80.00
	Hi Mag Pulverized Calcitic Agricultural Limestone Texas, MD	85.00	95.50	83.00	77.00
Laminations Inc Scranton, PA	Earthbox Special Dolomitic	109.00	100.00	71.00	50.00
Limestone Dust Corporation Bluefield, VA	Pulverized Limestone	94.62	99.89	95.97	86.82
Martin Limestone, Inc. Blueball, PA	Martin's #18 Calcium Limestone	90.40	90.00	60.00	50.00
	Martin's #18 Magnesium Limestone	90.00	90.00	60.00	50.00
	Martin's Calcium Limestone	90.40	98.00	70.00	65.00
	Martin's Magnesium Limestone	103.50	98.00	80.00	75.00
Miles Farm Center Shelbyville, KY	Pelleted Lime	90.00	98.00	98.00	42.40
Mineral Processing Carey, OH	NutraLime	97.00	100.00	85.00	70.00
O-N Minerals - James River Company Buchanan, VA	Aglime Ground Dolomitic	95.00	90.00	50.00	30.00
	Hi-Cal Aglime - Pulverized	95.00	90.00	50.00	30.00
Old Castle Retail Atlanta, GA	micro select prill-cal	97.00	100.00	85.00	82.00
	pro granual-cal	96.00	92.00	50.00	40.00
	pro pulv dol	95.00	100.00	88.00	80.00

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Mesh Screen	Percent Passing 60 Mesh Screen	Percent Passing 100 Mesh Screen
Oldcastle Lawn & Garden Atlanta, GA	Cal Turf Micro	95.00	100.00	80.00	70.00
	Cal Turf Pro	95.00	100.00	80.00	70.00
	Green N Grow Dolomitic Limestone	97.00	100.00	72.00	54.00
	Green N Grow	97.00	100.00	85.00	82.00
	Mag Turf Micro	102.00	100.00	80.00	70.00
	Mag Turf Pro	102.00	100.00	80.00	70.00
	Micro Select Prill-Cal	94.00	100.00	88.00	80.00
	Micro Select Prill-Dol	90.00	99.00	70.00	50.00
	Pro Select Pellets	89.58	95.00	80.00	75.00
	Pro Select Prill-Cal	97.00	100.00	85.00	82.00
	Pro Select Prill-Calcitic	94.00	100.00	88.00	80.00
	Pro Select Prill-Dol	90.00	100.00	70.00	50.00
	SD EZ Spread Granular Cal	96.00	92.00	50.00	40.00
	SD Pelletized Lawn Lime - Dol	95.00	95.00	72.00	54.00
	SD Pelletized Lawn Lime - Cal	91.00	100.00	88.00	80.00
	SD Pulverized Gardenlime-Cal	91.00	100.00	88.00	80.00
SD Pulverized Gardenlime-Dol	95.00	95.00	80.00	70.00	
Soil Doctor Lawnlime - Calcitic	89.58	95.00	80.00	75.00	
Plant Food Company Inc Cranbury, NJ	PFC's Phusion Calcitic Limestone	95.00	99.00	85.00	78.00
Prescription Fertilizer & Chemical Co Ivor, VA	Prescription Dolomitic Lime	100.00	90.00	60.00	40.00
Profile Products, LLC. Buffalo Grove, IL	ProPlus Neutralime Dry	97.00	100.00	99.50	96.00
Riverton Corporation Front Royal, VA	Riverton Aglime	95.00	90.00	50.00	35.00
Rockydale Quarries Corporation Roanoke, VA	Ground Agri. Limestone - Bulk	97.00	90.00	50.00	35.00
	Ground Agri. Limestone - Bagged	97.00	90.00	50.00	35.00
	Pelletized Dolomite Limestone	97.60	99.00	55.00	40.00
Rohrs Quarry, Inc. Lititz, PA	RQI Hi-Cal Damp Limestone	88.00	98.00	65.00	55.00
Salem Stone Corporation - DBA ACCO Stone Co. Christiansburg, VA	Acco Ground Limestone	85.00	90.00	50.00	35.00
Sisson & Ryan Quarry, LLC Shawsville, VA	Sisson & Ryan Agri. Ground Limestone - Bulk	85.00	90.00	65.00	50.00
Solu-Cal USA LTD West Wareham, MA	Solu-Cal Enhanced Calcitic lime	91.00	100.00	95.00	95.00
Southern States Cooperative Richmond, VA	Solu-Lime	91.00	100.00	95.00	95.00
	Southern States Calcitic Pelleted Limestone	91.00	100.00	88.00	80.00
	Southern States Dolomitic Pelleted Limestone	95.00	95.00	72.00	54.00

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Mesh Screen	Percent Passing 60 Mesh Screen	Percent Passing 100 Mesh Screen
Southern States Southside Petersburg, VA	SSC Southside Elkton Lime Luckstone	95.00	90.00	50.00	30.00
Staunton Lime Company Staunton, VA	Staunton Ground Agricultural Lime	105.00	86.60	54.10	44.70
Stuart M Perry Inc Winchester, VA	High Mag Ground Limestone	90.00	95.00	80.00	70.00
	Pulverized Limestone	85.00	100.00	96.00	87.00
	Agricultural Pelletized Limestone	90.00	95.00	80.00	70.00
TCS Materials Winston-Salem, NC	Vulcan Materials Co – Lime	95.00	90.00	50.00	35.00
Tennessee Valley Resources Jefferson City, TN	Agricultural Lime	85.00	90.00	50.00	35.00
	Gordonsville Lime	80.00	90.00	50.00	35.00
The Andersons Lawn Fertilizer Division Inc Maumee, OH	Anderson Golf Products DG Lime	90.00	100.00	85.00	70.00
Voluntary Purchasing Groups Bonham, TX	Hi-Yield Agricultural Limestone	109.03	99.50	60.00	50.00
Vulcan Construction Materials, LP. Hanover, PA	Hanover Agri Lime	98.00	95.00	90.00	75.00
	Hanover Agri-Cal Lime	93.00	95.00	90.00	75.00
	Hanover Hi-Mag Lime	102.00	98.00	95.00	75.00

B) Hydrated Lime

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Screen	Percent Passing 60 Screen	Percent Passing 100 Screen
Carmeuse Lime, Inc Maintowoc, WI	Rolico Dolomitic Hydrated Lawn N' Garden Lime	150.25	99.00	95.00	90.00
Carmeuse Lime, Inc – Ansville Operation Pittsburg, PA	Hi Cal Hydrate Lime	128.00	99.90	99.70	99.00
Chemical Lime Company of VA, Inc Ripplemead, VA	Chemical Hydrated Lime	128.00	100.00	98.00	95.00
Greer Lime Company Morgantown, WV	Greer Hydrated Lime	125.00	100.00	100.00	98.00
Hoffman, A.H., Inc. Lancaster, NY	Hoffman Horticultural Hydrated Lime	128.00	99.90	99.70	99.00
Oldcastle Industrial Minerals Thomasville, PA	Lee Double Strength Hydrate	147.50	95.00	96.00	95.00
Oldcastle Lawn & Garden Thomasville, PA	Lee Double Strength Hydrate	137.00	99.00	96.00	95.00
	SD Hydrated	127.00	100.00	99.00	97.00
Voluntary Purchasing Groups Bonham, TX	Hi-Yield Horticultural Limestone	131.00	100.00	99.25	99.00

C) Industrial Co-Product (Substandard Liming Materials)

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Screen	Percent Passing 60 Screen	Percent Passing 100 Screen
Altavista Power Station Altavista, VA	Altavista Power Station Waste Lime	63.20	92.00	70.00	60.00
Baker Lime York, PA	Bakers AG 10 Bulk	105.60	50.00	40.00	28.00
Georgia Pacific LLC Gladys, VA	BPB Fly Ash	63.36	99.98	99.90	99.80
	GPB Bottom Ash	12.02	98.22	93.87	87.80
Greif Riverville, LLC. Amherst, VA	Greifwood Ash Substandard Liming Material	50.00	76.00	63.00	51.00
Harsco Materials Sarver, PA	Reclime	92.00	98.00	82.00	68.00
MillerCoors Breweries LLC Eden Brewery Eden, NC	Farm O. N.	13.00	90.00	50.00	30.00
Montgomery Farm Supply Wirtz, VA	Cal-Plus	80.00	95.00	90.00	80.00
Ontario Hardwood Co Inc Keysville, VA	Ontario Hardwood Dry Kilns Liming Material	85.68	90.00	71.79	60.75
Tennessee Valley Resources Jefferson City, TN	Baltimore Calcium Magnesium Lime	85.00	90.00	50.00	35.00
Upper Occoquan Sewage Authority Centreville, VA	UOSA Lime Solids	92.90	99.90	99.40	98.50

D) Soil Amendments

Firm Name	Product Name	Cal Carb Equiv % (CCE)	Percent Passing 20 Screen	Percent Passing 60 Screen	Percent Passing 100 Screen
Amsoil, Inc. Superior, WI	Natural Liquid Lime	22.00	100.00	100.00	100.00
Cleary Chemical Corporation Dayton, NJ	Limestone F Liquid	56.49	100.00	100.00	100.00
Landscape Supply, Inc. Roanoke, VA	Hydrolime	64.81	100.00	100.00	100.00
Lesco Inc Cleveland, OH	Lesco Liquid Lime (190993)	64.17	100.00		100.00
Oregon's Only Organics, LLC. Eugene, OR	Nectar of the Fods Olympus Up pH Liquid Lime	60.00	100.00	100.00	98.00
Precision Fibers Ronda, NC	EZ Lime Liquid Plus	64.81	100.00	100.00	100.00
Profile Products, LLC. Buffalo Grove, IL	ProPlus NeutralLime Liquid	73.00	100.00	100.00	100.00

(7) ANTISTRIPPING ADDITIVES – (Asphalt Lab)

Following is a list of approved Anti-stripping Additives:

Manufacturer	Brand Names	Notes
Akzo Nobel Surface Chem., LLC 7101 Adams St. Unit No. 7 Willowbrook, IL 60521	Kling Beta LV	100% Active
	Kling Beta LV-(HM)	100% Active
	Kling Beta2550-(HM)	100% Active
	Kling Beta 2600	100% Active
	Kling Beta 2700	100% Active
	Kling Beta 2912	100% Active
	Kling Beta 3024	100% Active
	Perma Tac Plus	100% Active
	Wetfix 312	100% Active
Armak Chemicals Division Chicago, Illinois	Redicote 82-S	100% Active
ARR-MAZ Products Winter Haven, Florida	Ad-here HP Plus	100% Active
	Ad-here 65-00	100% Active
	Ad-here LOF 6500 LS	100% Active
	Ad-here 66-01	100% Active
	Ad-here 62-40	100% Active
	Ad-here (Regular)	100% Active
	ACRA-2000	100% Active
	SC-AT-50	100% Active
	Ad-here 6265-1	100% Active
	Adhere 77-00	100% Active
Adhere 65-50		
Chemoran Oranmore Galway, Ireland	TPH	100% Active
Exxon Chemical Americas Tomah Products Milton, Wisconsin	ACRA-1000	100% Active
	ACRA-3000	100% Active
	ACRA-5000	100% Active
	ACRA-5092	100% Active
	ACRA-600L	100% Active
	No Strip Super Concentrate	90% Active
	101-25B	100% Active
	101-25D	100% Active
	101-25E	100% Active
Innophos 259 Prospect Plains Road Cranbury, NJ 08512	Innovalt W	100% Active

Manufacturer	Brand Names	Notes
McTron Technologies Charlotte, NC	Kohere AS-1000	100% Active
MWV Asphalt Innovations North Charleston, SC	BA-2000	100% Active
	Evotherm J1	
	Evotherm M1	
	Morlife 2200/PC	100% Active
	Morlife 3300	100% Active
	Morlife 5000	
	Pave Bond T-Lite	100% Active
	Pave Bond LITE	100% Active
Pre Tech Industries Dearborn Brook Circle Exter, NH 03833	Pavegrip 250 G	
	Pavegrip 275	100% Active
	Pavegrip 350	
	Pavegrip 400	100% Active
	Pavegrip AA-2	
	Pavegrip 550	
Seaboard Asphalt Products Co.	Super Bond 96	100% Active
SouthEastern Chemical Corp. P.O. Box 917 932 East Elm St. Graham, NC 27253	Aggrebond 275	100% Active
TAPCO, Inc. Greensboro, North Carolina	TAPCO 206	60% Active
Unichem International Santa Fe, TX	8162	100% Active
Unique Paving Materials 3993 E. 93 rd Street Cleveland, Ohio 44105-4096	HPM	
Westvaco Corp. Chemical Division Charleston Heights, South Carolina	Indulin AS-1	100% Active
	Indulin AS-Special	100% Active
	PC-705	100% Active
The quantity of Anti-stripping Additive used will be checked in accordance with VTM-13.		

(8) **ASPHALT RELEASE AGENTS – (Asphalt Lab)**

The following list of asphalt release agents is approved; however, they shall be diluted as recommended by the Manufacturer, and approved by the Department. The dilution recommendation shall be shown on a label attached to the Release Agent container. The dilution rates listed below are the maximums currently approved by the VDOT.

Manufacturer	Brand Names	Dilution Rate Agent:Water	Foaming (F) /Non-Foaming (NF)
Alzo, Inc.	RELEEZ	1: 30	NF
ARR-MAZ Products	ARR-MAZ TBRA #7191	1: 40	F
Arrow Magnolia Int'l.	Slick II	1:20	F
	Super Slick	1:20	NF
Breakaway Advanced	Maintenance Mates	1:20	F
Bio-Clean Ind.	Bio-Clean	1:30	
Capital Janitorial Supply	Colonial Blue Blaze	1: 20	F
Capitol Supply Co.	Rapid Release	1:15	
Certified Laboratories	Citrus Claw	Not diluted	
Chem-Tech Solutions, Inc.	Westech CT-1440	1:15	
The ChemMark Corp.	Thermal-Slide	Not diluted	F
Chemstar Chemical	Chemsolve L-40	1:100	
ChemStation of Virginia	3917	1:20	
	2159	1:20	
	2620	1:20	
	2791	5:1	
	2406	1:20	
	2061-A	1:5	
	8194	1:5	
	8442	1:5	
Chemical Technologies, LLC	PM-25	1:30	
ChemTek Inc.	Aqua Slip 30	1:30	F
	Aqua Slip	1:15	
CleanEdge, formerly ChemStation	CleanEdge 2217	6:1	
	1475	1:20	
	HD-5565	1:27	F
	6992	1:40	
Cleaning Systems, Inc.	Slide	1:30	
	Asphalt Release	1:10	
D&A, Inc.	L-Slip	1: 100	F
	SP-Slip	3:100	
	SMA-Slip	1: 100	F
	SB-Slip	1: 25	F
	V-Slip	1:33	F
	Slippery-Slope	3:100	F
Drummand American	Slip N Slide DL 3510	1:12	F
Diversey Corp./ DuBois Chemicals	Liqui-Slip	1: 19	F
	PolySlip	1: 30	F
	Slide-Eze	1: 30	F
	Slide-All	1:33	F
EDCO Mfg, Inc.	EDCO Asphalt Release	1: 10	F
Empire Services	Empire 2000 Phalt Free	1:30	
	Empire Slide Plus	1:30	
Engineering Chemistry Co.	Slip & Slide	1:100	F

Manufacturer	Brand Names	Dilution Rate Agent:Water	Foaming (F) /Non-Foaming (NF)
Engineering Chemistry Co.	Slip & Slide H.D.	3:100	F
	Slip & Slide VOB	3:100	NF
Express Chemical Co.	Citra Slip	1:40	
Fine Organics Corp	FO Release	3:100	F
	FO Release II	3:100	F
Forcon Chemical Corp.	Super Slick	1:35	F
	Super "Release" All	1: 35	F
Foster and Company, Inc.	No Stick I	1: 10	NF
	No Stick II	1: 10	NF
Global Barrier Coatings, Inc.	ARA (Asphalt Release Agent	1:20	NF
Handi-Clean Prod. Inc.	Super Slide	1:15	
Hydro-Chem Systems, Inc.	Slide Out	10:1	
Industrial Water Group	No-Phalt Release	1:40	F
	No-Phalt Equipment	1:60	F
Industrial Controls	Synthetic Release	1:25	
JJC Materials	570156	1:30	
L & F Products	Professional NL Concentrate All Purpose Cleaner Formula 177-62	1:32	F
Lawrence Sanitary Co. Chem Station	5895	1:20	F
	1475	1:20	F
	6996	1:10	NF
	6992	1:40	NF
Maxco Supply Co.	Max Slide	1:20	F
MEPCO, Inc.	Mepcoat 103	1: 48	NF
Mid-Atlantic II	HD5510	1:20	
Momar Incorporated	TM-08-024 SS Mold-Cote NS- 20	1:40	
Morton International	Mor-Release VL	1:40	NF
NCC, Inc.	NCC-60 (Release Foam)	1: 30	F
	Release Plus	1: 40	NF
	Super Foam - SF - 92	1: 35	F
	Phalt Free	1: 35	
New Dawn Manufacturing	ESE-100	1:31	
New Life Chemical Equip.	Quick Slick	1:50	
Petroferm Inc.	PFC 265-13	1:40	
Presto Chemical Co.	Bio-Kream	1: 38	NF
	Kwik Release	1: 40	F
	E-Z Slip	1: 35	NF
	Syn-Coat	1: 40	
Pro Chem, Inc	Release	1:15	
Puritan/Churchill Chemical Co.	Churchill L 901	1:40	F
Qualichem	Formula 5110	3:100	NF
	Formula 5111	1:100	F
	Formula 5119	3:100	F
	Q-Slide 554	1:5	

Manufacturer	Brand Names	Dilution Rate Agent:Water	Foaming (F) /Non-Foaming (NF)
Qualichem	S-Slide 766		
	Q-Slide 559		
Rhomar Industries, Inc.	Enviro-slide	1: 3	
Rochester Midland Corp.	Slipeazee	3: 100	NF
	Slipeazee SB	1: 30	F
	Slipeazee Natural	1: 20	
	Slipeazee Satin	1: 10	
	Slipeazee 2000	1: 30	
Roxxon Corp.	Rox-Release	2.5:100	F
	EzeSlip	1:10	F
Safety First Chemicals	Safety Slide	1: 30	F
Schaeffer Mfg. Co.	#4002 Bed Release Agent	1:30	NF
Schneid, Inc.	Release	1:15	F
Secco	EZE	1:30	F
Space Chemical, Inc.	AI-6235	1:5	NF
Spartan Chem. Co. Inc.	Spartan SD-20 Cleaner	1:30	F
Compound Technologies, Inc.	SPX-7	1:5	F
	No.1 Asphalt Release Agent	1:5	
Stop Stix Incorporated	StopStix	1:20	
Sun Coast Supply Corp.	Harvey's Power Grease & Tar Cutter	1:25	F
Tec-Team Industries, Inc.	TECLON-50	1:37	NF
	Teclon-Pro	1:5	
Texo Corporation	TEXOPE 515	1:30	F
TPC Team Ind. Inc.	Mega-Ton	1:53	
Tri-State Equip. Sales	I-So-Slick	1: 40	
U.S. Pro-Tec, Inc.	ECO-1000	1:20	F
Vibrant Products Unltd. Corp.	Envirofoam	1: 30	F
	Super Slick	1: 30	NF
West River Products, LLC	Power Plus	1:10	F
Zep Manufacturing	EZ008	1:10	NF
	E2008	1:1	
	R-6690	1:55	
	Zep Formula 4358	1:459	F
	Zep Pinnacle	1:15	NF
	Zep X-509 (formerly No.1 Asphalt Release Agent)	1:5	

(9) APPROVED ELECTRODE AND FLUX-ELECTRODE COMBINATIONS – (Structures)

Any electrode or flux-electrode combination which appears on the approved list may be accepted without evidence of test or certification. The electrodes are to be used in the welding of the following ASTM steel base metals: A709, Gr.36, Gr. 50, Gr. 100, Gr. 50W, 70W, and 100W.

If the Fabricator or Contractor desires to use any electrode or flux-electrode combination which is not on the approved list, he may do so, providing he submits certified copies of test reports of all pertinent required tests of the American Welding Society made on electrodes and flux-electrode combinations of the same class, size and brand, and which were manufactured by the same process and with the same materials as the brands being furnished.

*E6010 and E6011 rods may only be used for miscellaneous welding (piling, forms, railing, etc.).

**F6A2, F6A4, or F6A6 may only be used to weld A36 steel.

List No. 9 (Cont.)

FILLER METAL FOR M270M (M270) A709M (A709) GR. 36, 50, 100
AND PAINTED GR. 50W AND 100W STEEL

MANUFACTURER	TRADE NAME	AWS CLASSIFICATION	AWS SPECIFICATION	
The ESAB Group, Inc.	ATOM Arc 7018-1	E7018-1 H4-R	A5.1	
	ATOM Arc 7018	E7018 H4-R	A5.1	
	Core Weld C6	E70C-6M	A5.18	
	Dual Shield 7100 Ultra	E71T-M/T-12M	A5.20	
	Dual Shield R-70 Ultra	E70T-1CH8/T-1M1 T-9CH8/T-9M	A5.20	
Hobart Brothers, Co.	Hobart 335A	E6011	A5.1	
	Hobart 335C	E6011	A5.1	
	Hobart 418	E7018-1 H4R	A5.1	
	Hobart 718 MC	E7018, E7018-1H4-R	A5.1	
	Quantum ARC 6	ER70S-6	A5.18	
	Fabco RXR	E70T-1C, E70T-9C	A5.20	
	Fabco TR70	E70T-1 CH8, E70T-9 CH8	A5.20	
	EXCEL-ARC 71	E71T-1CR71T-1M, E71T-9C, E71T-9M	A5.20	
	Formula XL550 (H4)	E71T-1C, E71T-12 CJH4	A5.20	
	TM 771	E 71T-1C, E71T-12 CJH8	A5.20	
	TM 95K	E90T5-K2CH4, E90T5-K2M- H4	A5.29	
	The Lincoln Electric, Co.	Easy-Arc 6011C	E 6011	A5.1
Easy-Arc 7018MR		E7018-H4R, E7018	A5.1	
Excalibur 7018 MR		E7018-H4-R	A5.1	
Fleetweld 5P		E6010	A5.1	
Fleetweld 5P+		E6010	A5.1	
Jetweld 78 MR		E7018-H4R, E7018	A5.1	
Jetweld LH-70		E7018-H4R, E7018	A5.1	
Lincolnweld 761(761-Pipe) Flux/L-61 Electrode		F7A2-EM12K-H8	A5.17	
Lincolnweld 780 Flux/L61 Electrode		F7A4-EM12K-H8 (also meets requirements of F7A2 EM12K-H8)	A5.17	
Lincolnweld 960 Flux/L61 Electrode		F7A2-EM12K-H8	A5.17	
Metalshield MC-710XL		E70C6M-H8, E70C-G-H8	A5.18	
Outershield 70		E70T-1 CH16, E70T-9C H16	A5.20	
Outershield 71M		E71T-1C, E71T-H16	A5.20	
Super Arc L-50 Electrode		ER70S3	A5.18	
Superarc L-56 Electrode		ER70S6	A5.18	
Ultracore 71A85		E71T-1MH8, E71T-9MH8	A.520	
Ultracore 71C		E71T-1CH8, E71T-9CH8	A.520	
Murex Welding Products		Murex 6011C	E6011	A5.1
		Murex 7018MR	E7018-H4-R, E7018	A5.1

List No. 9 (Cont.)

FILLER METAL FOR EXPOSED BARE APPLICATION OF
M270M (M270) A709M (A709) GR 345W (50W) STEEL

MANUFACTURER	TRADE NAME	AWS CLASSIFICATION	AWS SPECIFICATION
ESAB Welding & Cutting Products	ATOM Arc 8018	E8018-C3 H4-R	A5.5
	Dualshield 8100-W	E81T1-W2C/W2M	A5.29
Lincoln Electric Co.	AXXX 10 Flux/L61 Electrode	F7A4-EM12K-Nil -H8	A5.23
	Excalibur 8018-C3 MR	E8018-C3 H4R	A5.5
	Lincolnweld 860 Flux/LA-75 Electrode	F7A2-ENi 1K-Ni1-H8	A5.23
	Lincolnweld 960 Flux/LA-75 Electrode	F8A2-ENi1 K-Ni1-H8	A5.23
	UltraCore 81Ni1A75-H	E81T1-Ni1MJH4	A5.29
	UltraCore 81Ni1C-H	E81T1-Ni1C-H4	A5.29

FILLER METAL FOR HIGH PERFORMANCE STEEL
HPS 70 W (HPS 485 W) STEEL ONLY

MANUFACTURER	TRADE NAME	AWS CLASSIFICATION	AWS SPECIFICATION
ESAB Welding & Cutting Products	Atom Arc 8018	E8018-C3 H4-R	A5.5
	Dualshield 8100-W	E81T1-W2C/WM	A5.29
Hobart Brothers (Trimark)	TM 771	E 71T-1C, E71T-12CJH8	A5.20
Lincoln Electric, Co.	Excalibur 8018-C3 MR	E8018-C3 H4R	A5.5
	Excalibur 9018 M MR	E9018 – H4-R, E9018 M	A5.5
	Lincolnweld Mill 800 HPNi Flux/LA-85 Electrode (LNS165)	F9A4-ENi5-G-H22	A5.23

(10) POWDERED EPOXY REBAR COATINGS – (Physical Lab)

The following epoxy coatings for reinforcing steel are approved:

Aervoe-Pacific Co., Inc. Gardnerville, Nevada	Aervoe 156 Green Rebar
AKZO Powder Coatings	Resicoat 500607 Resicoat 500620* Resicoat RB-600 (HKF30R) Interpon HD-34 Green HR046G Green HK007U
Valspar North Kansas City, MO	720-A-009 Greenbar
Dupont Powder Coating Houston, TX	Nap-Gard 7-2719 Nap-Gard 7-2709
3-M Co., St. Paul, MN	ScotchKote 413
*When applied to blasted and chromate pretreated steel.	
**Limited approval for use only on wire mesh and post fabricated reinforcing steel	

(11) FIBER MULCH, WOOD CELLULOSE - ANNUAL CHECK
- (Landscape Development)

The following fiber mulches are currently approved and may be accepted on visual inspection:

Product	Manufacturer	Phone Number
70/30 Blend Premium Cellulose	Carolina Precision Fibers, Inc. P.O. Box 624 Elkin, NC 28621	(866) 476-3278
PFM Wood Fiber Wood Fiber Blend	Central Fibers 1525 Waynesburg Drive, S.E. Canton, Ohio 44707 Attn: Mr. Lloyd Depersig	(888) 452-2630
Mat Blend Mat Fiber	Matt Norwood LLC P.O. Box 578 747 Harrisburg Drive SW Lenoir, NC 28645 Attn: Mr. Jim Sandherr	(828) 758-4463
GeoSkin Hydraulic Mulch	Mulch and Seed Innovations, LLC 7265 Alabama Hwy 9 South Centre, AL 35960	(256) 927 - 8823
1000 2000 Enviro-Blend	Profile Products P.O. Box 652 219 Simpson Street Conover, NC 28613	(828) 327-4165
Country Boy Conwed Cellulose Hydro Spray Terra Mulch Soil Cover	Profile Products 60 Dave Crockett Road Limestone, TN 37681 Attn: Mr. Gary Bower	(423) 257-2051
Fiber mulches will be accepted only if bagged and shipped from the locations listed above.		

(12) **CERTIFICATE OF COMPLIANCE AND GUARANTEE - GUARDRAIL MATERIALS-
(Structures)**

In accordance with Sec. 204.18 herein, the following guardrail Erectors have submitted annual certificates of compliance and guarantee:

A&P Services, LLC	Penn Line Services, Inc.
Guardrail of Roanoke Inc.	Riteway Fence, Inc.
Guardrails, Etc., Inc. (Maryland)	Roadway Construction Products, Inc
L.S. Lee, Inc.	
Lanford Brothers Co.	Webster and Webster
Long Fence	
Makco, Inc.	
Nickelston Industries, Inc.	

The following guardrail Manufacturers have submitted annual certificates of compliance and guarantee:

Broadway Metal Works, Inc.
Elderlee, Inc.
Gregory Highway Products
Highway Safety Corp.
Marx Contracting, Inc.
R. G. Steel Corp
Trinity Highway Products

These certificates have been reviewed and are on file at the office of the State Materials Engineer. For the period June 1, 2011 through December 31, 2011, steel material supplied by the above companies is to be accepted by visual inspection.

Guardrail end treatments must be crash tested in accordance with NCHRP 350 criteria. The Special design Group in Central office Location & Design Division maintains a NCHRP 350 product list at the following website:

<http://www.virginiadot.org/business/locdes/nchrp350-index.asp>

QUALIFIED LOW VOLATILE ORGANIC COMPOUND
(13) ZINC RICH PAINT SYSTEMS LIST– (Chemistry Lab)
(SYSTEM B)

Note: Effective with the March 2005 advertisement, all approved paint systems must not exceed the 2.8 lb/gal/ VOC as applied requirements, except zinc-rich primers, which must not exceed the 3.5 lb/gal requirement as applied. Also paints manufactured after January 1, 2005 must meet these requirements if supplied to or applied in the Northern Virginia VOC Emission Control Area. This consists of the counties of Arlington, Fairfax, Loudoun, Prince William and Stafford, and the cities Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park City.

The below listed systems have been prequalified for use, as listed and must be certified for each lot. Although these products are approved for use, no statement is made about relative ease of application. The user needs to determine the particular application techniques, equipment, etc., that are needed. In all cases, Manufacturers' recommendations should be followed as to application requirements and temperature limitations. If there is a conflict between Manufacturer's recommendation and specification requirement, then, with the approval of the Engineer the Manufacturer's recommendation will rule. The Manufacturer is required to have a technical service representative on hand to assist the Contractor the first time that these products are used by the Contractor. Material exceeding stated range is to be removed and reapplied unless otherwise allowed by the Engineer. No two or more component material is to be mixed in less than packaged quantities and shall be mixed with power agitators.

GROUP I

Primers in this group shall be used to paint new steel, including contact, bolted and faying surfaces and may be used to paint existing steel.

System Type: Inorganic Zinc primer, cycloaliphatic epoxy intermediate and aliphatic acrylic-polyester urethane topcoat, organic zinc epoxy repair primer

<u>MANUFACTURER - Carboline Paint Co. – St. Louis, MO (804) 559-3237 / (314) 644-1000</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Carbozinz 11 HS	Green	2.0-3.0	2.40
Intermediate(s)	Carboguard 893	White	4.0-6.0	1.6
Topcoat(s)	Carbothane 133 LH	As Specified	3.0-5.0	2.7
Primer Repair(s)	Carbozinc 859			2.7
Approval date 10/10		Review date 12/11		

System Type: Inorganic zinc primer, polyamide epoxy intermediate and aliphatic acrylic polyurethane topcoat, organic zinc repair primer.

MANUFACTURER – International Paint, Houston, TX (800) 589-1267				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Interzinc 22 HS	Reddish gray	2.5-3.0	2.8
Intermediate(s)	Intergard 475 HS	White	5.0-8.0	1.76
Topcoat(s)	Interthane 990 HS	As specified	2.0-3.0	2.73
Primer Repair (s)	Interzinc 52		3.0	2.8
Approval Date 9/01		Review date 12/11		

System Type: Inorganic zinc primer, epoxy intermediate and aliphatic acrylic polyurethane topcoat, inorganic zinc repair primer.

MANUFACTURER – ICI Devco, Buffalo, NY (716) 824-6455				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Catha-Coat 304V	Gray	2.0-4.0	2.7
Intermediate(s)	Bar-Rust 231	White	4.0-8.0	2.1
Topcoat(s)	Devthane 379UVA	As Specified	2.0-3.0	2.6
Primer Repair(s)	Catha-Coat 302HA		2.0-4.0	2.8
Approval date 10/07		Review date 12/11		

System Type: Inorganic zinc primer, polyamide epoxy intermediate and polyester modified aliphatic acrylic polyurethane topcoat, organic zinc repair primer.

MANUFACTURER – Sherwin Williams – Richmond, Va. (804) 387-4050				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Zinc Clad II Plus	Reddish gray	2.0-4.0	2.53
Intermediate(s)	Macropoxy 646	White	3.0-10.0	2.08
Topcoat(s)	Acrolon 218 HS	As specified	3.0-6.0	2.5
Primer Repair (s)	Zinc Clad IV		3.0-5.0	2.57
Approval Date 7/10		Review date 12/11		

System Type: Inorganic zinc primer, polyamide epoxy intermediate and Aliphatic Acrylic-polester urethane topcoat, organic zinc repair primer.

<u>MANUFACTURER – Sherwin Williams – Richmond, Va. (804) 387-4050</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Zinc Clad Dot	Gray-Green	2.0-4.0	2.6
Intermediate(s)	Steel Spec Epoxy	Off White	3.0-6.0	2.7
Topcoat(s)	Hi-Solids Polyurethane	As specified	3.0-4.0	2.8
Primer Repair (s)	Zinc Clad IV		3.0-5.0	2.6
Approval Date 1/11		Review date 12/11		

GROUP IA

Primers in this group shall only be used to paint existing steel and may be used on contact, bolted and faying surfaces. This is due to their slip coefficient ratings.

System Type: Organic zinc primer, polyamide epoxy intermediate, aliphatic acrylic urethane topcoat, organic zinc repair primer

<u>MANUFACTURER – PPG Industries, Inc. – Roswell, GA</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Amercoat 68 HS	Redish-Gray	3.0-5.0	2.4
Intermediate(s)	Amercoat 399	White	4.0-8.0	1.5
Topcoat(s)	Amercoat 450 H	As Specified	2.0-5.0	2.6
Primer Repair(s)	Amercoat 68 HS		3.0-5.0	2.4
Approval Date 11/08 Review date 12/11				

System Type: Zinc-rich single or two component moisture-cure polyurethane primer and aliphatic polyaspartic urethane topcoat, organic zinc repair primer.

<u>MANUFACTURER – Sherwin Williams – Richmond, VA (804) 387-4050</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Corothane I Galvapak Zinc B65G11 (zinc dust included) or Corothane I Galvapak Zinc B65G10 with B69D210 (zinc dust) – packaged separately	Gray	3.0-4.0	2.8
Topcoat(s)	Fast Clad™ Urethane	As Specified	6-9	2.4
Primer Repair(s)	Corothane I Galvapak Zinc B65G11 or B65G10 as described above		3.0-4.0	2.8
Approval Date 5/05 Review date 12/11				

Note: When applying the above two coat system, stripe coating shall be accomplished using only the prime coat in accordance with Section 411.04(b)..

System Type: Organic zinc primer, polyamide epoxy intermediate, aliphatic acrylic polyester polyurethane topcoat, organic zinc repair primer

MANUFACTURER – Sherwin Williams – Richmond, VA (804) 387-4050				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Zinc Clad III HS	Gray-Green	3.0-5.0	2.8
Intermediate(s)	Macropoxy 646	White	3.0-10.0	2.0
Topcoat(s)	Acrolon 218 HS	As Specified	3.0-6.0	2.3
Primer Repair(s)	Zinc Clad III HS		3.0-5.0	2.8
Approval Date 11/05 Review date 12/11				

System Type: Organic zinc primer, epoxy intermediate, aliphatic acrylic urethane topcoat, organic zinc epoxy repair primer

MANUFACTURER – Akzo Nobel / International Paint – Jeffersonville, IN				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Interzinc 315 B	Green	2.0-6.0	2.42
Intermediate(s)	Intergard 475HS EVA 009 BUFF/056	Buff	4.0-8.0	1.72
Topcoat(s)	Interthane 870UHS	As Specified	3.0-5.0	1.91
Primer Repair(s)	Interzinc 315B			2.42
Approval Date 7/10 Review date 7/10				

GROUP II

Primers in this group shall only be used for existing structures that require no painting of contact, bolted or faying surfaces. This is due to their slip coefficient rating.

System Type: Organic zinc primer, epoxy intermediate, acrylic polysiloxane topcoat, organic zinc repair primer

<u>MANUFACTURER – International Paint, LLC – Houston, TX (800) 589-1267</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Interzinc 52	Blue, Gray, Green	2.0-3.0	2.8
Intermediate (s)	Intergard 475HS	Light Gray	4.0-8.0	1.46
Topcoat (s)	Interfine 979	As specified	4.0-6.0	1.82
Primer Repair (s)	Interzinc 52		2.0-3.0	2.8
Approval Date 8/05 Review date 12/11				

System Type: Organic zinc primer, polyamide epoxy intermediate, aliphatic acrylic-polyester polyurethane topcoat, organic zinc repair primer

<u>MANUFACTURER – Carboline Company – Mechanicsville, VA</u>				
COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC lb/gal
Primer(s)	Carbozinc 859	Green	3.0-5.0	2.7
Intermediate(s)	Carboguard 888	White	3.0-5.0	2.7
Topcoat(s)	Carbothane 133 LH	As Specified	3.0-5.0	2.6
Primer Repair(s)	Carbozinc 859		3.0-5.0	2.7
Approval Date 3/08 Review date 12/11				

All top coats shall be of sufficient dry film thickness to completely cover and hide the intermediate coat and produce a uniform color and appearance.

(14) PIPE GASKETS AND COATINGS – (Quality Assurance)

Preformed Plastic or Mastic Gaskets.

There are several proprietary materials that have been evaluated to see if they would perform satisfactorily. These materials are:

Brand Name	Manufacturer
Butyl-Tite Conforms to ASTM C990, AASTHO M 198, and Federal Specification SS-S-210	MultiSeal, Inc. Evansville, Indiana
Clippership Bituminous Joint Compound (MP-52) Asbestos free trowel mastic	Seaboard Asphalt 3601 Fairfield Road Baltimore, MD 800-536-0332
Con Seal (CS101, CS102, CS202, CS208, CS302) CS-102, CS 202 and CS 302 conform to the requirements of ASTM C 990 for butyl rubber sealants.	Concrete Sealants, Inc. 8917 S. Palmer Road New Carlisle, OH 937-845-8776
E-Z Stick Conforms to the requirements of ASTM C 990 for butyl rubber sealants.	Concrete Products Supply Co. Fort Wayne, IN (Roanoke, VA)
Macwrap Conforms to the requirements of ASTM C 877 Type II	Mar-Mac MFG. Co. Inc McBee, SC.
Seal Wrap Meets the same requirements as Macwrap but does not have the steel tie straps.	Mar-Mac MFG. Co. Inc. McBee, S.C. 843-335-8211
RV 30 Conforms to the requirements of ASTM C 990 R-427-N	Ru Van, Inc. Evansville, IN 812-464-2488
Meets the requirements of ASTM D 1056, Type 2A: These materials may be accepted on brand name.	Press-Seal Gasket Corporation 6935 Lincoln Pkwy Fort Wayne, IN 260-436-0521

"Other Protective Coating Materials" may be used to coat conduit. At this time, the following materials have been evaluated and approved for use.

Brand Name	Manufacturer
Bitumastic 50, Bitumastic 300 M	Koppers Company Pittsburgh, PA 412-227-2700
Cooper Black #750	Coopers Creek Chemical Corp. West Conshohocken, PA 610-828-0375

Any conduit that is pre-coated with a bonded PVC material (Approx. 40 mils) is also acceptable.

These materials may be accepted on brand name; however, it is cautioned, directions on the container should be followed explicitly, particularly with regard to coating thickness, number of coats and dry time.

Other Approved Gaskets

R-427-N (1" x 1" closed cell neoprene gasket for precast box culverts)	Press-Seal Gasket Corp. Fort Wayne, Indiana
------------------------------------------------------------------------	------------------------------------------------

(15) APPROVED STUD SHEAR CONNECTORS – (Structures)

The Manufacturers listed below have qualified their stud shear connectors in accordance with Sec. 232(h) of the Virginia Department of Transportation Road and Bridge Specifications. Effective immediately, these studs may be used on Virginia construction projects without evidence of test or certification.

Manufacturer	Division or Trade Name	Size
BlueArc Stud Welding	BlueArc	1/4, 3/8, 1/2, 5/8, 3/4, 7/8
Cox Industries	Cox	3/8, 1/2, 5/8, 3/4, 7/8
Nelson Stud Welding	Nelson	1/4, 3/8, 1/2, 5/8, 3/4, 7/8
Stud Welding Associates, Inc.	Ultra-Arc	1/4, 3/8, 1/2, 5/8, 3/4, 7/8
Tru-Fit Screw Products, Corp.	Tru-Weld	3/8, 1/2, 5/8, 3/4, 7/8

**(16) APPROVED SURFACE MOUNTED and GROUND MOUNTED FLEXIBLE POST
DELINEATORS – (Chemistry Lab)**

Trade Name	Manufacturer	Local Representative
SH 236 SMA WS (approved NTPEP# TTC-95S-9) Dura-Post (approved NTPEP# TTC-95S-8)	Safe-Hit Corporation 35 East Wacker Drive, Suite 1100 Chicago, IL 60601 312.467.6750	Korman Signs, Inc. Richmond, VA 804.262.6050
Channelizer SDCF303601MB (Approved 9/97 NTPEP #TTC-96S-5)	Carsonite International 10 Bob Gifford Blvd. Early Branch, SC 29916 803-943-9115	Carsonite International Paul R. DuBay 605 Bob Gifford Blvd. Early Branch, SC 29916 804-778-7775
Tra-Flex 36"	Arkan Plastics 136 SE 20th Street Great Bend, KS 67530 620-792-3794	Protection Services 3027 Christian Ave Roanoke, VA 24012 540-362-2777
Flex Stake TM 750 series (approved NTPEP# TTC-96S-3)	Flexstake Inc. 2150 Andrea Lane Fort Myers, FL 33912 800-348-9839	RGA Inc. 454 Southlake Blvd. Richmond, VA 23236 804-794-1592
FG300UR (Approved 10/30/98 NTPEP #TTC-98W-3)	Filtrona / Bunzl Extrusion - Tacoma, Inc. 3110 70 th Avenue East Tacoma, WA 98424 253-284-8000	Highway Safety Supply P.O. Box 128 Brandy Station, VA 22714 540-825-2675
D36F (Approved 3/25/2003 NTPEP #TTC-98S-12)	Impact Recovery Systems P.O. Box 12637 246 West Josephine St. San Antonio, TX 78212 210-736-4477	
TD-5200 (Appr, 4/15/08) TD-5275 (Appr, 4/15/08) TD-5500 (Appr, 9/4/08) TD-5600 (Appr, 9/4/08)	Three D Traffic Works, Inc. 430 N. Varney St. Burbank, CA 91502 (877)843-9757	

(17) QUALIFIED PREFORMED TAPE LIST – (Chemistry Lab)

The following products have been prequalified, but the manufacturer must supply certification for each lot.

Manufacturer's instructions for installation shall be followed both as to method and temperature of application to pavement requirements. Primer/sealers may be required; the manufacturer's specific recommendations shall be followed, and the cost of the primer/sealer shall be included in the bid price or unit price. Although approved for use, not all products may be equal in all characteristics. Contractor needs to determine the best product for his intended use.

Name	Manufacturer	Approval No.
Type B Class IV		
These tapes may be used for stop lines, crosswalks, messages and arrows only:		
White		
Series 1000	Brite-Line Technologies	STR-96-137-PA
ATM 300	Advance Traffic Markings	STR-98-TX-510
Yellow		
ATM 300	Advance Traffic Markings	STR-98-TX-511
Type B Class VI		
These tapes may be used for edge lines, center and skip lines, messages and arrows only:		
White		
A 380I ES	3M Manufacturing	MS 13965
A 380 WR	3M Manufacturing	MS 19276
A 380 WR ES	3M Manufacturing	MS 19276
A 380 AW	3M Manufacturing	MS 13965
A 380AW-5 Contrast Tape For Center and Skip Line Only	3M Manufacturing	MS13965
A 380I-5 ES Contrast Tape For Center and Skip Line Only	3M Manufacturing	MS11107
Yellow		
A 381I ES	3M Manufacturing	MS 13966
A 381 WR	3M Manufacturing	MS19277
A 381 WR ES	3M Manufacturing	MS19277
A 381 AW	3M Manufacturing	MS 13966
A 381 AW-5 Contrast Tape For Center and Skip Lines Only	3M Manufacturing	MS13966
A 381I-5 ES Contrast Tape For Center and Skip Lines Only	3M Manufacturing	MS11108
XRP-E Yellow	Brite-Line Technologies, LLC	PMM-2010-01-017, MS21493
Note: The Prefix "A" = Adhesive - may not be designated on product number tested.		

QUALIFIED PREFORMED TAPE LIST

The following products have been prequalified, but the manufacturer must supply certification for each lot.

Name	Manufacturer	Approval No.
Type D Class I		
ATM 200 White	Advance Traffic Markings	STR-98-TX-507
ATM 200 Yellow	Advance Traffic Markings	STR-98-TX-508
ATM 2000W White	Advance Traffic Markings	PMM-02-12-MS
ATM 2000 Y Yellow	Advance Traffic Markings	PMM-02-13-MS
Series 100 White	Brite-Line Technologies	PMM-04-014-MS
Series 100 Yellow	Brite-Line Technologies	PMM-05-007-PA
RY-140 White	Trelleborg	PMM-2000-187-PA
RY-140 Yellow	Trelleborg	PMM-2000-188-PA
Type D Class II		
ATM 200 White	Advance Traffic Markings	STR-98-TX-507
Series 100 White	Brite-Line Technologies	PMM-04-014-MS
Series 100 Yellow	Brite-Line Technologies	PMM-05-007-PA
ATM 2000W White	Advance Traffic Markings	PMM-02-12-MS
ATM 2000Y Yellow	Advance Traffic Markings	PMM-02-13-MS
Type D Class III		
Scotchlane 780™ White	3M Manufacturing	MS- 06-010 VDOT MS18477
Scotchlane 781™ Yellow	3M Manufacturing	MS- 06-011 VDOT MS18478
Delta-Line TWR-White	Brite-Line Technologies, Inc.	PMM-09-005(Florida) MS-21321
Delta-Line TWR- Yellow	Brite-Line Technologies, Inc.	PMM-09-006 (Florida) MS-21322
Type E		
Scotchlane™ Series A145	3M Manufacturing	STR-93-111
ATM 280 Black	Advance Traffic Markings	STR-98-TX-509
Deltaline BTR	Brite-Line Technologies	STR-97-83-MN
RB-140 Black	Trelleborg	PMM-01-UT-28

(18) ABRASIVES – (Chemistry Lab)

EXPENDABLE ABRASIVES

- | | |
|------------------------------------------------------------------|-----------------------|
| 1. Starblast XL – DuPont | Phone: (800) 441-9487 |
| 2. Black Blast -- Virginia Materials and Supplies | Phone: (757) 855-0155 |
| 3. GMA ROM 30 x 60 Garnet – Barton Mines Company | Phone: (800) 792-5462 |
| 4. Crystalgrit -- Virginia Materials and Supplies | Phone: (757) 855-0155 |
| 5. Glass Jet – Virginia Materials and Supplies | Phone: (757) 855-0155 |
| 6. Western's Bengal Bay Garnet – Virginia Materials and Supplies | Phone: (757) 855-0155 |
| 7. Reed Minerals Black Beauty® 1240 from Moundsville WV plant | Phone: (717) 763-4200 |
| 8. Reed Minerals Black Beauty® 2040 from Moundsville WV plant | Phone: (717) 763-4200 |
| 9. Reed Minerals Black Beauty® 4490 from Moundsville WV plant | Phone: (717) 763-4200 |

(19) APPROVED LIST OF ABSORPTIVE SOUNDWALL COLOR COATINGS – (Structures)

The following color coating may be used on sound absorptive soundwall panels for the purpose of obtaining the specified color using brand names, provided manufacturing specifications are followed specifically.

Product	Manufacturer
Canyon Tone Stain	United Coatings
Cementrate	Harris Specialty Chemicals, Inc.
Cold-Flex Stain	Cold -Flex, Inc.
FX-430	Fox Industries
Nitocote Cementrate WB (Waterbased)	Harris Specialty Chemicals, Inc.
H&C Silicone Acrylic Concrete Stain	Sherwin Williams
Aquastain T-96	Tamms Industries, Inc.
Rainstopper Concrete Stain	Textured Coatings of America, Inc.
Tex*Cote 300 Bridge-Cote Smooth Coating	Textured Coatings of America, Inc.
Tex*Cote XL-70 Bridge-Cote Smooth Coating	Textured Coatings of America, Inc.

(20) **APPROVED WATER BORNE LEAD FREE TRAFFIC PAINT – (Chemistry Lab)**

<u>White</u>	<u>Manufacturer</u>	<u>Product No.</u>	<u>NTPEP Submittal No.</u>
Sherwin Williams		BP14016	STR-97-41-AL
		BP14019	STR-97-44-AL
		BP15652	STR-98-PA-135
		BP15622	STR-98-PA-150
		BP17312	PMM(2000PA)-170
		BP17313	PMM(2000PA)-171
		BP17316	PMM(2000PA)-174
Ennis Paint (formerly LaFarge Road Markings and Centerline)		CL-6000	STR-96-85-PA
		CL-6004	STR-96-68-PA
		CL-7018	STR-97-69-AL
		CL-8210	STR-98-PA-96
		CL-8214	STR-98-PA-100
		CL-8216	STR-98-PA-102
		CL-8218	STR-98-PA-104
		CL-8220	STR-98-PA-106
		CL-8222	STR-98-PA-108
Ennis Paint (formerly LaFarge Road Markings and Linear Dynamics)		LD96-1002	STR-96-85-PA
		LD96-1008	STR-96-91-PA
		LD971001C	STR-97-138-AL
		LD981001	STR-98-PA-158
		LD981002	STR-98-PA-159
		LD981003	STR-98-PA-160
		LD981004	STR-98-PA-161
		LD981005	STR-98-PA-162
Ennis Paint (formerly LaFarge Road Markings)		LRMOOWB-19	PMM(2000PA)-110
		LRMOOWB-20	PMM(2000PA)-111
Ennis Paint		Douglas 303-98	STR-98-PA-214
		Ennis EP200W13	STR-98-PA-17
		Ennis EP200W14	STR-98-PA-18
		Ennis EP200W16	STR-98-PA-20
		EP415W03	PMM(2000PA)-61
		EP415W04	PMM(2000PA)-62

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<u>Yellow</u>	<u>Manufacturer</u>	<u>Product No.</u>	<u>NTPEP Submittal No.</u>
Sherwin Williams		BP-14021 BP15611 BP15623 BP17314	STR-97-46-AL STR-98-PA-139 STR-98-PA-151 PMM(2000PA)-172
Ennis Paint (formerly LaFarge Road Markings and Linear Dynamics)		LD961009 LD981009 LD981010	STR-96-92-PA STR-98-PA-165 STR-98-PA-166
Ennis Paint (formerly LaFarge Road Markings)		LRMOOWB-31	PMM(2000PA)-122
Aexcel		72Y-AO65	STR-96-148-PA
Ennis Paint		Douglas 306-98 Douglas 307-98 Ennis EP200Y-15 Ennis EP200Y-18 EP415Y03 EP415Y04 EP415Y05 EP415Y06	STR-98-PA-217 STR-98-PA-218 STR-98-PA-26 STR-98-PA-29 PMM(2000PA)-66 PMM(2000PA)-67 PMM(2000PA)-68 PMM(2000PA)-69

(21) QUALIFIED #14 ALUMINUM EPOXY MASTIC COATINGS – (Chemistry Lab)
(SYSTEM F)

Note: Effective with the February 2005 advertisement, all approved paint systems must not exceed the 2.8 lb/gal/ VOC requirement. Also paints manufactured after January 1, 2005 must meet these requirements if supplied to or applied in the Northern Virginia VOC Emission Control Area. This consists of the counties of Arlington, Fairfax, Loudoun, Prince William and Stafford, and the cities Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park City.

These paints have been prequalified for use, but each lot must be certified.

Carboline	Carbomastic 15
Carboline	Carbomastic 90 Aluminum
RCB Coatings	Alumox H.S. Epoxy E-433
RCB Coatings	7510
International Paint	Interplus 670 HS AL
Sherwin Williams	Epoxy Mastic Aluminum II

The following epoxy mastic products are available in colors, and have been prequalified for use where colored topcoats are specified. Each lot must be certified.

Carboline	Carboguard 890
Carboline	Carboguard 890 LT
RCB Coatings	7508
Sherwin Williams	Macropoxy High Solids

The following urethane products may also be used for colored topcoats. Each lot must be certified.

Carboline	Carbothane 134 HG
Carboline	Carbothane 134 HS
RCB Coatings	Shinethane HS
International Paint	Interthane 870UHS
Sherwin Williams	Acrolon 218 HS

(22) PAVEMENT MARKERS** – (Chemistry Lab)**

SNOW PLOWABLE RAISED PAVEMENT MARKERS				
Manufacturer	Casting Model No.	Reflector Description	Casting Adhesive	Reflector Adhesive
Ennis Traffic Safety Solutions	98 (Note 1)	940 (Note 2)	Epoplex MA-50 or Epoplex MA-52 or Lord Corp. Thermoset EP-87 or must meet AASHTO-M237, Type IV Note 3, Note 4	Liquid Nails – 602
Ennis Traffic Safety Solutions	101 MS # 08185	Ennis 944 Ray-O-Lite 2004/2004S 3M 190 Ennis C-40	Epoplex MA-50 or Epoplex MA-52 or Lord Corp. Thermoset EP-87 or must meet AASHTO-M237, Type IV Note 3, Note 4	Liquid Nails – 602
Accent Stripe, Inc.	Northstar 41	Ray-O-Lite 2004/2004S 3M 190 Ennis C-40	Lumiline SMA or must meet AASHTO-M237, Type IV Note 4	Liquid Nails – 602
Nightline	B-400	Ray-O-Lite 2004/ 2004S 3M 190 Ennis C-40	Epoplex MA-50 or Epoplex MA-52 or Poly-Carb 29 or must meet AASHTO-M237, Type IV Note 4	Liquid Nails – 602
Hallen	H-1010 HP H-960 HP	Ray-O-Lite 2004/2004S 3M 190 Ennis C-40	Any casting adhesive that meets AASHTO-M237, Type IV Note 4	Liquid Nails – 602
Ray-O-Lite	Snow-Lite 100	Ray-O-Lite 2004/2004S 3M 190 Ennis C-40	Epoplex MA-50 or Epoplex MA-52 or Slocum Type M-397 Note 4	BK0246-01 or Liquid Nails – 602

NOTES:

1. The Model 98 has been discontinued. The 940 reflector can be used as a replacement in existing Model 98 castings. The Model 98 has been replaced with the approved castings listed above.
2. All reflectors are approved for use in any casting in which they fit.
3. Lord Corp. Thermoset EP-87 formerly Epoxy #2203.
4. Any approved casting adhesive may be used with any casting provided they meet AASHTO, M-237, Type IV specifications.

TEMPORARY PAVEMENT MARKERS			
Manufacturer	Marker No.	Size	Adhesive
Ennis Traffic Safety Solutions	88	4" x 4"	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	11	4" x 4"	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	948	2" x 4"	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	C-80	4" x 4"	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	C-40	2" x 4"	Bitumen Adhesive or AASHTO-M237, Type II
Ray-O-Lite	"Standard" Types – B, D, DR	4" x 4"	Bitumen Adhesive
Ray-O-Lite	2004, 2004S Types – B, C, D, DR, G, H, K, X, Z	2" x 4"	Bitumen Adhesive
Ray-O-Lite	Model AA Types – B, C, D, DR, G, H, K, X, Z	4" x 4"	Bitumen Adhesive
Ray-O-Lite	Model AA-ARC II Types – B, C, D, DR, G, H, K, X, Z	4" x 4"	Bitumen Adhesive
3M	290 (White) 291 (Yellow)	3.5" x 4" 3.5" x 4"	Bitumen Adhesive
PEXCO, LLC (formerly Filtrona / Bunzl Extrusion)	DAPCO RPM	4" x 4"	Bitumen Adhesive

FLEXIBLE TEMPORARY PAVEMENT MARKER (FTPM) (Chip Seal/Overlay) For 14 Day Maximum Usage			
Manufacturer	Marker No.	Size	Adhesive
PEXCO, LLC. (formerly Filtrona / Bunzl Extrusion)	TOM W-1 TOM W-2 TOM Y-1 TOM Y-2	4" Length	Bitumen Adhesive
APEX	MODEL 932 CW/CW2 CY/CY2 CWOL/CW2OL CYOL/CY2OL	4" Length	Bitumen Adhesive

RECESSED PAVEMENT MARKERS			
Manufacturer	Marker No.	Size	Adhesive
Ray-O-Lite	2004, 2004S Types – B, C, D, DR, G, H, K, X, Z	For 4" wide slots/grooves	EP-326 Epoxy
Ennis Traffic Safety Solutions	948	For 4.5" wide slots/grooves	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	944SB	For 4" wide slots/grooves	2202 Bitumen or AASHTO-M237, Type II
Ennis Traffic Safety Solutions	C-40	For 4" wide slots/grooves	2202 Bitumen or AASHTO-M237, Type II

(23) DELINEATORS – (Chemistry Lab)

<u>GUARDRAIL DELINEATORS</u>		
<u>Manufacturer</u>	<u>Model No.</u>	<u>Adhesive Part No.</u>
Pexco/Davidson TCP	DAPCO I-Flex Guardrail Marker Davidson Straight Guardrail Reflector	DAPCO 795A
Duraflex	Railrider	H.B. Fuller SCO 252124
Eastern Metal/USA-Sign	661 (one-sided) (Note 1)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	662 (two-sided) (Note 1)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	631 (one-sided) (Note 1)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	632 (two-sided) (Note 1)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
AKT Corporation	FT-1 (Note 1)	Astro Optics Adhesive Cement
	FR-1	
	FB-33	
Pexco/Davidson TCP	PCBM-9	DAPCO 795A
	PCBM-T9 (3"x 4")	DAPCO 795
Pexco/Davidson TCP	PCBM-T9 (2" x 4.5")	DAPCO 795
NOTE 1: For use when guardrail has wooden blockout posts.		

<u>BARRIER DELINEATORS</u>		
<u>Manufacturer</u>	<u>Model No.</u>	<u>Adhesive Part No.</u>
Pexco/Davidson TCP	PCBM-9	DAPCO 795A
Duraflex	Flexx 2020	H.B.Fuller SCO 252124
Eastern Metal/USA-Sign	661 (one-sided)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	662 (two-sided)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	631 (one-sided)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
	632 (two-sided)	Dow Corning #795 Silicone or Courtlauds PRC Rapid Seal
AKT Corporation	FT-1	Astro Optics Adhesive Cement
	FB-33	
Pexco/Davidson TCP	PCBM-T9 (3" x 4")	DAPCO 795
Pexco/Davidson TCP	PCBM-T9 (2" x 4.5")	DAPCO 795

<u>ROAD EDGE DELINEATORS</u> (Single or Double Element Type)		
<u>Manufacturer</u>	<u>Model No.</u>	<u>Shape</u>
Ennis Paint/Stimsonite)	975	3.25" Circular
AKT	18 (Delineator only) 181 (Delineator with Bracket)	3.25" Circular
Ray-O-Lite	RT-90	3.25" Circular
NOTES:		

(24) MINERAL ADMIXTURES FOR HYDRAULIC CEMENT CONCRETE – (Physical Lab)

Silica Fume

Manufacturer	Product
Advanced Cement Technologies	Silica Fume
Addiment	Micro Silica Fume
Axim Italcementi Group	Catexol SF-D
Elkem	EMS 970D
Euclid	Eucon M.S.A.
Fritz	Silica Fume
BASF, Inc./Masterbuilders	RHEOMAC® SF 100
Sika	Sikacrete 950 Sikacrete 950 DP
Simcala Inc.	Simcala Microsilica
UCM Zirconia, Inc	Electrasil Microsilica
W. R. Grace	Force 10000 Force 10000 D

Slag

Manufacturer	Product
Essroc Italcementi	GGBFS Grade 100, Middlebrach, OH
**Lefarge/Blue Circle Cement Co.	NewCem - Grade 120
Allentown Cement Co.	AllCem - Grade 100
**St. Lawrence Cement	Grancem – Grade 120
**Lehigh Cement	Allcem/Camden – Grade 120

Class N

Manufacturer	Product
Lehigh	XPM

(25) CORRUGATED METAL PIPE PRODUCERS ON QA/QC PROGRAM – (Quality Assurance)

The following manufacturers of corrugated metal culvert pipe have VDOT approved Quality Assurance programs as outlined in the instructions. For additions and deletions to this list contact the District Materials Engineer.

Manufacturer	Plant Location
Bowie Sales, Inc.	Shawsville, VA
Carl M. Henshaw Drainage Products	Chester, VA
CMC Supply, Inc.	Roanoke, VA
ConTech Construction Products	Greencastle, PA
ConTech Construction Products	New Castle, DE
ConTech Construction Products	Charlotte, NC
ConTech Construction Products	Raleigh, NC
ConTech Construction Products	Ashland (Summit), KY
Eastern Supply, Inc.	Winchester, VA
Jennmar Specialty Products	Cedar Bluff, VA
Lane Metal Products	Bealton, VA
Lane Metal Products	Bedford, PA
Lane Metal Products	Dublin, VA
Plateau Pipe, LLC	Cookeville, TN
Public Drainage Supply	Blountville, TN
Smith Setzer & Sons, Inc.	Catawba, NC

***P = Probationary**

(26) CONCRETE PIPE PRODUCERS ON QA/QC PROGRAM– (Quality Assurance)

The following manufacturers of concrete culvert pipe have VDOT approved Quality Assurance programs as outlined in the instructions. For additions and deletions to this list contact the District Materials Engineer or the Materials Division Physical Laboratory.

Manufacturer	Plant Location	Monitored By	Next Review Date
Americast, Inc.	Chesapeake, VA		
Americast, Inc.	Ashland, VA		
Bolton Concrete Products	Bristol, VA		
Foltz Concrete Pipe Co.	Winston –Salem, NC		
Hanson Pipe and Precast	Chesapeake, VA		
Hanson Pipe and Precast	Hanover Plant, Hanover, VA		
Hanson Pipe and Precast	Jessup, MD		
Hanson Pipe and Precast (*P)	Oakboro, NC		
Hanson Pipe and Precast	Roanoke, VA		
Hanson Pipe and Precast	Salem, VA		
Hanson Pipe and Precast	Southside Plant, Richmond, VA		
Hanson Pipe and Precast.	Manassas, VA		
Hydro Conduit Corporation	Thomasville, NC		
Johnson Concrete (*P)	Salisbury, NC		
Oldcastle Precast (*P)	Fayetteville, NC		
Oldcastle Precast (*P)	Raleigh, NC	Central Office	
Permatile Concrete Pipe Co.	Bristol, VA		
Quality Culvert(*P)	Emporia, VA		
Rinker Materials	Frederick, MD		
Rinker Materials	Middletown, DE		
Rinker Materials	Wilson, NC		
Smith-Setzer & Sons, Inc.	Catawba, NC		
Smith-Setzer & Sons, Inc.	Stoney Creek, VA		

(*P) = Probationary

List No. 27

(27) QUALIFIED SILICONE RUBBER JOINT SEALER – (Chemistry Lab)

The following products have been prequalified, **but** the manufacturer must supply certification for each lot.

Class A

Roadsaver Part #34902	Crafco, Inc. 420 N. Roosevelt Chandler, AR 85226 (800) 528-8242
Dow Corning 888	Dow Corning Corp. 3901 South Saginaw Road Midland, MI 48686 (989)496-4400
Tremco Spectrum 800	Tremco Incorporated 3777 Green Road Beachwood, OH 44122 (216) 292-5000

Class B (for use on newly sawn or newly constructed joints only)

Roadsaver SL Part #34903	Crafco, Inc. 420 N. Roosevelt Chandler, AR 85226 (800) 528-8242
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Class C (for use in newly sawn or newly constructed joints, including joints between hydraulic cement concrete pavement and asphaltic shoulders with no spalling of HCC edge)

Dow Corning 890 SL	Dow Corning Corp. 3901 South Saginaw Road Midland, MI 48686 (989) 496-4400
Tremco Spectrum 900 SL	Tremco Incorporated 3777 Green Road Beachwood, OH 44122 (216) 292-5000
SikSil 728 SL (formerly Bondaflex)	Bondaflex Technologies 995 Towbin Avenue Lakewood, NJ 08701 (201) 458-4146

Class D (to seal expansion joints on bridge decks, where rapid curing is required).

Dow Corning 902 RCS	Dow Corning Corp. 3901 South Saginaw Road Midland, MI 48686 (989) 496-4400
*Wabo Silicone Seal	Watson Bowman Acme Corp. 95 Pineview Drive Amherst, NY 14228 (703) 691-9239

(28) POLYMERS FOR SEALING CRACKS IN HYDRAULIC CEMENT CONCRETE-
(Physical Lab)

Product	Type Polymer	Manufacturer
Degadeck Crack Sealer Plus	MMA	BASF Construction Chemicals, LLC
DECKSEAL	Epoxy	SSI Construction & Industrial Materials, Inc.
Dural 5	Epoxy	The Euclid Chemical Company
Dural 50 LM	Epoxy	The Euclid Chemical Company
Dural 335	Epoxy	The Euclid Chemical Company
E-Bond 523	Epoxy	E-Bond
E-Bond 550 Hi-Mod Low Viscosity	Epoxy	E-Bond
Mark-135 Safe-T-Seal	Epoxy	Polycarb
Sikadur 55 SLV	Epoxy	Sika Chemical Corp.
Sikadur 35 Hi-Mod LV	Epoxy	Sika Chemical Corp.
SIL-ACT EP-700D	Epoxy	Advanced Chemical Technologies
Surepoxy HMLV	Epoxy	Kaufman Inc.
Versafill 60A/60B	Epoxy	Henkel Corporation
Crack Sealer ULV – 2 Part	HMWM (Mod)	Watson Bowman Acme
Duraguard 401-100 (Low Modulus)	HMWM	ChemMasters
Duraguard 401-3 (High Modulus)	HMWM	ChemMasters
Rhoca Gil HS-LV	HMWM	Rhone Poulenc
Rhoca Gil HS-2K	HMWM	Rhone Poulenc
Sealate T-70-MX-30 Bridge Deck Elongation	HMWM	Transpo Industries
Sika Pronto 19	HMWM	Sika Chemical Corp.
SikaPronto 19 TF	HMWM	Sika Chemical Corp.
Transpo T-70 MX	HMWM	Transpo Industries

Transpo T-70 X Static Loading	HMWM	Transpo Industries
Percol Concrete Healer	Urethane	Percol Polymerics, Inc.
ROADWARE 10 Minute Concrete Mender	Urethane	Roadware Incorporated

LEGEND:

HMWM (Mod) High Molecular Weight Methacrylate Modified
HMWM High Molecular Weight Methacrylate
MMA Methyl Methacrylate

(29) CHEMICAL/MECHANICAL ANCHORING SYSTEMS - (Physical Lab)

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Chemical Anchors</u>		
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
AC100+ Gold	Powers Fasteners Brewster, NY	Injectable two component vinylester adhesive. See manufacturer's instructions for uses and applications.
Anchor Loc	Schul International Co. Norcross, GA	Cartridge epoxy dowel bar anchoring system.
CIA – Gel Epoxy	Covert Operations Long Beach, CA	Cartridge epoxy anchoring system for dowel bars, rebars and anchoring bolts.
Concessive 1420	BASF Construction Chemicals, LLC Building Systems	Two component 100% solids nonsag epoxy adhesive. Mainly used for anchoring fasteners, rebar, and dowels into concrete.
DBA-5	Superior Epoxies Coatings, Inc. Lilburn, GA	Epoxy gel anchor system for dowel bars, rebars, anchoring bolts, and bonding hardened concrete to other materials Mix 1:1 by volume. Apply above 33° F.
Dural Fast Set Epoxy Gel	Tamms Industries Kirkland, IL	Epoxy cartridge kit for anchoring dowel bars, rebars and anchoring bolts. Application temperature must be at least 35° F and rising.
EDOT	Simpson Strong-Tie Co., Inc. Whitman, MA	Two component high-solids epoxy based system that is non-shrink anchor grouting material. See manufacturer's instructions for uses and applications.
Epcon Systems	ITW Ramset/Red Head Wooddale, IL	Cartridge epoxy anchor system for threaded rod and rebar applications.
Epcon System Acrylic 7	ITW Ramset/Red Head Wooddale, IL	Two part, all weather adhesive for anchoring, dowling and pinning applications. Can be used down to -10° F without preheating the cartridge.
Epcon Maxima 7 Acrylic Glass Capsule System	ITW Ramset/Red Head Wooddale, IL	Acrylic glass capsule system, can be used in temperatures as low as 32° F. (Full cure time is 24 hours.)
Epcon Impact Vinylester Glass Capsule Sys	ITW Ramset/Red Head Wooddale, IL	Two part vinylester capsule system, one capsule installation will equal yield Strength of Gr. 60 rebar, and two capsule Installation will equal ultimate strength of Gr. 60 rebar.
Fixmaster Anchor Bolt Grout HP	Henkel Corporation	Two component, 100% solids, high modulus, structural epoxy gel. Is solvent free, no odor, high strength moisture intensive, non-sag epoxy system. Recommended temperature range is 35° - 115°F.
Futura Bond 566R	Futura Companies Scottsdale, GA	For grouting anchoring dowels, re-bars, and bolts in concrete. Also for bonding in external steel reinforcing plates to concrete. For bonding concrete. Use above 40° F.

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Chemical Anchors (Cont.)</u>		
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Hi-Mod Gel 580, 590, 592	E-Bond Ft. Lauderdale, FL	For use in anchoring bolts dowels, and pins, injection grouting and as a structural adhesive. Can be extended with salt free silica aggregate mixed 1:1 by volume. Cures to 40° F
Hilti HVA Adhesive Anchoring	Hilti, Inc. Tulsa, OK	Capsulated anchor for rods, dowel bars and rebar use above 23° F. Cure time at 23° F to 32° F is 5 hours, at 68° F and above the cure time is 20 minutes.
Hilti C-100 Anchoring System	Hilti, Inc. Tulsa, OK	Cartridge dowelling system for use above 32° F. Cure time at 32° F is 48 hours, at 70° cure time is 6 hours.
Hilti Hit Re 500	Hilti, Inc. Tulsa, OK	Two part epoxy system. Extended temperature range from 23° to 105° F. Has a working time of 30 minutes.
Hilti HSE 2411 Dowelling System	Hilti, Inc. Tulsa, OK	Cartridge dowelling system for use above 32° F. Cure time at 32° F is 48 hours, at 70° cure time is 6 hours.
Hilti HVU Adhesive Capsule Anchoring & Dowelling System	Hilti, Inc. Tulsa, OK	Urethane Methacrylate consisting of resin, hardener and aggregate in a foil capsule. Curing time above 68 F 20 min. Curing time above 50 F 30 min., 32 F 1 hr.
Hilti HY-150 Anchor System	Hilti, Inc. Tulsa, OK	Cartridge anchor for rods, dowel bars, and rebar use above 23° F (-5°C). Cure time at 23° F is 6 hours. At 68° F, cure time is 45 minutes.
Hilti HTE 50 (formerly Hilti HSE 2421)	Hilti, Inc. Tulsa, OK	Two part cartridge epoxy system used to install reinforcing steel and threaded studs. Cures in temperatures of 32°F - 100°F.
Hit Hy 150 Max	Hilti, Inc. Tulsa, OK	Hybrid adhesive mortar combining Urethane methacrylate resin, hardener, cement and water. The components are kept separate from the hardener and water by means of a dual cylinder foil cartridge attached to a manifold. It is formulated for fast curing and installation in a wide range of solid and hollow base material temperatures from 14°F to 104°.
HS-200	Adhesives Technology Corp. Pompano Beach, FL	Two part cartridge epoxy system used to install reinforcing steel and threaded studs. Cures in temperatures of 32°F - 100°F.
Keligrit	Kelken Gold, Inc. Parlin, NJ	High strength, non-shrink polyester resin anchoring. May be used in freezing Conditions down to 10 F by keeping resin at 70° F- 90 F immediately prior to use.
KeligROUT/ KeligROUT 101	Kelken Gold, Inc. Parlin, NJ	Polyester anchoring system for grouting anchor bolts and dowel bars. Cure time is 48 hours at 70° F.
Kelipoxy II	Kelken Gold, Inc. Parlin, NJ	Epoxy anchoring system for grouting anchor bolts and dowel bars. Cure time is 48 hours at 77° F.
Liquid ROC 300	MKT Fastening, LLC Lonoke, AR	Capsule polyester anchor for dowel bars rebar, anchoring bolts.
Liquid ROC 300	MKT Fastening, LLC Lonoke, AR	Twin tube polyester anchor for dowel bars rebar, anchoring bolts.

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Chemical Anchors (Cont.)</u>		
Mark-198.1	Poly-Carb, Inc.	Two part cartridge epoxy system used to install reinforcing steel and threaded studs. Substrate temperature should be above 40° F. at time of application. Mark-198.1 is not recommended where the cured material is Subjected to a dry temperature condition of 190° F. or greater, as well as, a wet temperature condition of 140° F. or greater.
PE 1000+	Powers Fasteners Brewster, NY	Epoxy two component injectable adhesive. See manufacturer's instructions for uses and applications.
PolyBac/Polyject 1257-58	PolyGem, Inc. West Chicago, IL	Polymer anchoring system for use anchoring threaded rods, bolts, reinforcing steel and smooth dowels to solid concrete. Pot life at 75° F is 15 minutes.
PolyBac/Polyject 1605	PolyGem, Inc. West Chicago, IL	Fast setting polymer anchoring system for use anchoring threaded rods, bolts, reinforcing steel and smooth dowels to solid concrete. Pot life at 75° F is 10 minutes.
Powers Fasteners Hammer Capsule	Powers Fasteners, Inc. Brewster, NY	Hammer capsule adhesive for use in anchoring dowels, rebars, and bolts in concrete. Base material temp. 68°F and over, setting time 1hr., 32-50°F, 5hrs., 14-23°, 24 hrs.
Powers Fasteners Power Fast Standard Set	Powers Fasteners, Inc. Brewster, NY	Gel time 60 minutes at 40°F, min. cure time 16 hours, full cure 48 hours. Do not use below 40°F.
Powers Fasteners T308+	Powers Fasteners, Inc. Brewster, NY	An injection two component epoxy adhesive. See manufacturer's instructions for uses and applications.
Propoxy 300 Fast	Unitex Kansas City, MO	Fast epoxy anchoring system used for grouting bolts, dowels, pins, structural bonding of concrete, masonry, metal, and wood, both vertical and overhead, 2 component 1:1 mix by volume, moisture insensitive use above 30° F sets 5-10 min.
Propoxy 300	Unitex Kansas City, MO	Epoxy anchoring system used for grouting bolts, dowels, pins, structural bonding concrete and masonry. 2 component epoxy, mix 1:1 by volume Use between 65-85° F Pot life above 30 min.
Rezi-Weld Rapid Set Epoxy Anchor System	W. R. Meadows Austell, GA	Epoxy anchoring system used for dowels, bars, and anchoring bolts. Pot life at 73° F is 10 min.
Sikadur Anchor Fix-1	Sika Corp. Lyndhurst, NJ	One cartridge, two component, solvent and styrene free, modified acrylic, anchoring adhesive used to install rebar, threaded rods, bolts and special fastening systems. Application temperature substrate and ambient 14° to 86°F.
Sikadur Anchor Fix-4	Sika Corp. Lyndhurst, NJ	Two cartridge, two component, solvent and styrene free, Epoxy Resin, anchoring adhesive, used to install rebar or threaded rods. Application temperature substrate and ambient: 40° to 90°F.
Sikadur DBA	Sika Corp. Lyndhurst, NY	Anchoring System.
Sikadur Injection Gel Anchors	Sika Corp. Dublin, VA	Epoxy anchoring system for grouting bolts, dowel, pins. Insensitive to moisture. Mix 1:1 by volume. Pot life less than 30 min. Use above 40°F.

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Chemical Anchors (Cont.)</u>		
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Slam-Tite Hammer in Glass Chemical Capsule	Ankrтите Fastening Systems Tulsa, OK	Polyester resin and hardening agent with aggregate filler. Minimum cure time above 68F 10 min. 50-68°F 5 hrs., Store in original container at 50 to 100°F.
Simpson Acrylic-Tie Adhesive (AT)	Simpson Strong Tie Co., McKinney, Texas	Two components, 10:1 ratio base adhesive. Formulated for use in all types of weather. Used to anchor threaded rod and dowelling rebar.
Simpson ET Epoxy-Tie (ET)	Simpson Strong Tie Co. Addison, IL	It is a two component cartridge, 100% Solids epoxy based adhesive for use As a high strength, non-shrink anchor grouting material.
Simpson SET Epoxy-Tie (SET)	Simpson Strong-Tie Co. Inc.	Two component, epoxy based system dispensed through a static-mixing nozzle. Used to anchor threaded rod or dowelling rebar.
Simpson Vinylester Glass Capsule (VGC)	Simpson Strong-Tie Co., Inc. Dublin, CA 94568	Two component, vinyl ester based adhesive contained within a glass capsule, used to anchor threaded rod or rebar. Adhesive should be applied in dry conditions, should not be installed in or through standing water. The base material must be 25°F (-50°C) or above, at the time of installation.
Sure Anchor Epoxy J50	Dayton Superior Oregon, IL	Cures above 40°F for use in anchoring bolts, dowels, and reinforcing steel 1:1 by volume, pot life 30-40 min.
Sure Anchor I Epoxy J51	Dayton Superior Oregon, IL	Fast epoxy anchoring system used for grouting bolts, dowels, pins, both vertical and overhead, 1:1 by volume, moisture insensitive, use above 30°F, sets in 5-10 minutes.
Surepoxy 117 Epoxy Anchoring System	Kaufman Products, Inc. Baltimore, MD	Epoxy anchoring system for grouting, anchoring bolts, and dowel bars. Use above 60°F, pot life of 8-10 min at 75°F.
Surepoxy 116 Epoxy Anchoring System	Kaufman Products, Inc. Baltimore, MD	Epoxy anchoring system for grouting, anchoring bolts, and dowel bars. Use 40-60°F, pot life of 8-10 min at 50°F.
True Grip 590	J. Dedoes, Inc. Milford, MI	Epoxy anchoring system for grouting, anchoring bolts, and dowel bars. Cure time is 24 hrs. at 75°F.
Ultrabond 1	Adhesives Technology Corp.	Two component, 100% solids, high modulus, structural epoxy gel. Ultrabond 1 is solvent free, no odor, high strength moisture intensive, non-sag epoxy system. Recommended temperature range is 35° - 115°F.
Ultrabond 1300	Adhesives Technology Corp. Pompano Beach, FL	Two component 100% solids, high aspect ceramic blend epoxy for use From 35-110°F. Initial cure 4 hrs. Final cure 24 hours.

List No. 29(Cont.)

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Chemical Anchors (Cont.)</u>		
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Ultrabond 2000	Adhesives Technology Corp. Pompano Beach, FL	Ultrabond 2000 is a two component cartridge, 100% solids ceramic blend Epoxy: moisture insensitive, low Viscosity; temperature range from 60° to 110°F; mix ratio of 2:1.
Ultrabond 2300	Adhesives Technology Corp. Pompano Beach, FL	Epoxy adhesive anchors for fastening materials to masonry items. Sets in 8 hrs. at 80°F.
Ultrabond 3	Adhesives Technology Corp. Pompano Beach, FL	Epoxy adhesive anchors for fastening materials to masonry items. Sets in 2 hrs. at 80°F.
Unisorb Capsule Anchor	Unisorb, Inc. Jackson, MI	Urethane adhesive anchor for grouting bolts, dowels, and pins on vertical and overhead use. Glass encapsulated package may be used in wet or damp conditions. Sets in 30 min. at room temperature.
X-Tite ResiLoc EX22	X-Calibur Construction Systems, Inc. Miramar, FL	Two components, 100% solids, high modulus, structural epoxy gel. X-Tite ResiLoc EX22 is solvent free, no odor high strength moisture intensive, non-sag epoxy system. Recommended Temperature range is 35°F - 115°F.

Chemical and Mechanical Anchors are not to be used in direct tension or overhead applications.

<u>Mechanical Anchors</u>		
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Drillco Maxi-Bolt	Drillco Devices, Ltd Long Island City, NY	Expansion anchor
Hilti Kwik Bolt II Expansion Anchor	Hilti, Inc	Expansion Anchor Bolt
Hilti Kwik Bolt 3 Expansion Anchor	Hilti, Inc.	Expansion Anchor Bolt
Hilti HDI Anchor	Hilti, Inc.	Flush mount drop in expansion anchor.
Liebig Safety Bolts	Liebig International, Inc. Charlottesville, VA	Concrete expansion anchor
Powers Fasteners Power-Bolt	Powers Fasteners, Inc. Brewster, NY	Expansion Anchor Bolt
Powers Fasteners Power-Stud	Powers Fasteners, Inc. Brewster, NY	Expansion Anchor Bolt
Powers Fasteners Wedge-Bolt	Powers Fasteners, Inc. Brewster, NY	Screw Anchor
Simpson Drop-In (WA) Simpson Sleeve-All (SL) Simpson Titen HD (THD)	Simpson Strong Tie Co. McKinney, TX	Expansion anchor
Simpson Wedge-All (WA)	Simpson Strong-Tie Co., Inc	Expansion anchor
Sup-R-Stud	MKT Fastening, LLC Lonoke, AR	Expansion anchor bolt
Tru Bolt Wedge Anchors	ITS Ramset Redhead	Expansion anchor bolt

(30) HYDRAULIC CEMENT CONCRETE SEALANTS, STAINS, AND COATINGS - (Physical Lab)

Sealants

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
<u>Silane, Siloxane</u>			
Certi-Vex Guard CACS (Gray)	Vexcon Chemicals, Inc Philadelphia, PA	A decorative <u>colored</u> one step cure and penetrating water repellent sealer with excellent stain protection that can be applied to fresh or existing horizontal and vertical concrete surfaces in one application.	385 g/l
Certi – Vex Guard	Vexcon Chemicals, Inc. Philadelphia, PA	A <u>clear</u> one step cure and penetrating water repellent sealer with excellent stain protection that can be applied to fresh or existing horizontal and vertical concrete surfaces in one application.	326 g/l
Consolideck SaltGuard WB	Prosoco, Inc GA, NJ, TX	Water based siloxane water repellent and chloride screen	<120 g/l
Enviroseal 40	BASF Construction Chemicals, LLC	A clear, water-based 40% alkylalkoxysilane penetrating sealer. Provides long-lasting protection against moisture intrusion, freeze/thaw cycles, and chloride intrusion. Can be applied on horizontal and vertical, exterior or interior and above grade. Ideal for traffic-bearing surfaces.	<350
Evercrete Deep Penetrating Sealer (DPS)	Evercrete Corporation Miami, FL	Surface sealer sets within two to four hours after application. Coverage 150 – 300 sf/gallon Depending on concretes texture. Non-Toxic penetrating sealer for concrete material. USDA approved for contact with drinking water.	0 g/l
Surtreat TPS II	Sealtreat Corp. Pittsburg, PA	Silane Coating	0 g/l
Sikagard 701W	Sika Corp. Richmond, VA	Solvent-free siloxane emulsion concentrate. Coverage 100-250 sq.ft./gal. Mix ratio = 1 part to 4 parts water.	193 g/l

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
<u>Epoxy</u>			
E-Bond 120	E-Bond Epoxies, Inc Ft. Lauderdale, FL	Epoxy penetrating sealer for concrete. Mix 1:1 by volume, tack free time at 77°F is 45 min. Use above 40°F.	
Epoxeal GS Structural	BASF Construction Chemicals, LLC	A two component ultra-low viscosity epoxy sealer and structural adhesive. Its low viscosity formula penetrates deeply into concrete to repair damaged structures. It accepts an aggregate broadcast to provide a slip-resistant surface. It has a 2 to 1 mix ratio which is convenient and easy to mix, and meets the mix requirement ratio for professional mix equipment.	0 g/l
Hydro-Seal 75	Northern Industries Inc. Coventry, RI	A sprayable high build water-based epoxy coating that protects & preserves concrete, masonry and block surfaces and contains no VOC's. Hydro-Seal 75 resists chemical attack, freeze thaw spalling and hydro-static pressure in excess of 40PSI. Provides a decorative, smooth long lasting finish that is waterproof and highly durable. Apply above 40 degrees F.	0 g/l
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
<u>Stains</u>			
Aquastain T-96	Tamms Industries, Inc Kirkland, IL	Decorative water based, liquid polymer penetrating stain. Apply 2 coats at 45° F and rising. Apply second coat 12-24 hrs.	<100 g/l
Canyon Tone Stain	United Coatings Spokane, WA	Pigmented stain for coloring and protecting concrete, Acrylic copolymer Apply at 150sq.ft./gal., 40-90°F.	163 g/l
H & C Shield Plus Ultra	Sherwin Williams Matt Apsley (804) 387-4050	A low odor, water based stain that provides a long-lasting, durable and decorative finish on interior and exterior concrete and masonry	222 g/L
Thoro Pigmented Sealer	BASF Construction Chemicals, LLC	A water-based, tinted, semi-transparent acrylic stain for sealing concrete, stucco, EIFS, and masonry. It is breathable allowing moisture to escape, preventing blistering and peeling. UV resistant which enhances building appearance long term.	92

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
White Roc Toner VOC	BASF Construction Chemicals, LLC	A water-based, 100% acrylic, protective and decorative pigmented penetrating stain for concrete and masonry. It provides excellent water repellency, weatherability, and color retention. It is breathable allowing interior vapors to escape, preventing blistering and peeling. Can be utilized to even out shading variations in concrete and masonry.	138
<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
<u>Other Protective Coatings and Sealers</u>			
Certi-Vex EnvioSmooth VOC	Vexcon Chemicals, Inc Philadelphia, PA.	Decorative <u>smooth</u> high-build coating that covers surface blemishes and cracks. Provides excellent adhesion, weatherability and waterproofing of concrete, masonry, block, wood and primed metal surfaces. Apply to green concrete without peeling or loss of adhesion, excellent resistance to UV light, molds or fungi and environmental chemicals. Apply to vertical exterior, above or below grade and in the presence of hydrostatic pressure.	296 g/l
Certi-Vex EnvioTex VOC Textured Sand	Vexcon Chemicals, Inc. Philadelphia, PA	Decorative <u>textured</u> high-build coating that covers surface blemishes and cracks. Provides excellent adhesion, weatherability and waterproofing of concrete, masonry, block, wood and primed metal surfaces. Apply to green concrete without peeling or loss of adhesion, excellent resistance to UV light, molds or fungi and environmental chemicals. Apply to vertical exterior, above or below grade and in the presence of hydrostatic pressure.	296 g/l
Chem-Crete Pavix CCC100	Moisture Control Associates Roanoke, VA	A unique water-based penetrating product that permanently seals concrete from moisture erosion. It is 100% safe for the environment, protects reinforcing steel bars against corrosion without any negative effect on existing steel cathodic protection, no VOC's, used as a single application, it seals pores and capillaries within the concrete and masonry substrates, prevents spalling from freeze/thaw cycles, eliminates efflorescence, prevents penetration of chloride ions from de-icing salts. Ideal for bridges, marine, railway, highways, airports.	0g/l

List No. 30(Cont.)

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

Other Protective Coatings

<u>Product</u>	<u>Manufacture</u>	<u>Description</u>	<u>VOC Level</u>
Evercrete Top Seal (TS)	Evercrete Corporation Miami, FL	Water repellent for concrete, bricks, natural stone and wood; clear non-glossy, non-toxic, non-flammable.	0 g/l
Mark - 173.5	Poly-Carb Cleveland, Ohio	A water-based, high build acrylic with excellent flexibility and durability. Specially designed to provide a long lasting coated surface, which resists salt spray, environmental attack and normal weathering. Recommended for use on tilt-up, precast, or poured-in-place concrete. Estimated coverage is 50-100 sq.ft per gallon, per coat.	<100 g/l
Tamms Coat	Tamms Mentor, OH	Water based emulsion of 100% acrylic resin polymer. Textured decorative and protective coating. Apply at surface and ambient temperatures between 45-90°F.	<100 g/l
Texcote 300 Bridgecote	Textured Coatings of America, Inc Ft. Lauderdale, FL	High build latex acrylic coating Rapid drying, good adhesion. Covers 1.25 m ² /L at 40-100 F.	300 g/l
Textured DOT	ChemMasters	Description, Water based, high build 100% acrylic decorative coating. Develops a tough, durable, water repellent film that is alkali acid, mildes fungus and mold resistant	
Thorocoat	BASF Construction Chemicals, LLC	A water-based 100% acrylic high build coating for use on above grade walls, concrete, masonry, cement, plaster, stucco, EIFS, vertical and overhead surfaces. Thorocoat comes in smooth, fine and coarse textures. Thorocoat smooth is meant to be applied as a two coat-system. Apply above 40 degrees F.	107 g/l
Thorocoat DOT	BASF Construction Chemicals, LLC	A water-based high build 100% acrylic coating for use on above grade exterior, vertical, overhead and previous coated surfaces. Thorocoat DOT comes in a fine texture. Apply above 40 degrees F.	58 g/l
Thorseal	BASF Construction Chemicals, LLC	A decorative cement-based coating mixed with an acrylic copolymer (Acryl 60) which creates a low maintenance and highly durable waterproof barrier. Apply above 40 degrees F.	0 g/l
Ultracrete Solvent Borne Textured Coating	Sherwin Williams Matt Apsley (804) 387-4050	A low VOC textured coating designed for use on concrete such as poured-in-place concrete and pre-cast concrete, to improve aesthetics. It is available as a smooth finish or in fine, medium and extra-coarse textures.	396g/l

List No. 30(Cont.)

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

Other Protective Coatings

<u>Product</u>	<u>Manufacture</u>	<u>Description</u>	<u>VOC Level</u>
Ultracrete Textured Coating	Sherwin Williams Matt Apsley (804) 387-4050	A heavy duty, VOC compliant, 100% acrylic aggregate-filled coating with outstanding color retention and durability. It can be used directly over numerous substrates.	55g/l
FX 432	Fox Industries Baltimore, MD	Polymer modified penetrating sealer for concrete. One component water based. Apply at a rate of 200-300 sq. ft./gal with brush, roller or spray.	0.0 g/l

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

Concrete Anti-Graffiti Systems

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
Anti-Graffiti Coating B97C00150	Sherwin-Williams Richmond, VA Matt Apsley (804) 387-4050	A single component, non-sacrificial, ready-to-use siloxane coating that cures with atmospheric moisture. Intended for use over properly prepared colored or bare concrete surfaces. Excellent clean ability with either water power-washing, or solvent wipe.	< 250 g/l
Aquathane	Tamms Mentor, OH	Two component aliphatic polyurethane anti-graffiti protective coating. Apply at surface and ambient temperatures between 50 and 90F and at humidity below 80%.	<340 g/l
Ceva Thane CR Top Coat 76	E-poxy Engineered Materials LLC	Two component, air-drying, water borne polyurethane.	180 g/l
FX-441	Fox Industries Baltimore, MD	Anti Graffiti Aliphatic Urethane two part system: one component top coat and second component top coat apply at 300 square ft/gal apply above 40°F.	340 g/l
Graffiti-Pruf	Visual Pollution Technologies Scottsdale, AZ Tele no. 480-657-9183 Toll free 888-887-8347 Fax 480-767-2796	Completely non-toxic liquid, water-based emulsion used for protecting Surfaces from graffiti, atmospheric Pollution and corrosion. Apply only when ambient and surface temperatures are above 40°F.	0 g/l
Prmakote	Visual Pollution Technologies Scottsdale, AZ Tele no. 480-657-9183 Toll free 888-887-8347 Fax 480-767-2796	One step application no thinning or mixing. Dries and protects in 24 hours. Retards the growth of mold, mildew and algae. Apply 300 to 600 square ft/ gallon depending on the surface.	220 g/l
Professional Water Sealant Super Strength	Professional Products of Kansas, Inc. Wichita, Kansas	One part, One coat penetrating, permanent weather proofing formula using RTV Silicone Rubber.	<250 g/l
Tag Pruf	BASF Construction Chemicals, LLC	A clear, non-yellowing, breathable, water-based, tri-polymer formulation, sacrificial graffiti barrier, that protects interior and exterior walls from unwanted surface markings.	0 g/l
Tagguard	BASF Construction Chemicals, LLC	A unique, multi-polymer, invisible formulation that protects interior and exterior walls from graffiti and other unwanted surface markings. Tagguard can be effective on a variety of concrete and masonry surfaces. It is fast drying, environmentally friendly, breathable and suitable for low temperature application down to 20 degrees.	230 g/l

**HYDRAULIC CEMENT CONCRETE
SEALANTS, STAINS, AND COATINGS**

Non-Compliant in Arlington, Fairfax, Loudoun, Prince William, and Stafford Counties

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>	<u>VOC Level</u>
Sure Klean Weather Seal H-40	Prosoco, Inc. GA, NJ, TX	Protective silane coating apply 40-95°F.	
Sil-Act ATS 42	Advanced Chemical Tech Oklahoma City, OK	Silane sealant used to prevent salt intrusion. Applied at 1 gal/125 sq. ft. with low pressure sprayer.	589 g/l
Sure-Poxy Penetrating	Kaufman Products Baltimore, MD	Epoxy penetrating sealer. Mix 1:1 by vol, apply 150 sq. ft/gal/coat. Pot life 70°F is 24 hours, apply above 50°F.	610 g/l
FX 430	Fox Industries Baltimore, MD	Fox Industries Concrete stain and coating. Acrylic copolymer in clear, white, grey and colors, apply at 300 sq/ft/gal.	675 g/l
H&C Silicone Acrylic Concrete Stain	Sherwin Williams Richmond, VA Matt Apsley (804) 387-4050	Solvent based concrete stain formulated with acrylic and silicone resins and alkali proof pigments.	575 g/l
Rainstopper 400	Textured Coatings of America, Inc Ft. Lauderdale, FL	Semi-transparent solvent free resin sealer. Covers 125 sq/ft/gal.	600 g/l
Texcote XL -70	Textured Coatings of America, Inc. Ft. Lauderdale, FL	One component ready to use concrete protective coating. Application temperature 40-100°F.	600 g/l

(31) HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS – (Physical Lab)**Very Rapid (2500psi in 2 hours)**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Cement All	CTS Cement Manufacturing Corp. Fredericksburg, VA	Initial Set – 18 minutes 2 hr. strength – 2710 psi, 6 hr. strength – 3320 psi, 28 day strength – 5270 psi
Chemspeed 65	Chem Masters Madison, Ohio	Initial Set – 10 minutes 2 hr. strength 3183 psi 6 hr. strength 3925 psi 28 day strength 7043 psi
Dura Patch MMA M	Chem Masters Madison, Ohio	Polymer liquid with an MMA base and powder catalyst. Extended 100% With # 8's. 1 hour strength, 4200 psi. Can be applied to moisture and frost-free surfaces.
Dura Patch MMA G	Chem Masters Madison, Ohio	Polymer liquid with and MMA base and powder catalyst. Extended 100% with # 8's. 1 hour strength. 3520 psi. Can be applied to moisture and frost-free surfaces.
Elastic Cement	Percol Polymerics, Inc	Rapid setting (10 min.) polymer concrete. Use with aggregate to patch potholes and spalls in PCC and asphalt concrete. Use neat to seal moving cracks in PCC.
Euco Speed MP*	Euclid Chemical Co. Cleveland, OH	Initial set 12 min., 4.2lbs water/bag. Extended 30lbs/bag with #8's, 2hr. strength 5890 psi, 28 day strength 6600 psi,. NEVER extend Euco Speed MP with limestone or aggr. containing limestone.
Five Star Highway Patch	Five Star Products Inc Fairfield, CT.	Initial set-61 min extended 30 lbs #8's 50 lbs/bag 2 hrs strength- 2510psi Vertical and overhead patching
Five Star Structural Patch	Five Star Products Inc Fairfield, CT	Initial set- 25 min 150 Lbs / 18.7 lbs water, 3 Hrs cube strength-5830 psi
Five Star Structural Concrete-V/O	Five Star Products Inc Fairfield, CT	Initial set- 28 min Vertical and Overhead patching, 2 hrs strength-3830 psi, 28 day8330 psi. Water/mix ratio 0.167
FRC-121	CISCO Pounding Mill, VA	Initial set-25 min extended 25#/bag with #8's, 2 hrs strength- 3620psi,4 hrs strength- 5210psi Vertical and overhead patching
*Polymer concrete patching materials - non-cementitious - cannot be overlaid with epoxy EP-5 Mod		

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS**Very Rapid (2500psi in 2 hours)**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
FUTURA-15	W. R. Meadows, Inc.	Initial Set – 17 minutes 2 hr. strength – 3790 psi 6 hr. strength – 4440 psi 28 day strength – 8510 psi 50 lb. bag mixed with 25 lbs. #8 stone and 5.47 lb. water
FX-263	Fox Industries, Inc Baltimore, MD	Initial set- 15min 8.4 lbs water/bag, 4 hrs strength- 2680psi, 24hrs strength-2970psi, 28day strength-4770psi Vertical & overhead patching
FX-930	Fox Industries, Inc Baltimore, MD	Initial set-10 min 50 lbs sand/50 lbs #8's/ 16.66 lbs water / 59 lb bag, 2 hrs strength- 2630 psi, 24 hrs strength- 4080 psi.
High Power D.O.T. Grade Repair Mortar	US Concrete Products	Initial Set – 11 minutes 2 hr. strength – 3540 psi 6 hr. strength – 4380 psi 28 day strength – 6110 psi 55 lb. Bag mixed with 50 lbs. # 8 stone and 8.33 lb. Water
HD-50 HD Concrete Patch	Dayton Superior Corp Oregon, IL	Initial set- 56 min extended 30lbs #8's/50 lbs bag/ 6.8 lbs water, 2hrs strength 4190 psi
HD-DOT Patch	Symons Corp DesPlaines, IL	Initial set 56 min. extended 13.6 kg #8's/22.7 kg bag/3.1 L water, 2 hr. Strength 28.1 Mpa
MONO-PATCH	BINDAN Corporation Richmond, VA	2 hr. strength - 2,840 psi 6 hr. strength - 5,180 psi 28 day strength – 8,870 psi For initial set and mixing instructions, see technical data sheet.
MONO-PATCH COLD SET	BINDAN Corporation Richmond, VA	2 hr. strength – 5,340 psi 6 hr. strength - 6,440 psi 28 day strength – 9,510 psi For initial set and mixing instructions, see technical data sheet.
Pavemend SL	CeraTech, Inc. Baltimore, MD	2 hr. strength – 4,340 psi 6 hr. strength – 4,810 psi 28 day strength – 9,730 psi For initial set and mixing instructions, see technical data sheet.
Pavemend SL Pavemend 15.0	CeraTech, Inc.	2 hr. strength – 2910 psi 6 hr. strength – 2830 psi 28 day strength – 5660 psi For initial set and mixing instructions, see technical data sheet.

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS

Very Rapid (2500psi in 2 hours)

Pavemend SLQ Pavemend 5.0	CeraTech, Inc.	2 hr. strength – 4650 psi 6 hr. strength – 4380 psi 28 day strength – 5660 psi For initial set and mixing instructions, see technical data sheet
Planitop 18	Specialty Products, Inc.	Comp. Strength 4” x 8” cylinders 2 hrs. - 3370 psi 6 hrs. – 5080 psi 28 day – 9280 psi 7 – day bond strength 4690 psi Length Change Air = -0.07 Moist = +0.04 Initial Set = 8 min. Final Set = 11 min. 25 Cycle Freeze Thaw Loss = 0.13%
Power Set 120	Bonsal American Charlotte, NC St. Albans, WV White Marsh, MD	Initial Set – 14 minutes 2 hr. strength – 3410 psi, 6 hr. strength – 3850 psi 28 day strength - 7840 psi 50 lb. bag mixed with 30 lbs. #8s and 3.5 qts. water
Premium Patch 100	Bonsal American Charlotte, NC	2hr. strength – 3140psi For initial set and mixing Instructions see technical data sheet.
ProSpec Magna 100 Grout (formerly Bonsal Magna 100)	Bonsal American Charlotte, NC St. Albans, WV White Marsh, MD	Initial set 14 min. 2 hr. strength 3770 psi 50 lb bag mixed with 30 lbs #8’s and 4.2 lb. Water
*Rescon 424 Polymer	Symons Corp Des Plaines, IL	Polymer liquid with a MMA base and concrete powder catalyst. Extended 100% with #8’s. 2hr. strength 7560 psi. Can be applied to moisture and frost-free surfaces.
*Set 45	BASF Construction Chemicals, LLC Shakopee, MN	Initial set- 9 min extended 25lbs #8's stone/ 50 lbs bag/ 4.17 lbs water 2 hrs strength- 6040 psi.
SET 45 HW	BASF Construction Chemicals, LLC Building Systems	2 hr. psi strength – 4,000, 6 hr. psi strength – 4,060 28 day psi strength – 6,350 For initial set and mixing instructions, see technical data sheet. 50 lb. bag mixed with 30 lbs. #8 stone and 4.16 lbs. of water.
SikaQuick 2500	Sika Corporation	Initial Set – 18 minutes 2 hr. strength – 4120 psi, 6 hr. strength – 4970 psi 28 day strength – 5550 psi 50 lb bag mixed with 30 lbs. #8’s & 5.5 pints water

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS

Very Rapid (2500psi in 2 hours)

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Quikrete Commercial Grade FastSet DOT Mix	The Quikrete Companies	Initial Set – 30 minutes 2 hr. strength – 4630 psi 6 hr. strength – 5590 psi 28 day strength – 7020 psi 55 lb. bag mixed with 25 lbs. #8 stone and 8.33 lbs. water 100% Extension 2 hr. strength – 2630 psi 6 hr. strength – 4160 psi 28 day strength – 9440 psi 55 lb. bag Quikrete mixed with 55 lbs. #8 stone and 8.33 lbs. water
Express Repair	Euclid Chemical	Initial Set 28 min 2 hr. strength 3540 psi 6 hr. strength 3800 psi 28 day strength 9945 psi 50 lb bag mixed with 50 lbs #8's and 6.2 lbs water
10-60 Rapid Mortar	BASF Construction Chemicals, LLC Shakopee, MN	Initial set- 15 min extended Rapid Mortar with 30 lbs #8's per 50 lbs bag, 2 hrs strength- 3820 psi
*Transpo T-17 WWB	Transpo Industries, Inc. New Rochelle, NY	Polymer liquid with a MMA base and powder catalyst. Extended 100% with #8's. 2hr. strength 7830 psi. Can be applied to moisture and frost-free surfaces.
Unisorb Concrete Repair Compound	Unisorb, Inc. Jackson, MI	Initial set- 15 min extended 25 lbs #8's/50 lbs water/50 lbs bag, 2 hrs strength -2660 psi.
Versaspeed	The Euclid Chemical Co.	Initial Set – 12 minutes 2 Hr. Strength – 2700 psi 6 Hr. strength – 3830 psi 28 day strength – 8840 psi 50 lb. bag mixed with 25 lbs. # 8 stone and 3.5 lb. water.

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS**Rapid (2000psi in 2 - 6 hours)**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
10-61 Rapid Mortar	BASF Construction Chemicals, LLC Building Systems	2 hr. psi strength – 1,780 6 hr. psi strength – 3,160 28 day psi strength – 6,180 For initial set and mixing instructions, see technical data sheet. 50 lb. bag mixed with 50 lbs. #8 stone and 6.77 lbs. of water.
Belzona Magma Quartz*	Belzona, Inc. 2000 NW 88 Ct. Miami, Florida 33172	Strength- 7750 psi in 4 hrs Epoxy concrete patching
D.O.T.Line	CeraTech, Inc.	2 hr. strength – 2,280 6 hr. strength – 3,680 28 day strength – 7,780 For initial set and mixing instructions see technical data sheet.
Emaco T-415	BASF Construction Chemicals, LLC Shakopee, MN	Initial set- 18 min extended 45% with #8's/25 kg bag/ 1.9 L water, 2 hrs strength-10.5 MPa, 4hrs strength-15.3 MPa 6hrs strength-18.4 Mpa 28day strength-68.0 MPa
Euco Speed	Euclid Chemical Co. Cleveland, OH	Initial set- 23min 159 lbs Euco Speed/18.7 lb water, 6 hrs strength-2100psi, 24 hrs strength- 5340psi
FX-928FR Rapid Summer	Fox Industries Baltimore, MD	Initial set -17 min extended 30lbs#8's / 50 lbs bag w/ 6.9 lbs. water/ bag 6 hrs strength- 3730psi, 28day strength- 5510psi
HD-25 Polymer Modified Mortar for Vertical &	Dayton Superior Oregon, IL	Initial Set – 21 Min., 6 hour strength 2720 psi, 24 hour Overhead strength 4600 psi, 7 day bond strength 3050 psi.
High Power D.O.T. Grade Repair Mortar	U. S. Concrete Products	Initial Set 33 min. 2 hr. strength – 2250 psi 6 hr. strength – 3450 psi 28 day strength – 7210 psi 50 lbs. bag mixed with 30 lb. 8's and 8.33 lb. Water

* Polymer concrete patching materials - non-cementitious - cannot be overlaid with epoxy EP-5Mod

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS

Rapid (2000psi in 2 - 6 hours)

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Mainline	CeraTech, Inc.	6 hr. strength – 3,130 28 day strength – 6,650 For initial set and mixing instructions see technical data sheet.
Pavemend EX	CeraTech, Inc.	2 hr. strength – 3010 psi 6 hr. strength – 4000 psi 28 day strength – 6570 psi For initial set and mixing instructions, see technical data sheet.
Pavemend EXH	CeraTech, Inc.	6 hr. strength – 3720 psi 28 day strength – 5340 psi For initial set and mixing instructions, see technical data sheet.
Planitop X	MAPEI Corp.	2 hr. strength – 2,330 psi 6 hr. strength – 2,960 psi 28 day strength – 4,890 psi For initial set and mixing instructions, see technical data sheet.
ProSpec Premium Patch 200 (formerly Pre-Blend Premium Patch)	Bonsal American (formerly Pre-Blend Products, Inc.)	Initial Set – 24 minutes 2 hr. strength – 2900 psi 6 hr. strength – 3320 psi 28 day strength – 5150 psi 50 lb. Bag mixed with 40 lbs. #8's and 6.77 lb. Water
Rapid Set Mortar Mix	CTS Cement Manufacturing. Corp. Fredericksburg, VA	Initial Set – 28 minutes 2 hr. strength – 2430 psi 6 hr. strength – 2770 psi 28 day strength – 4790 psi
SikaSet Roadway Patch	Sika Chemical Corp.	Initial Set – 64 min. 2 hr. Strength 2340 psi 28 day strength 6990 psi Mixed 6.6 lbs. water / 50 lb bag

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS**Slow (2000psi in 6-24 hours)**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Conpatch Vertical and Overhead Polymer Patching	Conspec Marketing Co. Kansas City, KS	Vertical and overhead patching material initial set- 31min water/mix ratio-.0125 6 hrs strength- 1330 psi, 24 hrs strength-3190 psi, 28day strength- 4480psi
DuralTop Flowable Mortar	Tamms Industries Kirkland, IL	Polymer modified Flowable mortar Initial set 97 min. 1 day strength 2380 psi, 28 day strength 5730 psi Do not use limestone aggregate. Do not exceed 35 lbs. of aggregate.
Emaco S66-CI	BASF Construction Chemicals, LLC Shakopee, MN	Initial set- 428 min 24hrs strength-3070 psi 28day strength-7370 psi water/mix 0.091
Emaco S88-CI	BASF Construction Chemicals, LLC Shakopee, MN	Initial set- 304 min 24hrs strength-4840 psi 28day strength-11400 psi water/mix 0.151
Five Star Vertical Patch	Five Star Products, Inc. Fairfield, CT	vertical and overhead patching material, initial set 13 min., water/mix 0.125 6 hr strength 930 psi 28 day strength 7270 psi
Hi-Cap	Kaufman Products Baltimore, MD	Initial set-5 min. 10.4 lbs. water per 50 lb. unit. 1 day strength-2025 psi, 7 day strength- 6000 psi
Metro Mix 240 AE	Bonsal American Charlotte, NC	1 Day Strength – 3350psi For initial set and mixing instructions see technical data sheet
Octocrete	IPA Systems Philadelphia,PA	Initial set- 133 min 24 hrs strength(6x12)- 2546psi, 7 day strength(6x12)- 4408psi
*Patch-It	A-1 Distribution Fayetteville, NC	Epoxy mortar patching kit Strength 24 hrs. – 2, 220 PSI Strength 48 hrs. – 3,330 PSI Strength 72 hrs. – 5,300 PSI *polymer concrete patching material – non-cementitious- cannot be overlaid with epoxy EP-5 modified

HYDRAULIC CEMENT CONCRETE PATCHING MATERIALS**Slow (2000psi in 6-24 hours)**

<u>Product</u>	<u>Manufacturer</u>	<u>Description</u>
Sika-Top 122 Plus	Sika Chemical Corp. Lyndhurst, NY	Polymer modified, Portland cement Initial set- 78 min. 1 day strength-2540 psi, 28 day strength- 5740 psi extended with 42 lbs. No. 8.
Sika-Top 123 Plus	Sika Chemical Corp Lyndhurst, NY	Latex modified, Portland cement Initial set- 42 min. 1 day strength- 3820 psi, 28 day strength- 6810 psi
Tigercrete	Garon Products Inc. Wall, NJ	Initial set 5-10 min, 6 qts water /50 lbs bag, 24 hrs compressive strength- 3390 psi
Verticoat	The Euclid Chemical Co. Cleveland, OH	Polymer modified vertical and overhead patching material. Initial set 10 min., 6 hour strength 1770 psi, 24 hour strength 3260 psi, 28 day strength 5720 psi.

(32) STABILIZERS FOR ASPHALT MIXTURES – (Asphalt Lab)

<u>Product</u>	<u>Minimum</u>	<u>Manufacturer</u>
Gilsonite HMA Modifier	Replaces 8% by weight of asphalt	American Gilsonite Co. Ziegler Chemical & Mineral Co
Trinidad Lake Asphalt	Replaces 25% by weight of asphalt	Trinidad Asphalt Co. of America
Bonfibers	6 pounds per ton of total mix	Kapejo, Inc
Petroflex 402-1N	6 pounds per ton of total mix	GRC Materials Co.
Fiber Pave 3010	6 pounds per ton of total mix	Fiberized Products

(33) SHOTCRETE/GUNITE MIXTURES – (Physical Lab)

<u>Product</u>	<u>Manufacturer</u>
Eucoshot Silica fume, modified shotcrete	Euclid Chemical Co. Cleveland, OH
Eucoshot F Silica fume, modified with polypropylene reinforcing fibers.	Euclid Chemical Co. Cleveland, OH
Eucoshot FM Silica fume, modified with polypropylene fibers	Euclid Chemical Co. Cleveland, OH
Eucoshot Supreme Latex modified shotcrete	Euclid Chemical Co. Cleveland, OH
FX-288 Micro Silica Fiber Reinforced Shotcrete Mortar	Fox Industries Baltimore, MD
ProSpec Shotcrete 300 Portland cement, well graded aggregates, microsilica and special additives to improve adhesion and reduce rebound.	Bonsal American Charlotte, NC St. Albans, WV White Marsh, MD
ProSpec Shotcrete 300V Portland cement, well graded aggregates microsilica and polypropylene fibers.	Bonsal American Charlotte, NC St. Albans, WV White Marsh, MD
Quikrete Shotcrete MS With polypropylene fibers	The Quikrete Companies Lawrenceville, GA
ShotPatch 21F Silica fume enhanced, fiber reinforced shotcrete	BASF Construction Chemicals, LLC Shakopee, MN
SikaCem 103	Sika Corp. Richmond, VA
SureShot Shotcrete Portland cement, specially proportioned aggregates microsilica and polypropylene fibers.	Kaufman Products, Inc. Baltimore, MD

(34) CONCRETE PRECAST PRODUCERS ON QA/QC PROGRAM- (Quality Assurance)

The following manufacturers of concrete precast products have VDOT approved Quality Assurance programs as outlined in the instructions. For additions or deletions to this list contact the District Materials Engineer or the Materials Division Physical Laboratory.

Manufacturer	Plant Location	Monitored By	Probation Start Date
A. C. Miller	Blairsville, PA		
A.C. Miller (*p)	Spring City, PA		3/24/11
Americast, Inc.	Ashland, VA		
Americast, Inc.	Harrisonburg, VA		
Americast, Inc.	Martinsburg, WV		
Americast, Inc. (Clear Flow)	Waynesboro, VA		
Americast, Inc. (Pipe)	Ashland, VA		
Bolton Concrete Products	Johnson City, TN		
Century Concrete, Inc.	Virginia Beach, VA		
Cherry Precast	Rural Hall, NC		
Coastal Precast Systems, LLC	Chesapeake, VA		
Concrete Safety Systems	Bethel, PA		
Concrete Specialties, Inc. (CSI) (*P)	Roanoke, VA		
Contractors Precast Corp.	Davidsonville, MD		
Curtis Contracting, Inc.	West Point, VA		
D. W. Lyle, Corp.	McKenney, VA		
DOT Concrete and Precast L.L.C.	Pennington Gap, VA		
Eastern Vault	Princeton, WV		
Faddis Concrete Products (*P)	Downingtown, PA		
Faddis Concrete Products (*P)	Kutztown, PA		
Faddis Concrete Products (*P)	New Castle, PA		3/14/11
Foltz Concrete Pipe(*P)	Winston Salem, NC		
Hanson Pipe and Precast	Chesapeake, VA		
Hanson Pipe and Precast(*P)	Dunn, NC		
Hanson Pipe and Precast	Hanover Plant, Hanover, VA		
Hanson Pipe and Precast	Jessup, MD		
Hanson Pipe and Precast	Manassas, VA		
Hanson Pipe and Precast(*P)	Oakboro, NC		5/13/10
Hanson Pipe and Precast	Roanoke, VA		
Hanson Pipe and Precast	Salem, VA		
Hanson Pipe and Precast	Southside Plant, Richmond, VA		
Heartland Concrete	Petersburg, VA		5/13/10
J & R Slaw, Inc.	Leighton, PA		
K. J. Williams Concrete Co., Inc.	Cresaptown, MD		
M & M Precast, Inc. (*P)	North East, MD		
Mack Industries, Inc.	Elm, NC		
Miscellaneous Concrete Products	Roanoke, VA		
Nansemond Precast Concrete Co.	Suffolk, VA		
Oldcastle Precast (*P)	Greensboro, NC	Central Office	
Oldcastle Precast (*P)	Fuquay-Varina, NC	Central Office	
Pawnee Precast, Inc. (*P)	Coolville, OH		
Permatile Concrete Products Co.	Bristol, VA		
Rinker Materials	Frederick, MD		
Rinker Materials	Middletown, DE		
Rinker Materials	Thomasville, NC		
Rockingham Precast	Harrisonburg, VA		

Manufacturer	Plant Location	Monitored By	Probation Start Date
Ross Prestress	Bristol, TN		
Rotondo Precast	Fredericksburg, VA		
Smith Carolina Corporation	Reidsville, NC		
Smith Midland Corporation	Midland, VA		
Stonewall Precast, Inc.	Woodstock, VA		
Terre Hill Concrete Products (*P)	Lebanon, PA		
Tindall Corporation (*P)	Spartanburg, SC		
Winchester Building Supply Co.	Winchester, VA		
Wyoming Concrete	Wyoming, DE		

(*P) = Probationary

(35) FIBERS FOR USE IN HYDRAULIC CEMENT CONCRETE – (Physical Lab)**Blended Copolymer**

Supplier	Phone Number
PSI Packaging, Inc. (MaxTen)	(706) 638-0055
PSI Packaging, Inc. (MaxTen Super Mix)	(706) 638-0055

Steel Fibers

Supplier	Phone Number
Bekart Wire Co (RC 80/60 BN)	(770) 514-2286, Contact: Heidi Helmink
Bekart Wire Co (RC 65/60 BN)	(770) 514-2286, Contact: Heidi Helmink
Maccaferri Inc	(301) 223-6910
Polytorx, LLC (Helix)	(734) 322-2114

Polypropylene Fibers

Supplier	Phone Number
Advanced Fiber Solutions, Inc. (Fibrillated)	(800) 351-5410
Advanced Fiber Solutions, Inc. (Monofilament)	(800) 351-5410
Advanced Fiber Solutions, Inc. (Ultimax Structural Fibers)	(800) 351-5410
Durafiber	(804) 371-7252
FiberMesh	(512) 261-4600
Forta	(412) 458-5221
The Euclid Chemical Company (Monofil)	(800) 321-7628
The Euclid Chemical Company (Fibrillated)	(800) 321-7628
W. R. Grace	(617) 876-1401

Polyolefin

Supplier	Phone Number
3M	

Polyester

Supplier	Phone Number
The Euclid Chemical Company (Super 76)	(800) 321-7628

***Approval does not grant permission to reduce steel requirements.**

(36) PRE-FABRICATED EDGE DRAINS – (Mohamed Elfino)

<p>12" AdvanEdge Pipe</p>	<p>Advanced Drainage Systems, Inc. 12137 Deer Haven Road Marriottsville, MD 21104 1 – (443) 463-5814</p>
<p>SITEDRAIN Strip 6400 and 6400T (Formally Known as Akwadrain Strip Drain)</p>	<p>American Wick Drain Corp. 1209 Airport Road Monroe, NC 28110 1-(800) 242-9425</p>
<p>TerraDrain Strip Drain Style "T"</p>	<p>WEBTEC, Inc. P.O. Box 19729 Charlotte, NC 28219 1-(800) 438-0027</p>

(37) WALL DRAIN SYSTEMS – (Soils Lab)

SiteDrain 184 (Formally known as Amerdrain 500)	American Wick Drain Co. 1209 Airport Road Monroe, NC 28110
Amerdrain 520	American Wick Drain Co. 1209 Airport Road Monroe, NC 28110
CCW MiraDRAIN 6000	Carlisle Coatings & Waterproofing Inc. 900 Hensley Lane Wylie, TX 75098
CCW MiraDRAIN 6200	Carlisle Coatings & Waterproofing Inc. 900 Hensley Lane Wylie, TX 75098
CCW MiraDRAIN 8000	Carlisle Coatings & Waterproofing Inc. 900 Hensley Lane Wylie, TX 75098
CCW MiraDRAIN 9000	Carlisle Coatings & Waterproofing Inc. 900 Hensley Lane Wylie, TX 75098
Drain-It 500	ACF, Inc. 1801 Willis Road Richmond, VA
Monsanto Drainage Mat Hydraway	Monsanto, Co. 800 N. Lindbergh Blvd. St. Louis, MO 63167
TerraDrain 101	Webtec, Inc. PO Box 19729 Charlotte, NC 28219
TerraDrain 203	Webtec, Inc. PO Box 19729 Charlotte, NC 28219

(38) PIPE REHABILITATION SYSTEMS - (Pipe & Drainage Committee)

Blue-Tek	Reline America, Inc. 116 Battleground Ave. Saltville, VA 24370
CIPP, COR72-AT-470	TriState Utilities Utility Rehabilitation Specialists 2111 Smith Avenue Chesapeake, VA 23320
Contech A-2 Contech A-2000	Contech Construction Prod. Inc. 13801 Village Mill Drive, Suite 104 Midlothian, Virginia 23113
Culvert Renew HDPE Liner	Water Works Supply of Virginia 8338 Old Richfood Road Mechanicsville, VA 23116
Danby (Up to 42 in. in diameter. Large sizes should have design calculations submitted for review)	Danby of North America 100 Church Lane Baltimore, MD 21208
Easy Liner Slipliner	Aqueous Sales, Inc. 136530 Hailsham circle Midlothian, VA 23113
Global Liner	Global Pipeline Systems 176 York Rd., Suite 5 Box 5 Warminster, PA 18974
Insituform	Insituform Technologies, Inc 17988 Edison Ave Chesterfield, MO 63005 Contact: Pat Melton Office: (803) 356-6216 / Fax: (803)356-6219
Lamson Vylon Slipliner	Waterpro, Inc. 8910 Burge Ave. Richmond VA 23236
N-12 P.E. Pipe	Advanced Drainage Systems, Inc. 5950 Fairview Rd. Suite 403 Charlotte, NC 28210
Perma-Lateral Relining System	Perma-Liner Industries, Inc. 18548 US Highway 19 N. Clearwater, FL 33764
National Liner	American Water Services Underground Infrastructure, Inc. 4143 Weaver Court Hilliard, Ohio 43026
Perma-Liner Point Repair System	Perma-Liner Industries Inc. 18548 US Highway 19 N. Clearwater, FL 33764
Plexco/Spirolite	J. P. McElvenny Co. Inc. Richmond, VA
PolySpray Full Structural	Hydra Tech Engineered Products 10448 Chester Rd Cincinnati, OH 45215

Poly-Triplex Liner System	Poly-Triplex Technologies, Inc. PO Box 18167 Panama City Beach, FL 32417
Premier-Pipe USA	Am-Liner East, Inc. 1402 Shepard Drive Sterling, VA 20164
Sekisui SPR	Sekisui SPR Americas, LLC 1045 Research Center Atlanta Dr., Suite F Atlanta, GA 30331
Superliner	Inner-View 1140 Kempsville Rd. Chesapeake, VA 23320
Snap-Tite (Up to 42 in. in diameter. Large sizes should have design calculations submitted for review)	H.D. Polyethylene Pipe Systems, Inc. P.O. Box 5253 Pinehurst, NC 28374 P E Sales, Inc. P.O. Box 461 Perry Hall, MD 21128 Contact: Andrew Cary, PE 410-733-0748
Terra Verde CIPP	Tri-State Utilities 211 Smith Ave. Chesapeake, VA 23320
U-Liner	American Water Services Underground Infrastructure, Inc. 4143 Weaver Court Hilliard, Ohio 43026
Ultraliner	Ultraliner P.O. Box 3630 Oxford, AL 36203 P.O. Box 5253 Pinehurst, NC 28374
Ultra-Rib	Aqueous Sales, Inc. 136530 Hailsham Circle Midlothian, VA 23113

Styrene Based Liner Products

- Effluent from the curing process will only be allowed to discharge directly to the sanitary sewer or pumped to above-ground containers for subsequent direct discharge to the sanitary sewer; no effluent shall be released exterior to the rehabilitated pipe or containers.
- The Contractor shall assure that the discharge of process water/condensate from the installation of any cured in place liner products to a Publicly Owned Treatment Works (POTW) conforms with the Industrial Pretreatment Program requirements of that POTW. In the absence of an Industrial Pretreatment Program, the Contractor shall notify, and obtain approval from, the POTW prior to any discharges and comply with all the requirements of the POTW receiving the discharge. If the POTW does not allow the discharge or the Contractor cannot meet the pre-treatment requirements, the Contractor shall collect and dispose of the material at a private industrial wastewater treatment facility. Irrespective of disposal method, the Contractor shall provide documentation of the POTW discharge approval or waste disposal documentation to the VDOT Area Construction Engineer.

- The Contractor is responsible for reporting and taking the appropriate corrective actions for any accidental releases of CIPP waste or CIPP effluent into the environment.

(39) WICK DRAINS – (Soils Lab)

Amer-Drain 407	American Wick Company 1209 Airport Road Monroe, NC 28110
Amer-Drain 407F	American Wick Company 1209 Airport Road Monroe, NC 28110
Amer-Drain 417	American Wick Company 1209 Airport Road Monroe, NC 28110
Amer-Drain 607	American Wick Company 1209 Airport Road Monroe, NC 28110
Mebra-Drain MD-88	Nilex Corporation 15171 E. Fremont Drive Englewood, CO 80112
Mebra-Drain MD-7407	Nilex Corporation 15171 E. Fremont Drive Englewood, CO 80112
U. S. Wick Drain	Palmatier Construction Co. Inc. 8867 King Road PO Box 442 Leland, NC 28451
Alidrain	Burcan Industries 111 Industrial Dr. Suite 19 Whitby, Ontario, Canada L1N5Z9
Geotech Geoinclusion Geotech drainage board to be use with Geoinclusion only.	Geotech Systems Corporation Dulles, VA

(40) QUALIFIED SYSTEM W PAINTS – (Chemistry Lab)

The following paint systems have been prequalified for use, but the manufacturer must provide certification for each lot.

COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC (lbs./Gal.)
#101 Primer	3356 - 2 Acrylic	Brown	2.0 – 3.0	1.17
#102 Intermediate	3356 - 1 Acrylic	White	2.0 – 3.0	1.02
#103 Finish	3356 - 3 Acrylic	As specified	2.0 – 3.0	1.17
MANUFACTURER – Carboline Company, (Contact) Mechanicsville, VA (804) 304-3113 Approved 7/10				

COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC (lbs./Gal.)
#101 Primer	W-103 Water-Guard	#595-30045	2.0 – 4.0	1.46
#102 Intermediate	W-112 Water-Guard	White	2.0 – 4.0	1.29
#103 Finish	W-XXX Water-Guard	As specified	2.0 – 4.0	2.01
MANUFACTURER – Elite Coatings, Gordon, GA (478) 628-2111 Approved 1/97				

COAT	PAINT	COLOR	DRY FILM THICKNESS (mils)	VOC (lbs./Gal.)
#101 Primer	B66NW1 Acrylic	Brown	3.0 – 6.0	1.79
#102 Intermediate	B66WW8 Acrylic	White	3.0 – 6.0	1.46
#103 Finish	B66XXXXX Acrylic	As specified	3.0 – 5.0	1.87
MANUFACTURER – Sherwin Williams, Richmond, VA (804) 387-4050 Approved 4/09				

**(41) SUPERPAVE GYRATORY COMPACTORS FOR ASPHALT CONCRETE MIXTURES –
(Asphalt Lab)**

INTERLAKEN TECHNOLOGY CORPORATION Gyratory Compactor, Model GYR-001
PINE INSTRUMENT COMPANY Gyratory Compactor, Model AFGC125X
PINE INSTRUMENT COMPANY Gyratory Compactor, Model AFG1 SGC
TEST QUIP INC. (Gilson) Brovold Gyratory Compactor, No Model Number
TROXLER ELECTRONIC LABORATORIES, INC. Gyratory Compactor, Model 4140

(42) HIGH DENSITY POLYETHYLENE (HDPE) PIPE PRODUCERS– (Quality Assurance)

<p>Advance Drainage Systems/Hancor (ADS/Hancor)</p> <p>Bessemer City, NC Buena Vista, VA Findlay, OH (Olive St.) Findlay, OH (TR 172) Logan Township, NJ</p>	<p>Advance Drainage Systems/Hancor (ADS/Hancor)</p> <p>Ludlow, MA Muncy, PA Mebane, NC Springfield, VT Waverly, NY Wooster, OH</p>
<p>Baughman Tile Co. Paulding, OH</p>	<p>Blue Diamond Corrugated (Formerly: Blue Diamond Industries, LLC) Roseboro, NC</p>
<p>Crumpler Plastic Pipe, Inc. Roseboro, NC</p>	<p>Haviland Drainage Products Haviland, OH</p>
<p>JM Eagle</p> <p>Cochranon, Pennsylvania Wharton, Texas</p>	<p>Quality Culvert Incorporated Astatula, FL Athens, AL</p>
<p>Lane Enterprises Shippensburg, PA Wytheville, VA</p>	<p>Emporia, VA Marshall, TX</p>
<p>Soleno Inc. Ibberville, QC McAdam, NB Haggersville, Ont</p>	<p>Southeast Culvert, Inc. Winder, GA</p>

(43) APPROVED YELLOW (LEAD FREE) THERMOPLASTIC PRODUCTS
- (Chemistry Lab)

The following thermoplastic formulations have been evaluated and found to have satisfactory initial nighttime color. Note that, as part of materials acceptance, all production batches will be tested for comparison with the originally submitted samples.

Ennis Paint (formerly Avery Dennison) (formerly Stimsonite)

Product No. 884188 (formerly YID-5GX-VA-DCA)
Product No. 884189 (formerly YID-5GX-VA-HRB)
Product No. 884186 (YID-5GX-VA-DCC)
Product No. 884187 (YID-5GX-VA-HRC)

Swarco

Product No. Swarolux 98 STR-115
Product No. Swarolux 98 STR-116
Product No. VYALF001
Product No. VYALF002

Ennis Paint (formerly Cataphote)

Alkyd Extrude (Yellow L. F. Thermoplastic)

Product No. 32101462
Product No. 32101464
Product No. 32101466
Product No. 32101468
Product No. 32101463

Alkyd Spray (Yellow L. F. Thermoplastic)

Product No. 32102462
Product No. 32102464
Product No. 32102466
Product No. 32102468

Ennis Paint (formerly LaFarge Road Marking and LDI)

Product No. E E VA AL F Y 99 1 (Made in Eastpoint, Ga.)
Product No. P E VA AL F Y 99 1 (Made in Pennsdale, Pa.)
Product No. E E VA AL F Y 99 2 (Made in Eastpoint, Ga.)
Product No. P E VA AL F Y 99 2 (Made in Pennsdale, Pa.)
Product No. E E VA AL F Y 99 3 (Made in Eastpoint, Ga.)
Product No. P E VA AL F Y 99 3 (Made in Pennsdale, Pa.)
Product No. EEVAAAALFY998
Product No. EEVAAAALFY04
Product No. EEVAAAALFY06

Crown Technology

Product No. Ecotherm 06-YAX-AACF
06-YAX-01CF
06-YAX-00CF

Ennis Paint

Product No. Va-AK-SX-YNL-1

s.Dobco

Product No. Y1X0605
Y1S0605
Y1X0615
Y1X0625

(44) APPROVED Q/A SUPPLIERS LIST – (Quality Assurance)**Note: Approval does not include water and sewer line items.**

Supplier	Location
ACF Environmental	Chantilly, VA
ACF Environmental	Chesapeake, VA
ACF Environmental (*P)	Harrisonburg, VA
ACF Environmental	Richmond, VA
ACF Environmental	Manassas, VA
ACF Environmental	Staunton
A. H. Harris & Sons, Inc	Bristol, VA
A. H. Harris & Sons, Inc	Charlottesville, VA
A. H. Harris & Sons, Inc	Hampton, VA
A. H. Harris & Sons, Inc (Saunders Oil.)	Richmond, VA
A. H. Harris & Sons, Inc (Virginia Construction Supply.)	Roanoke, VA
Chesterfield Trading Co. Inc.	Richmond, VA
Colonial Construction Materials, Inc	Oilville, VA
Curtis Contracting, Inc.	West Point, VA
Eastern Supply Inc. (*p)	Winchester, VA
Ferguson Waterworks	Chantilly, VA
Ferguson Waterworks (*p)	Chesapeake, VA
Ferguson Waterworks	Danville, VA
Ferguson Waterworks	Forest, VA
Ferguson Waterworks	Newport News, VA
Ferguson Waterworks (*p)	Williamsburg, VA
Form Services, Inc.	Baltimore, MD
GeoProducts, LLC	Kilmarnock, VA
Interstate Construction Product, Inc.	Norton, VA

Supplier	Location
Jett & Company (*p)	Newport News, VA
Jett & Company (*p)	Norfolk, VA
Landscape Supply, Inc. (*p)	Richmond, VA
Landscape Supply, Inc. (*p)	Roanoke, VA
Public Drainage Supply, Inc. (*P)	Blountville, TN
TransCon Supply	Harrisonburg, VA
White Cap Construction Supply	Richmond, VA
White Cap Construction Supply (*P)	Springfield, VA
Whitlock Brothers, Inc.	Norfolk, VA
Whitlock Brothers, Inc.	Toano, VA
Whitlock Brothers, Inc.	Newport News, VA
Virginia Road and Bridge Supply, Inc.	Salem, VA

(*p) = probationary

(45) QUALIFIED WOOD TREATMENT PLANTS – (Chemistry Lab)

The following wood treatment plants are approved to provide treated lumber to the Virginia Department of Transportation. They are required to provide certification documentation with each order.

If a wood treatment plant is not on this list they must be approved by meeting the requirements listed in the VDOT, Manual of Instructions, Section 204.29. They are required to provide certification documentation with each order. (Allow a minimum of two weeks for sampling and testing.)

Wood Treatment Plant Preservatives	Telephone #	Preservative
Acme Wood Preserving , Princeton, WV	(304) 425-8769	CCA, Creosote
Albemarle Wood Preserving, Albemarle, NC	(704) 982-2516	CCA
Amelia Lumber Co. Inc., Amelia, VA	(804) 561-2155	CCA
Atlantic Wood Industries, Newsome, VA	(757) 654-9462 or (757) 397-2317	CCA
Bestway South Inc., Stony Point, NC	(704) 585-6373	CCA
Stella-Jones Corp.-(formerly Burke-Parson-Bowlby, Reedy, WV)	(304) 927-1250 ext. 17	CCA, Creosote
Carolina Pole, Inc. Eutawville, SC	(803) 492-7728	CCA
Carolina Pole, Inc. Leland, NC	(910) 371-3131	PENTA, CCA
East Tennessee Forest Products, Moshien, TN	(423) 422-7134	CA-C
Tri-State Lumber, Fulton, MS- (affiliated with East Tennessee)	(662) 862-2125	CCA
Durable Wood Preservers, Charlotte, NC	(704)-537-3113	CCA
Fortress Wood Products, Henderson, NC	(252) 492-3046	CCA
Gladys Timber Products, Gladys, VA	(434) 283-4744	CCA
Long Life Treated Wood, Inc., Hebron, MD	(800) 451-3137	CCA, CA-C
Madison Wood Preservers Inc., Madison, VA	(800) 844-8383	CCA, CA-C
Midwest Wood Treating, Inc., Norwalk, OH	(419) 668-1610	ACQ,CCA
North-South Wood Preserving, North, SC	(803) 492-7728	PENTA
Reliance Treated Wood, Federalsburg, MD	(302) 629-8964	CCA
Rocky Top Wood Preservers, Hagerstown, MD	(301) 791-5518	CCA
Valley Timber Sales, Troy, VA	(540) 832-3646	CCA
Wood Preservers Inc., Warsaw, VA	(804) 333-4022	CCA, CA-C

Notes:

PENTA treatment is pentachlorophenol and is, also, called PCP.

Dispersed or micronized Copper Azole (MCA) has not been standardized by the American Wood Preservers Association (AWPA) and is not acceptable for VDOT use.

Treatment plants that are approved for Copper Azole-B (CA-B) treatment and that have moved to Copper Azole-C (CA-C) treatment, have maintained their qualified status as CA-C.

Plants formerly approved to treat with ACQ or CA-B that are now using only MCA, are no longer listed as qualified for the ACQ or CA-B treatments.

The Burke-Parson-Bowlby Plant in, Stanton, KY is no longer in operation.

(46) SIGN SHEETING AND INK QUALIFIED PRODUCTS LIST – (Chemistry Lab)

The following products have been prequalified, but the manufacturer must supply certification for each lot.

Permanent Signs - to include background and all positive contrast letters, numerals, symbols, arrows, and borders on positive contrast guide signs, Vertical panels (Group 2 Channelizing Devices), and the "STOP" side of sign paddles:			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
Avery Dennison	T-6500	White	SSM-98-15
Avery Dennison	T-6501	Yellow	SSM-96-009
Avery Dennison	T-6507	Green	SSM-98-15
Avery Dennison	T-6508	Red	SSM-98-15
Avery Dennison	T-5509A	Brown	SSM-01-11
Avery Dennison	T-6505	Blue	SSM-96-009
Ink:			
Avery Dennison	4930 series	Black, red, blue, green, yellow	
	4930 series	Clear coat (required under warranty)	
Inks shall be specified by the sheeting manufacturer.			

Manufacturer	Product No.	Color	NTPEP Submittal No.
Nippon Carbide	N812	White	SSM-97-7
Nippon Carbide	N512	White	SSM-97-7
Nippon Carbide	N804	Yellow	SSM-97-7
Nippon Carbide	N808	Green	SSM-97-7
Nippon Carbide	N805	Red	SSM-97-7
Nippon Carbide	N806	Blue	SSM-97-7
Nippon Carbide	N809	Brown	SSM-97-7
Ink:			
Nippon Carbide	3800N series		
Inks shall be specified by the sheeting manufacturer			

Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3930	White	SSM-04-1061
3M	3931	Yellow	SSM-04-1062
3M	3932	Red	SSM-06-1148
3M	3935	Blue	SSM-05-1079
3M	3937	Green	SSM-04-1063
3M	3939	Brown	SSM-07-1247
3M	3990	White	SSM-04-1052
3M	3992	Red	SSM-99-705
3M	3997	Green	SSM-04-1057
3M	3995	Blue	SSM-04-1056
3M	4081	Fluorescent Yellow	SSM-05-1107
3M	4090	White	SSM-05-1100
3M	4091	Yellow	SSM-05-1103
3M	4092	Red	SSM-05-1104
3M	4095	Blue	SSM-05-1105
3M	4097	Green	SSM-05-1106
3M	4099	Brown	SSM-07-1246
Ink:			
3M	882	Traffic Sign Red	
3M	883	Blue	
3M	884	Yellow	
3M	885	Black	
3M	886	Orange	
3M	887	Brown	
3M	888	Green	
3M	891	Thinner	
3M	893	Violet	
3M	894	Lemon Yellow	
3M	895	Magenta	
Inks shall be specified by the sheeting manufacturer			

Cones, tubular delineators			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3810	White	SSM-01-03
Avery Dennison	WR-6100series	White	SSM-00-26

Drums and permanent sand barrels			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3810	White	SSM-01-03
3M	3811	Yellow	SSM-96-7
3M	3814	Orange	SSM-01-03
Avery Dennison	WR-6100series	White	SSM-00-26
Avery Dennison	WR-6100series	Orange	SSM-00-27

Traffic gates, trailer's back frame of portable changeable message signs, arrow boards and portable lights.			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	981-32	White/red	
Avery Dennison	V-5720	White/Red	
Reflexite	V82 Classic	White/Red	
Reflexite	V99 Daytime White	White/Red	
Reflexite	V92 Daybright	White/Red	

Orange construction and maintenance signs, barrier vertical panels installed on concrete traffic barrier service, rear panel of truck mounted attenuators, temporary impact attenuators (except sand barrels) and the "SLOW" side of sign paddles			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3924	Fluorescent Orange	SSM-03-1028
3M	3924 S	Fluorescent Orange	SSM-03-1038
3M	3954	Fluorescent Orange	SSM-02-26
3M	4084	Fluorescent Orange	SSM-05-1109
Ink:			
3M	885	Black	
Sheeting:			
Avery Dennison	W-7514	Fluorescent Orange	SSM-00-25
Ink:			
Avery Dennison	4930 Series	Black	
Sheeting:			
Nippon Carbide	CRG 92847	Fluorescent Orange	SSM-02-909
Ink:			
Nazdar	4930	Black	
Nikkalite	N3603	Black	
Inks shall be specified by the sheeting manufacturer			

Temporary sand barrels			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3914	Fluorescent Orange	SSM-98-13

Object markers, nose of guardrails, permanent impact attenuators (except sand barrels), standard road edge delineators, special road edge delineators, barrier delineators, interstate road edge delineators, chevron panels, bridge end panel signs (VW-13) and railroad advance warning signs.			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3990	White	SSM-99-5
3M	3991	Yellow	SSM-94-5
Avery Dennison	T-7500	White	SSM-00-766
Avery Dennison	T-7501	Yellow	SSM-01-869

Type III barricades			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	DG4-LOW	White/orange	

Pedestrian, bicycle and school crossing signs including advance signing, school portion of school speed limit signs, school bus stop ahead signs and “Share The Road” signs when used with bicycle signs			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	3983	Fluorescent yellow-green	SSM-95-4
3M	4083	Fluorescent Yellow-Green	SSM-05-1108
Ink:			
3M	885	Black	
Inks shall be specified by the sheeting manufacturer			

Roll-up signs			
Manufacturer	Product No.	Color	NTPEP Submittal No.
Sheeting:			
3M	RS-20-CW	White	MS 09195
3M	RS-24-CW	Fluorescent Orange	MS 09177
Ink:			
3M	1805	Black	
Sheeting:			
Reflexite	Marathon	White	MS 19666
Reflexite	Marathon	Fluorescent Orange	MS 19667
Ink:			
Inks shall be specified by the sheeting manufacturer			

(47) ACRYLIC PAINT FOR ALUMINUM AND GALVANIZED SURFACES – (Chemistry Lab)

<u>Manufacturer</u>	<u>Paint</u>	<u>Dry Film Thickness (DFT)</u>	<u>Color</u>
<u>Carboline Paint Co.</u> Primer: Top Coat:	Carbocrylic 120 Carbocrylic 3350	1.0 – 2.0 mils 2.0 – 3.0 mils	White As Specified
<u>Elite Coatings</u> Primer: Top Coat:	W – 186 Metal Primer Water Guard Series	3.0 mils 3.0 mils	Buff As Specified
<u>M.A.B. Paints</u> Primer: Top Coat:	HydroPrime (073-189) Seashore Enamel (024 Line)	1.5 – 2.0 mils 1.5 – 2.0 mils	White As Specified
<u>Porter Coatings</u> Primer: Top Coat:	212 DTM Acrylic 2809 Series	2.0 mils 2.5 – 3.0 mils	Red As Specified
<u>Sherwin Williams</u> Primer: Top Coat:	B71Y1 DTM Wash B66-200 Series Finish	0.7 – 1.3 mils 2.5 – 4.0 mils	Yellow – Green As Specified

Surface Preparation

All aluminum and galvanized surfaces shall be cleaned in accordance with SSPC-SP1 to remove oil, dirt, grease and any foreign matter that may be present. Secondly, the surface shall be cleaned using an acid etching solution (agreed upon by the manufacturer of the paint) to remove any aluminum oxide or zinc oxide present on the surface. Once etching is complete, the surface shall be washed with clean potable water to neutralize the acid. All of the above procedures are critical to assure proper adhesion and durability of the coating when painting either of these surfaces.

It may be necessary to sweep blast both aluminum and galvanized surfaces after cleaning the surface according to SSPC SP-1. This may be used as an alternative to acid etching. This type of surface preparation should be evaluated on a case-by-case basis and in conjunction with the manufacturer's recommendations.

(48) **APPROVED TYPE F CONSTRUCTION MARKINGS – (Chemistry Lab)**

All waterborne paint markings shall be applied at a wet film thickness of 15±1 mil and a glass bead application rate of 6 pounds per gallon.

WATERBORNE PAINT CLASS I

Manufacturer	Product No.	NTPEP Submittal No.
White		
Sherwin Williams	BP-14016	STR-97-41-AL
	BP-14019	STR-97-44-AL
	BP15652	STR-98-PA-135
	BP15622	STR-98-PA-150
	BP17312	PMM(2000PA)-170
	BP17313	PMM(2000PA)-171
	BP17316	PMM(2000PA)-174
Ennis Paint (formerly LaFarge Road Markings and Centerline)	CL-6000	STR-96-64-PA
	CL-6004	STR-96-68-PA
	CL-7018	STR-97-69-AL
	CL-8210	STR-98-PA-96
	CL-8214	STR-98-PA-100
	CL-8216	STR-98-PA-102
	CL-8218	STR-98-PA-104
	CL-8220	STR-98-PA-106
	CL-8222	STR-98-PA-108
Ennis Paint (formerly LaFarge Road Markings and Linear Dynamics)	LD96-1002	STR-96-85-PA
	LD96-1008	STR-96-91-PA
	LD971001C	STR-97-138-AL
	LD981001	STR-98-PA-158
	LD981002	STR-98-PA-159
	LD981003	STR-98-PA-160
	LD981004	STR-98-PA-161
	LD981005	STR-98-PA-162
Ennis Paint (formerly LaFarge Road Markings)	LRMOOWB-19	PMM(2000PA)-110
	LRMOOWB-20	PMM(2000PA)-111
Ennis Paint	Douglas 303-98	STR-98-PA-214
	Ennis EP200W13	STR-98-PA-17
	Ennis EP200W14	STR-98-PA-18
	Ennis EP200W16	STR-98-PA-20
	EP415W03	PMM(2000PA)-61
	EP415W04	PMM(2000PA)-62

WATERBORNE PAINT CLASS I

Manufacturer	Product No.	NTPEP Submittal No.
Yellow		
Sherwin Williams	BP-14021	STR-97-46-AL
	BP15611	STR-98-PA-139
	BP15623	STR-98-PA-151
	BP17314	PMM(2000PA)-172
Ennis Paint (formerly Linear Dynamics) and LaFarge Road Markings	LD96-1009	STR-96-92-PA
	LD981009	STR-98-PA-165
	LD981010	STR-98-PA-166
Ennis Paint (formerly LaFarge Road Markings)	LRMOOWB-31	PMM(2000PA)-122
Aexcel	72Y-AO65	STR-96-148-PA
Ennis Paint	Douglas 306-98	STR-98-PA-217
	Douglas 307-98	STR-98-PA-218
	Ennis EP200Y-15	STR-98-PA-26
	Ennis EP200Y-18	STR-98-PA-29
	EP415Y03	PMM(2000PA)-66
	EP415Y04	PMM(2000PA)-67
	EP415Y05	PMM(2000PA)-68
	EP415Y06	PMM(2000PA)-69

WATERBORNE PAINT CLASS II

Manufacturer	Product No.	NTPEP Submittal No.
White		
Sherwin Williams	BP-14016	STR-97-41-AL
	BP15652	STR-98-PA-135
	BP15622	STR-98-PA-150
	BP17312	PMM(2000PA)-170
	BP17313	PMM(2000PA)-171
Ennis Paint (formerly Centerline and LaFarge Road Markings)	CL-8214	STR-98-PA-100
	CL-8216	STR-98-PA-102
	CL-8218	STR-98-PA-104
	CL-8220	STR-98-PA-106
	CL-8222	STR-98-PA-108
Ennis Paint (formerly Linear Dynamics) and LaFarge Road Markings	LD981001	STR-98-PA-158
	LD981004	STR-98-PA-161
	LD981005	STR-98-PA-162
Ennis Paint	Douglas 303-98	STR-98-PA-214
	Ennis EP200W13	STR-98-PA-17
	Ennis EP200W14	STR-98-PA-18
	Ennis EP200W16	STR-98-PA-20
	EP415W03	PMM(2000PA)-61
	EP415W04	PMM(2000PA)-62
Yellow		
Sherwin Williams	BP-14021	STR-97-46-AL
	BP15623	STR-98-PA-151
	BP17314	PMM(2000PA)-172
Ennis Paint LaFarge Road Markings	LRMOOWB-31	PMM(2000PA)-122
Ennis Paint	Douglas 306-98	STR-98-PA-217
	Douglas 307-98	STR-98-PA-218
	EP415Y03	PMM(2000PA)-66
	EP415Y04	PMM(2000PA)-67
	EP415Y05	PMM(2000PA)-68
	EP415Y06	PMM(2000PA)-69

(49) QUALIFIED SEALERS AND TOPCOATS FOR METALLIZED SURFACES –
(Chemistry Lab)

Note: Effective with the February 2005 advertisement, all approved paint systems must not exceed the 2.8 lb/gal/ VOC requirement. Also paints manufactured after January 1, 2005 must meet these requirements if supplied to or applied in the Northern Virginia VOC Emission Control Area. This consists of the counties of Arlington, Fairfax, Loudoun, Prince William and Stafford, and the cities Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park City.

The following sealer/topcoat systems have been prequalified for use, but the manufacturer must provide certification for each lot.

Manufacturer	DFT, mils
Carboline:	
Rustbond FC	1.0-2.0
Carbothane 134 HG or 134 HS topcoat	2.0-3.0
ICI Devco Coatings:	
Pre-Prime 167	0.5-1.5
Devthane 378 topcoat	2.0-3.0
Xymax:	
Monolock PP	1.5-2.5
Bridge Finish topcoat	1.0-2.0

**(50) PERFORMANCE GRADED (PG) BINDER SOURCES ON VA ASPHALT ACCEPTANCE PROGRAM -
(Asphalt Lab)**

Code Number	Certifying Supplier	Shipping Location	Materials
10	Associated Asphalt, Inc.	Bristol, VA Associated Asphalt Bristol, LLC 10 Spurgeon Lane Bristol, VA 24203	PG 64-22 PG 70-22 PG 76-22 PMA
11	Associated Asphalt, Inc.	Roanoke, VA Associated Asphalt Roanoke, LLC 2677 Roanoke Ave., SW Roanoke, VA 24015	PG 64-22 PG 70-22 PG 76-22 PMA
12	Associated Asphalt, Inc.	Martinsburg, WV 855 Corning Way Martinsburg, WV 25401	PG 64-22 PG 70-22 PG 76-22 PMA
13	Associated Asphalt, Inc.	Greensboro, NC 100 S. Chimney Rock Road Greensboro, NC 27409	PG 64-22 PG 70-22 PG 76-22 PMA
20	Bitumar USA	Baltimore, MD Bitumar USA 6000 Pennington Ave Baltimore, MD 21226	PG 64-22 PG 70-22 PG 76-22 PMA
30	ESM Asphalt, LLC	Baltimore, MD Chevron Asphalt Terminal 1955 Chesapeake Ave. Baltimore, MD 21226	PG 64-22 PG 70-22
40	Marathon Petroleum Company, LLC	Ashland (Catlettsburg), KY Marathon Petroleum Company, LLC 11631 US Route 23 Catlettsburg, KY 41129	PG 64-22
41	Marathon Petroleum Company, LLC	Knoxville, TN 1808 Jones Street Knoxville, TN 37920	PG 64-22 & PG 76-22

Code Number	Certifying Supplier	Shipping Location	Materials
42	Marathon Petroleum Company, LLC	Winston Salem, NC Transflo Terminal Services 5025 Overdale Road Winston-Salem, NC 27107	PG 64-22
50	NuStar Asphalt Refining, LLC	Dumfries, VA NuStar Energy 18000 Cockpit Point Rd Dumfries, VA 22026	PG 64-22 PG 70-22 PG 76-22 PMA
51	NuStar Asphalt Refining, LLC	Baltimore, MD NuStar Energy 1800 Frankfurt Ave. Baltimore, MD 21226	PG 64-22 PG 70-22 PG 58-28 PG 76-22 PMA
52	NuStar Asphalt Refining, LLC	Hopewell, VA Regional Enterprises 410 Water St. Hopewell, VA 23860	PG 64-22 PG 70-22
53	NuStar Asphalt Refining, LLC	Newport News, VA 801 Terminal Avenue Newport News, VA 23607	PG 64-22 PG 70-22 PG 76-22 PMA PG 70-28 PMA
54	NuStar Asphalt Refining, LLC	Chesapeake 428 Barnes Road Chesapeake, VA 23434	PG 64-22
55	NuStar Asphalt Refining, LLC	Gloucester (Terminal #B099) King Street & Jersey Avenue Gloucester City, NJ 08030-0031 Telephone: (856) 456-6673 Terminal Manager: Ted Davis	PG 70-28
70	Valero Marketing and Supply Co.	Baltimore, MD (APEX) Baltimore APEX Terminal APEX Petroleum Petroleum Fuel & Terminal Co. Baltimore, MD 21226 Tanker: 40-2, 40-4, 475-20	PG 64-22 PG 70-22

Code Number	Certifying Supplier	Shipping Location	Materials
71	Valero Marketing and Supply Co	Richmond, VA Kinder Morgan 4110 Deepwater Terminal Rd Richmond, VA 23234	PG 64-22 PG 70-22
80	Conoco Phillips	Ergon Asphalt 3111 McClure Street Knoxville, TN 37920	PG 64-22 PG 76-22
90	Blacklidge Emulsions, Inc	Greer, SC 539 East Poinsett Street Greer, SC 29651	PG 64-22
100	J.T. Russell and Sons	Charlotte Terminal 601 North Hoskins Road Charlotte, NC 28126	PG 64-22
101	J.T. Russell and Sons	Albemarle Terminal 221 Snuggs Road Albemarle, NC 28001	PG 64-22
102	J.T. Russell and Sons	Healing Springs Terminal 18846 NC Hwy 8 Denton, NC 27239	PG 64-22
103	J.T. Russell and Sons	Branchville, VA 32420 Moore Lane Branchville, VA 23828	PG 64-22
110	Old Castle Materials	Wilmington, NC 3314 River Road	PG 64-22

**(50.1) EMULSIFIED ASPHALT SOURCES ON VA ASPHALT ACCEPTANCE PROGRAM -
(Asphalt Lab)**

Code Number	Certifying Supplier	Shipping Location	Materials
10	Asphalt Emulsion, Inc	1524 Valley Road. Richmond, VA 23222	CRS-2,CRS-2L,CQS-1H,CQS-1HLM,RC-250
11	Asphalt Emulsion, Inc	8730 Vulcan Lane Manassas, VA 20109	CRS-2,CRS-2L,CRS-2P,CQS-1H,CQS-1HLM,CSS-1H
12	Asphalt Emulsion, Inc	18000 Cockpit Point Rd Dumfries, VA 22026	CRS-1,CRS-2, CRS-2L, CSS-1h
13	Asphalt Emulsion, Inc	801 Terminal Ave Newport News, VA 23607	CRS-1,CRS-2, CRS-2L, CQS-1H, CQS-1HLM, NOVABOND
14	Asphalt Emulsion, Inc	151 Emmett Rd Dunn, NC 28334	CRS-1, CRS-2
20	Associated Asphalt Roanoke,LLC	10 Spurgeon Lane Bristol, VA 24201	CRS-2,CRS-2L
21	Associated Asphalt Roanoke,LLC	2677 Roanoke Ave, SW Roanoke, VA 24015	CRS-2,CRS-2L
31	Hammaker East Ltd, Producer Asphalt Emulsion, Inc	7700 Fort Darling Road Richmond, Va 23237	CRS-2,CRS-2L,CRS-1
32	Hammaker East Ltd, Producer Asphalt Emulsion, Inc	3450 Asiatic Ave Baltimore, MD 21226	CRS-1

Code Number	Certifying Supplier	Shipping Location	Materials
40	Blacklidge Emulsions, Inc.	539 East Poinsett Street Greer, SC 29651	CRS-1, CRS-2
50	Seaboard	3601 Fairfield Road Baltimore, MD 21226	EM-50, EM-50TT
60	Specialty Emulsions	1194 Zinns Quarry Rd. YORK, PA 17404	CRS-1, EM-50, EM-50TT

(50.1A) APPROVED NONTRACK TACK COAT MATERIALS (Asphalt Lab)

The approved materials on List 50.1A must ship from an approved source and location on List 50.1.

Manufacturer	Product Name	Code
Blacklidge Emulsions	NTSS-1HM	10
Blacklidge Emulsions	UltraFuse	11
Asphalt Emulsions, Inc.	TTCQS-1HL	30
Seaboard Asphalt	EM-50TT	40

(51) APPROVED 2% COPPER NAPHTHENATE – (Chemistry Lab)

The following products have been approved for field use on saw cut CCA-treated wood posts.

Jasco Termin-8

Behr #90

W. M. Barr Coppo-W

Green's Copper

(52) ARTICULATED BLOCKS FOR SLOPE PROTECTION & DITCHLINING – (Maintenance Div.)

Armorflex	<p>Armortec, Inc. Suite 1990, Peachtree Corners Plaza Norcross, Georgia 30071 (800)241-6313 Note: Mats come in 320 sq. ft. sections. Requires a crane to lift sections into place.</p>
Hexagonal Interlocking Panels	<p>Ecological Technology Company, Inc. Thesauer Weg D-04460 Kitzen Germany +4934296/779-20 +4934296/779-33 Fax</p>
NOR-Bloc	<p>Norwood, Inc. 222 George Street Beckley, West Virginia 25801 (304)252-6517 Note: Individual interlocking blocks.</p>
Cable Concrete	<p>Permatile Concrete Products Co. P. O. Box 2049 100 Beacon Road Bristol, Virginia 24203-2049 (540)669-5332 Note: Mats come in 2 ft. x 4 ft. sections or 16 ft. x 4 ft. sections.</p>
Shoreloc (formerly GeoLink)	<p>ACF Environmental 2831 Cardwell Road Richmond, VA 23234 (800) 223-9021 Note: Mats come in either 4" x 12" x 16" or 6" x 12" x 16" blocks.</p>
Shoreblock SD	<p>ACF Environmental 2831 Cardwell Road Richmond, VA 23234 (800) 223-9021</p>

(53) EROSION CONTROL MULCHES – (Maintenance Div.)

Straw of Hay Mulch applied at a rate of 3,000 lbs. per acre (3,600 kg/hectare) so as to provide a minimum 95% coverage to the soil. Straw or hay shall be tacked with fiber mulch applied at a of 1,000 lbs. per acre, an approved mulch tackifier applied as recommended by the manufacturer, punching, or disking into the soil, or other method approved by the Engineer.

Manufacturers of Mulch Products acceptable for use as Erosion Control Mulch:

Airtrol	United States Gypsum Co. 125 South Franklin Street Chicago, IL 60606 (312)214-9192
Earth Guard Matrix	Terra Novo 2930 Patton Way Bakersfield, CA 93308
Excel Fibermulch II	American Excelsior Company 831 Pioneer Ave Rice Lake, WI 54868 Attn: Kurt Kelsey (715) 236-5643
Flexterra Flexible Growth Medium (FGM)	Profile Products, LLC 750 Lake Cook Road, Suite 440 Buffalo Grove, IL 60089 (866) 325-6262
Hydra CX2	North American Green 14649 Highway North Evansville, IN 47725 (800) 772-2040
PAM-12	ENCAP, LLC 3921 Algoma Rd. Green Bay, WI 54311-9707
Spraymat	Central Fiber Corp. 1525 Waynesburg Drive, S E. Canton, Ohio 44707 (888)452-2630 Jeff Ward, representative
Soil Guard	Mat, Inc. 12402 Highway 2 Floodwood, MN 55736
Soil Sement	Mid-West Industrial Supply Co., Inc. 14330 Heathland Terrace Midlothian, Virginia 23113 (804)794-4403 Hal Martin, representative
USG Enviro-Shield Brand Bonded Fiber	United States Gypsum Co. 125 South Franklin Street Chicago, IL 60606 (312)214-9192

(54) FIBER MULCH SUPPLIERS – (Please see list No. 11)

(55) MULCH TACKIFIER SUPPLIERS – (Maintenance Div.)

TacPac GT	Central Fiber Corp. 4814 Fiber Lane Wellsville, KS 66092-0749 contact Herod Seeds (804)643-7683
Contact Contact AT	Conwed Fibers 1850 Tate Blvd., S.E. Suite 350 Hickory, NC 28601 (800)366-1180
EcoTak OP-5 EcoTak SAT-11	Eastern Products, Inc. One Copperfield Way Mahwah, New Jersey 07430-3200 (201)684-0463, (201)684-0464 FAX EPINJ@aol.com
EC 1000 EC 3000 ECT 3000 (copolyacrylamide)	Erosion Control Technologies, Inc 3380 Route 22 West, Unit 3A Branchburg, NJ 08876 P. O. Box 5383 North Branch, NJ 08876 (800)245-0551, (908)707-1445 FAX
A500 Hydro Stik	Finn Corp. 9281 LeSaint Drive Fairfield, Ohio 45014 (800)543-7166
Jonathan Green Hydrogreen Tackifier Jonathan Green Super Tackifier	Joanathan Green Turf Products P. O. Box 326 Farmingdale, New Jersey 07727 (800)526-2303, (908)938-5788 FAX
Progacyl AG-50	Lyndal Chemical Co. P.O.Box 1740 Coronet Dr. Dalton, GA. 30720 (404)259-4831
Terra-Mulch Tacking Agent 3	Profile Products LLC 750 Lake Cook Road, Suite 440 Buffalo Grove, IL 60089 (800) 215-3427
Mulch Mate Supertac StrawMate Tackifier	PRS Materials, Inc. 520 Pusey Avenue Collingdale, PA 19023 prsm@juno.com (610)532-3960, (610)534-1555 Fax (800)432-3966
Dirt Glue	Unocal Corp. Unocal Chemicals Division 1445 Alondra Blvd. La Mirada, CA. 90638 (714)228-4749

(56) STANDARD EC-2 EROSION CONTROL BLANKETS – (Maintenance Div.)

(VELOCITY 2.5 – 4.0 f.p.s.)	
Curlex Curlex I Curlex I CL Curlex II Curlex II CL Straw, Premier, Single, Green Net Straw, Premier, Double, White Net E-Staple	American Excelsior Company 831 Pioneer Ave. Rice Lake, WI 54868 Attn: Kurt Kelsey (715) 234-6861
Anti-Wash/Geojute	Belton Industries 8613 Roswell Road, Suite 200 Atlanta, Ga. 30350 (800) 225-4099, (770) 992-6361 Fax
Jute Mesh	Bemis Brothers Bag Company St. Louis, Mo.
Jute Mesh	Belting Bagging Company Belton, South Carolina
Dekowe 700 Dekowe 900	Belton Industries Hambry Road Belton, South Carolina 29627
East Coast ECS-1 East Coast ECS-2 East Coast ECSC-2 ECX-1 ECX-2	East Coast Erosion Blankets, LLC 443 Bricker Road Bernville, PA 19506 Diane M. Hitt (610) 488-8496, Fax (610) 488-8494
S1000	Enviroscape ECM, Ltd. 22700 State Route 613 Oakwood, OH 45873 (888) 550-1999, Fax (419) 594-3213
S32 UVD, SC32, S32, S31 UVD, S31, C32	ErosionControlBlanket.com Box 69 Riverton Manitoba, Canada R0C 2R0 Roy Nelsen (970) 875-1158, Fax (970) 871-6779
Earthlock St'd. Straw – Proguard SS High Velocity Straw – Proguard DS St'd. Excelsior – Everhold XL1 High Velocity Excelsior – Everhold XL2	Erosion Control Systems, Inc. 9015 Energy Lane Northport, Alabama 35406 (205)333-3080, Fax (205) 333-3090
Greenfix WS05 Straw Blanket Greenfix WSO5B Straw Blanket Greenfix WSO52 Straw Blanket Greenfix WSO72 Straw Blanket Greenfix WSO72B Straw Blanket Greenfix CFS072B Straw -Coir Blanket Greenfix CFSO72R Straw -Coir Blanket Greenfix CFO72RR Coir Blanket Greenfix CFO72B Coir Blanket	Greenfix America P. O. Box 23310 Santa Barbara, California 93121 (800)929-2184 (888)GREENFX

(VELOCITY 2.5 - 4.0 f.p.s.)	
Jute Erosion Control Matting	The Griffith Bag Company, Inc. 510 Waterman Drive Harrisonburg, VA 22801 (800)433-2615, (540)433-2616
Soil Saver Heavy Jute Mesh	Jim Walls Company Commerce Plaza, Suite 109 12820 Hillcrest Road Dallas, Texas 75230
JMD Jute Mesh	JMD Manufacturing 5401 Progress Blvd. Bethel Park, PA. 15102
Jute Mesh	L & M Bag and Supply Co., Inc. 541 Hazel Avenue P.O. Box 865 Nashville, Georgia 31639
Jute Mesh	Ludlow Manufacturing & Sales Co. Needham Heights 94, MA
MA-S1	Mid America Erosion Control Products, Inc. P.O. Box 488, Charlestown, IN 47111 Kris Bernens (812) 289-1900 (812) 289-1599 Fax
Koir Mat 400	Nedia Enterprises, Inc. 22187 Vantage Pointe Place Ashburn, VA 20148 (571) 223-0200 (571) 223-0202 Fax
S-75, SC-150,C-125, S150, S75BN, S150BN, SC150BN, C125BN	North American Green 14649 Highway 41 North Evansville, Indiana 47711 (812)867-6632
RS-1 Straw RS-2 Straw	Robex LLC 5830 Highway 161 Springfield, Tennessee 37172 (615) 382-3300, (877) 56ROBEX
BioD Mat 70 BioD Mat 90 BioD-SiltCheck	RoLanka International, Inc. 155 Andrew Drive Stockbridge, GA 30281 (770)506-8211
S-1 S-2 CS-2 C-2	SI Geosolutions 6025 Lee Highway, Suite 435 Chattanooga, TN 37421 (800)621-0444, (423)485-9068 Fax
SEC-S1, SEC-S2, SEC-XL1, SEC-XL2, SEC-SC2, SEC-C2	Southern Environmental Conservation (SEC) 902 Main Avenue, Suite A Northport, Alabama 35476 (866) 252-4486 (205) 752-1206 Fax

(VELOCITY 2.5 - 4.0 f.p.s.)	
Verdyol Standard ERO-MAT Verdyol High Vel. ERO-MAT Verdyol Excelsior Standard Verdyol Excelsior High Vel.	Verdyol Alabama, Inc. P.O.Box 605 407 Miles Pkwy. Pell City, AL. 35125-0605 (205) 338-4411, (205) 338-4595 Fax
Terraguard SS Terraguard DS	WEBTEC, Inc. P. O. Box 19729 Charlotte, NC 28219 Dave Snyder (800)438-0027, (704)394-7946 Fax
X-Cel Permamat 100 Excel SS2 Excel SR-1 Excel R-1 Excel S-2 Excel CC-4	Western Excelsior 4609 E Boonville-New Harmony Rd Evansville IN, 47725 Ph: 866-540-9810 FX: 812-867-8928
WintersFiber WinterStraw SNG, WinterStraw HVW Winters Choice Winters Coir	Winters Excelsior Company 77 Holly Road P.O. Box 39 McWilliams, AL 36753 (800) 248-7237, (251) 746-2173, (251) 746-2579 fax

§244.02 (k)(2). Soil retention mats shall consist of a machine-produced mat of wood fibers, wood excelsior, or manmade fiber that shall intertwine or interlock. Matting shall be nontoxic to vegetation and germination of seed and shall not be injurious to the unprotected skin of the human body.

Mats shall be of consistent thickness, with fiber evenly distributed over its entire area, and covered on the top and bottom side with netting having a high web strength or covered on the top side with netting having a high web strength and machine sown on maximum 2-inch centers along the longitudinal axis of the material. Netting shall be entwined with the mat for maximum strength and ease of handling.

(57) STANDARD EC-3 TYPE A, TYPE B, & TYPE C SOILS STABILIZATION MATS**– (Maintenance Div.)**

TYPE A MATS (Velocity 4.0 - 7.0 f.p.s.)	
AEC Premier Straw/Coconut AEC Premier Coconut Curlex I (.98) E-Staple	American Excelsior Company 831 Pioneer Ave. Rice Lake, WI 54868 Attn: Kurt Kelsey (715) 234-6861
Earthlock Enkamat 7003 (formerly 7005) Enkamat 7010 Enkamat II	Colbond Inc. 1301 Sand Hill Road P.O. Box 1057 Enka, NC Attn: Jason Willis (800) 365-7391, (828) 665-5009 fax (Formerly Erosion Control Systems Northport, Al. 35476)
ECP-2 ECC-2	East Coast Erosion Blankets, LLC 443 Bricker Road Bernville, PA 19506 Diane M. Hitt (610) 488-8496, Fax (610) 488-8494
C4000 S2000 SC3000	Enviroscape ECM, Ltd. 22700 State Route 613 Oakwood, OH 45873 (888) 550-1999, Fax (419) 594-3213
Greenfix CF072RP	Greenfix America P. O. Box 23310 Santa Barbara, California 93121 (800)929-2184 (888)GREENFX
MacMat N10 MacMat N20 MacMat N6P MacMat N6G MacMat N8P MacMat N8G	Maccaferri Environmental Solutions 10303 Governor Lane Blvd Williamsport, MD 21795-3116 (301) 223-6910 (301)223-6134 Fax
C350 SC250 P300	North American Green 14649 Highway 41 North Evansville, Indiana 47711 (812)867-6632
P42	ErosionControlBlanket.com Box 69 Riverton Manitoba, Canada R0C 2R0 Roy Nelsen (970) 875-1158, Fax (970) 871-6779
*Mats listed in the Type B category may be substituted for the Type A material at no additional cost to VDOT.	

TYPE A MATS (Velocity 4.0 - 7.0 f.p.s.)	
Landlok 435	Synthetic Industries 4019 Industry Drive Chattanooga, Tennessee 37416 (800)621-0444, (423)499-0753 Fax
Landlok 435	Synthetic Industries 4019 Industry Drive Chattanooga, Tennessee 37416 (800)621-0444, (423)499-0753 Fax
Miramat Regular (18 oz./sq.yd.)	TC Mirafi 365 S. Holland Drive Pendergrass, Georgia 30567 (800)685-9990 e589, (706)693-4400 Fax
Miramat TM8	Ten Cate Nicolon 365 South Holland Dr. Pendergrass, GA 30567 (706) 693-2226
RSSC-3 RSC-4	Robex LLC 5830 Hwy 161 Springfield, TN 37172 (615)382-3300 Fax (615) 382-9051
S32, S32 UVD	ErosionControlBlanket.com Box 69 Riverton Manitoba, Canada R0C 2R0 Roy Nelsen (970) 875-1158, Fax (970) 871-6779
SEC-C2, SEC-P2	Southern Environmental Conservation (SEC) 902 Main Avenue, Suite A Northport, Alabama 35476 (866) 252-4486 (205) 752-1206 Fax
*Mats listed in the Type B category may be substituted for the Type A material at no additional cost to VDOT.	

TYPE B MATS (Velocity 7.0 - 10.0 f.p.s.)	
AEC Curlex II (.98) AEC Curlex III AEC Curlex Enforcer AEC Curlex High Velocity E-Staple Recyclex Recyclex TRM - V	American Excelsior Company 831 Pioneer Ave. Rice Lake, WI 54868 Attn: Kurt Kelsey (715) 234-6861
Enkamat 7012 Enkamat 7018 Enkamat 7020 Enkamat 7210 Enkamat 7220 Enkamat II	Colbond Inc. 1301 Sand Hill Road P.O. Box 1057 Enka, NC Attn: Jason Willis (800) 365-7391, (828) 665-5009 fax (Formerly Erosion Control Systems Northport, Al. 35476)
ECC-3 ECP-2	East Coast Erosion Blankets, LLC 443 Bricker Road Bernville, PA 19506 Diane M. Hitt (610) 488-8496, Fax (610) 488-8494
C32, SC32	ErosionControlBlanket.com Box 69 Riverton Manitoba, Canada R0C 2R0 Roy Nelsen (970) 875-1158, Fax (970) 871-6779
PEC-MAT	Greenstreak, Inc. 3400 Tree Court Ind. Blvd. St. Louis, Missouri 63122 (800)325-9504, (314)225-9854 Fax
MacMat N10 MacMat N20 MacMat N6P MacMat N6G MacMat N8P MacMat N8G	Maccaferri Environmental Solutions 10303 Governor Lane Blvd Williamsport, MD 21795-3116 (301) 223-6910 (301)223-6134 Fax
P-300 P300P C350 SC250	North American Green 14649 Highway 41 North Evansville, Indiana 47711 (812)867-6632, (812) 867-0247 Fax
RSP-5	Robex LLC 5830 Hwy 161 Springfield, TN 37172 (615)382-3300 Fax (615) 382-9051
SEC-P2	Southern Environmental Conservation (SEC) 902 Main Avenue, Suite A Northport, Alabama 35476 (866) 252-4486 (205) 752-1206 Fax

TYPE B MATS (continued) (Velocity 7.0 - 10.0 f.p.s.)	
Bon Terra America SFB Landlok 435 Landlok 450 Landlok 460 Landlok 1060	Synthetic Industries 4019 Industry Drive Chattanooga, Tennessee 37416 (800)621-0444, (423)499-0753 Fax
Miramat Heavyweight (24 oz./sq.yd.) Mirafi TM 8	TC Mirafi 365 S. Holland Drive Pendergrass, Georgia 30567 (800)685-9990 e589, (706)693-4400 Fax
Miramat TM8	Ten Cate Nicolon 365 South Holland Dr. Pendergrass, GA 30567 (706) 693-2226
TB1000 TM3000	Tensar Earth Technologies 5775-B Glenridge Drive Lakeside Center, Suite 450 Atlanta, Georgia 30328-5363 (800)292-4459, (404)705-9650 Fax
TerraGuard 44P TerraGuard 45P	WEBTEC, Inc. P. O. Box 240302 Charlotte, NC 28224-0302 (800)438-0027, (704)394-7946 Fax
Excel PP5-10 Excel PP5-8	Western Excelsior 4609 E Boonville-New Harmony Rd Evansville IN, 47725 Ph: 866-540-9810 FX: 812-867-8928

TYPE C MATS (Slopes 3:1 and flatter)	
Enkamat 7003 (formerly 7005) Enkamat 7010 Enkamat II	Colbond Inc. 1301 Sand Hill Road P.O. Box 1057 Enka, NC Attn: Jason Willis (800) 365-7391, (828) 665-5009 fax (Formerly Erosion Control Systems Northport, Al. 35476)
ECP-2	East Coast Erosion Blankets, LLC 443 Bricker Road Bernville, PA 19506 Diane M. Hitt (610) 488-8496, Fax (610) 488-8494
Greenfix CF072RP	Greenfix America P. O. Box 23310 Santa Barbara, California 93121 (800)929-2184 (888)GREENFX
PEC-MAT	Greenstreak 3400 Tree Court Industrial Blvd. St. Louis, MO 63122-6614 (800) 325-9504
MacMat N6P MacMat N6G MacMat N8P MacMat N8G	Maccaferri Environmental Solutions 10303 Governor Lane Blvd. Williamsport, MD 21795-3116 (301)223-6910, (301) 223-6134 Fax
MA-S2	Mid America Erosion Control Products, Inc. P.O. Box 488, Charlestown, IN 47111 Kris Bernens (812) 289-1900 (812) 289-1599 Fax
C350 SC250	North American Green 14649 Highway 41 North Evansville, Indiana 47711 (812)867-6632, (812) 867-0247 Fax
RSP-5	Robex LLC 5830 Hwy 161 Springfield, TN 37172 (615)382-3300 Fax (615) 382-9051
Landlok 435	Synthetic Industries 4019 Industry Drive Chattanooga, Tennessee 37416 (800)621-0444, (423)499-0753 Fax
Miramat Regular (18 oz./sq.yd.)	TC Mirafi 365 S. Holland Drive Pendergrass, Georgia 30567 (800)685-9990 e589, (706)693-4400 Fax
Miramat TM8	Ten Cate Nicolon 365 South Holland Dr. Pendergrass, GA 30567 (706) 693-2226

TYPE C MATS (continued) (Slopes 3:1 and flatter)	
Tenax Multimat	Tenax Corp. 4800 East monument Street Baltimore, Maryland 21205 (410)522-7000, (410)522-7015 Fax (800)356-8495
Excel PP5-10 Excel PP5-8	Western Excelsior 4609 E Boonville-New Harmony Rd Evansville IN, 47725 Ph: 866-540-9810 FX: 812-867-8928

TYPE C MATS	
(Slopes steeper than 3:1)	
Enkamat S Enkamat 7018 Enkamat II	Colbond Inc. 1301 Sand Hill Road P.O. Box 1057 Enka, NC Attn: Jason Willis (800) 365-7391, (828) 665-5009 fax (Formerly Erosion Control Systems Northport, Al. 35476)
ECP-2	East Coast Erosion Blankets, LLC 443 Bricker Road Bernville, PA 19506 Diane M. Hitt (610) 488-8496, Fax (610) 488-8494
MacMat N6P MacMat N6G MacMat N8P MacMat N8G	Maccaferri Environmental Solutions 10303 Governor Lane Blvd. Williamsport, MD 21795-3116 (301)223-6910, (301) 223-6134 Fax
P550	North American Green 14649 Highway 41 North Evansville, Indiana 47711 (812)867-6632, (812) 867-0247 Fax
Pyramat 4700	Synthetic Industries 4019 Industry Drive Chattanooga, Tennessee 37416 (800)621-0444, (423)499-0753 Fax
Miramat TM8	Ten Cate Nicolon 365 South Holland Dr. Pendergrass, GA 30567 (706) 693-2226
P42	ErosionControlBlanket.com Box 69 Riverton Manitoba, Canada R0C 2R0 Roy Nelsen (970) 875-1158, Fax (970) 871-6779

(58) STANDARD EC-4 TYPE 2, ROCK CHECK DAM – (Maintenance Div.)
for Synthetic Material Substitution

Substitutions may be made with the approval of the Engineer at no additional cost to VDOT.	
Erosion Eel	Friendly Environment 100 Prince Street Shelbyville, TN 37160 (615) 607-5953, (615) 333-7751 Fax
Sediment Log	American Excelsior Company 850 Avenue H East P. O. Box 5067 Arlington, TX 76005-5067 (817) 640-1555, (817) 649-7816 Fax (800) 777-SOIL
AEC Premier Straw Wattles (9 inch) AEC Premier Straw Wattles (12 inch) Curlex Sediment Logs	American Excelsior Company 831 Pioneer Ave. Rice Lake, WI 54868 (715) 234-6861
Triangular Silt Dike	Triangular Silt Dike Company, Inc. 608 Greenwood Midwest City, OK 73110 Attn: Jason Roach (405) 741-7406
Filtrexx DitchChexx	Filtrexx International 35841 Grafton Eastern Road Grafton, OH 44044 (440) 926-2607
Terra-Tubes – Filter Filtration Tubes (FFT)	Profile Products, LLC 750 Lake Cook Road Suite 440 Buffalo Grove, IL 60089 (847) 215-1144, (866) 325-6262

(59) ST'D. EC-6, INLET PROTECTION APPROVED LIST – (Maintenance Div.)**for Synthetic Materials Substitution****Substitutions may be made with the approval of the Engineer at no additional cost to VDOT.**

Curb Drop Inlet	
Curlex Sediment Logs	American Excelsior Company 831 Pioneer Ave. Rice Lake, WI 54868 (715) 234-6861
Dandy Curb (formerly Beaver Dam True Dam)	Dandy Products 2011 Harrisburg Pike, Suite R Grove City, OH 43123 (800) 591-2284, (614) 875-6305 Fax
Erosion Eel	Friendly Environment 100 Prince Street Shelbyville, TN 37160 (615) 607-5953, (615) 333-7751 Fax
Filtrexx InletSoxx	Filtrexx International 35481 Grafton Eastern Road Grafton, OH 44044 (440) 926-2607
Gutter Buddy Gutter Gator Grate Gator	ACF Environmental 2831 Cardwell Road Richmond, VA 23234 (800) 223-9021, (804) 743-7779 Fax
Rapid Flow Drain Filter	Erosion Control Products, Inc. 4001 Van Dyke Ct. Monroe, NC 28110 (704) 821-3042, (704) 821-5239 Fax
Sediment Log	American Excelsior Company 850 Avenue H East P. O. Box 5067 Arlington, TX 76005-5067 (817) 640-1555, (817) 649-7816 Fax (800) 777-SOIL

(60) ST'D. EC-8, DEWATERING BAG APPROVED LIST – (Maintenance Div.)

Material specifications may be reviewed in Section 245 of the Road and Bridge Specifications.

Dirtbag® 55	ACF Environmental 2831 Cardwell Road Richmond, VA 23234 (800) 223-9021, (804) 275-4132 Fax
Filter Bag	GeoProducts, L. L. C. 161 Technology Park Drive Kilmarnock, VA 22482 (800) 448-4505, (804) 435 - 7462
Ultra-Dewatering Bag	UltraTech 11542 Davis Creek Court Jacksonville, FL 32256 (800) 353-1611
FB1 FB3 FB4	Frank Roberts & Sons, Inc 1130 Robertsville Rd Punxsutawney, PA 15767 Ph 800-262-8955 or 814-938-5000 Fax 814-938-0880

(61) **GRAY IRON CASTING MANUFACTURERS/DISTRIBUTORS ON QA/QC PROGRAM-**
(Quality Assurance)

Gray Iron Casting Domestic Manufacturers – compliant with Buy America

East Jordan Iron Works, Inc.	301 Spring Street East Jordan, Michigan, USA 49727
East Jordan Iron Works, Inc.	270 Red Wing Road Ardmore Industrial Park Ardmore, Oklahoma 73401
Neenah Foundry Co.	2121 Brooks Avenue Neenah, Wisconsin 54956
U.S. Foundry and Manufacturing Corporation	8351 N.W. 93 Street Medley (Miami), Florida, USA 33166-2096

Gray Iron Casting - Domestic and Foreign Distributors-may not be compliant with Buy America

Capitol Foundry of VA., Inc. (*P) on probation until April 15, 2012 QA Plan for DI-1, DI-2, DI-12, IC-2, JB, MH-1, MH-F&C-1	2856 Crusader Circle Virginia Beach, Virginia 23453
Chesapeake Foundries, Inc. (*P)	7840D Cessna Avenue Gaithersburg, MD 20879

(*P)=Probationary

(62) CABLE GROUTS – (Physical Lab)

Masterflow 1205	BASF Construction Chemicals, LLC
SIKA 300PT	Sika Corporation
Euco Cable Grout PTX	Euclid Chemical Company

(63) GEOGRIDS/HIGH-STRENGTH GEOTEXTILES – (Soils Lab)

GEOGRIDS

Fornit 20		Huesker, Inc.
Fornit 30		Charlotte, NC
Mirafi BXG 11	Miragrid 18XT	Mirafi, Inc. Charlotte, NC
Mirafi BXG 12	Miragrid 20XT	
Miragrid 2XT	Miragrid 22XT	
Miragrid 3XT	Miragrid 24XT	
Miragrid 5XT	Miragrid LM7	
Miragrid 7XT	Miragrid LM10	
Miragrid 8XT	Miragrid LM18	
Miragrid 10XT	Paragrid	
Signode Geogrid TNX 250		
Signode Geogrid TNX 5001		Signode Corporation Glenview, IL
Stratagrid: SG700 , SG600, SG500, SG350, SG200, SG150, Microgrid		Strata Systems, Inc. Cumming, GA
Tensar Geogrids		The Tensar Corporation Morrow, GA
Terramesh		Maccafferi , Inc. Williamsport, MD
Secugrid 20/20 Q1 Secugrid 30/30 Q1 Combigrid 30/30 Q1 151 GRK 3		Naue America Atlanta, GA

GEOTEXTILES

Mirafi HP370	Mirafi, Inc. Charlotte, NC
Mirafi HP570	

*** These products should only be use if they meet project specific strength requirements or were specifically recommended by the Design Engineer.**

(64) HYDRAULIC BARRIERS FOR USE IN STORM WATER RETENTION – (Soils Lab)

Bentofix Thermal Lock Clay Liner	Terrafix Geosynthetics, Inc. 178 Bethridge Road Toronto, Ontario, Canada M9W 1N3 (416) 674-0363
Bentomat	CETCO Lining Technologies 2870 Forbs Avenue Hoffman Estates, IL 60192 (800)527-9948
Bentomax	BGSE Lining
Claymax	CETCO Lining Technologies 2870 Forbs Avenue Hoffman Estates, IL 60192 (800)527-9948
Bentomat ST	CETCO Lining Technologies 2870 Forbs Avenue Hoffman Estates, IL 60192 (800)527-9948

(65) APPROVED SOUND BARRIER PANELS – (Paul Kohler)

Precast Concrete (Companies provide both absorptive and/or reflective)	Product Name	Contacts Name
Armtec 505 York Blvd., Suite 2 Hamilton, ON Canada L8R 3K4	Durisol ®	Mr. Brian Clarke
Coastal Precast Systems 4215 Lafayette Center Dr., Suite 1A Chantilly, Virginia 20151	Whisper-Wall ®	Mr. Stephen McCowin
Faddis Concrete Products 3515 Kings Highway Downingtown, Pennsylvania 19935	AcoustaCrete ®	Mr. Gary Figallo
Smith-Midland Corporation P.O. Box 300 Midland, VA 22728	Softsound ®	Mr. Guy Schuch
Metal (Companies provide both absorptive and reflective)	Product Name	Contacts Name
Empire Acoustical Systems 1106 South Mays, #240 Round Rock, TX 78664	Silent Screen ® M90 ®	Mr. Patrick McKeown
Other	Product Name	Contacts Name
Centria 1005 Beaver Grade Road Moon Township, PA	Eco Sound Barrier	Mr. Cory Matchett
CYRO Industries 1796 Main Street Sanford, ME 04073	Paraglas Soundstop ®	Mr. Nathan Binette
HOOVER Treated Wood Products, Inc. 154 Wire Road Thomson, Georgia 30824	Plywall ®	Ms. Pam Floyd
Date: February 23, 2011		

(66) APPROVED WARM-MIX ASPHALT PRODUCTS AND PROCESSES (Asphalt Lab)

Manufacturer	Product/Process	Code
Sasol International	Sasobit	1
MeadWestvaco	Evotherm ET	2
Astec, Inc.	Double Barrel Green System	3
Maxam	AQUABlack	4
Gencor	Ultrafoam Gx	5
MeadWestvaco	Evotherm 3G	6
StanSteel	Accu-Shear	7

New products/processes will be evaluated by the District Materials Engineer and a central committee. Once approved, the product/process will be added to this approved list. The evaluation procedure involves documentation and independent test data to support the new WMA product or process, mix design submittals and a trial section.

(67) APPROVED PRECAST PAVEMENT SYSTEMS - (Affan Habib)

Manufacturer	Product/Process
The Fort Miller Co. P.O. Box 98 Schuylerville, NY 12871-0098 (518) 695-4970	Super Slab

The approval is subject to further clarification of the submitted specification/details and a successful trial installation.

(68) STORM WATER MANAGEMENT – TRASH RACKS (SWM-DR) - (Location & Design)

Substitutions may be made with the approval of the Engineer at no additional cost to VDOT.

Manufacturer Name	Product(s)
Plastic Solutions, Inc. 240 McGhee Road Winchester, VA 22603 PH: 540-722-4694	StormRax – Round Series

(69) APPROVED FENCE MANUFACTURERS - (Chemistry Lab)

Approved fence material shall be used in accordance with the R&B specifications, R&B Standards, Plans, or as directed by the Engineer.

Allied Tube and Conduit

Pipe, SS-40
Pipe, SCH-40

Bekaert Corporation

Barbed Wire, Galvanized
Woven Wire, Galvanized
Brace/Line Wire, Galvanized

Chicago Heights Steel

Post - "T"

Guardian Fence Suppliers

Chain-Length Fence,
Galvanized
Chain-Link Fence, Aluminized
Chain-Link Fence, Vinyl Coated
Barbed Wire, Galvanized
Barbed Wire, Aluminized
Barbed Wire, Vinyl Coated
Tension Wire, Galvanized
Tension Wire, Aluminized
Tension Wire, Vinyl Coated

Iron World

Chain-Link Fence, Galvanized
Chain-Link Fence, Aluminized
Chain-Link Fence, Vinyl Coated
Barbed Wire, Galvanized
Barbed Wire, Aluminized
Barbed Wire, Vinyl Coated
Woven Wire, Galvanized
Woven Wire, Aluminized
Woven Wire, Vinyl Coated

Master Halco Inc.

Chain-Link Fence, Galvanized
Chain-Length Fence, Aluminized
Chain-Link Fence, Vinyl Coated

Merchants Metals

Pipe, Vinyl Coated
Chain-Link Fence, Galvanized
Chain-Link Fence, Aluminized
Chain-Link Fence, Vinyl Coated
Barbed Wire, Galvanized
Barbed Wire, Aluminized
Tension Wire, Galvanized
Tension Wire, Aluminized

Franklin Industries

Post - "T"

**Stateside Steel & Wire, LLC
Chain-Link Fence, Galvanized**

Stephens Pipe & Steel, LLC

Pipe, Galvanized
Pipe, Vinyl Coated
Chain-Link Fence, Galvanized
Chain-Link Fence, Aluminized
Chain-Link Fence, Vinyl Coated
Barbed Wire, Galvanized
Barbed Wire, Aluminized
Barbed Wire, Vinyl Coated
Tension Wire, Galvanized
Tension Wire, Aluminized
Tension Wire, Vinyl Coated
Woven Wire

Sonco Worldwide, Inc.

Chain-Link Fence, Aluminized
Chain-Link Fence, Vinyl Coated
Tension Wire, Aluminized
Tension Wire, Vinyl Coated

Wheatland Tube Company

Pipe, WT-40
Pipe, SCH-40

(70) APPROVED QA FENCE SUPPLIERS LIST - (Quality Assurance)

Supplier	Location
American Highway Fence, Inc.	Mt. Sterling, Ky
Atlantic Fence Supply	Ashland, VA
Hercules Fence (*P)	Ashland, VA
Hercules Fence (*P)	Manassas, VA
Hercules Fence (*P)	Norfolk, VA
Hercules Fence (*P)	York County, VA
Interstate Fence Supply (*P)	Mt. Sterling, KY
Long Fence	Chantilly, VA
Master Halco (*P)	Ashland, VA
NU-Valley Fence Co., Inc. (*P)	Greenville, VA
Webster & Webster Inc. (*P)	Verona, VA

(*P) = Probationary

(71) POLYETHYLENE SHEETING - (Physical Lab)

Note: PE film (AASHTO M 171) used for curing shall be white except that opaque or transparent PE film may be used between November 1 and April 1.

White**Manufacturer****Product Number**

Poly America

CF0420W (4 mils, 20 feet wide, white)

CF0428W (4 mils, 28 feet wide, white)

CF0620W (6 mils, 20 feet wide, white)

Akrotex Films

877141001216 (4 mils, 20 feet wide, white)

Transparent/Opaque**Manufacturer****Product Number**

Poly America

CF0420 (4 mils, 20 feet wide, transparent)

CF0428 (4 mils, 28 feet wide, transparent)

CF0620 (6 mils, 20 feet wide, transparent)

Akrotex Films

877141001193 (4 mils, 20 feet wide, transparent)

(72) DETECTABLE WARNING PLATES - (Quality Assurance)

Tiles must meet Light on Dark or Dark on Light contrast requirements

Product	Manufacturer	Description
AccessTile Cast in Place Replaceable	AccessTile	Engineer composite polymer cast in place replaceable plate
ADA Solutions (Cast In Place Composite Tactile)	ADA Solutions, Inc.	Homogenous glass and carbon composite cast in place panel
ADA Solutions (Replaceable composite tactile)	ADA Solutions, Inc.	Homogenous glass and carbon composite replaceable (wet set) plate
ADA TRUNCATED DOME DETECTABLE WARNING PAVERS	Elizabeth City Glass	Concrete Pavers with recycled glass aggregate
AlertCast	AlertTile	Glass reinforced, thermoset composite replaceable cast in place plate
Armorcast Detectable Warning Wet Set Replaceable	Armorcast Products	Composite polymer wet set replaceable plates
Armor-Tile (Cast in Place)	Armor-Tile Tactile Systems	Cast in Place Vitrified Polymer Composite plate
Armor-Tile (Modular Pavers)	Armor-Tile Tactile Systems	Vitrified polymer paving system that can be dry laid on compacted fill or set in grout
Duralast	East Jordan Iron Works	Gray Iron Detectable Warning Plates
Neenah Foundry Detectable Warning Plates	Neenah Foundry	Gray Iron Detectable Warning Plates.

(73) **APPROVED WHITE AND YELLOW (LEAD FREE) PREFORMED THERMOPLASTIC -
(Chemistry Lab)**

Manufacturer	Product Name	VDOT Approval No.
WHITE		
Flint Trading (336) 475-6600	PreMark	PMM (05)-PA-042
	Hot Tape	PMM (08)-PA-132
	Flame Tape	PMM (08)-PA-059
Sherwin Williams (706) 846-2221	Smart Tape	PMM(05)-PA-017
Swarco	Preformed Thermoplastic White	PMM(08)-PA-224
YELLOW		
Flint Trading (336) 475-6600	PreMark	PMM (02)-PA-065
Sherwin Williams (706) 846-2221	Smart Tape	PMM (05)-PA-018

NOTE:

The above materials shall be supplied at 125 mils in thickness.

Materials shall be installed in accordance with Manufacturer's installation instructions.

If material is applied to hydraulic cement concrete, the primer/sealer used shall be listed on the C-85 (Contractors Daily Log).

During application (when molten) the above materials shall be "flooded" with additional glass beads conforming to AASHTO M247 Type1.

(74) **APPROVED POLYUREA PAVMENT MARKINGS - (Chemistry Lab)**

Manufacture	Color	Product No.	Retroreflective Optics*	NTPEP Submittal No.
Epoplex Corp.	White	LS-90	M247 Type 1 (10lbs./Gal) Visibeads (10 lbs/Gal)	PMM-2002-PA-240
Epoplex Corp.	White	GM-90	M247 Type 1 (6lbs./Gal) Visibead PlusII (6 lbs/Gal)	PMM-2006-MS-036
Ennis	White	HPS-5	M247 Type 1 (10 lbs./Gal) M247 Type 4 (10 lbs./Gal)	PMM-2008-PA-124
Ennis	Yellow	HPS-5	M247 Type 1 (Flood) M247 Type 4 (Flood)	PMM-2005-PA-050

* **Note:** The same retroreflective optics materials (Type and quantity (lbs/Gal) used for the NTPEP testing must be used with these products when installed on VDOT roads.

(75) **APPROVED EPOXY PAVMENT MARKINGS - (Chemistry Lab)**

Manufacture	Color	Product No.	NTPEP No.
Ennis Traffic Safety Solutions	White	HPS-3	PMM-08-PA-180
Ennis Traffic Safety Solutions	Yellow	HPS-3	PMM-08-PA-121
Accent Stripe	White	Lumiline III	PMM-08-PA-110
Accent Stripe	Yellow	Lumiline III	PMM-08-PA-111
Poly Carb	White	MARK 55.3	PMM-08-PA-180
Poly Carb	Yellow	MARK 55.3	PMM-08-PA-181
Epoplex	White	LS-50	PMM-08-PA-190
Epoplex	Yellow	LS-50	PMM-08-PA-191