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Table 1a. Major features of the prestressed concrete girders.

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Girder Type	BT-54	BOX	II, IV	III	NU1100	III	NE 1000	BT1600	IV, III	B42-48
Girder Depth, in	54	30	36, 54	45	43.3	45	39.4	63	54, 45	42
Max. Span, ft	114	112	127.1	72	75	65	60	101.1	91.9	115.5
Max. Spacing, ft	8.75	Adjacent	7.6	10	12.4	12.5	11.5	12.6	10.2	Adjacent
Max. No. of Strands	50	64	56	34	30	40	26	42	30	30
Dia. of Strands, in	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.6	0.6
Concrete Strengths										
Specified at Release, psi	8000	6500	8000	7000	5500	6500	5500	7000	7000	6000
Actual at Release, psi	8040-9810	5600-10,900	10,464	7618-9852	8471	6700	6800	7325	7700-10,500	6670-9210
Age at Release, hours	19-45	—	24	21-40	—	14-17	—	72	27	18
Specified Design, psi	10,000	10,000	10,000	10,000	12,000	8000	8000	10,000	10,000	10,000
Actual at Design Age, psi	8440-11,060	7800-14,000	13,300	10,502-12,023	13,944	7755	11,200	10,151	11,800-15,000	9570-12,920
Design Age, days	28	56	56	56	56	28	28	56	28	56

Table 1a. Major features of the prestressed concrete girders (continued).

STATE	SD	SD	TN	TN	TX (Louetta) (1)		TX (San Angelo) (1)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB (2)	WB	Route 40	VA Av.	SR 18
Girder Type	II	II	BT-72	BT-72	U 54	U 54	IV	IV	IV	III	W74G
Girder Depth, in	36	36	72	72	54	54	54	54	54	45	73.5
Max. Span, ft	61	61	159	151.33	136.5	134.0	157	140.3	80	74	137
Max. Spacing, ft	11.4	11.4	8.33	8.33	12.94	16.62	11	8.26	10	9.25	8
Max. No. of Strands	32	32	54	50	87	87	c	64	54	34	40
Dia. of Strands, in	0.5	0.5	0.6 sp	9/16	0.6	0.6	0.6	0.5	0.5	0.6	0.6
Concrete Strengths											
Specified at Release, psi	8520	8520	8000	8000	8800	8800	8100	6600	6000	6800	7400
Actual at Release, psi	—	—	8635	8719	9190	9680	11,630	8560	7340 s 7820 m	8840	8150
Age at Release, hours	—	—	24-72	24-72	21	21	46	—	18 s, 72 m	18	18-60
Specified Design, psi	9900	9900	10,000	10,000	13,100	13,100	14,000	8900	8000	10,000	10,000
Actual at Design Age, psi	15,900	13,250	9651	10,529	14,440	14,550	15,240	10,130	9060 s 11,490 m	11,200	12,220
Design Age, days	28	28	28	28	28(3)	28(3)	28 (3)	28	28	28	56

(1) For the Texas bridges, different concrete strengths were specified for different girder span lengths. Listed strengths are largest values.
(2) Values are for modified design.
(3) Specified at 56 days, generally tested at 28 days.
c = combination of pretensioning and post-tensioning was used, m = moist curing, s = steam curing, sp = special.

Table 1b. Major features of the cast-in-place concrete decks.

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH (1)
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Total Deck Thickness, in	7	11.5	8	8	7.5	9	9	8.7	8.5	5.5
Curing Type (2)	Wet	Wet (3)	Wet	Wet	Wet	Wet	Wet	Wet	Moist	—
Curing Duration, days	7	5	7	7	8	4	7	14	7	—
Permeability										
Specified, coulombs	—	—	2000	2000	1800	1000	1000	—	—	—
Actual, coulombs	2870	5597	3963	1390	589	753	1060	—	—	—
Age, days	56	—	56	56	56	56	56	—	—	—
Concrete Strengths										
Specified, psi	6000	5076	7250	4200	8000	6000	6000	6000	6000	—
Actual, psi	7370	5310	7740	5493	10,433	9020	9004	6160	7150	—
Age, days	28	28	56	28	56	28	28	28	28	—

(1) Ohio bridge used of 5.5-in-thick top flange of box beam and 3-in-thick asphalt.
(2) The terminology is that used by the states. In general, wet and moist curing represent the same procedures.
(3) May – September only. For November – March, membrane curing with insulated blankets was specified. For April and October, either method was allowed.

Table 1b. Major features of the cast-in-place concrete decks (continued).

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Total Deck Thickness, in	9	9	8.25	8.25	7.25	7.25	7.5	7.5	8.5	8.5	7.5
Curing Type (2)	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet
Curing Duration, days	7	7	7	7	10	10	10	10	7	7	14
Permeability											
Specified, coulombs	—	—	1500	1500	—	—	—	—	2500	2500	—
Actual, coulombs	461	1058	—	—	1730	900	—	—	778	1457	2645
Age, days	90	—	28 (4)	28 (4)	56	56	—	—	28 (4)	28 (4)	> 210
Concrete Strengths											
Specified, psi	4500	4500	5000	5000	4000	8000	6000	4000	4000	5000	4000
Actual, psi	7070	6170	8265	6460	5700	9100	7345	6120	6600	5400	5490
Age, days	28	28	28	28	28	28	28	28	28	28	28

(2) The terminology is that used by the states. In general, wet and moist curing represent the same procedures.
(4) Includes 21 days at 100 ^{o}F.

Table 2a. Structural design considerations.

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Specifications	—	STD	STD	STD	STD	STD	STD	STD	STD	STD
Live Loads	—	HS 25	MS 18	HS 20	HS 20	HS 25	HS 25	MS 18	MS 18	HS 25
Prestress Loss, psi	—	65,753	64,500	49,500	—	—	48,800	—	35,585	19.6%
Allowable Tensile Stress										
Top of Girder at Release, $\sqrt{f'_{ci}}$, psi	—	7.5	3.0	7.5	—	7.5	7.5	—	0	7.5
Bottom of Girder after Losses, $\sqrt{f'_c}$, psi	—	6.0	6.0	6.0	6.0	3.0	0	—	6.0	6.0
Concrete Cover										
Girder, in	—	1	1.1-2.1	1	0.8-1.8	1	1.6	1	1.2, 1.5	2, 2.5, 1.25
Top of Deck, in	2	2.5	2.75	2	—	3	3	2.5	2.5	—
Bottom of Deck, in	1	—	1	1	1	1-1/4	1-3/4	1.3	1.2	—

STD = AASHTO Standard Specifications for Highway Bridges.

Table 2a. Structural design considerations (continued).

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Specifications	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	LRFD
Live Loads	HS 25	HS 25	HS 20	HS 20	HS 20	HS 20	HS 20	HS 20	HS 20	HS 20	HL 93
Prestress Loss, psi	28%	28%	—	—	55,390	55,390	49,070	47,910	28%	30.81%	41,100
Allowable Tensile Stress											
Top of Girder at Release, $\sqrt{f'_{ci}}$, psi	3	3	—	—	10	10	10	7.5	3	3	200 psi
Bottom of Girder after Losses, $\sqrt{f'_c}$, psi	6	6	—	—	8	8	8	6	3	3	0
Concrete Cover											
Girder, in	1	1	Varies	Varies	1	1	1	—	2, 1	2, 1	1
Top of Deck, in	2.5	2.5	2.5	2.5	2	2	2	—	2.75 (1)	2.75 (1)	2.5
Bottom of Deck, in	1	1	1	1	1.75 (2)	1.75 (2)	1.75 (2)	—	1.5 (1)	2.75 (1)	1

(1) To center of bar.
(2) Cover to 3/8-in-diameter strand in panels
LRFD = AASHTO LRFD Bridge Design Specifications.
STD = AASHTO Standard Specifications for Highway Bridges.

Table 3a. Specified concrete properties for prestressed concrete girders.

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Max. Concrete Temp. ^{o}F	160	158	—	160	160	160	160	—	185	—
Slump, in	$\leq$ 8	—	2-7	$\leq$ 10	—	5-7	5-7	—	$\leq$ 8	6-8
Air Content, %	3.5-6	—	3.5-6.5	—	—	5-8	5	—	3-5	5-7
Girder Curing Method	ps	—	—	sc or h	—	s	—	s	s or h	s
Cylinder Curing Method	mc	—	mc, std	mc	s, std	mc	mc	—	s or h	s, std
Concrete Strengths										
Release, psi	8000	6500	8000	7000	5500	6500	5500	7000	7000	6000
Design, psi	10,000	10,000	10,000	10,000	12,000	8000	8000	10,000	10,000	10,000
Design Age, days	28	56	56	$\leq$ 56	56	28	28	28	28	56
Permeability										
Specified, coulombs	—	—	3000	2000	—	1000	1500	—	2000	1000
Age, days	—	—	56	56	—	56	56	—	—	56

h = heat curing, mc = match curing, ps = partial steam curing, s = steam curing, sc = self curing (concrete insulated without additional heat), std = AASHTO T 23 standard cure.

Table 3a. Specified concrete properties for prestressed concrete girders (continued).

STATE	SD	SD	TN	TN	TX (Louetta) (1)		TX (San Angelo) (1)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB (2)	WB	Route 40	VA Av.	SR 18
Max. Concrete Temp. ^{o}F	—	—	—	—	—	140	—	—	190	190	—
Slump, in	5	—	2-8	2-8	—	—	—	4-5	0-7	0-7	$\leq$ 7
Air Content, %	5.5-7.5	—	4-8	4-8	—	—	—	—	3-6	3-6	—
Girder Curing Method	s, rh	—	—	—	sc, s	sc, s	sc, s	sc	s, m	s	—
Cylinder Curing Method	—	—	s	s	sc, s	sc, s	sc, s	sc	s, m	s	mc
Concrete Strengths											
Release, psi	8520	8520	8000	8000	8800	8800	8100	6600	6000	6800	7400
Design, psi	9900	9900	10,000	10,000	13,100	13,100	14,000	8900	8000	10,000	10,000
Design Age, days	28	28	28	28	56	56	56	28	28	28	56
Permeability											
Specified, coulombs	—	—	2500	2500	—	—	—	—	1500	1500	1000
Age, days	—	—	28 (3)	28 (3)	—	—	—	—	28 (3)	28 (3)	56

(1) For the Texas bridges, different concrete strengths were specified for different girder span lengths. Listed strengths are largest values.
(2) Values are for modified design.
(3) Includes 21 days at 100 ^{o}F.
m = moist curing, mc = match curing, rh = radiant heat curing, s = steam curing, sc = self curing (concrete insulated without additional heat).

Table 3b. Specified concrete properties for cast-in-place concrete decks.

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH (1)
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Max. w/cm	0.40	0.44	0.35	0.40	—	0.38	0.38	—	0.43	0.28
Slump, in	≤ 5	(2)	2-5	2-8	< 8	2-3	2-3	—	≤ 5	5-7
Air Content, %	3.5-6	5-8	3.5-6.5	4-7	5-7.5	6-9	5-9	—	4.5-7.5	5-7
Curing Type (3)	Wet	Wet (4)	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Wet
Curing Duration, days	7	5	7	7	8	4	7	14	7	7
Concrete Strengths										
Compressive, psi	6000	5076	7250	4200	8000	6000	6000	6000	6000	8000
Age, days	28	28	56	28	56	28	28	28	28	56
Permeability										
Specified, coulombs	—	—	2000	2000	1800	1000	1000	—	—	1000
Age, days	—	—	56	56	56	56	56	—	—	56

(1) Ohio bridge did not have a separate concrete deck. Values are for the abutments.
(2) Not more than 1.5 in greater than slump of the approved mix design.
(3) The terminology is that used by the states. In general, wet and moist curing represent the same procedures.
(4) May – September only. For November – March, membrane curing with insulated blankets was specified. For April and October, either method was allowed.
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Table 3b. Specified concrete properties for cast-in-place concrete decks (continued).

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Max. w/cm ratio	0.39	—	0.43	0.43	0.44	—	0.44	0.44	0.45	0.45	0.39
Slump, in	5-7	—	2-8	2-8	3-4	3-9	3-9	3-4	2-7	2-7	—
Air Content, %	5.5-7.5	—	4-8	4-8	5	0	6	6	5-8	5-8	6
Curing Type (3)	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Moist	Moist	Wet
Curing Duration, days	7	7	7	7	10	10	10	10	7	7	14
Concrete Strengths											
Compressive, psi	4500	4500	5000	5000	4000	8000	6000	4000	4000	5000	4000
Age, days	28	28	28	28	28	28	28	28	28	28	28
Permeability											
Specified, coulombs	—	—	1500	1500	—	—	—	—	2500	2500	—
Age, days	—	—	28 (5)	28 (5)	—	—	—	—	28 (5)	28 (5)	—

(3) The terminology is that used by the states. In general, wet and moist curing represent the same procedures.
(5) Includes 21 days at 100 ^{o}F.

Table 4a. Concrete mix proportions for prestressed concrete girders.[1]

STATE	AL	CO	GA	LA	NE	NH (2)	NH (2)	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
w/cm ratio	0.28	0.29	0.25	0.25	0.24	0.33	0.30	0.30	0.30	0.28
Cement Type	III	III	I	III	I	III	II	—	I/II	III
Cement Quantity, lb/yd^3	753	730	800	691	750	777	550	846	900	846
Fly Ash Type	C	—	F	C	C	—	—	F	—	—
Fly Ash Quantity, lb/yd^3	133	—	100	296	200	—	—	127	—	—
Silica Fume, lb/yd^3	—	35	75	—	50	50	50	68	50	100
GGBFS, lb/yd^3	—	—	—	—	—	—	200	—	—	—
Fine Aggregate, lb/yd^3	1069	1363	932	1135	990	1075	1200	953	905	927
Coarse Aggregate Max. Size, in	3/4 (3)	3/8	3/4	1/2	1/2	3/4	3/4	—	3/4	3/8
Coarse Aggregate Quantity, lb/yd^3	1916	1775	1802	1803	1860	1850	1750	1446	2000	1774
Water, lb/yd^3	248	219	246	247	240	273	242	312	275	262
Air Entrainment, fl oz/yd^3	35	—	4	—	—	10	5	—	6.0	21
Water Reducer, fl oz/yd^3	—	15-58	27	60	30	—	—	—	—	—
Retarder, fl oz/yd^3	—	—	—	—	—	14	—	—	36	28
High-Range Water-Reducer, fl oz/yd^3	225	44-131	150	150	225	206	80	—	81	203

(1) Based on approved concrete mix proportions.
(2) Also includes 4.0 gal/yd^3 of corrosion inhibitor.
(3) Later changed to 1/2 in.

Table 4a. Concrete mix proportions for prestressed concrete girders (continued).[1]

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA (s)	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
w/cm ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.27	0.32	0.28	0.27
Cement Type	II	II	I	I	III	III	III	III	I	I	III
Cement Quantity, lb/yd^3	680	680	747	747	671	671	671	526	752	752	728
Fly Ash Type	—	—	C	C	C	C	C	C	—	—	C
Fly Ash Quantity, lb/yd^3	—	—	249	249	315	315	312	196	—	—	222
Silica Fume, lb/yd^3	84	84	—	—	—	—	—	—	55	75	50
GGBFS, lb/yd^3	—	—	—	—	—	—	—	—	—	—	—
Fine Aggregate, lb/yd^3	1200	1200	974	974	1086	1086	1062	1160	1425	1350	890
Coarse Aggregate Max. Size, in	3/4	3/4	3/4	3/4	1/2	1/2	1/2	3/4	3/4	1/2	1/2
Coarse Aggregate Quantity, lb/yd^3	1825	1825	1920	1920	1919	1919	1863	1998	1675	1671	1870
Water, lb/yd^3	190	190	248	248	248	248	246	196	255	235	265
Air Entrainment, fl oz/yd^3	6.0	4.0	—	—	—	—	—	—	3-7	7	—
Water Reducer, fl oz/yd^3	46	46	—	—	—	—	—	—	24-30	—	29
Retarder, fl oz/yd^3	—	—	—	—	27	27	28	16	24-30	25-30	—
High-Range Water-Reducer, fl oz/yd^3	260	382	5-15	5-15	200	200	200	159	202	207	215

(1) Based on approved concrete mix proportions.
(s) steam-cured girders only.

Table 4b. Concrete mix proportions for cast-in-place concrete decks.[1]

STATE	AL	CO	GA	LA	NE	NH (2)	NH (2)	NM	NC	OH (3)
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
w/cm ratio	0.37	0.38	0.34	0.39	0.31	0.38	0.38	0.32	0.33	0.22
Cement Type	II	—	I	IS	IP	II	Blended	I/II	I/II	I
Cement Quantity, lb/yd^3	658	705	651	306	750	607	608	687	587	803
Fly Ash Type	C	—	—	—	C	—	—	F	F	F
Fly Ash Quantity, lb/yd^3	165	—	—	—	75	—	—	172	175	68.5
Silica Fume, lb/yd^3	—	—	12	—	—	53	52	—	—	87.5
GGBFS, lb/yd^3	—	—	—	305	—	—	—	—	—	—
Fine Aggregate, lb/yd^3	1042	1384	1385	1176	1400	1190	1190	1290	1000	868
Coarse Aggregate Max. Size, in	1	3/4	3/4	1	1/2	3/4	3/4	1/2	1	3/8
Coarse Aggregate Quantity, lb/yd^3	1860	1488	1700	1900	1400	1815	1815	1400	1825	1721
Water, lb/yd^3	304	266	225	238	255	253	253	275	250	210
Air Entrainment, fl oz/yd^3	32	3.4	16.2	4.0	5	6	4.5	8.6	—	31.6
Water Reducer, fl oz/yd^3	25	—	19.5	—	30	20	19.8	—	—	—
Retarder, fl oz/yd^3	—	—	—	36.7	—	—	—	—	—	—
High-Range Water-Reducer, fl oz/yd^3	98	19	143	—	135	79	105.6	56.3	—	191.8

(1) Based on approved concrete mix proportions.
(2) Also includes 4.0 gal/yd^3 of corrosion inhibitor.
(3) Ohio bridge did not have a separate concrete deck. Values are for the abutments.

Table 4b. Concrete mix proportions for cast-in-place concrete decks (continued).[1]

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
w/cm ratio	0.39	0.36	0.36	0.36	0.43	0.35	0.31	0.42	0.40	0.45	0.39
Cement Type	II	II	I	I	I	I	II	II	II	I	I
Cement Quantity, lb/yd^3	511	590	494	494	383	474	490	427	329	560	660
Fly Ash Type	—	F	C	C	C	C	C	C	—	F	C
Fly Ash Quantity, lb/yd^3	118	124	153	153	148	221	210	184	—	140	75
Silica Fume, lb/yd^3	55	—	50	50	—	—	—	—	—	—	—
GGBFS, lb/yd^3	—	—	—	—	—	—	—	—	329	—	—
Fine Aggregate, lb/yd^3	1100	1222	1115	1115	1243	1303	1365	1240	1173	1004	1100
Coarse Aggregate Max Size, in	—	—	1	1	1-1/2	1	1-1/4	1-1/4	1	1	1/2
Coarse Aggregate Quantity, lb/yd^3	1725	1634	1810	1810	1856	1811	1900	1856	1773	1724	1700
Water, lb/yd^3	264	255	233	233	229	244	219	258	263	315	290
Air Entrainment, fl oz/yd^3	—	—	—	—	2.1	—	3.1	3.1	8.5	5	—
Water Reducer, fl oz/yd^3	41	22	—	—	—	—	—	—	66	—	6
Retarder, fl oz/yd^3	—	—	—	—	45	22	28	26	—	21	—
High-Range Water-Reducer, fl oz/yd^3	—	—	—	—	—	122	156	—	13-20	—	—

(1) Based on approved concrete mix proportions.

Table 5a. Measured structural concrete properties for prestressed concrete girders.[1]

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Max. Concrete Temp., ^{o}F	—	158	—	147	132	—	—	—	162	—
Slump, in,	7.7	—	3.5-6	6.6	—	6.3	7	7.5	4-7	6
Air Content, %	4.4	—	3-5	—	—	6.6	3.5	7.2	3-5	6-7
Unit Weight, lb/ft^3	149.7	—	145.0	—	—	147.1	148.6	137.5	—	—
Curing Type	ps	—	sc	sc, ps	s	s	s	—	—	s
Compressive Strength										
Age at Release, hours	19-45	—	24	21-40	—	14-17	—	72	27	18
Release, psi	8040-9810	5600-10,900	10,464	8130	8471	6700	6800	7325	9400	7810
7 days, psi	—	—	10,360	9250	10,529	8000	10,240	—	—	9060
28 days, psi	9920	—	12,480	11,018	12,554	7755	11,200	9076	13,100	11,290
56 days, psi	9950	7800-14,000	13,300	11,238	13,944	9000	11,850	10,151	—	11,810

(1) Based on production concrete.
ps = partial steam curing, s = steam curing, sc = self curing (concrete insulated without additional heat).

Table 5a. Measured structural concrete properties for prestressed concrete girders (continued).[1]

STATE	SD	SD	TN	TN	TX (Louetta)(2)		TX (San Angelo)(2)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Max. Concrete Temp., ^{o}F	140	140	—	—	—	—	158	155	166	161	—
Slump, in,	8	6.9	—	—	3.8-8.8	3.8-8.5	3.5-9	7-8	6.8	6.6	2.8-6
Air Content, %	4	6.7	—	—	2	2	2	2	5.9	4.4	1
Unit Weight, lb/ft^3	—	—	—	—	154	154	153	149	—	—	159
Curing Type	rh	rh	s	s	sc	sc	sc	sc	s, m	s	s
Compressive Strength											
Age at Release, hours	—	—	24-72	24-72	17-21	19-21	17-46	26	18 s	18	18-60
Release, psi	—	—	8635	8719	8460	8740	9940	8560	7340 s	8840	8150
7 days, psi	11,970	10,400	9484	9903	—	—	—	—	—	—	—
28 days, psi	15,900	13,250	9651	10,529	13,460	13,610	14,510	10,130	9060 s	11,200	11,370
56 days, psi	15,590	—	10,090	10,651	—	—	—	—	9875 s	—	12,220

(1) Based on production concrete.
(2) For the Texas bridges, different concrete strengths were specified for different girder span lengths. Listed strengths are average values except for San Angelo WB, where largest values are used.
m = moist curing, rh = radiant heat curing, s = steam curing, sc = self curing (concrete insulated without additional heat).

Table 5b. Measured structural concrete properties for cast-in-place concrete decks.[1]

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH (2)
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Slump, in,	5.8	3.8	4-7	—	—	3-5	5.25	2.5-8.5	4-5	4.5
Air Content, %	4.7	5.5	3.2-6.5	—	—	4.0-5.8	6.0	4.5-8.2	5.7-6.8	6.5
Unit Weight, lb/ft^3	—	143.4	149.2	—	—	144-147	147.4	134-150	—	141
Curing Type	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Curing Duration, days	7	5	7	7	—	5.7	7	14	7	7
Compressive Strength										
7 days, psi	6010	4390	5040	3149	7252	6890	7100	5116	—	—
28 days, psi	7370	5310	6217	5493	9606	9020	9004	6160	7150 NB	8689
56 days, psi	—	5950	7740	5785	10,433	—	9120	7501	—	—

(1) Based on production concrete.
(2) Ohio bridge did not have a separate concrete deck. Values are for the abutments.

Table 5b. Measured structural concrete properties for cast-in-place concrete decks (continued).[1]

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Slump, in,	—	2.5	—	—	4	7	7.4	—	5.7	3.6	3.3
Air Content, %	—	6.7	—	—	3.8	0	6.3	4.7	7.0	5.8	5.6
Unit Weight, lb/ft^3	—	143	—	—	143	150	—	145	—	—	—
Curing Type	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet
Curing Duration, days	7	7	7	7	10	10	10	10	7	7	14
Compressive Strength											
7 days, psi	5120	4920	4945	4287	—	—	6054	—	5388	4260	—
28 days, psi	7070	6170	8265	6460	5700	9100	7345	6120	6600	5400	5490
56 days, psi	—	—	8713	7197	5700	9740	—	—	—	6710	—

(1) Based on production concrete.

Table 5c. Measured durability properties for prestressed concrete girders and cast-in-place concrete decks.[1]

STATE	AL	CO	GA	LA	NE	NH	NH	NM	NC	OH
BRIDGE NAME	AL 199	Yale Av.	SR 920	Charenton	120th St.	Route 104	Route 3A	Rio Puerco	U.S. 401	U.S. 22
Prestressed Concrete Girders										
Air Content, %	4.4	—	3-5	—	—	6.6	3.5	—	3-5	6-7
Chloride Permeability, coulombs	2720	—	198	1355	—	1590	390	—	1257-3055	213
Age, days	56	—	56	56	—	56	56	—	90	320
Freeze-Thaw Resistance, %	98	—	—	—	—	107 (2)	—	—	—	—
Scaling Resistance	—	—	—	—	—	—	—	—	—	—
Abrasion Resistance, in	—	—	—	—	—	—	—	—	—	—
Cast-in-Place Concrete Decks										
Air Content, %	4.7	5.5	3.2-6.5	—	—	4.0-5.8	6.0	4.5-8.2	5.7-6.8	—
Chloride Permeability, coulombs	2870	5597	3963	1390	589	753	1060	—	—	—
Age, days	56	—	56	56	—	56	56	—	—	—
Freeze-Thaw Resistance, %	92	—	—	—	—	97 (2)	—	—	—	—
Scaling Resistance	—	—	—	—	—	0-1	—	—	—	—
Abrasion Resistance, in	—	0.025	—	—	—	—	—	—	—	—

(1) Based on production concrete.
(2) ASTM C 666 Procedure A or AASHTO T 161 Procedure A.

Table 5c. Measured durability properties for prestressed concrete girders and cast-in-place concrete decks (continued).[1]

STATE	SD	SD	TN	TN	TX (Louetta)		TX (San Angelo)		VA	VA	WA
BRIDGE NAME	I 29 NB	I 29 SB	Porter	Hickman	NB	SB	EB	WB	Route 40	VA Av.	SR 18
Prestressed Concrete Girders											
Air Content, %	4	6.7	—	—	2	2	2	2	5.9	4.4	1
Chloride Permeability, coulombs	65	88	390	496	≤ 1000	≤ 1000	≤ 1000	≤ 1000	228	125	496
Age, days	90	—	56	56	56	56	56	56	28 (3)	28 (3)	> 300
Freeze-Thaw Resistance, %	—	—	—	—	—	—	—	—	—	26, 91 (2)	—
Scaling Resistance	—	—	—	—	—	—	—	—	—	0-1	—
Abrasion Resistance, in	—	—	—	—	—	—	—	—	—	—	—
Cast-in-Place Concrete Decks											
Air Content, %	—	6.8	—	—	3.8	0	6.3	4.7	7.0	5.8	5.6
Chloride Permeability, coulombs	461	1058	1297	317 (3)	1730 (4)	900 (4)	703 (4)	2573 (4)	778	1457	2645
Age, days	90	—	56	28	56	56	56	56	28 (3)	28 (3)	> 210
Freeze-Thaw Resistance, %	—	—	—	—	—	—	97.9	97.3	—	108 (2)	—
Scaling Resistance	—	—	—	—	—	—	2-3	0	—	0-1	—
Abrasion Resistance, in	—	—	—	—	—	—	0.04	0.07	—	—	(5)

(1) Based on production concrete.
(2) ASTM C 666 Procedure A or AASHTO T 161 Procedure A.
(3) Includes 21 days at 100 ^{o}F.
(4) ASTM standard cure.
(5) Reported as a weight loss of 3.33 gm.