

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.					strana
						32
Zkusebni misto cislo	a	Rbe	α t	α w	Rbe * α w * α t	
21	53	64.8	.9	.85	49.6 MPa	
22	54	66.8	.9	.85	51.1 MPa	
23	46.9	53.2	.9	.85	40.7 MPa	
24	54	66.8	.9	.85	51.1 MPa	
25	51.4	61.7	.9	.85	47.2 MPa	
26	51.5	61.9	.9	.85	47.4 MPa	
27	54	66.8	.9	.85	51.1 MPa	
28	54	66.8	.9	.85	51.1 MPa	
29	54	66.8	.9	.85	51.1 MPa	
30	54	66.8	.9	.85	51.1 MPa	
31	54	66.8	.9	.85	51.1 MPa	

Schmidtuv tvrdomer N-34 131 474

Schmidtuv tvrdomer N-34 131 474						
akce	P O N T E X s.r.o.					strana
Komorany						3
Vyvrt cislo	Zkusebni misto cislo	Schmidty Rbe	1	Pevnost vyvrtu 2	3	- Rbe prumer
1	21	49.6	23.6	26.9	31.9	28.5

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.				strana
					34
Zkusebni misto cislo	a	Rbe	α	Rbe * α	
21	53	49.6	.57	28.5	MPa
22	54	51.1	.57	29.3	MPa
23	46.9	40.7	.57	23.4	MPa
24	54	51.1	.57	29.3	MPa
25	51.4	47.2	.57	27.1	MPa
26	51.5	47.4	.57	27.2	MPa
27	54	51.1	.57	29.3	MPa
28	54	51.1	.57	29.3	MPa
29	54	51.1	.57	29.3	MPa
30	54	51.1	.57	29.3	MPa
31	54	51.1	.57	29.3	MPa

Schmidtuv tvrdomer N-34 131 474		
akce	P O N T E X s.r.o.	strana
Komorany		35
Zkousena cast konstrukce: SLOUPY C + 0,20		

VYPOCET ZARUCENE PEVNOSTI

CSN 73 2011,clanek 4.2.7.1

ARITMETICKY PRUMER PEVNOSTI $R_{be} = 28.3 \text{ MPa}$
SOUCINITEL $\beta_n = 1.78$
/ PRO 11 ZKUSEBNICH MIST /

SMERODATNA ODCHYLKA VYVRTU $S_{rez} = 2.5 \text{ MPa}$
/ NEJSOU-LI, $S_{rez}=2.5$ /

SMERODATNA ODCHYLKA SCHMIDTU $S = 1.9 \text{ MPa}$

$$S_r = \sqrt{S^2 + S_{rez}^2} = \sqrt{1.9^2 + 2.5^2} = 3.1 \text{ MPa}$$

VYBEROVA SMERODATNA ODCHYLKA $S_r = 3.1 \text{ MPa}$

$$R_{bg} = R_{be} - \beta_n * S_r = 28.3 - 1.78 * 3.1 = 22.8 \text{ MPa}$$

ZARUCENA PEVNOST BETONU

$$R_{bg} = 22.8 \text{ MPa}$$

ODPOVIDAJICI KVALITA BETONU

B 250

CSN 73 2400,zm. b,tab. 9

B 20

Schmidtuv tvrdomer N-34 131 474

akce

P O N T E X s.r.o.

strana

Komorany

36

Datum: 3/3/1993

Zpracovatel: ing. Kiml

Zkousena cast konstrukce: SLOUPY A +4,30

Stari betonu: > 1 rok

Vlhkost betonu: suchy

Smery mereni: 1-NAHORU 2-DOLU 3-VODOROVNE 4-NAHORU 45' 5-DOLU 45

Zkusebni misto:	97	a	54	48	48	56	46	46	47	47
Smer mereni:	3	prumer	49		Mez 0.8 = 39			Mez 1.2 = 59		
Karbonatace:		platne	54	48	48	56	46	46	47	47
Vlhkost: suchy		prumer	a = 49				Rbe = 57.2 MPa			

Zkusebni misto:	98	a	38	52	54	48	46	48	51	47
Smer mereni:	3	prumer	48		Mez 0.8 = 38			Mez 1.2 = 58		
Karbonatace:		platne	0	52	54	48	46	48	51	47
Vlhkost: suchy		prumer	a = 49.4				Rbe = 58 MPa			

Zkusebni misto:	99	a	50	53	49	45	56	48	49	56
Smer mereni:	3	prumer	51		Mez 0.8 = 41			Mez 1.2 = 61		
Karbonatace:		platne	50	53	49	45	56	48	49	56
Vlhkost: suchy		prumer	a = 50.8				Rbe = 60.5 MPa			

Zkusebni misto:	100	a	43	51	57	55	56	51	48	50
Smer mereni:	3	prumer	51		Mez 0.8 = 41			Mez 1.2 = 62		
Karbonatace:		platne	43	51	57	55	56	51	48	50
Vlhkost: suchy		prumer	a = 51.4				Rbe = 61.7 MPa			

Zkusebni misto:	101	a	53	50	53	48	45	47	48	49
Smer mereni:	3	prumer	49		Mez 0.8 = 39			Mez 1.2 = 59		
Karbonatace:	pH=5	platne	53	50	53	48	45	47	48	49
Vlhkost: suchy		prumer	a = 49.1				Rbe = 57.4 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		37

Zkusebni misto:	102	a	51	46	49	50	48	45	48	48
Smer mereni:	3	prumer	48			Mez 0.8 = 39			Mez 1.2 = 58	
Karbonatace:		platne	51	46	49	50	48	45	48	48
Vlhkost: suchy		prumer	a = 48.1				Rbe = 55.5 MPa			

Zkusebni misto:	103	a	57	48	54	52	52	50	49	50
Smer mereni:	3	prumer	52			Mez 0.8 = 41			Mez 1.2 = 62	
Karbonatace:		platne	57	48	54	52	52	50	49	50
Vlhkost: suchy		prumer	a = 51.5				Rbe = 61.9 MPa			

Zkusebni misto:	104	a	50	41	47	54	50	49	45	56
Smer mereni:	3	prumer	49			Mez 0.8 = 39			Mez 1.2 = 59	
Karbonatace:		platne	50	41	47	54	50	49	45	56
Vlhkost: suchy		prumer	a = 49				Rbe = 57.2 MPa			

Zkusebni misto:	105	a	48	52	54	46	56	40	32	50
Smer mereni:	3	prumer	47			Mez 0.8 = 38			Mez 1.2 = 57	
Karbonatace:		platne	48	52	54	46	56	40	0	50
Vlhkost: suchy		prumer	a = 49.4				Rbe = 58 MPa			

Zkusebni misto:	106	a	49	47	44	49	49	49	53	47
Smer mereni:	3	prumer	48			Mez 0.8 = 39			Mez 1.2 = 58	
Karbonatace:		platne	49	47	44	49	49	49	53	47
Vlhkost: suchy		prumer	a = 48.4				Rbe = 56 MPa			

Zkusebni misto:	107	a	46	47	46	48	47	46	45	51
Smer mereni:	3	prumer	47			Mez 0.8 = 38			Mez 1.2 = 56	
Karbonatace:		platne	46	47	46	48	47	46	45	51
Vlhkost: suchy		prumer	a = 47				Rbe = 53.4 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		38

Zkusebni misto:	108	a	57	58	58	48	59	60	54	56
Smer mereni:	3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 68		
Karbonatace:		platne	57	58	58	48	59	60	54	56
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	109	a	50	58	56	60	59	49	48	52
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 65		
Karbonatace:		platne	50	58	56	60	59	49	48	52
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	110	a	50	44	54	52	56	43	56	50
Smer mereni:	3	prumer	51		Mez 0.8 = 41			Mez 1.2 = 61		
Karbonatace:		platne	50	44	54	52	56	43	56	50
Vlhkost: suchy		prumer	a = 50.6				Rbe = 60.3 MPa			

Zkusebni misto:	111	a	33	37	51	43	46	36	40	53
Smer mereni:	3	prumer	42		Mez 0.8 = 34			Mez 1.2 = 51		
Karbonatace:		platne	0	37	0	43	46	36	40	0
Vlhkost: suchy		prumer	a = 40.4				Rbe = 41.2 MPa			

Zkusebni misto:	112	a	42	46	46	51	50	48	47	50
Smer mereni:	3	prumer	48		Mez 0.8 = 38			Mez 1.2 = 57		
Karbonatace:		platne	42	46	46	51	50	48	47	50
Vlhkost: suchy		prumer	a = 47.5				Rbe = 54.3 MPa			

Zkusebni misto:	113	a	49	55	49	46	51	50	50	59
Smer mereni:	3	prumer	51		Mez 0.8 = 41			Mez 1.2 = 61		
Karbonatace:		platne	49	55	49	46	51	50	50	59
Vlhkost: suchy		prumer	a = 51.1				Rbe = 61.2 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		39

Zkusebni misto:	114	a	49	49	40	40	29	39	46	30
Smer mereni:	3	prumer	40		Mez 0.8 = 32			Mez 1.2 = 48		
Karbonatace:		platne	0	0	40	40	0	39	46	0
Vlhkost: suchy			neplatne zkusebni misto							

Zkusebni misto:	115	a	54	54	48	50	47	53	53	48
Smer mereni:	3	prumer	51		Mez 0.8 = 41			Mez 1.2 = 61		
Karbonatace:	pH=5	platne	54	54	48	50	47	53	53	48
Vlhkost: suchy		prumer	a = 50.9				Rbe = 60.7 MPa			

Zkusebni misto:	116	a	47	49	47	47	47	38	54	46
Smer mereni:	3	prumer	47		Mez 0.8 = 38			Mez 1.2 = 56		
Karbonatace:		platne	47	49	47	47	47	38	54	46
Vlhkost: suchy		prumer	a = 46.9				Rbe = 53.2 MPa			

Zkusebni misto:	117	a	52	56	54	52	52	60	55	51
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 65		
Karbonatace:		platne	52	56	54	52	52	60	55	51
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.					strana
Komorany						40
Zkusebni misto cislo	a	Rbe	α t	α w	Rbe * α w * α t	
97	49	57.2	.9	.85	43.7	MPa
98	49.4	58	.9	.85	44.4	MPa
99	50.8	60.5	.9	.85	46.3	MPa
100	51.4	61.7	.9	.85	47.2	MPa
101	49.1	57.4	.9	.85	43.9	MPa
102	48.1	55.5	.9	.85	42.5	MPa
103	51.5	61.9	.9	.85	47.4	MPa
104	49	57.2	.9	.85	43.7	MPa
105	49.4	58	.9	.85	44.4	MPa
106	48.4	56	.9	.85	42.8	MPa
107	47	53.4	.9	.85	40.8	MPa
108	54	66.8	.9	.85	51.1	MPa
109	54	66.8	.9	.85	51.1	MPa
110	50.6	60.3	.9	.85	46.1	MPa
111	40.4	41.2	.9	.85	31.5	MPa
112	47.5	54.3	.9	.85	41.6	MPa
113	51.1	61.2	.9	.85	46.8	MPa
114	neplatne zkusebni misto					
115	50.9	60.7	.9	.85	46.5	MPa
116	46.9	53.2	.9	.85	40.7	MPa
117	54	66.8	.9	.85	51.1	MPa

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		41

Vyvert cislo	Zkusebni misto cislo	Schmidty Rbe	1	Pevnost vyvrtu			- Rbe prumer
				2	3		

1	98	44.4	29.2	0	0		29.2
2	110	46.1	38.8	23.4	0		31.1

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		42

Zkusebni misto cislo	a	Rbe	α	Rbe * α
97	49	43.7	.67	29.2 MPa
98	49.4	44.4	.67	29.6 MPa
99	50.8	46.3	.67	30.9 MPa
100	51.4	47.2	.67	31.5 MPa
101	49.1	43.9	.67	29.3 MPa
102	48.1	42.5	.67	28.3 MPa
103	51.5	47.4	.67	31.6 MPa
104	49	43.7	.67	29.2 MPa
105	49.4	44.4	.67	29.6 MPa
106	48.4	42.8	.67	28.5 MPa
107	47	40.8	.67	27.2 MPa
108	54	51.1	.67	34 MPa
109	54	51.1	.67	34 MPa
110	50.6	46.1	.67	30.7 MPa
111	40.4	31.5	.67	21 MPa
112	47.5	41.6	.67	27.7 MPa
113	51.1	46.8	.67	31.2 MPa
114		neplatne zkusebni misto		
115	50.9	46.5	.67	31 MPa
116	46.9	40.7	.67	27.1 MPa
117	54	51.1	.67	34 MPa

Schmidtuv tvrdomer N-34 131 474		
akce	P O N T E X s.r.o.	strana
Komorany		43
Zkousena cast konstrukce: SLOUPY A + 4,30		

CSN 73 2011,clanek 4.2.7.1

ARITMETICKY PRUMER PEVNOSTI $R_{be} = 29.8 \text{ MPa}$
SOUCINITEL β_n $\beta_n = 1.71$
/ PRO 21 ZKUSEBNICH MIST /

SMERODATNA ODCHYLKA VYVRTU $S_{rez} = 1.3 \text{ MPa}$
/ NEJSOU-LI, $S_{rez}=2.5$ /

SMERODATNA ODCHYLKA SCHMIDTU $S = 3 \text{ MPa}$

$$S_r = \sqrt{S^2 + S_{rez}^2} = \sqrt{3^2 + 1.3^2} = 3.2 \text{ MPa}$$

VYBEROVA SMERODATNA ODCHYLKA $S_r = 3.2 \text{ MPa}$

$$R_{bg} = R_{be} - \beta_n * S_r = 29.8 - 1.71 * 3.2 = 24.2 \text{ MPa}$$

ZARUCENA PEVNOST BETONU

$$R_{bg} = 24.2 \text{ MPa}$$

ODPOVIDAJICI KVALITA BETONU

B 250

CSN 73 2400,zm. b,tab. 9

B 20

Schmidtuv tvrdomer N-34 131 474

akce		P O N T E X s.r.o.	strana
Komorany			44
Datum: 3/3/1993		Zpracovatel: ing. Kiml	
Zkousena cast konstrukce: SLOUPY CD +16,80			
Stari betonu: > 1 rok		Vlhkost betonu: suchy	
Smery mereni: 1-NAHORU 2-DOLU 3-VODOROVNE 4-NAHORU 45' 5-DOLU 45'			

Zkusebni misto: 118	a	62	60	56	58	47	58	53	62
Smer mereni: 3	prumer	57		Mez 0.8 = 46			Mez 1.2 = 68		
Karbonatace:	platne	62	60	56	58	47	58	53	62
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 119	a	52	58	61	54	57	52	55	54
Smer mereni: 3	prumer	55		Mez 0.8 = 44			Mez 1.2 = 66		
Karbonatace:	platne	52	58	61	54	57	52	55	54
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 120	a	61	43	61	61	57	55	50	51
Smer mereni: 3	prumer	55		Mez 0.8 = 44			Mez 1.2 = 66		
Karbonatace: pH=5	platne	61	0	61	61	57	55	50	51
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 121	a	54	60	64	58	60	57	63	55
Smer mereni: 3	prumer	59		Mez 0.8 = 47			Mez 1.2 = 71		
Karbonatace:	platne	54	60	64	58	60	57	63	55
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 122	a	54	56	60	56	58	58	52	55
Smer mereni: 3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 67		
Karbonatace:	platne	54	56	60	56	58	58	52	55
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Schmidtuv tvrdomer N-34 131 474										
akce	P O N T E X s.r.o.								strana	
Komorany									45	

Zkusebni misto:	123	a	56	56	58	60	59	58	65	62
Smer mereni:	3	prumer	59		Mez 0.8 = 47			Mez 1.2 = 71		
Karbonatace:		platne	56	56	58	60	59	58	65	62
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	124	a	60	58	58	54	56	56	54	58
Smer mereni:	3	prumer	57		Mez 0.8 = 45			Mez 1.2 = 68		
Karbonatace:		platne	60	58	58	54	56	56	54	58
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	125	a	56	56	42	56	53	59	58	46
Smer mereni:	3	prumer	53		Mez 0.8 = 43			Mez 1.2 = 64		
Karbonatace:		platne	56	56	0	56	53	59	58	46
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	127	a	49	60	48	54	64	54	56	46
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 65		
Karbonatace:		platne	49	60	48	54	64	54	56	46
Vlhkost: suchy		prumer	a = 53.9				Rbe = 66.5 MPa			

Zkusebni misto:	128	a	57	57	58	59	57	57	61	59
Smer mereni:	3	prumer	58		Mez 0.8 = 47			Mez 1.2 = 70		
Karbonatace:		platne	57	57	58	59	57	57	61	59
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	129	a	56	55	58	59	56	57	57	58
Smer mereni:	3	prumer	57		Mez 0.8 = 46			Mez 1.2 = 68		
Karbonatace:		platne	56	55	58	59	56	57	57	58
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		46

Zkusebni misto: 130	a	56	56	55	59	58	56	53	55
Smer mereni: 3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 67		
Karbonatace: pH=8	platne	56	56	55	59	58	56	53	55
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 131	a	59	55	59	58	47	61	55	57
Smer mereni: 3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 68		
Karbonatace:	platne	59	55	59	58	47	61	55	57
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 132	a	61	58	57	55	49	56	58	57
Smer mereni: 3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 68		
Karbonatace:	platne	61	58	57	55	49	56	58	57
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto: 133	a	58	50	56	56	48	48	56	54
Smer mereni: 3	prumer	53		Mez 0.8 = 43			Mez 1.2 = 64		
Karbonatace:	platne	58	50	56	56	48	48	56	54
Vlhkost: suchy	prumer	a = 53.3				Rbe = 65.3 MPa			

Zkusebni misto: 134	a	54	46	56	56	48	46	54	58
Smer mereni: 3	prumer	52		Mez 0.8 = 42			Mez 1.2 = 63		
Karbonatace:	platne	54	46	56	56	48	46	54	58
Vlhkost: suchy	prumer	a = 52.3				Rbe = 63.4 MPa			

Zkusebni misto: 135	a	54	46	48	54	52	50	55	43
Smer mereni: 3	prumer	50		Mez 0.8 = 40			Mez 1.2 = 60		
Karbonatace:	platne	54	46	48	54	52	50	55	43
Vlhkost: suchy	prumer	a = 50.3				Rbe = 59.6 MPa			

Schmidtuv tvrdomer N-34 131 474										
akce	P O N T E X s.r.o.								strana	
Komorany									47	

Zkusebni misto:	136	a	58	57	57	60	62	58	58	58
Smer mereni:	3	prumer	59		Mez 0.8 = 47			Mez 1.2 = 70		
Karbonatace:		platne	58	57	57	60	62	58	58	58
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	137	a	50	50	58	62	58	52	56	62
Smer mereni:	3	prumer	56		Mez 0.8 = 45			Mez 1.2 = 67		
Karbonatace:		platne	50	50	58	62	58	52	56	62
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	138	a	63	45	55	52	52	52	59	59
Smer mereni:	3	prumer	55		Mez 0.8 = 44			Mez 1.2 = 66		
Karbonatace:		platne	63	45	55	52	52	52	59	59
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	139	a	64	52	52	48	52	54	56	56
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 65		
Karbonatace:		platne	64	52	52	48	52	54	56	56
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	140	a	60	59	61	60	58	48	51	55
Smer mereni:	3	prumer	57		Mez 0.8 = 45			Mez 1.2 = 68		
Karbonatace:		platne	60	59	61	60	58	48	51	55
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	141	a	62	58	56	52	47	58	65	61
Smer mereni:	3	prumer	57		Mez 0.8 = 46			Mez 1.2 = 69		
Karbonatace:		platne	62	58	56	52	47	58	65	61
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		48

Zkusebni misto:	142	a	53	56	46	58	57	45	45	47
Smer mereni:	3	prumer	51	Mez 0.8 = 41			Mez 1.2 = 61			
Karbonatace:		platne	53	56	46	58	57	45	45	47
Vlhkost: suchy		prumer	a = 50.9				Rbe = 60.7 MPa			

Zkusebni misto:	143	a	48	46	57	49	53	51	55	62
Smer mereni:	3	prumer	53	Mez 0.8 = 42			Mez 1.2 = 63			
Karbonatace:		platne	48	46	57	49	53	51	55	62
Vlhkost: suchy		prumer	a = 52.6				Rbe = 64.1 MPa			

Zkusebni misto:	144	a	58	54	51	62	44	49	50	52
Smer mereni:	3	prumer	53	Mez 0.8 = 42			Mez 1.2 = 63			
Karbonatace: pH=5		platne	58	54	51	62	44	49	50	52
Vlhkost: suchy		prumer	a = 52.5				Rbe = 63.9 MPa			

Zkusebni misto:	145	a	53	58	54	54	65	57	54	52
Smer mereni:	3	prumer	56	Mez 0.8 = 45			Mez 1.2 = 67			
Karbonatace:		platne	53	58	54	54	65	57	54	52
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	146	a	54	58	51	44	57	55	60	53
Smer mereni:	3	prumer	54	Mez 0.8 = 43			Mez 1.2 = 65			
Karbonatace:		platne	54	58	51	44	57	55	60	53
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	147	a	56	55	52	54	50	48	51	50
Smer mereni:	3	prumer	52	Mez 0.8 = 42			Mez 1.2 = 62			
Karbonatace:		platne	56	55	52	54	50	48	51	50
Vlhkost: suchy		prumer	a = 52				Rbe = 62.9 MPa			

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X S.T.O.					strana
						49
Komorany						
Zkusebni misto cislo	a	Rbe	α t	α w	Rbe * α w * α t	
118	54	66.8	.9	.85	51.1	MPa
119	54	66.8	.9	.85	51.1	MPa
120	54	66.8	.9	.85	51.1	MPa
121	54	66.8	.9	.85	51.1	MPa
122	54	66.8	.9	.85	51.1	MPa
123	54	66.8	.9	.85	51.1	MPa
124	54	66.8	.9	.85	51.1	MPa
125	54	66.8	.9	.85	51.1	MPa
127	53.9	66.5	.9	.85	50.9	MPa
128	54	66.8	.9	.85	51.1	MPa
129	54	66.8	.9	.85	51.1	MPa
130	54	66.8	.9	.85	51.1	MPa
131	54	66.8	.9	.85	51.1	MPa
132	54	66.8	.9	.85	51.1	MPa
133	53.3	65.3	.9	.85	50	MPa
134	52.3	63.4	.9	.85	48.5	MPa
135	50.3	59.6	.9	.85	45.6	MPa
136	54	66.8	.9	.85	51.1	MPa
137	54	66.8	.9	.85	51.1	MPa
138	54	66.8	.9	.85	51.1	MPa
139	54	66.8	.9	.85	51.1	MPa
140	54	66.8	.9	.85	51.1	MPa
141	54	66.8	.9	.85	51.1	MPa
142	50.9	60.7	.9	.85	46.5	MPa
143	52.6	64.1	.9	.85	49	MPa

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.	strana
Komorany		50

144	52.5	63.9	.9	.85	48.9 MPa
145	54	66.8	.9	.85	51.1 MPa
146	54	66.8	.9	.85	51.1 MPa
147	52	62.9	.9	.85	48.1 MPa

Schmidtuv tvrdomer N-34 131 474

akce		P O N T E X s.r.o.					strana	
Komorany							51	
Vyvrt cislo	Zkusebni misto cislo	Schmidty Rbe	1	Pevnost 2	vyvrtu 3	- Rbe prumer		
1	122	51.1	35.5	28.9	0	32.2		
2	132	51.1	41.6	0	0	41.6		

Schmidtuv tvrdomer N-34 131 474

akce	P O N T E X s.r.o.				strana
Komorany					52
Zkusebni misto cislo	a	Rbe	α	Rbe * α	

118	54	51.1	.72	36.9 MPa
119	54	51.1	.72	36.9 MPa
120	54	51.1	.72	36.9 MPa
121	54	51.1	.72	36.9 MPa
122	54	51.1	.72	36.9 MPa
123	54	51.1	.72	36.9 MPa
124	54	51.1	.72	36.9 MPa
125	54	51.1	.72	36.9 MPa
127	53.9	50.9	.72	36.8 MPa
128	54	51.1	.72	36.9 MPa
129	54	51.1	.72	36.9 MPa
130	54	51.1	.72	36.9 MPa
131	54	51.1	.72	36.9 MPa
132	54	51.1	.72	36.9 MPa
133	53.3	50	.72	36.1 MPa
134	52.3	48.5	.72	35 MPa
135	50.3	45.6	.72	32.9 MPa
136	54	51.1	.72	36.9 MPa
137	54	51.1	.72	36.9 MPa
138	54	51.1	.72	36.9 MPa
139	54	51.1	.72	36.9 MPa
140	54	51.1	.72	36.9 MPa
141	54	51.1	.72	36.9 MPa
142	50.9	46.5	.72	33.6 MPa
143	52.6	49	.72	35.4 MPa

Schmidtuv tvrdomer N-34 131 474		
akce	P O N T E X s.r.o.	strana
Komorany		53

144	52.5	48.9	.72	35.3 MPa
145	54	51.1	.72	36.9 MPa
146	54	51.1	.72	36.9 MPa
147	52	48.1	.72	34.8 MPa

Schmidtuv tvrdomer N-34 131 474		
akce	P O N T E X s.r.o.	strana
Komorany		54
Zkousena cast konstrukce: SLOUPY C ₁ D +18,80.		

VYPOCET ZARUCENE PEVNOSTI

CSN 73 2011,clanek 4.2.7.1

ARITMETICKY PRUMER PEVNOSTI

SOUCINITEL β_n

/ PRO 29 ZKUSEBNICH MIST /

$$R_{be} = 36.4 \text{ MPa}$$

$$\beta_n = 1.68$$

SMERODATNA ODCHYLKA VYVRTU

/ NEJSOU-LI, $S_{rez}=2.5$ /

$$S_{rez} = 6.6 \text{ MPa}$$

SMERODATNA ODCHYLKA SCHMIDTU

$$S = 1.1 \text{ MPa}$$

$$S_r = \sqrt{S^2 + S_{rez}^2} = \sqrt{1.1^2 + 6.6^2} = 6.7 \text{ MPa}$$

VYBEROVA SMERODATNA ODCHYLKA

$$S_r = 6.7 \text{ MPa}$$

$$R_{bg} = R_{be} - \beta_n * S_r = 36.4 - 1.68 * 6.7 = 25.1 \text{ MPa}$$

ZARUCENA PEVNOST BETONU

$$R_{bg} = 25.1 \text{ MPa}$$

ODPOVIDAJICI KVALITA BETONU

B 250

CSN 73 2400,zm. b,tab. 9

B 20

Schmidtuv tvrdomer N-34 131 474											
akce	P O N T E X s.r.o.								strana		
Komorany									55		
Datum: 3/3/1993		Zpracovatel: ing. Kiml									
Zkousena cast konstrukce: SLOUPY D +23,50											
Stari betonu: > 1 rok		Vlhkost betonu: suchy									
Smery mereni: 1-NAHORU 2-DOLU 3-VODOROVNE 4-NAHORU 45' 5-DOLU 45'											
Zkusebni misto: 148	a	58	55	59	58	57	59	52	54		
Smer mereni: 3	prumer	57		Mez 0.8 = 45				Mez 1.2 = 68			
Karbonatace:	platne	58	55	59	58	57	59	52	54		
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa					
Zkusebni misto: 149	a	56	56	57	50	60	56	52	56		
Smer mereni: 3	prumer	55		Mez 0.8 = 44				Mez 1.2 = 66			
Karbonatace:	platne	56	56	57	50	60	56	52	56		
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa					
Zkusebni misto: 150	a	50	54	53	46	55	60	54	56		
Smer mereni: 3	prumer	54		Mez 0.8 = 43				Mez 1.2 = 64			
Karbonatace:	platne	50	54	53	46	55	60	54	56		
Vlhkost: suchy	prumer	a = 53.5				Rbe = 65.8 MPa					
Zkusebni misto: 151	a	60	58	58	58	60	53	53	59		
Smer mereni: 3	prumer	57		Mez 0.8 = 46				Mez 1.2 = 69			
Karbonatace:	platne	60	58	58	58	60	53	53	59		
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa					
Zkusebni misto: 152	a	55	57	59	54	56	58	60	55		
Smer mereni: 3	prumer	57		Mez 0.8 = 45				Mez 1.2 = 68			
Karbonatace: pH=8	platne	55	57	59	54	56	58	60	55		
Vlhkost: suchy	prumer	a = 54				Rbe = 66.8 MPa					

Schmidtuv tvrdomer N-34 131 474										
akce	P O N T E X s.r.o.								strana	
Komorany									56	

Zkusebni misto:	153	a	46	56	57	52	54	58	57	48
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 64		
Karbonatace:		platne	46	56	57	52	54	58	57	48
Vlhkost: suchy		prumer	a = 53.5				Rbe = 65.8 MPa			

Zkusebni misto:	154	a	55	56	48	46	60	53	53	54
Smer mereni:	3	prumer	53		Mez 0.8 = 43			Mez 1.2 = 64		
Karbonatace:		platne	55	56	48	46	60	53	53	54
Vlhkost: suchy		prumer	a = 53.1				Rbe = 65.1 MPa			

Zkusebni misto:	155	a	53	56	49	51	58	58	56	60
Smer mereni:	3	prumer	55		Mez 0.8 = 44			Mez 1.2 = 66		
Karbonatace:		platne	53	56	49	51	58	58	56	60
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	156	a	48	51	51	57	52	57	56	57
Smer mereni:	3	prumer	54		Mez 0.8 = 43			Mez 1.2 = 64		
Karbonatace:		platne	48	51	51	57	52	57	56	57
Vlhkost: suchy		prumer	a = 53.6				Rbe = 66 MPa			

Zkusebni misto:	157	a	56	58	59	59	62	56	57	56
Smer mereni:	3	prumer	58		Mez 0.8 = 46			Mez 1.2 = 69		
Karbonatace:		platne	56	58	59	59	62	56	57	56
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			

Zkusebni misto:	158	a	56	51	53	55	44	48	55	51
Smer mereni:	3	prumer	52		Mez 0.8 = 41			Mez 1.2 = 62		
Karbonatace:		platne	56	51	53	55	44	48	55	51
Vlhkost: suchy		prumer	a = 51.6				Rbe = 62.2 MPa			

Schmidtuv tvrdomer N-34 131 474

akce

Komorany

P O N T E X s.r.o.

strana

57

Zkusebni misto:	159	a	51	48	49	59	56	51	45	45
Smer mereni:	3	prumer	51	Mez 0.8 = 40			Mez 1.2 = 61			
Karbonatace:		platne	51	48	49	59	56	51	45	45
Vlhkost: suchy		prumer	a = 50.5				Rbe = 60 MPa			
Zkusebni misto:	160	a	48	58	53	47	47	55	53	56
Smer mereni:	3	prumer	52	Mez 0.8 = 42			Mez 1.2 = 63			
Karbonatace:		platne	48	58	53	47	47	55	53	56
Vlhkost: suchy		prumer	a = 52.1				Rbe = 63.1 MPa			
Zkusebni misto:	161	a	56	56	55	55	57	54	51	56
Smer mereni:	3	prumer	55	Mez 0.8 = 44			Mez 1.2 = 66			
Karbonatace:		platne	56	56	55	55	57	54	51	56
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			
Zkusebni misto:	162	a	56	44	53	56	60	64	54	56
Smer mereni:	3	prumer	55	Mez 0.8 = 44			Mez 1.2 = 66			
Karbonatace:		platne	56	0	53	56	60	64	54	56
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			
Zkusebni misto:	163	a	47	52	56	56	56	53	54	43
Smer mereni:	3	prumer	52	Mez 0.8 = 42			Mez 1.2 = 63			
Karbonatace:		platne	47	52	56	56	56	53	54	43
Vlhkost: suchy		prumer	a = 52.1				Rbe = 63.1 MPa			
Zkusebni misto:	164	a	60	55	56	51	55	59	50	54
Smer mereni:	3	prumer	55	Mez 0.8 = 44			Mez 1.2 = 66			
Karbonatace:		platne	60	55	56	51	55	59	50	54
Vlhkost: suchy		prumer	a = 54				Rbe = 66.8 MPa			