

SCHMIDT/HAMMER										이산포IC Ramp-I교 비파괴강도 DATA										
PROJECT TITLE :																				
Company		 ㈜명성엔지니어링								Client				 ㈜일산대교						
Method		반발경도법, 초음파법								시험위치				상부구조						
시험조건																				
표본상태		표면평활작업후 실시								설계 강도				24.0 Mpa						
표면상태		양호								재령일, 재령계수				3000일 이상				0.63		
함수상태		건조								시험기종				NR타입, J.U.S.T - 900						
시험결과																				
위	지	반 측	발	경	도 치	평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고	
						(R _f)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료학회	건축학회	토목학회	건축학회					
S1		58	56	61	44	44	52.45	4.219	90	-2.9	49.5	0.63	28.3	28.5	30.7	28.1	27.0	28.4	29.4	양호
		55	52	51	60	61														
		47	59	56	45	45														
		60	51	46	54	44														
S2		49	56	50	47	43	51.40	4.205	90	-3.0	48.4	0.63	27.4	28.0	30.6	27.8	27.0	27.7	29.2	양호
		47	61	58	47	61														
		55	43	59	50	51														
		56	47	48	55	45														
S3		46	52	58	47	47	52.30	4.242	90	-2.9	49.4	0.63	28.2	28.4	30.9	28.6	27.0	28.3	29.8	양호
		61	60	47	53	52														
		48	45	61	57	62														
		45	43	45	57	60														
S4		45	43	56	59	57	51.60	4.188	90	-3.0	48.6	0.63	27.5	28.1	30.4	27.5	27.0	27.8	28.9	양호
		55	52	45	50	57														
		54	59	45	52	52														
		51	55	54	46	45														
S5		52	56	48	61	54	53.70	4.259	90	-2.8	50.9	0.63	29.4	29.1	31.1	29.0	27.0	29.2	30.0	양호
		58	53	62	53	47														
		58	44	51	53	49														
		50	57	59	62	47														

시험결과																			
위 치	반 측 발 경 도 지					평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고
						(R _f)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료학회	건축학회	토목학회	건축학회				
S22	59	54	59	55	48	54.10	4.289	90	-2.8	51.3	0.63	29.7	29.3	31.4	29.6	27.0	29.5	30.5	양호
	52	45	48	60	58														
	56	46	47	55	48														
	56	60	64	58	54														
S23	61	45	47	46	54	52.25	4.229	90	-2.9	49.3	0.63	28.1	28.4	30.8	28.3	27.0	28.3	29.6	양호
	55	48	60	56	50														
	48	53	51	52	47														
	44	55	58	57	58														
S24	62	50	47	58	47	51.95	4.236	90	-3.0	49.0	0.63	27.8	28.2	30.9	28.5	27.0	28.0	29.7	양호
	59	46	55	62	52														
	52	43	49	61	50														
	55	45	42	56	48														
S25	50	51	50	48	53	53.70	4.256	90	-2.8	50.9	0.63	29.4	29.1	31.1	28.9	27.0	29.2	30.0	양호
	60	47	52	51	47														
	43	64	61	63	55														
	55	57	53	53	61														
S26	54	55	45	52	42	52.35	4.253	90	-2.9	49.4	0.63	28.2	28.4	31.0	28.9	27.0	28.3	29.9	양호
	54	56	48	56	61														
	62	48	43	60	53														
	43	58	55	60	42														

SCHMIDT/HAMMER														이산포IC Ramp-1교 비파괴강도 DATA											
PROJECT TITLE :																									
Company						 (주) 명 성 엔 지 니 어 링						Client				 (주) 일 산 대 교									
Method						반발경도법, 초음파법						시험위치				하부구조									
시험조건																									
표본상태			표면평활작업후 실시						설계 강도				24.0 Mpa												
표면상태			양호						재령일, 재령계수				3000일 이상				0.63								
함수상태			건조						시험기종				NR타입, J.U.S.T - 900												
시험결과																									
위 치		반 발 경 도 치 측 정 치					평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고					
							(R ₁)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료학회	건축학회	토목학회	건축학회									
IA1 벽체	52	50	43	43	41	46.05	4.121	0	0.0	46.1	0.63	25.5	26.9	29.7	26.1	24.0	26.2	27.9	양호						
	37	45	46	43	49																				
	44	53	39	43	49																				
	51	47	48	45	53																				
IA2 벽체	41	54	45	46	49	46.20	4.144	0	0.0	46.2	0.63	25.6	27.0	30.0	26.6	24.0	26.3	28.3	양호						
	52	42	51	49	46																				
	51	49	41	40	38																				
	42	47	50	51	40																				
IP1 기둥부	38	37	40	49	52	46.15	4.132	0	0.0	46.2	0.63	25.6	27.0	29.8	26.3	24.0	26.3	28.1	양호						
	45	39	55	54	48																				
	51	51	49	53	46																				
	39	47	45	38	47																				
IP2 코핑부	50	43	50	48	50	46.85	4.148	0	0.0	46.9	0.63	26.1	27.3	30.0	26.6	24.0	26.7	28.3	양호						
	56	45	42	42	51																				
	50	48	56	41	39																				
	41	42	51	46	46																				
IP3 기둥부	43	43	55	42	44	46.60	4.137	0	0.0	46.6	0.63	25.9	27.2	29.9	26.4	24.0	26.6	28.1	양호						
	53	51	52	45	43																				
	41	52	46	46	42																				
	51	42	40	49	52																				

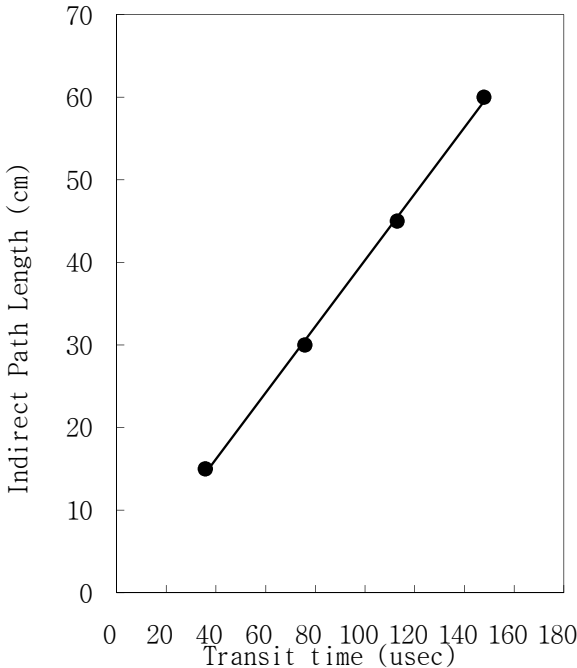
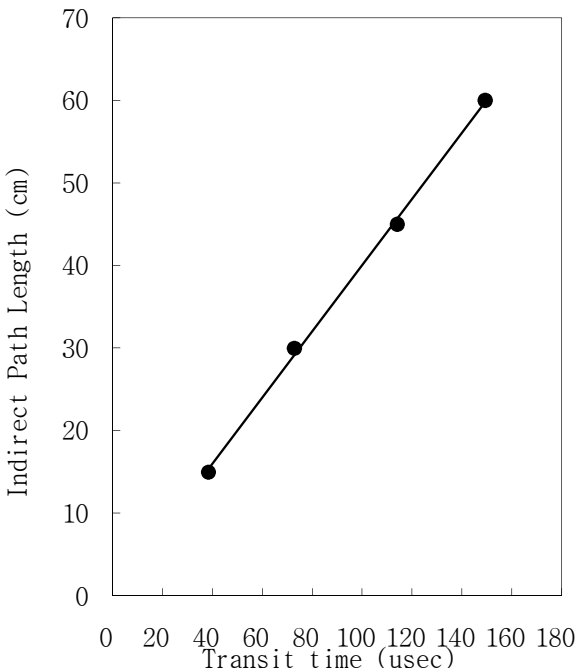
시험결과																			
위 치	반 발 경 도 지 정 지					평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고
						(R ₁)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료확회	건축확회	토목확회	건축확회				
IP4 코펑부	43	49	43	45	45	45.95	4.145	0	0.0	46.0	0.63	25.4	26.9	30.0	26.6	24.0	26.2	28.3	양호
	50	50	45	51	52														
	42	40	55	42	41														
	47	48	46	48	37														
IP5 기둥부	46	51	51	48	40	47.15	4.163	0	0.0	47.2	0.63	26.4	27.4	30.1	27.0	24.0	26.9	28.6	양호
	53	50	44	55	47														
	50	50	44	39	40														
	42	48	55	46	44														
IP6 코펑부	41	51	50	46	55	47.10	4.150	0	0.0	47.1	0.63	26.3	27.4	30.0	26.7	24.0	26.9	28.3	양호
	42	49	47	44	55														
	48	53	39	49	51														
	44	47	44	42	45														
IP7 기둥부	55	40	52	48	40	46.95	4.169	0	0.0	47.0	0.63	26.2	27.3	30.2	27.1	24.0	26.8	28.6	양호
	55	46	50	56	52														
	42	42	39	39	46														
	56	44	47	40	50														
IP8 기둥부	46	45	38	42	41	45.50	4.112	0	0.0	45.5	0.63	25.1	26.7	29.6	25.9	24.0	25.9	27.8	양호
	50	52	52	45	47														
	52	42	43	43	51														
	40	37	52	44	48														
IP9 기둥부	55	43	38	54	53	45.85	4.138	0	0.0	45.9	0.63	25.3	26.8	29.9	26.4	24.0	26.1	28.2	양호
	49	45	43	48	41														
	54	41	48	53	42														
	45	51	37	40	37														
IP10 기둥부	52	51	40	52	44	45.40	4.113	0	0.0	45.4	0.63	25.0	26.6	29.6	25.9	24.0	25.8	27.8	양호
	46	37	43	46	41														
	41	51	47	45	41														
	48	50	49	37	47														
IP11 기둥부	54	52	52	38	45	46.75	4.169	0	0.0	46.8	0.63	26.1	27.2	30.2	27.1	24.0	26.7	28.6	양호
	46	49	46	46	43														
	40	44	42	52	43														
	52	50	51	47	43														

시험결과																			
위 치	반 발 경 도 지 정 지					평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고
						(R ₁)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료확회	건축확회	토목확회	건축확회				
IP12 기둥부	47	50	46	45	42	45.25	4.088	0	0.0	45.3	0.63	24.9	26.6	29.4	25.4	24.0	25.7	27.4	양호
	52	37	49	54	45														
	39	44	48	39	54														
	53	40	38	37	46														
IP13 기둥부	41	41	53	41	45	46.80	4.136	0	0.0	46.8	0.63	26.1	27.3	29.9	26.4	24.0	26.7	28.1	양호
	52	43	51	43	45														
	53	49	41	44	54														
	39	43	52	51	55														
IP14 기둥부	40	54	40	44	46	46.10	4.134	0	0.0	46.1	0.63	25.5	27.0	29.9	26.3	24.0	26.2	28.1	양호
	55	55	44	48	54														
	55	39	38	39	48														
	42	46	52	46	37														
IP15 기둥부	41	51	50	50	43	45.35	4.103	0	0.0	45.4	0.63	24.9	26.6	29.5	25.7	24.0	25.8	27.6	양호
	48	49	44	47	43														
	38	44	46	37	46														
	39	50	46	43	52														
IP16 기둥부	42	43	38	37	54	45.55	4.102	0	0.0	45.6	0.63	25.1	26.7	29.5	25.7	24.0	25.9	27.6	양호
	50	44	48	47	43														
	43	51	53	40	47														
	54	42	44	51	40														
IP17 기둥부	51	42	49	44	45	44.95	4.114	0	0.0	45.0	0.63	24.6	26.4	29.7	25.9	24.0	25.5	27.8	양호
	45	52	50	45	47														
	39	39	38	46	46														
	47	39	45	44	46														
IP18 코빔부	44	55	43	52	38	46.85	4.158	0	0.0	46.9	0.63	26.1	27.3	30.1	26.8	24.0	26.7	28.5	양호
	52	39	49	46	50														
	50	42	40	54	52														
	43	45	51	39	53														
IP19 기둥부	37	53	53	54	46	45.55	4.096	0	0.0	45.6	0.63	25.1	26.7	29.5	25.5	24.0	25.9	27.5	양호
	40	51	49	43	44														
	39	41	46	40	41														
	46	54	47	49	38														

시험결과																			
위 지	반 측 발 경 도 지					평균치	초음파속도	타격 각도	타격각도 보정치	기준강도	재령계수	반발경도법(MPa)		초음파속도법(Mpa)		설계강도 (Mpa)	Schmidt Hammer 추정강도 (MPa)	초음파속도법 추정강도 (Mpa)	비고
						(R ₁)	km/sec	(α)	(∠R)	(R ⁰)	(n)	재료학회	건축학회	토목학회	건축학회				
IP20 코펑부	52	38	48	49	50	44.90	4.088	0	0.0	44.9	0.63	24.6	26.4	29.4	25.4	24.0	25.5	27.4	양호
	51	41	51	39	40														
	43	38	46	51	50														
	45	48	41	37	40														
IP21 기둥부	48	50	43	49	43	46.35	4.142	0	0.0	46.4	0.63	25.7	27.1	29.9	26.5	24.0	26.4	28.2	양호
	50	53	51	45	43														
	39	41	46	55	52														
	43	50	49	39	38														
IP22 코펑부	48	43	45	52	43	47.00	4.154	0	0.0	47.0	0.63	26.3	27.4	30.1	26.8	24.0	26.8	28.4	양호
	52	43	52	50	50														
	43	49	50	43	56														
	43	40	50	40	48														
IP23 기둥부	40	50	43	50	54	47.10	4.159	0	0.0	47.1	0.63	26.3	27.4	30.1	26.9	24.0	26.9	28.5	양호
	49	51	46	49	55														
	56	40	54	38	42														
	39	55	48	44	39														
IP24 코펑부	53	53	50	37	43	46.10	4.142	0	0.0	46.1	0.63	25.5	27.0	29.9	26.5	24.0	26.2	28.2	양호
	46	40	39	48	42														
	48	45	40	48	53														
	50	51	42	53	41														
IP25 기둥부	45	38	52	50	46	44.20	4.085	0	0.0	44.2	0.63	24.0	26.1	29.4	25.3	24.0	25.1	27.3	양호
	46	52	45	51	39														
	43	36	41	47	42														
	37	45	44	40	45														

이산포IC Ramp-I교 탄산화 DATA

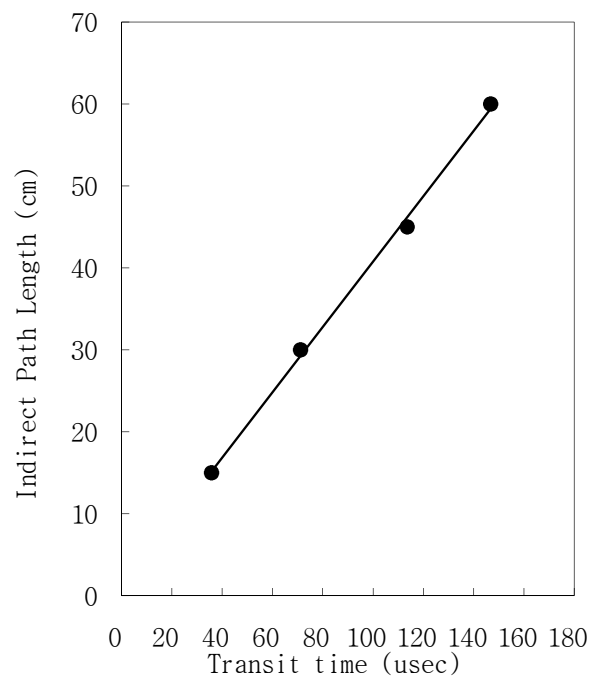
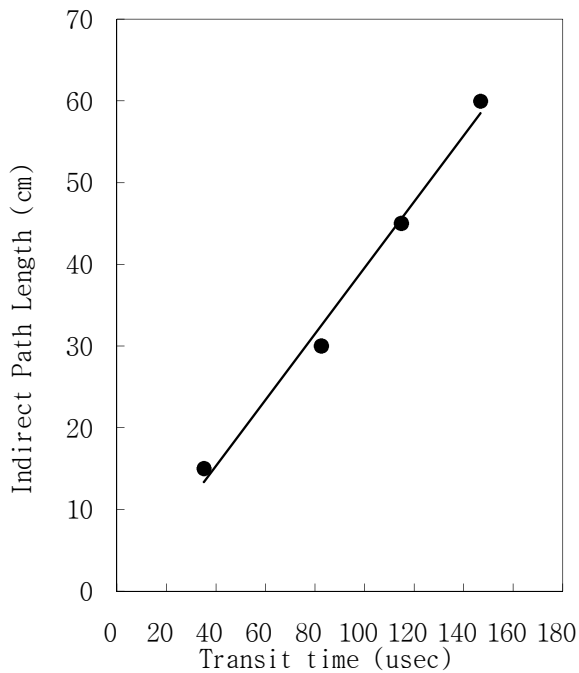
PROJECT TITLE :							
Company		 (주) 명 성 엔 지 니 어 링			Client	 (주) 일 산 대 교	
시험위치		시험위치	상부구조, 하부구조		시행방법	드릴링	
시험결과							
측정위치	탄산화깊이(mm)	최소피복두께	경과년수	탄산화잔여깊이(mm)	탄산화속도계수	잔존수명예측	상태평가등급
S5	11.0	41.0	17	30.0	2.67	126.4	a
S9	17.5	70.0	17	52.5	4.24	153.0	a
S19	17.0	70.0	17	53.0	4.12	165.2	a
IP7	16.0	100.0	17	84.0	3.88	468.6	a
IP12	12.5	100.0	17	87.5	3.03	833.0	a
IP15	13.0	100.0	17	87.0	3.15	761.4	a

PUNDIT		이산포IC Ramp-I교 초음파탐사 DATA	
PROJECT TITLE :			
Company	 (주) 명 성 엔 지 니 어 링	Client	 (주) 일 산 대 교
Model	J.U.S.T - 900	Method	초음파법
Pulse Velocity Data			
(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)			
부 재 명	S1(건전부)	부 재 명	S2(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
35.7	15	38.3	15
75.8	30	72.9	30
112.8	45	114.0	45
147.7	60	149.3	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.018 X + 1.371$		$Y = 4.005 X + 0.011$	
Vi (km/s)	4.018	Vi (km/s)	4.005
Correction Ration (Vi → Vd)	4.219	Correction Ration (Vi → Vd)	4.205
압축강도(F')	28.2	압축강도(F')	27.9
			

Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

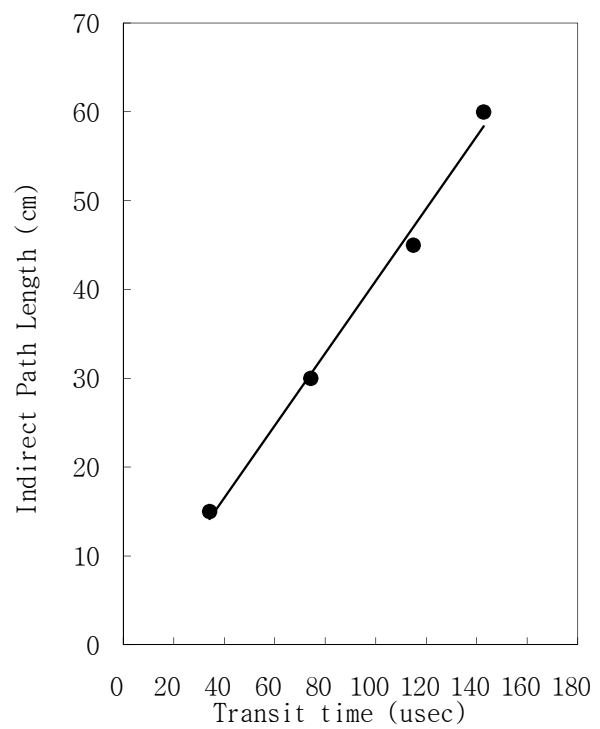
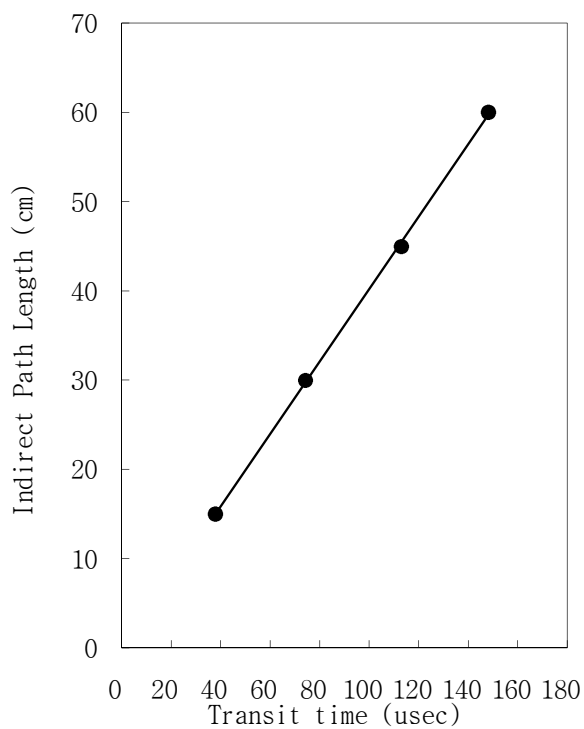
부 재 명	S3(건전부)	부 재 명	S4(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
35.1	15	35.8	15
82.6	30	71.2	30
114.9	45	113.5	45
146.8	60	146.8	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.040 X - 8.172$		$Y = 3.989 X + 8.708$	
Vi (km/s)	4.040	Vi (km/s)	3.989
Correction Ration (Vi → Vd)	4.242	Correction Ration (Vi → Vd)	4.188
압축강도(F')	28.6	압축강도(F')	27.5



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

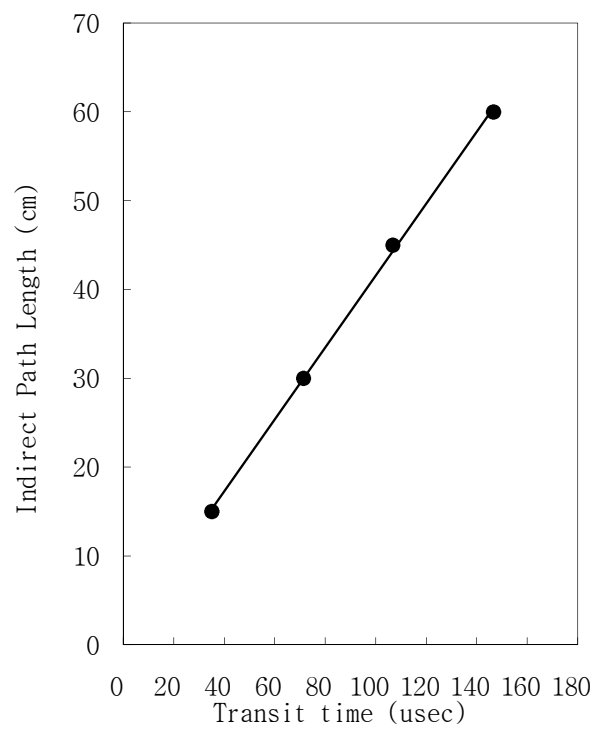
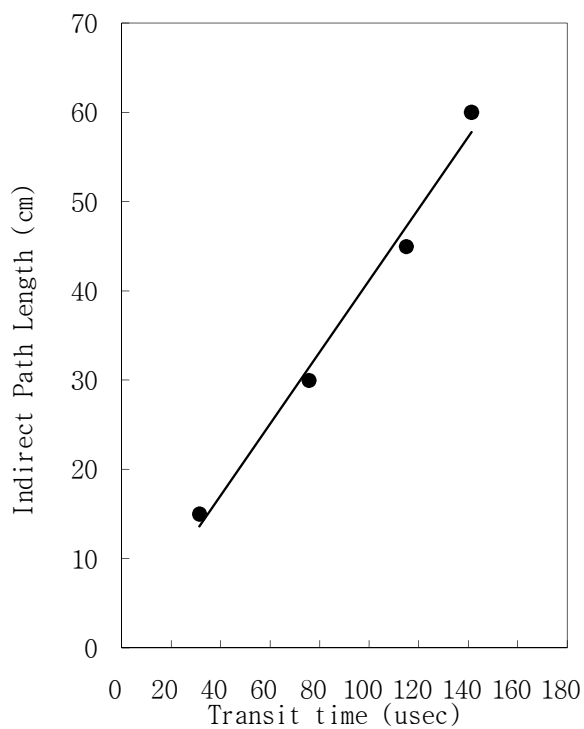
부 재 명	S5(건전부)	부 재 명	S6(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
37.9	15	34.2	15
74.2	30	74.3	30
113.0	45	114.8	45
148.2	60	142.8	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.056 X - 3.532$		$Y = 4.068 X + 2.698$	
Vi (km/s)	4.056	Vi (km/s)	4.068
Correction Ration (Vi → Vd)	4.259	Correction Ration (Vi → Vd)	4.271
압축강도(F')	29.0	압축강도(F')	29.2



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

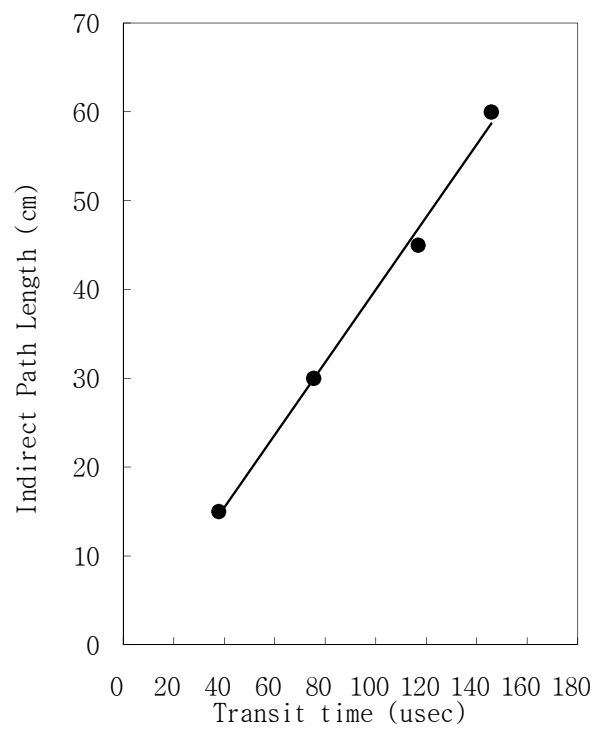
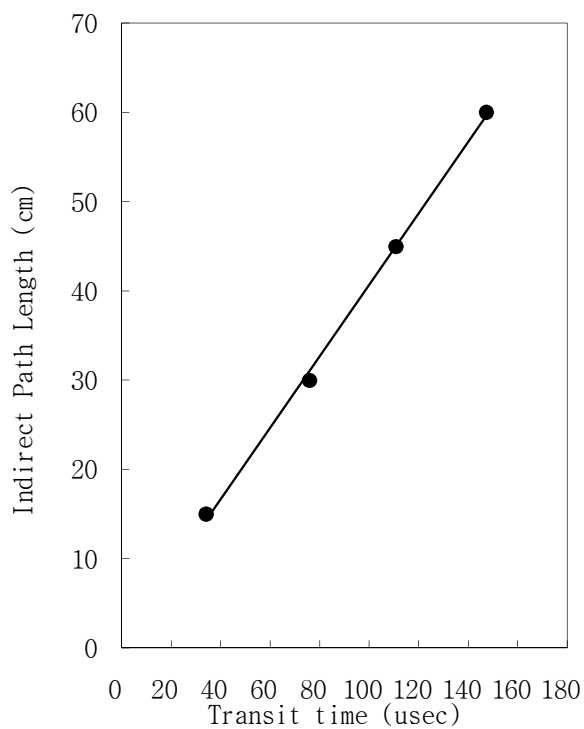
부 재 명	S7(건전부)	부 재 명	S8(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
31.4	15	35.1	15
75.6	30	71.3	30
114.9	45	106.7	45
141.3	60	146.7	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.016 X + 10.309$		$Y = 4.049 X + 10.804$	
Vi (km/s)	4.016	Vi (km/s)	4.049
Correction Ration (Vi → Vd)	4.217	Correction Ration (Vi → Vd)	4.251
압축강도(F')	28.2	압축강도(F')	28.8



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

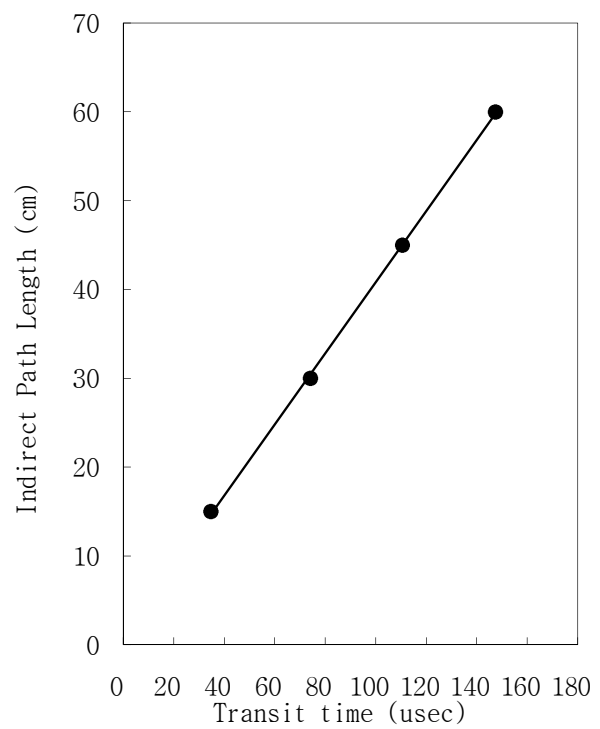
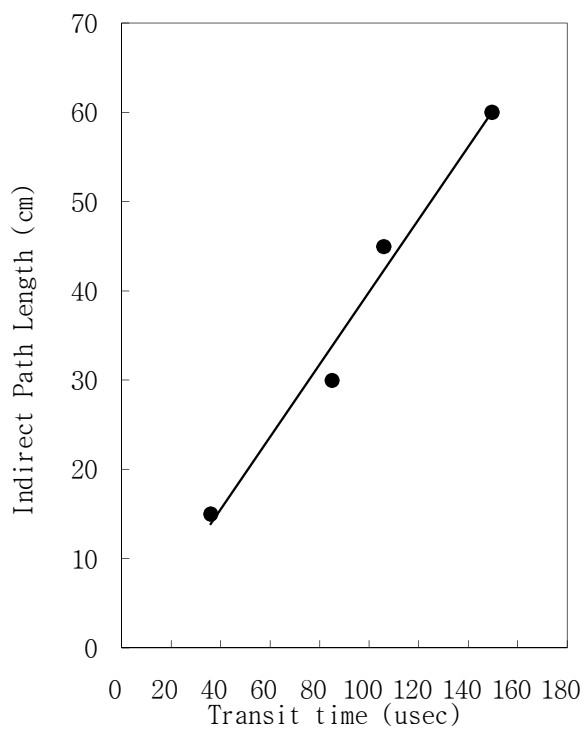
부 재 명	S9(건전부)	부 재 명	S10(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
34.2	15	37.7	15
75.9	30	75.4	30
110.8	45	116.7	45
147.2	60	145.8	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.006 X + 6.369$		$Y = 4.084 X - 8.48$	
Vi (km/s)	4.006	Vi (km/s)	4.084
Correction Ration (Vi → Vd)	4.206	Correction Ration (Vi → Vd)	4.288
압축강도(F')	27.9	압축강도(F')	29.6



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

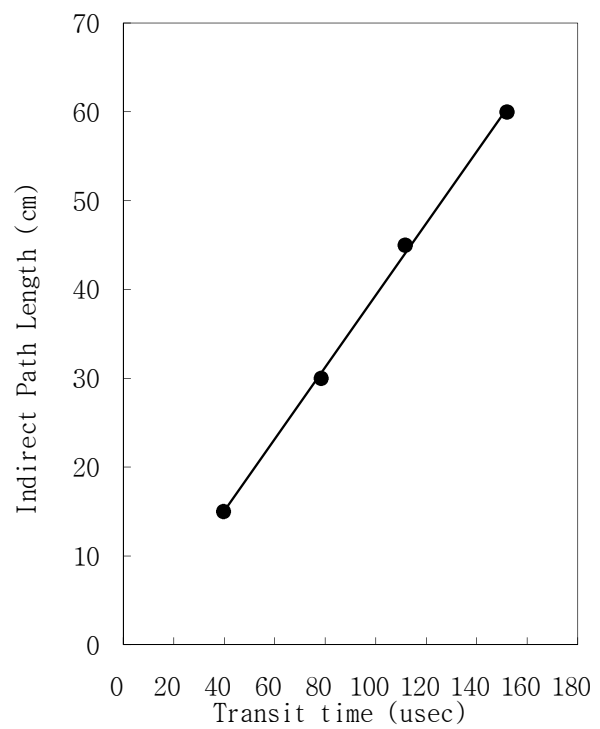
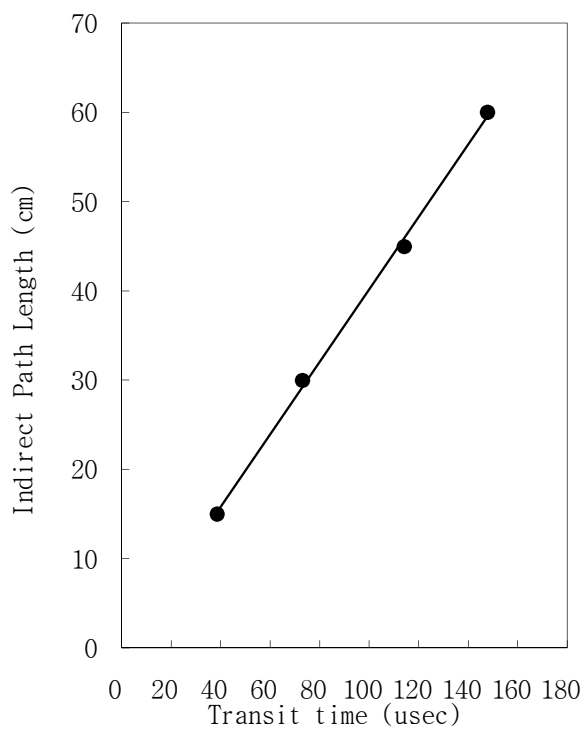
부 재 명	S11(건전부)	부 재 명	S12(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
35.9	15	34.7	15
84.9	30	74.2	30
105.9	45	110.5	45
149.6	60	147.5	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.059 X - 6.812$		$Y = 4.002 X + 7.928$	
Vi (km/s)	4.059	Vi (km/s)	4.002
Correction Ration (Vi → Vd)	4.262	Correction Ration (Vi → Vd)	4.202
압축강도(F')	29.0	압축강도(F')	27.8



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

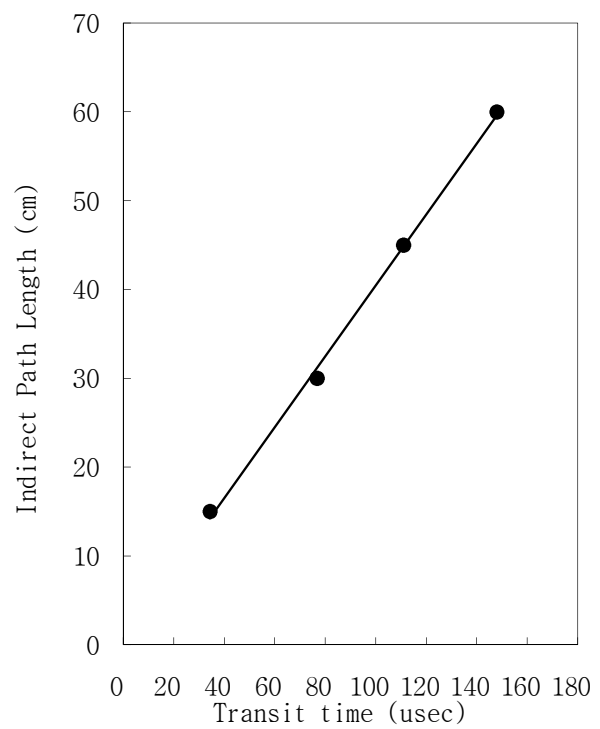
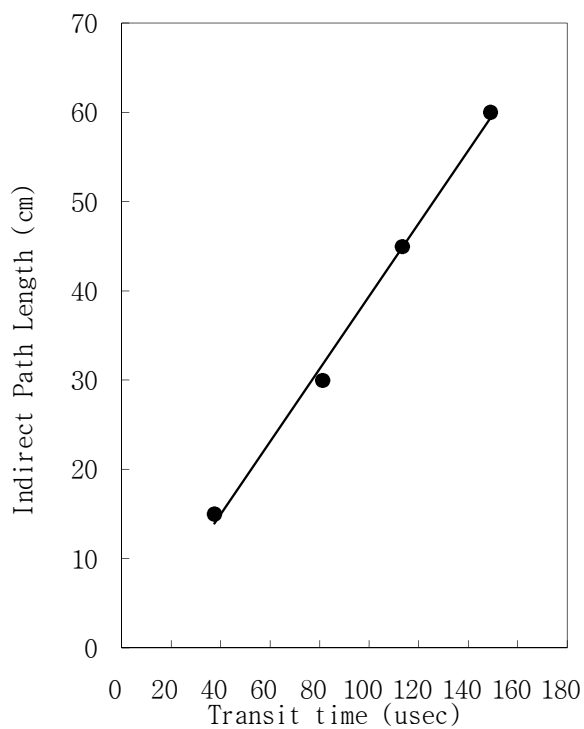
부 재 명	S13(건전부)	부 재 명	S14(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
38.5	15	39.6	15
73.1	30	78.3	30
114.2	45	111.7	45
147.8	60	152.0	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.059 X - 4.115$		$Y = 4.043 X - 10.677$	
Vi (km/s)	4.059	Vi (km/s)	4.043
Correction Ration (Vi → Vd)	4.262	Correction Ration (Vi → Vd)	4.245
압축강도(F')	29.0	압축강도(F')	28.7



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

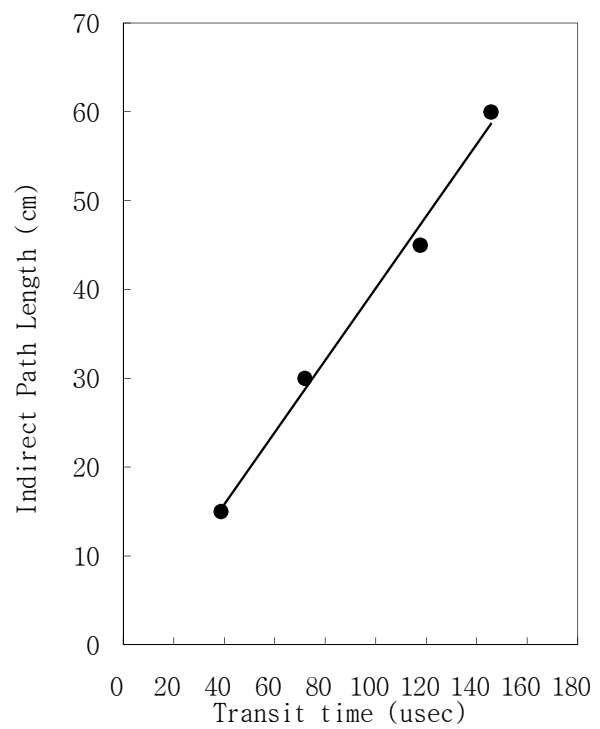
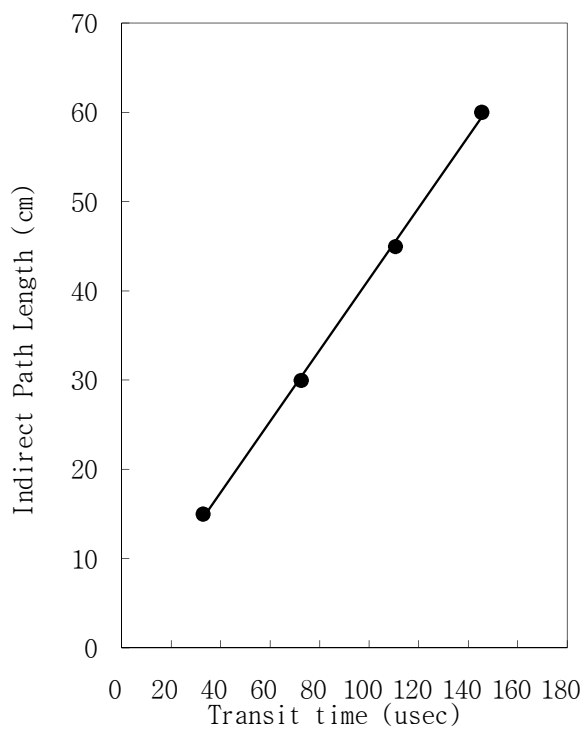
부 재 명	S15(건전부)	부 재 명	S16(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
37.5	15	34.3	15
81.2	30	76.8	30
113.4	45	111.1	45
148.9	60	147.9	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.077 X - 13.337$		$Y = 3.991 X + 5.726$	
Vi (km/s)	4.077	Vi (km/s)	3.991
Correction Ration (Vi → Vd)	4.281	Correction Ration (Vi → Vd)	4.191
압축강도(F')	29.4	압축강도(F')	27.6



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

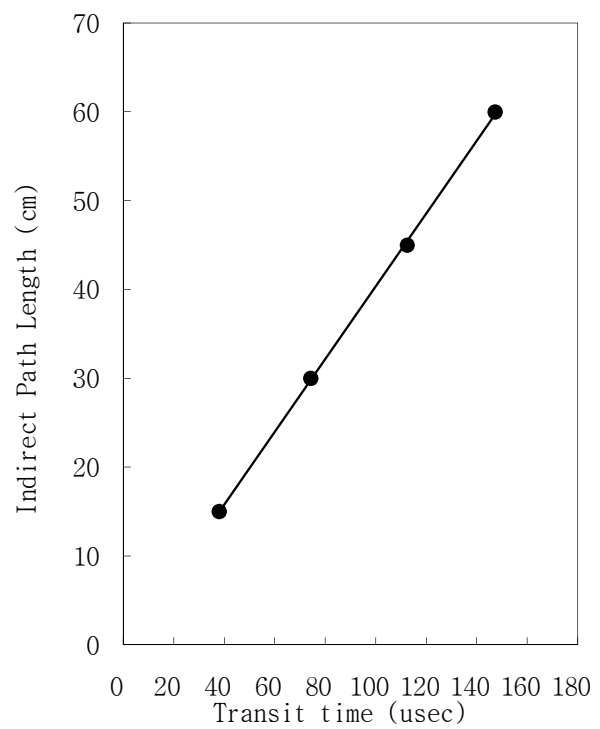
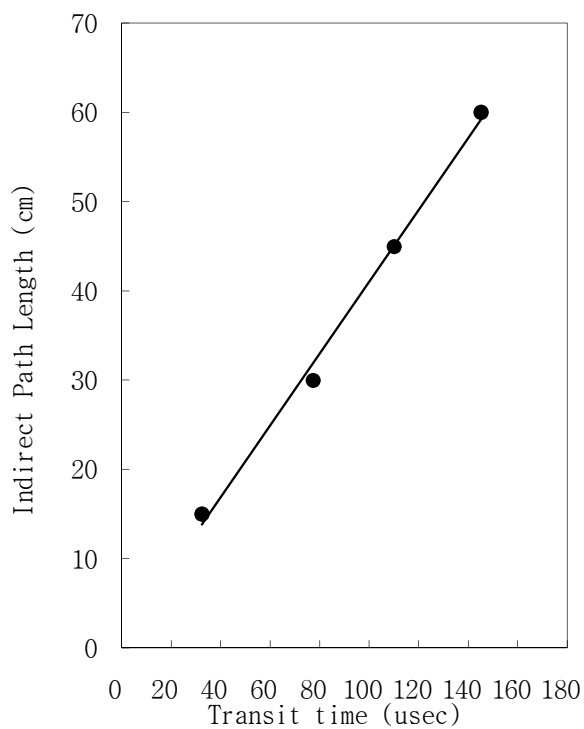
부 재 명	S17(건전부)	부 재 명	S18(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.8	15	38.6	15
72.6	30	71.8	30
110.5	45	117.7	45
145.5	60	145.7	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.986 X + 14.857$		$Y = 4.053 X - 3.73$	
Vi (km/s)	3.986	Vi (km/s)	4.053
Correction Ration (Vi → Vd)	4.185	Correction Ration (Vi → Vd)	4.256
압축강도(F')	27.5	압축강도(F')	28.9



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

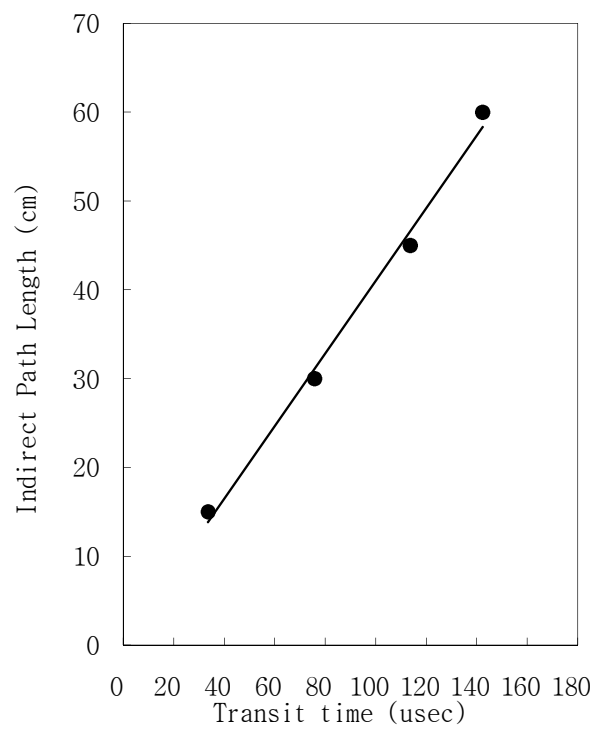
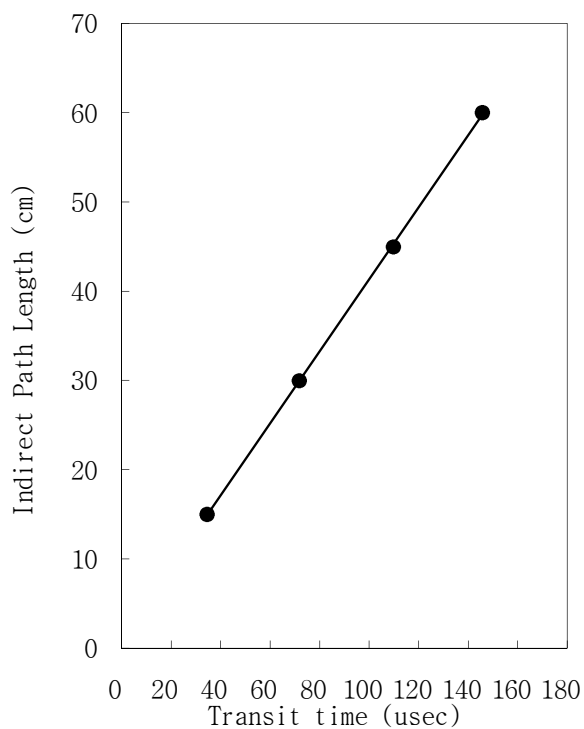
부 재 명	S19(건전부)	부 재 명	S20(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.5	15	38.0	15
77.3	30	74.3	30
110.0	45	112.4	45
145.2	60	147.3	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.026 X + 7.666$		$Y = 4.097 X - 6.049$	
Vi (km/s)	4.026	Vi (km/s)	4.097
Correction Ration (Vi → Vd)	4.227	Correction Ration (Vi → Vd)	4.302
압축강도(F')	28.4	압축강도(F')	29.9



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

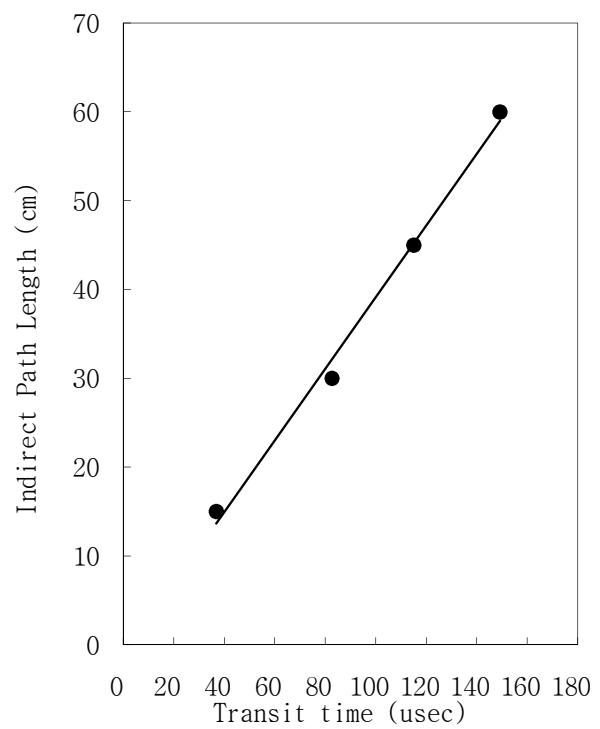
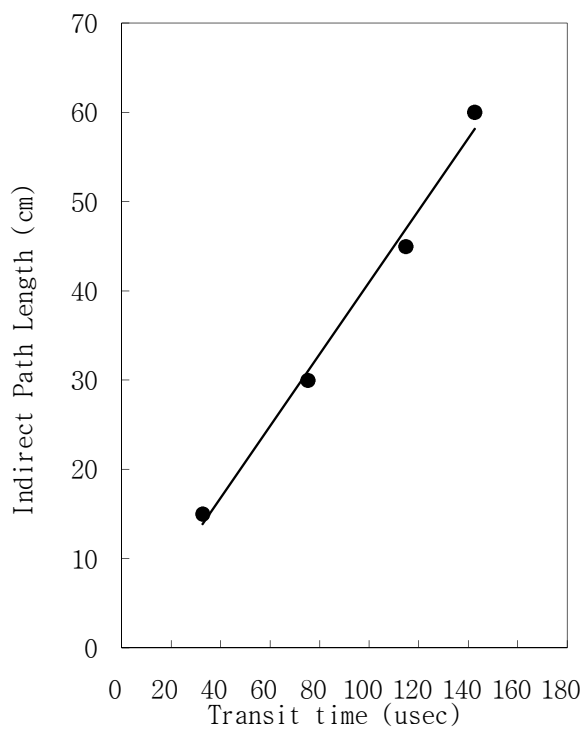
부 재 명	S21(건전부)	부 재 명	S22(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
34.6	15	33.5	15
71.8	30	75.8	30
109.8	45	113.7	45
145.7	60	142.4	60
line (Eq		Best fit line (Equation)	
$Y = 4.039 X + 9.538$		$Y = 4.085 X + 1.838$	
Vi (km/s)	4.039	Vi (km/s)	4.085
Correction Ration (Vi → Vd)	4.241	Correction Ration (Vi → Vd)	4.289
압축강도(F')	28.6	압축강도(F')	29.6



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

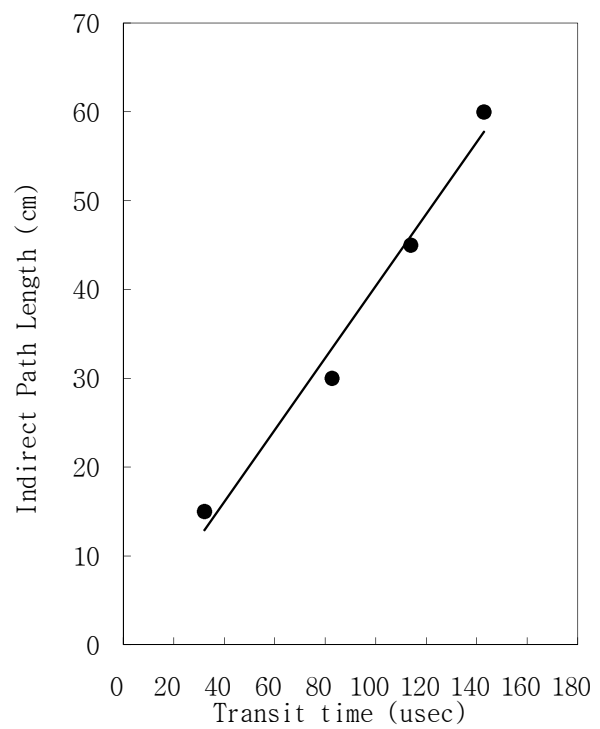
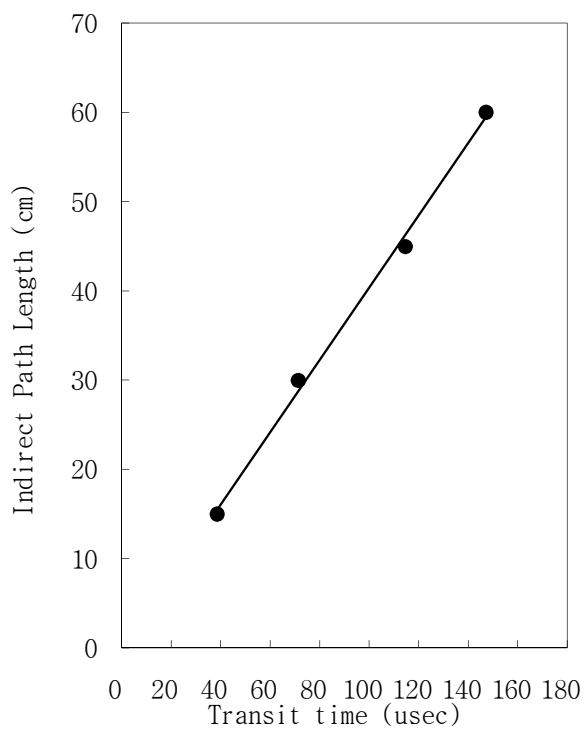
부 재 명	S23(건전부)	부 재 명	S24(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.7	15	36.9	15
75.3	30	82.6	30
114.8	45	115.1	45
142.6	60	149.2	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.028 X + 7.016$		$Y = 4.034 X - 12.088$	
Vi (km/s)	4.028	Vi (km/s)	4.034
Correction Ration (Vi → Vd)	4.229	Correction Ration (Vi → Vd)	4.236
압축강도(F')	28.4	압축강도(F')	28.5

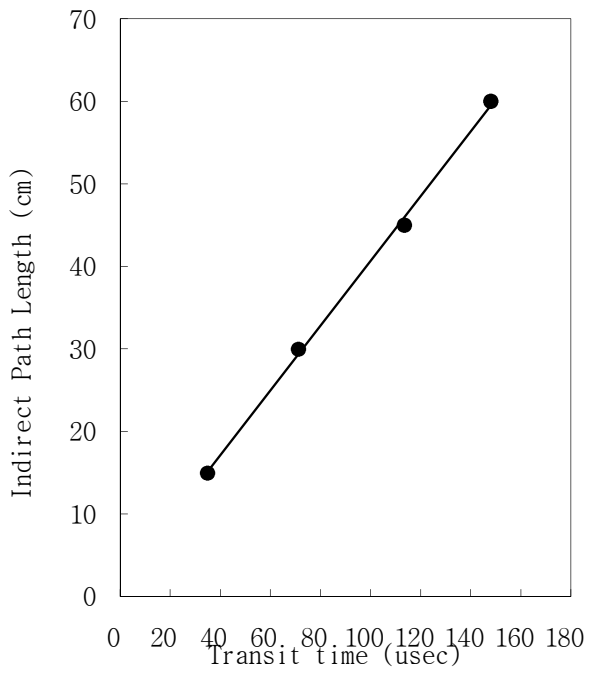
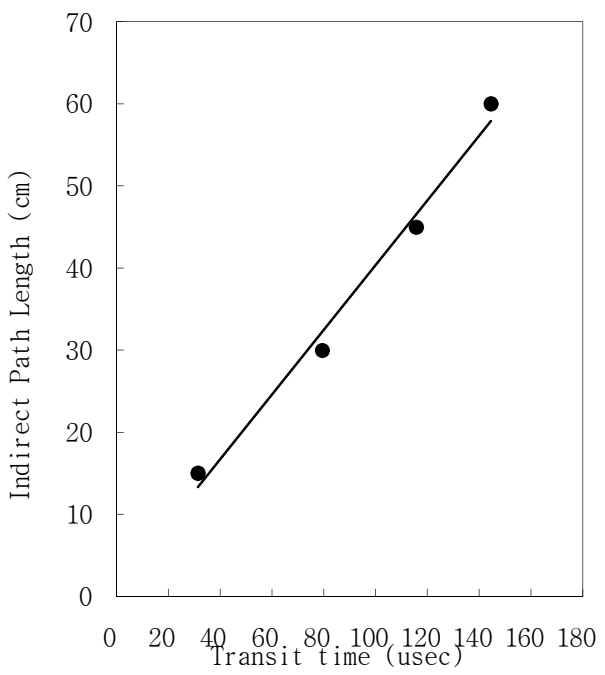


Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

부 재 명	S25(건전부)	부 재 명	S26(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
38.5	15	32.2	15
71.4	30	82.6	30
114.5	45	113.8	45
147.1	60	142.9	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.053 X - 1.456$		$Y = 4.050 X - 1.166$	
Vi (km/s)	4.053	Vi (km/s)	4.050
Correction Ration (Vi → Vd)	4.256	Correction Ration (Vi → Vd)	4.253
압축강도(F')	28.9	압축강도(F')	28.8

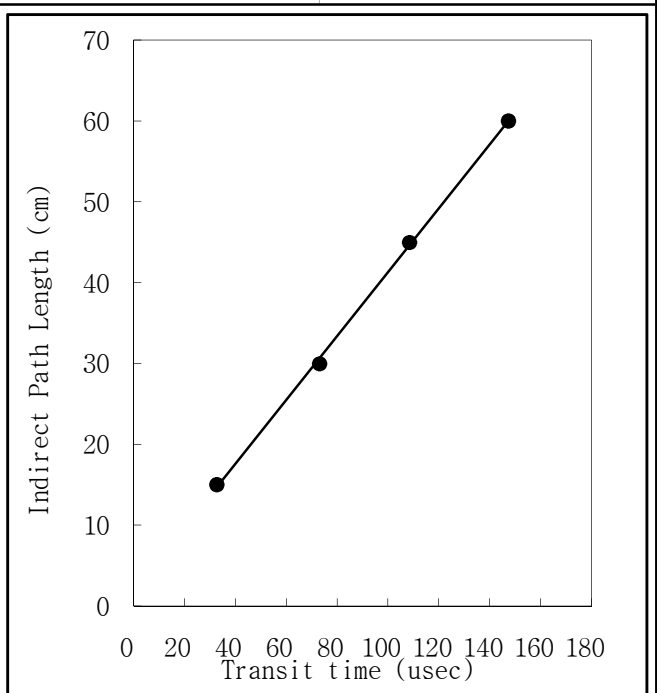
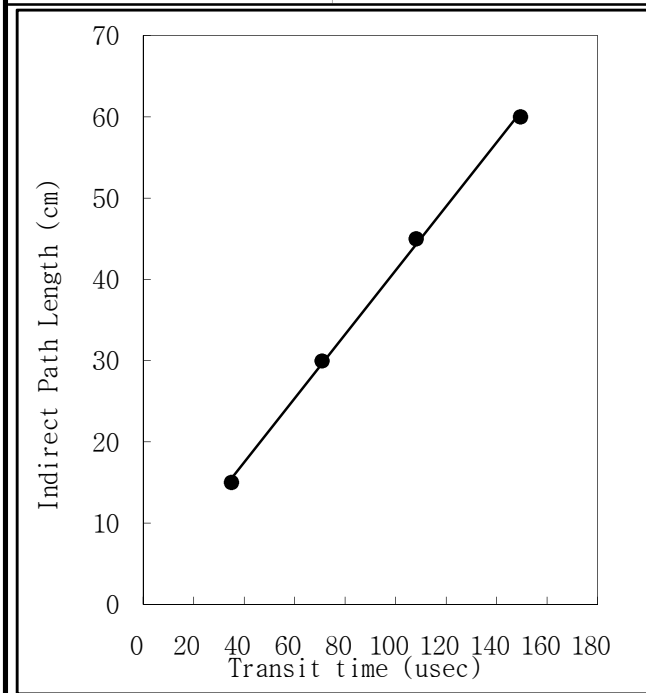


PUNDIT		이산포IC Ramp-1교 초음파탐사 DATA	
PROJECT TITLE :			
Company	 (주) 명 성 엔 지 니 어 링	Client	 (주) 일 산 대 교
Model	J.U.S.T - 900	Method	초음파법
Pulse Velocity Data (Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)			
부 재 명	IA1 벽체	부 재 명	IA2 벽체
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
34.9	15	31.6	15
71.2	30	79.4	30
113.5	45	115.8	45
148.0	60	144.5	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.925 X + 14.27$		$Y = 3.947 X + 8.585$	
Vi (km/s)	3.925	Vi (km/s)	3.947
Correction Ration (Vi → Vd)	4.121	Correction Ration (Vi → Vd)	4.144
압축강도(F)	26.1	압축강도(F)	26.6
			

Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

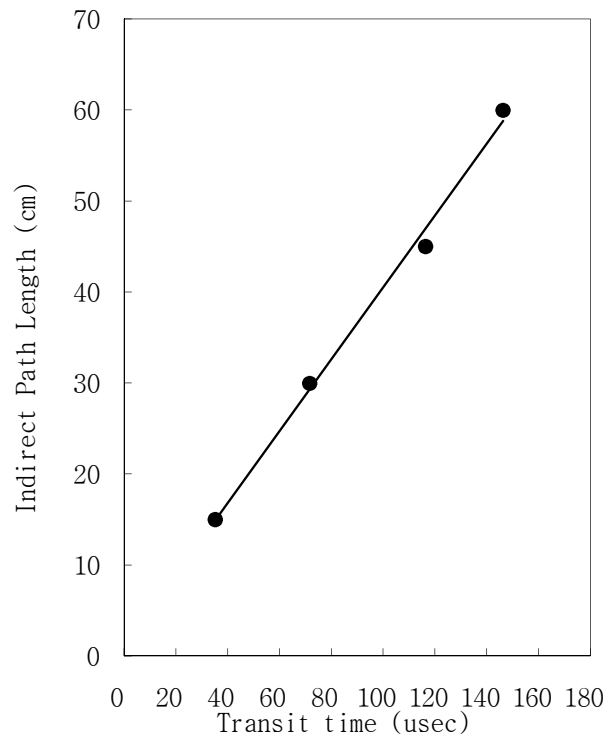
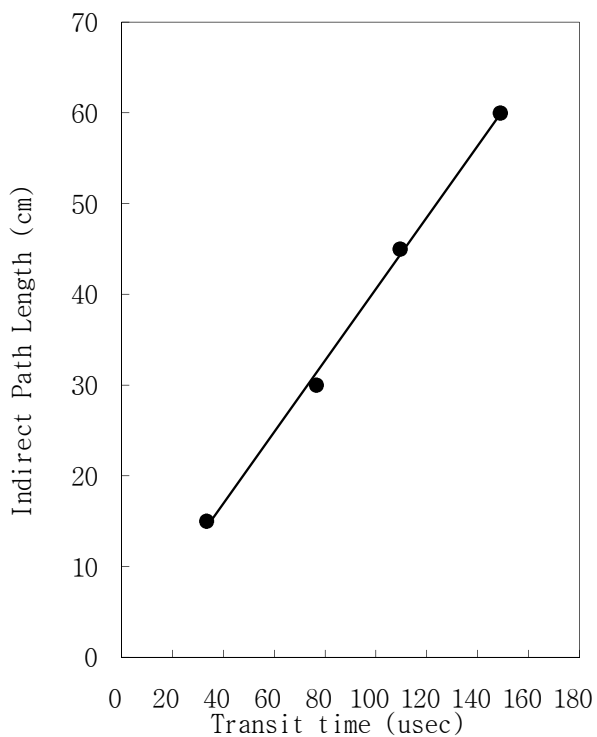
부 재 명	IP1 기둥부	부 재 명	IP2 코깁부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
35.0	15	32.7	15
70.9	30	73.1	30
108.2	45	108.5	45
149.5	60	147.4	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.935 X + 17.314$		$Y = 3.950 X + 17.796$	
Vi (km/s)	3.935	Vi (km/s)	3.950
Correction Ration (Vi → Vd)	4.132	Correction Ration (Vi → Vd)	4.148
압축강도(F)	26.3	압축강도(F)	26.7



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

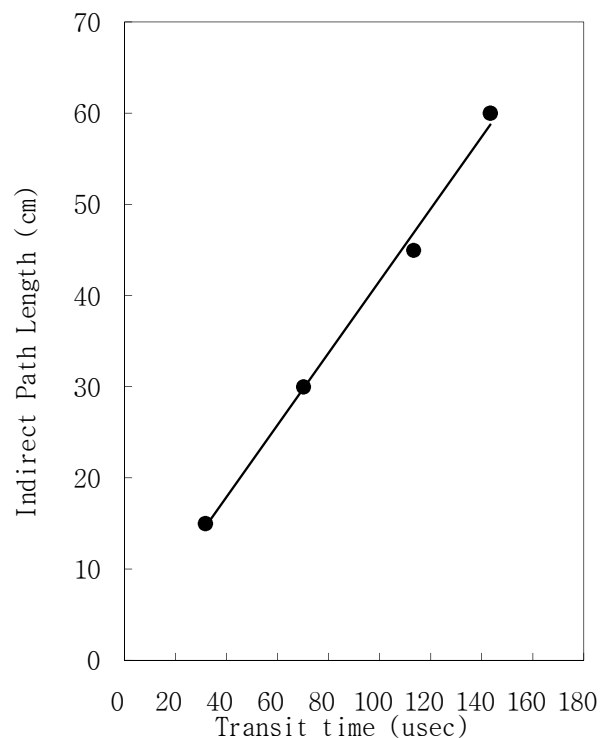
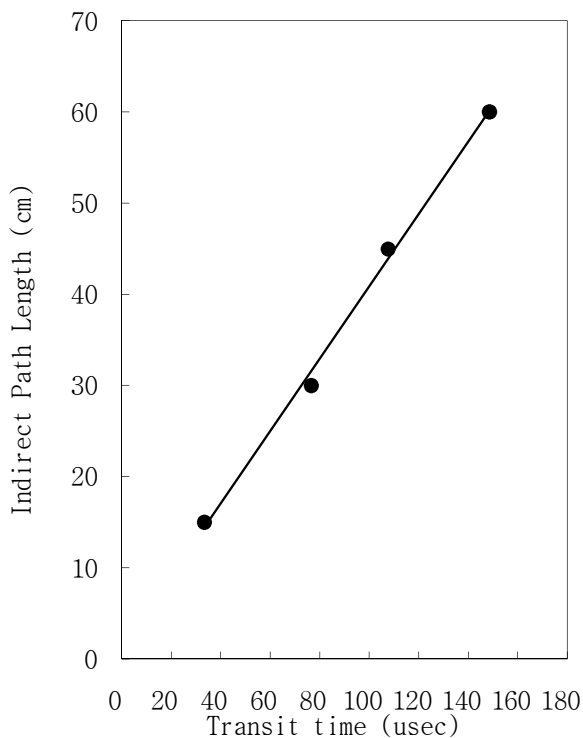
부 재 명	IP3 기둥부	부 재 명	IP4 코핑부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
33.3	15	35.2	15
76.5	30	71.7	30
109.5	45	116.4	45
148.9	60	146.3	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.940 X + 12.328$		$Y = 3.948 X + 10.24$	
Vi (km/s)	3.940	Vi (km/s)	3.948
Correction Ration (Vi → Vd)	4.137	Correction Ration (Vi → Vd)	4.145
압축강도(F')	26.4	압축강도(F')	26.6



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

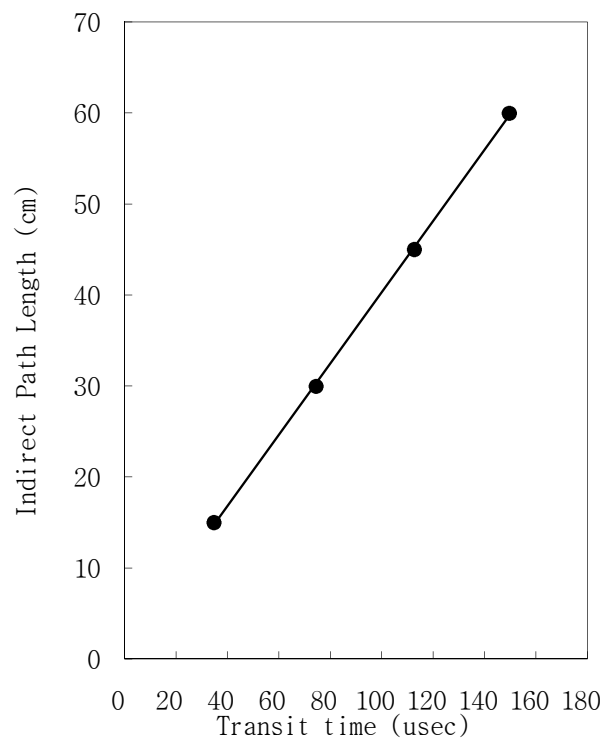
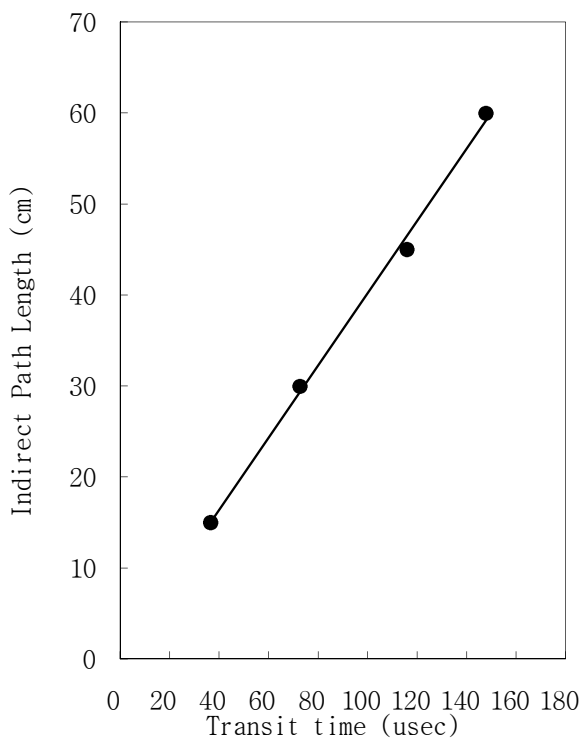
부 재 명	IP5 기둥부		부 재 명	IP6 코핑부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X		Y	X		Y
33.3		15	31.8		15
76.5		30	70.1		30
107.5		45	113.2		45
148.6		60	143.4		60
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.965 X + 12.271			Y = 3.952 X + 20.842		
Vi (km/s)		3.965	Vi (km/s)		3.952
Correction Ration (Vi → Vd)		4.163	Correction Ration (Vi → Vd)		4.150
압축강도(F')		27.0	압축강도(F')		26.7



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

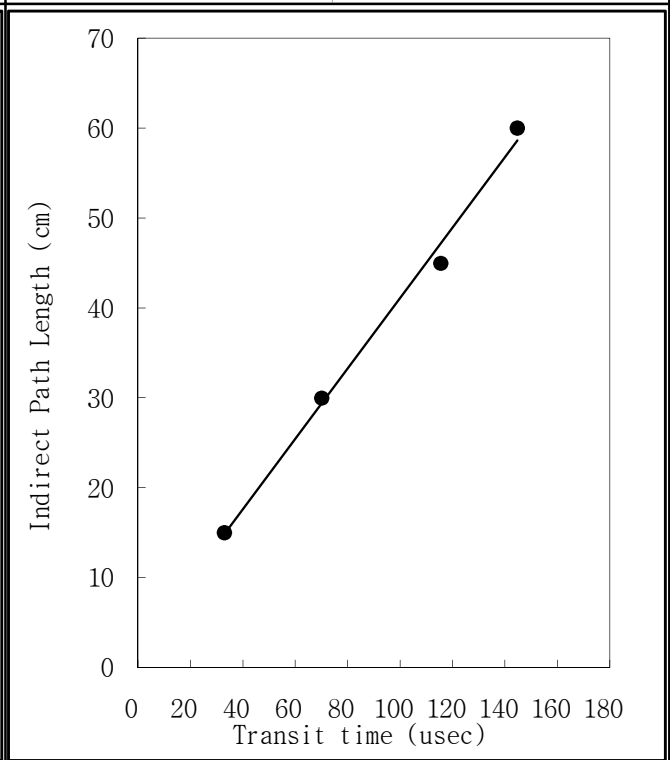
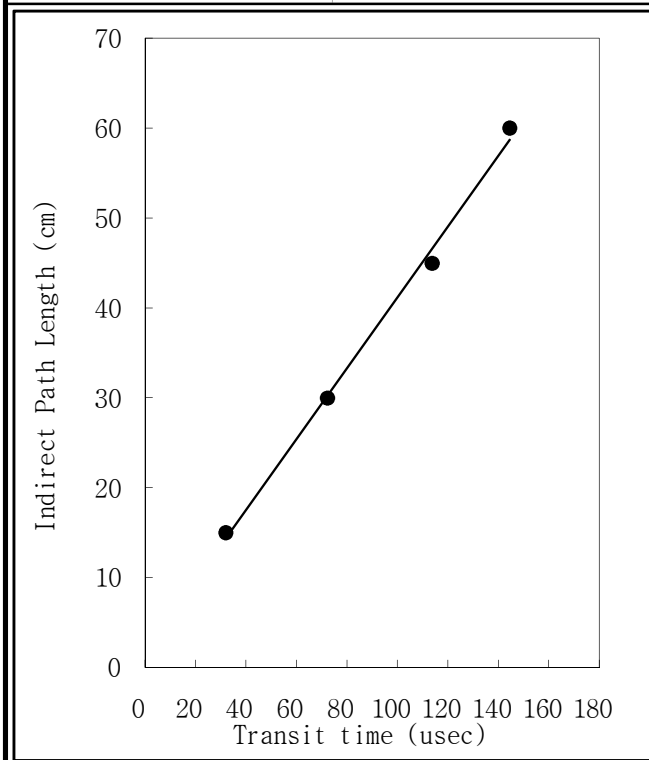
부 재 명	IP7 기둥부	부 재 명	IP8 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
36.6	15	34.7	15
72.7	30	74.4	30
115.8	45	112.6	45
147.8	60	149.6	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.970 X + 4.857$		$Y = 3.916 X + 11.451$	
Vi (km/s)	3.970	Vi (km/s)	3.916
Correction Ration (Vi → Vd)	4.169	Correction Ration (Vi → Vd)	4.112
압축강도(F)	27.1	압축강도(F)	25.9



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

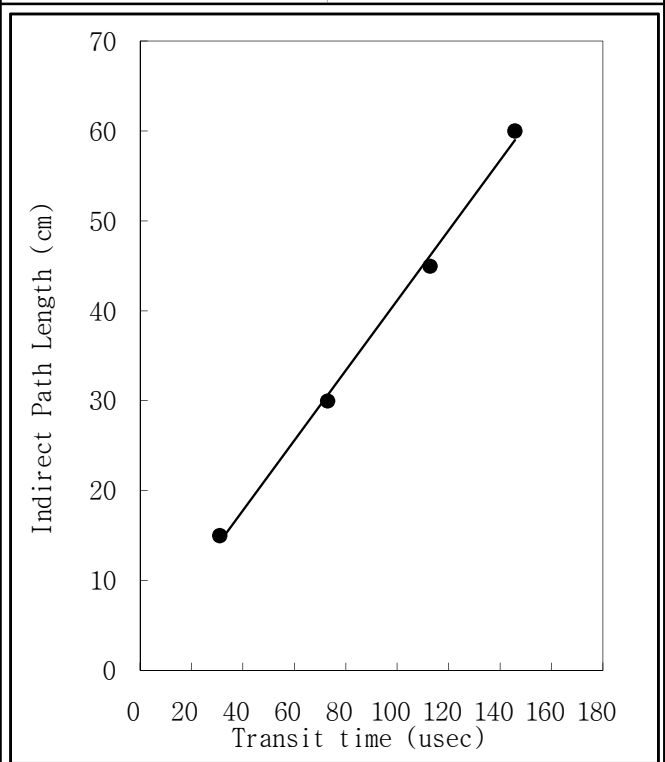
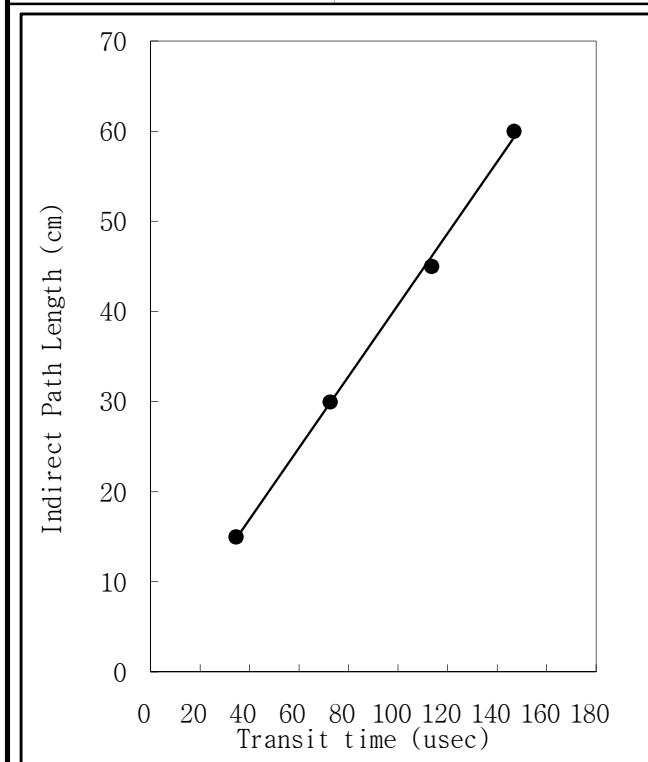
부 재 명	IP9 기둥부	부 재 명	IP10 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
31.9	15	33.0	15
72.3	30	70.1	30
113.8	45	115.5	45
144.4	60	144.7	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.941 X + 17.976$		$Y = 3.917 X + 19.193$	
Vi (km/s)	3.941	Vi (km/s)	3.917
Correction Ration (Vi → Vd)	4.138	Correction Ration (Vi → Vd)	4.113
압축강도(F)	26.5	압축강도(F)	25.9



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

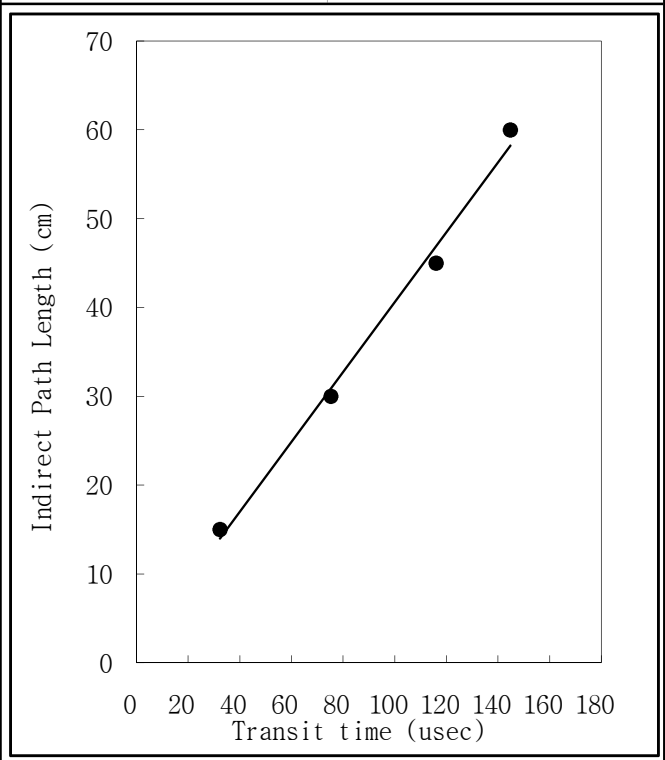
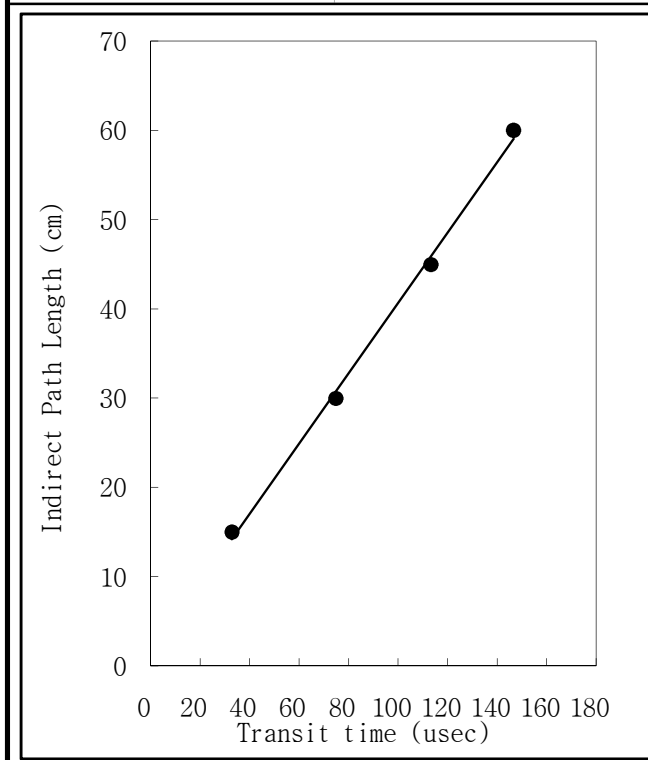
부 재 명	IP11 기둥부	부 재 명	IP12 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
34.6	15	31.0	15
72.6	30	73.0	30
113.5	45	112.8	45
146.7	60	145.8	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.970 X + 10.326$		$Y = 3.893 X + 22.102$	
Vi (km/s)	3.970	Vi (km/s)	3.893
Correction Ration (Vi → Vd)	4.169	Correction Ration (Vi → Vd)	4.088
압축강도(F)	27.1	압축강도(F)	25.4



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

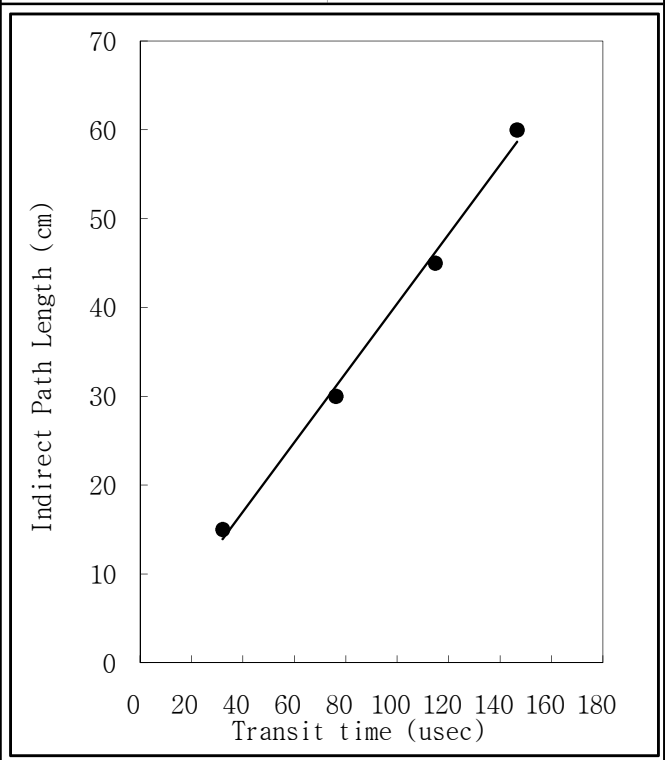
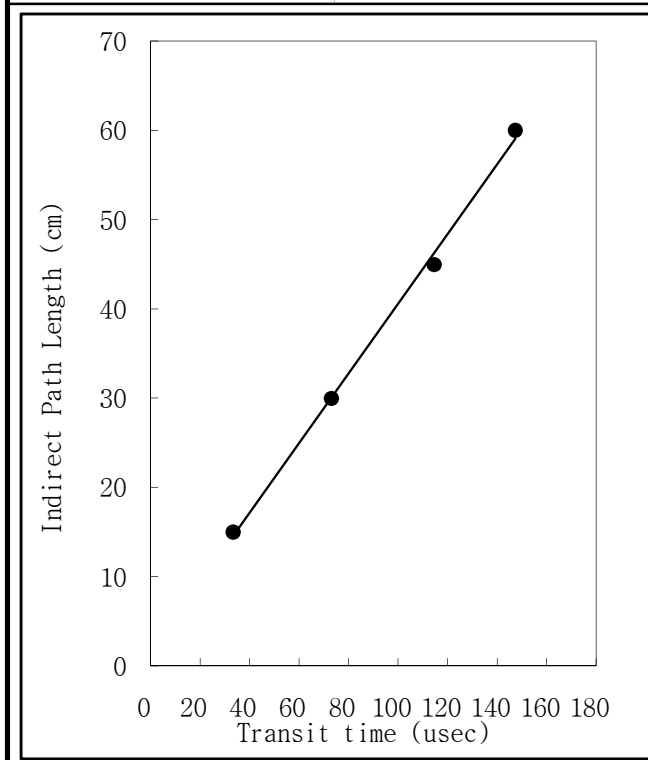
부 재 명	IP13 기둥부	부 재 명	IP14 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.8	15	32.4	15
74.9	30	75.2	30
113.3	45	116.1	45
146.6	60	144.8	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.939 X + 13.022$		$Y = 3.937 X + 12.312$	
Vi (km/s)	3.939	Vi (km/s)	3.937
Correction Ration (Vi → Vd)	4.136	Correction Ration (Vi → Vd)	4.134
압축강도(F)	26.4	압축강도(F)	26.4



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

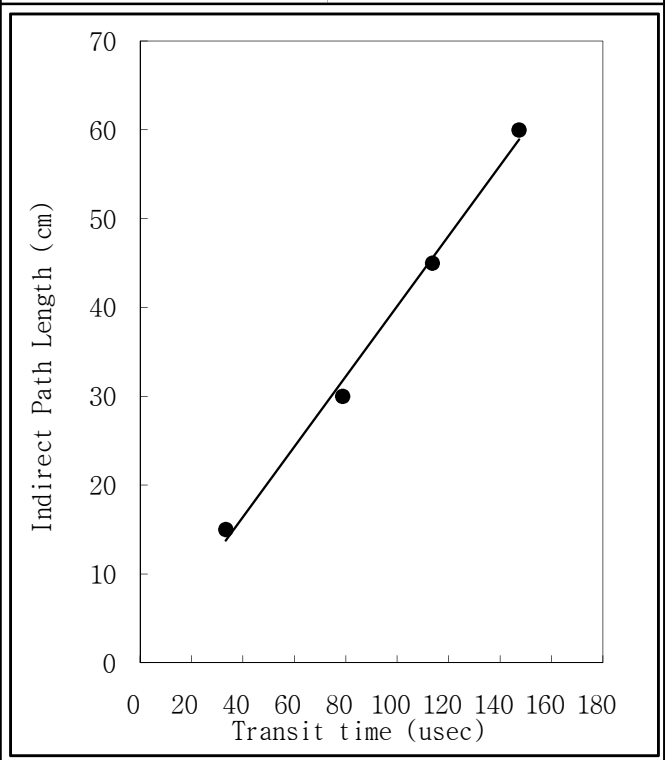
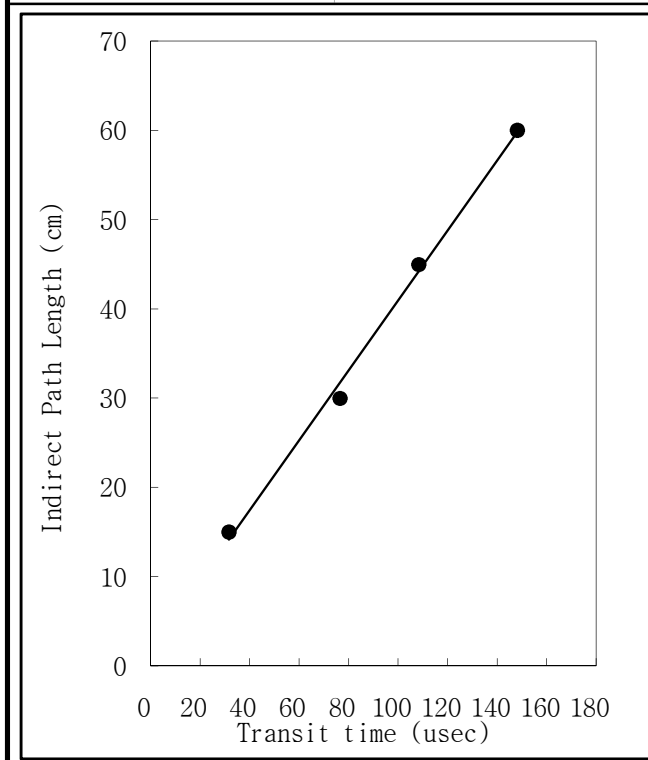
부 재 명	IP15 기둥부	부 재 명	IP16 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
33.4	15	32.1	15
73.1	30	76.2	30
114.6	45	114.7	45
147.2	60	146.6	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.908 X + 15.198$		$Y = 3.907 X + 14.016$	
Vi (km/s)	3.908	Vi (km/s)	3.907
Correction Ration (Vi → Vd)	4.103	Correction Ration (Vi → Vd)	4.102
압축강도(F)	25.7	압축강도(F)	25.7



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

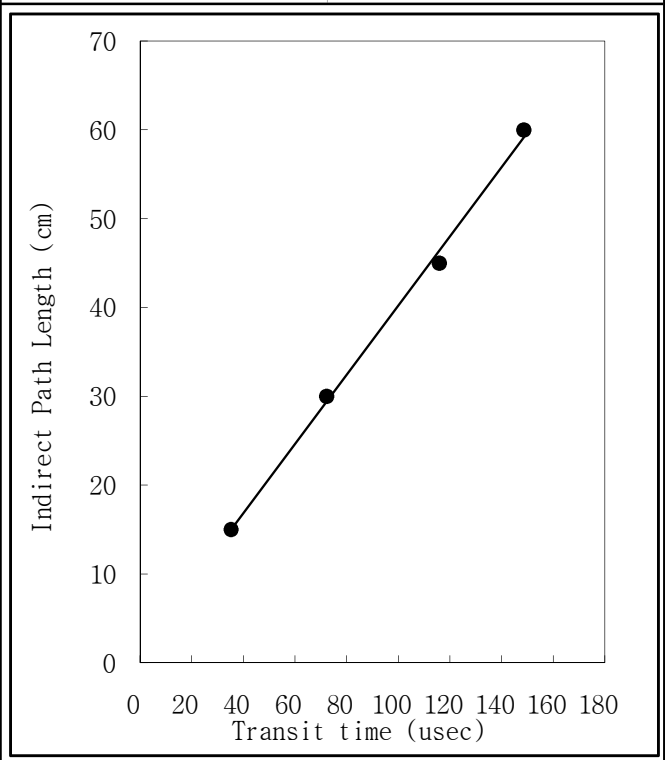
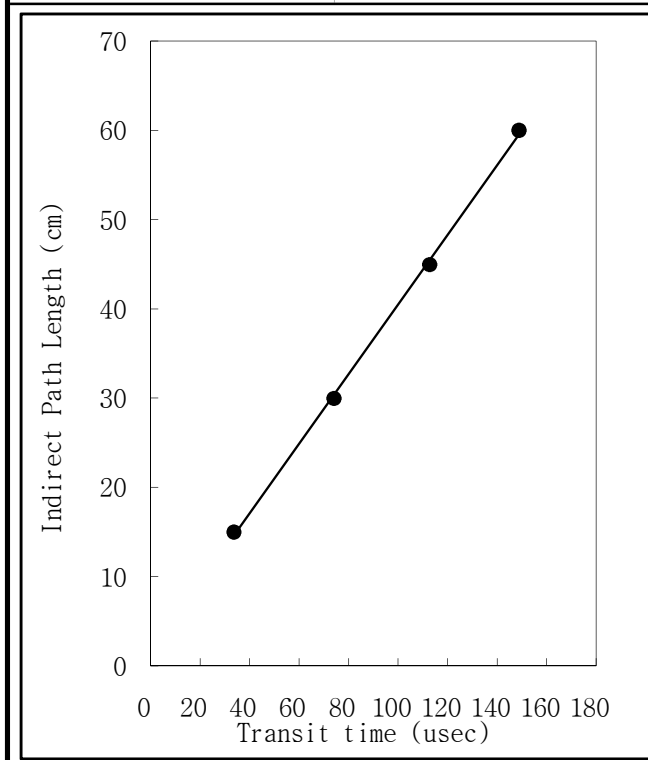
부 재 명	IP17 기둥부	부 재 명	IP18 코핑부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Ydirect	Path Length (cm)
X	Y	X	Y
31.7	15	33.4	15
76.6	30	78.8	30
108.4	45	113.6	45
148.2	60	147.4	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.918 X + 17.543$		$Y = 3.960 X + 5.573$	
Vi (km/s)	3.918	Vi (km/s)	3.960
Correction Ration (Vi → Vd)	4.114	Correction Ration (Vi → Vd)	4.158
압축강도(F)	26.0	압축강도(F)	26.9



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

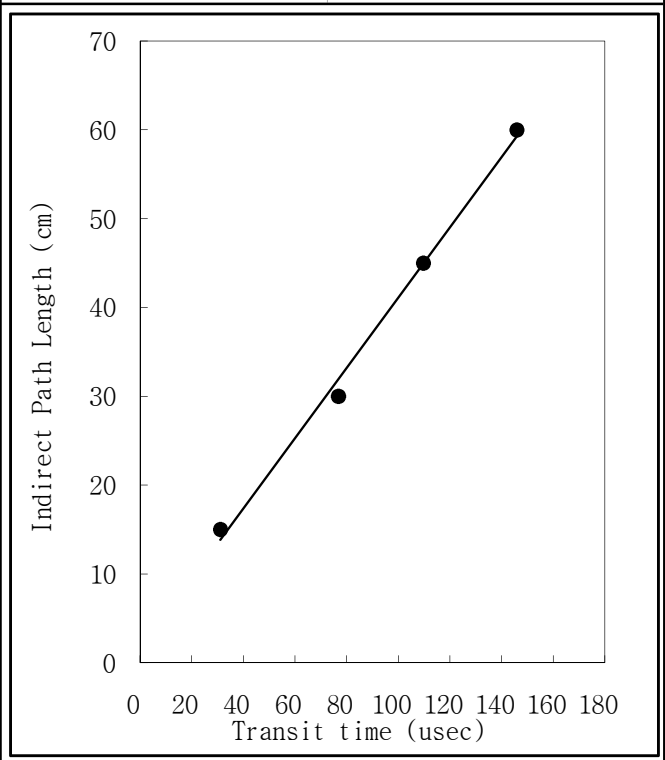
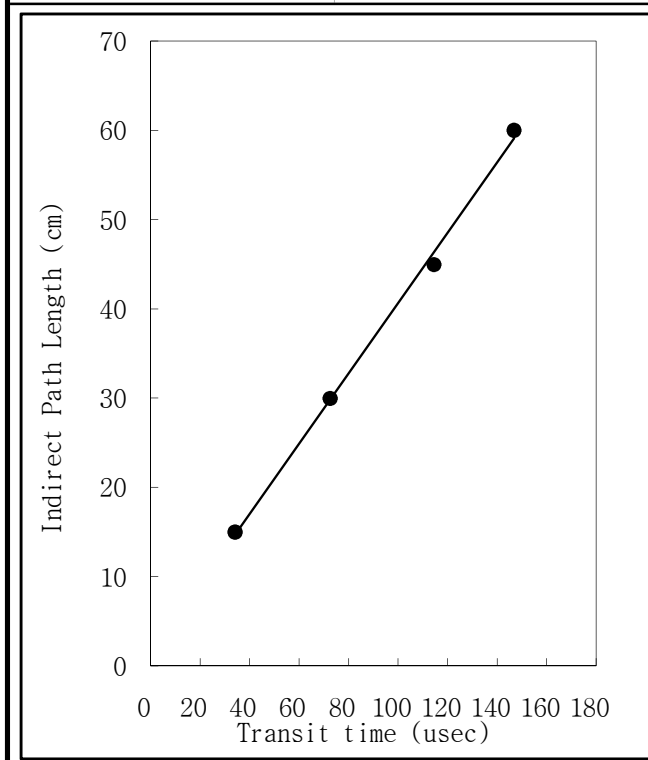
부 재 명	IP19 기둥부	부 재 명	IP20 코핑부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
33.6	15	35.2	15
74.1	30	72.3	30
112.8	45	116.0	45
148.8	60	148.7	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.901 X + 14.886$		$Y = 3.893 X + 12.711$	
Vi (km/s)	3.901	Vi (km/s)	3.893
Correction Ration (Vi → Vd)	4.096	Correction Ration (Vi → Vd)	4.088
압축강도(F)	25.6	압축강도(F)	25.4



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

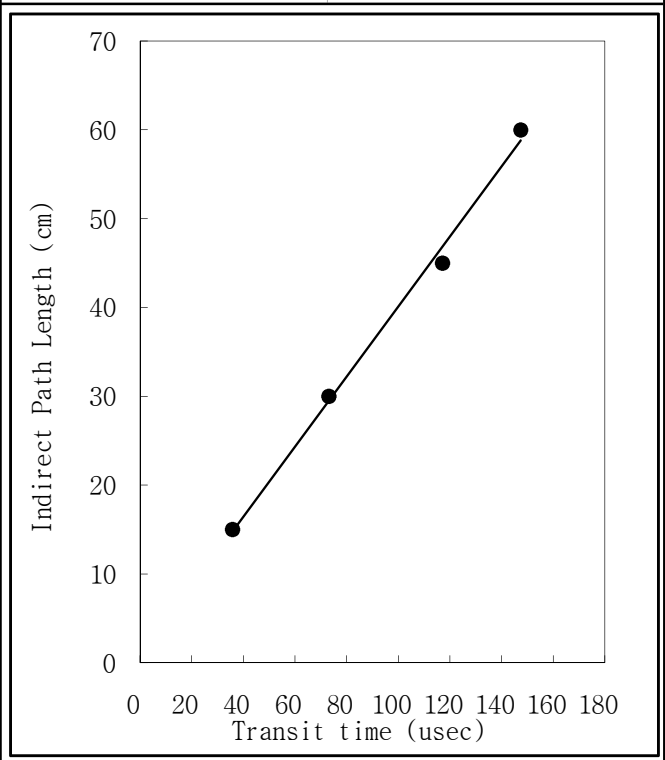
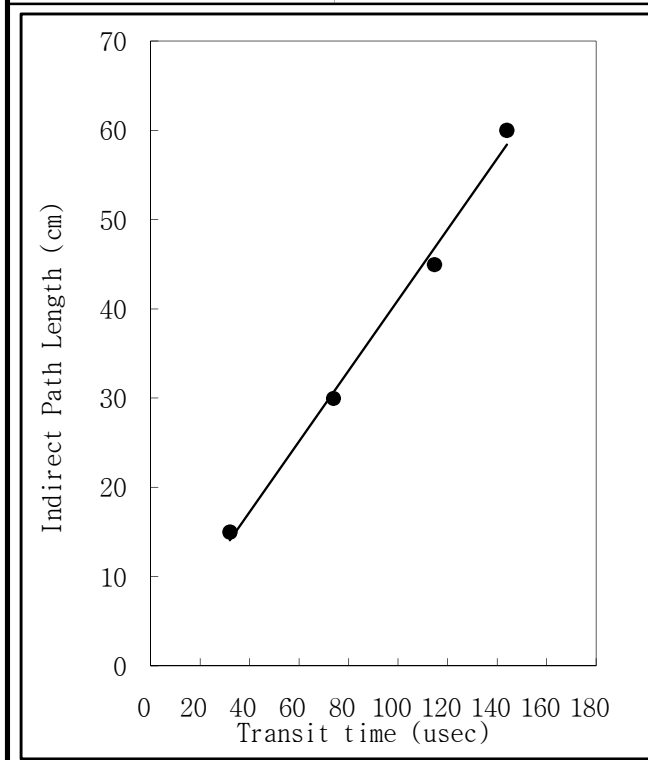
부 재 명	IP21 기둥부	부 재 명	IP22 코핑부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
34.2	15	31.1	15
72.6	30	76.9	30
114.4	45	109.7	45
146.7	60	145.9	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.945 X + 12.16$		$Y = 3.956 X + 15.365$	
Vi (km/s)	3.945	Vi (km/s)	3.956
Correction Ration (Vi → Vd)	4.142	Correction Ration (Vi → Vd)	4.154
압축강도(F)	26.6	압축강도(F)	26.8



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

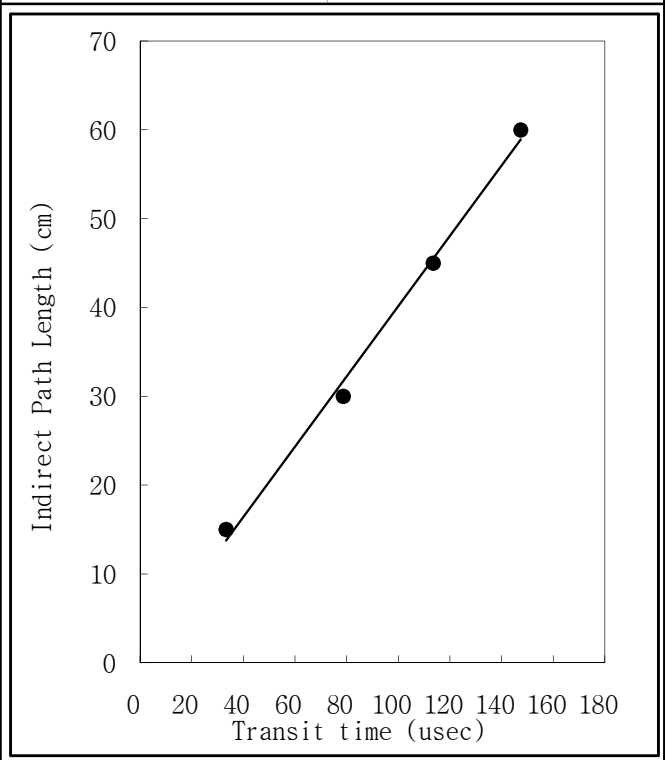
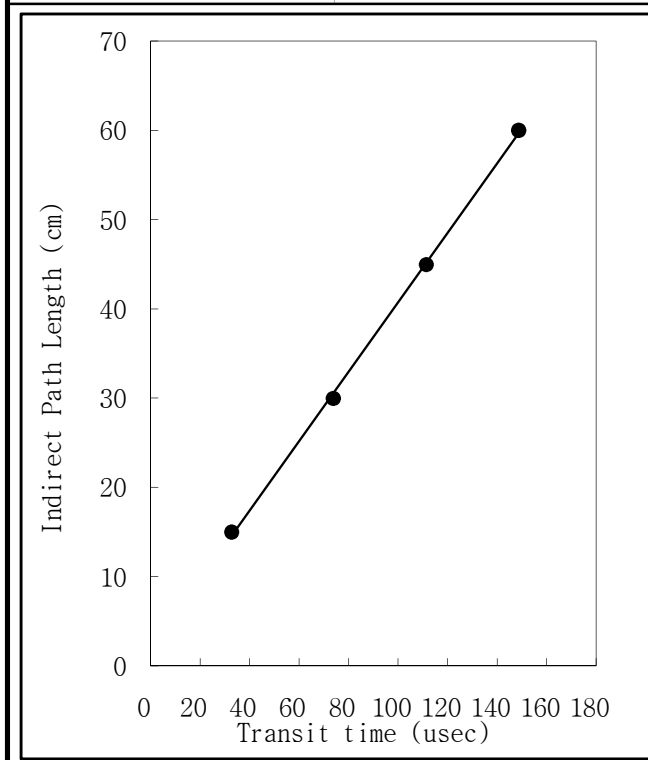
부 재 명	IP23 기둥부	부 재 명	IP24 코핑부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.1	15	35.9	15
73.8	30	73.2	30
114.7	45	117.2	45
143.9	60	147.4	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.961 X + 14.054$		$Y = 3.945 X + 6.485$	
Vi (km/s)	3.961	Vi (km/s)	3.945
Correction Ration (Vi → Vd)	4.159	Correction Ration (Vi → Vd)	4.142
압축강도(F)	26.9	압축강도(F)	26.6



Pulse Velocity Data

(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

부 재 명	IP25 기둥부	부 재 명	
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
32.7	15		15
73.9	30		30
111.3	45		45
148.7	60		60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.890 X + 18.501$		#DIV/0!	
Vi (km/s)	3.890	Vi (km/s)	#DIV/0!
Correction Ration (Vi → Vd)	4.085	Correction Ration (Vi → Vd)	#DIV/0!
압축강도(F)	25.3	압축강도(F)	#DIV/0!



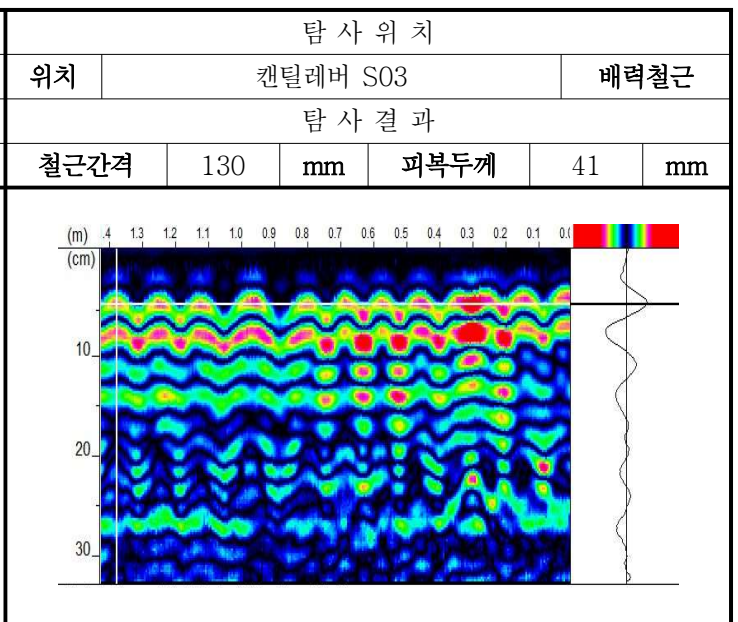
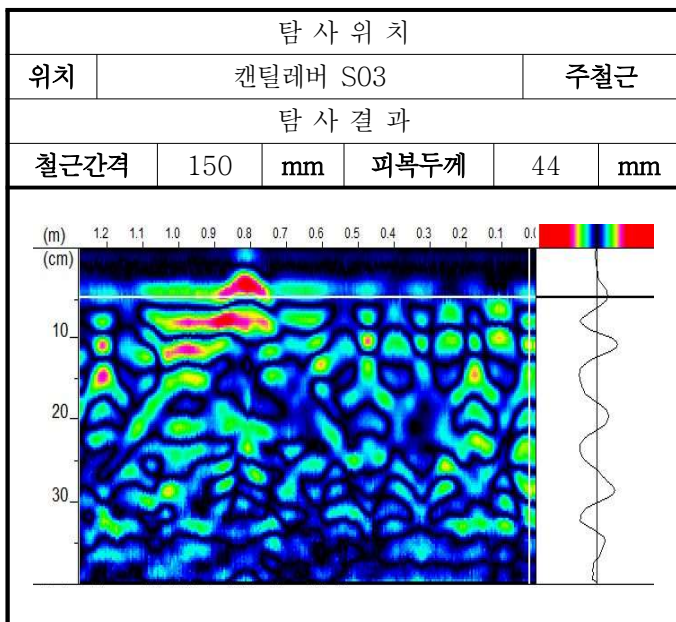
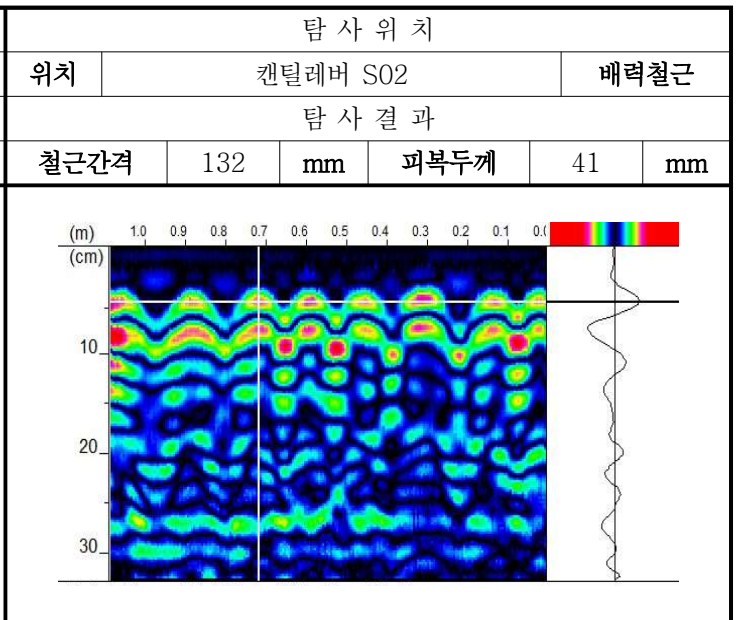
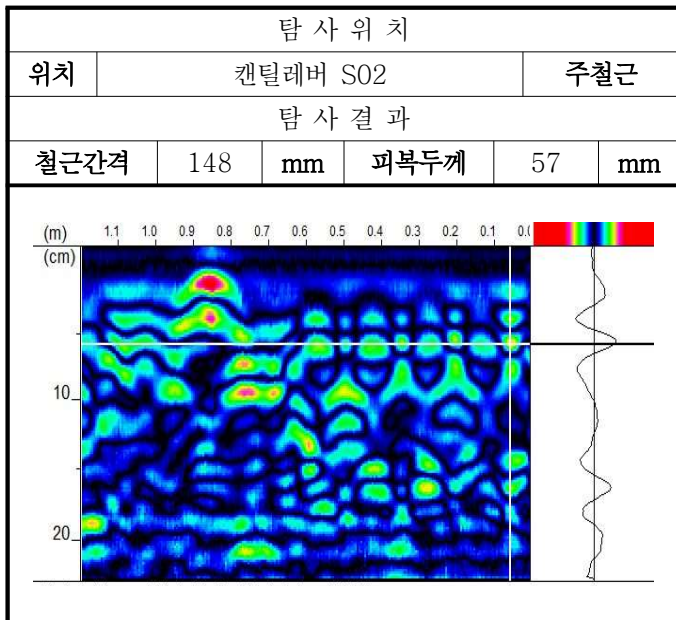
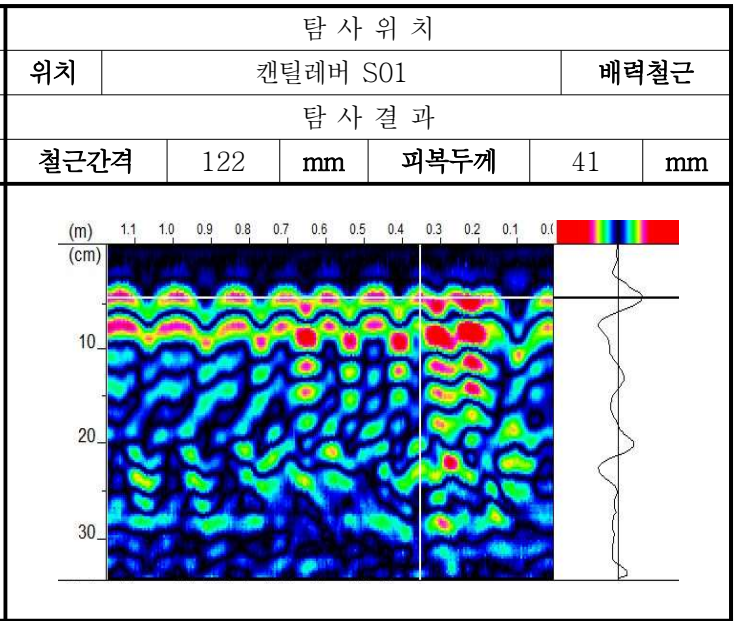
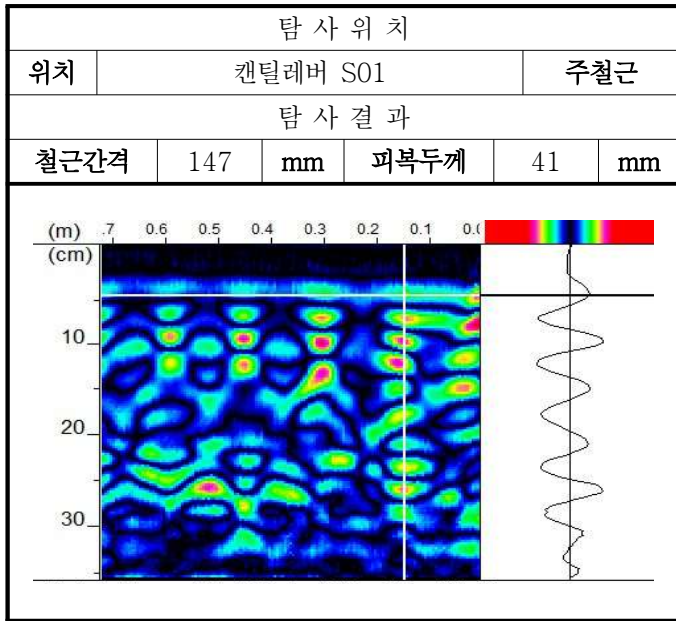
이산포IC Ramp-I					이산포IC Ramp-I				
균열 심도					균열 심도				
측정번호	건전부			평균	측정번호	건전부			
1	76.2	75.4	75.9	75.8	2	71.4	70.9	71.1	71.1
측정위치	균열부(수직균열 cw=0.3mm)			평균	측정위치	균열부(수직균열 cw=0.3mm)			
S7	81.2	81.8	80.1	81.0	IP1	77.6	75.7	76.5	76.6
	균열 깊이			품질		균열 깊이			품질
	5.6			1.98		6.0			2.11

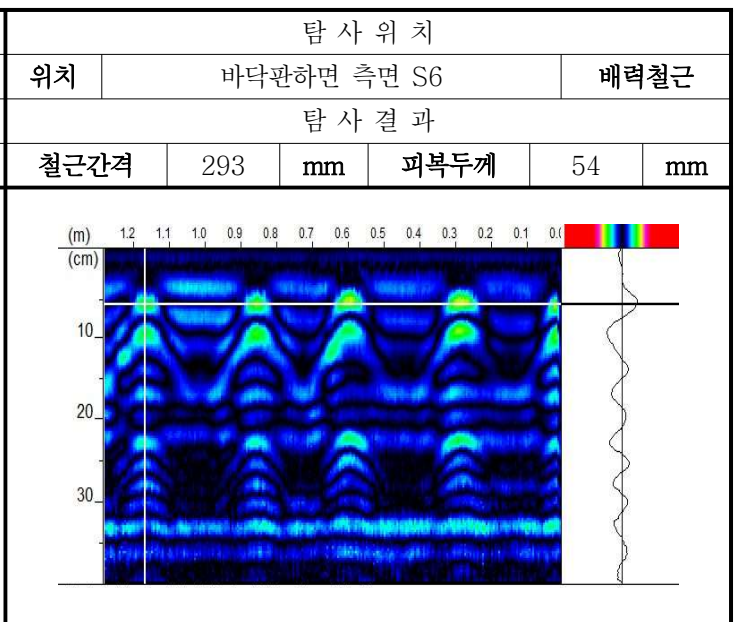
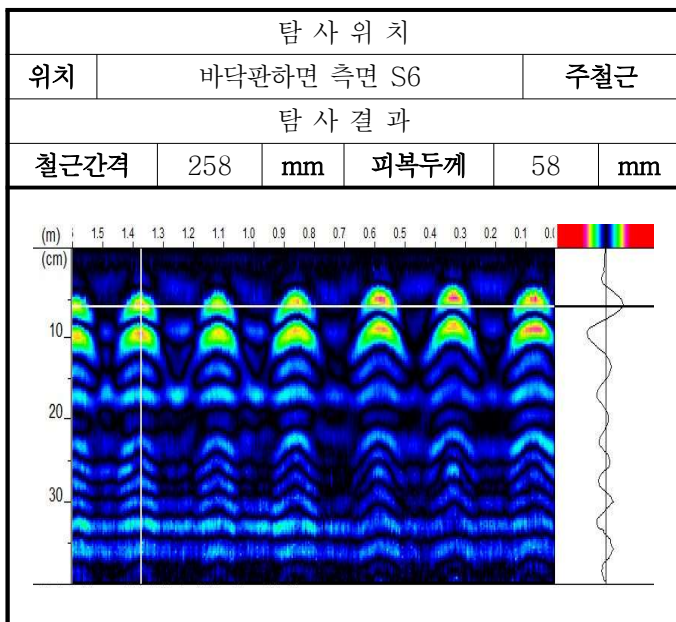
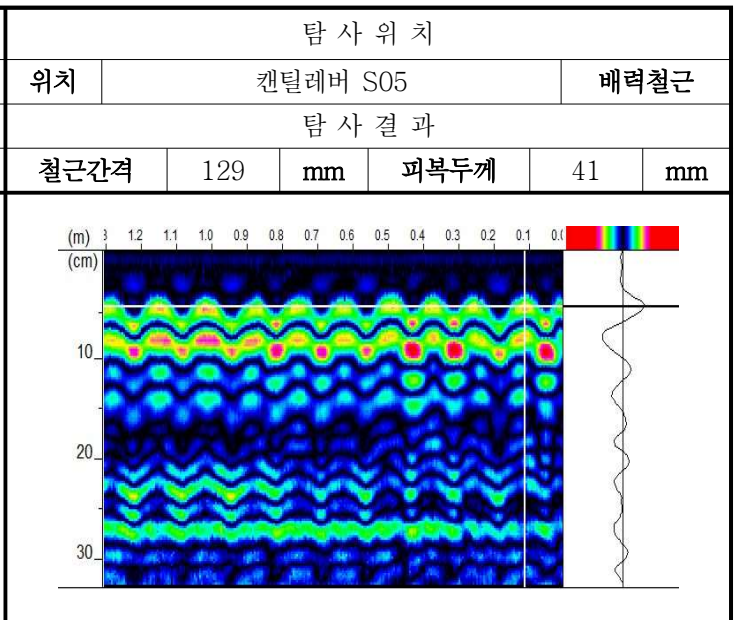
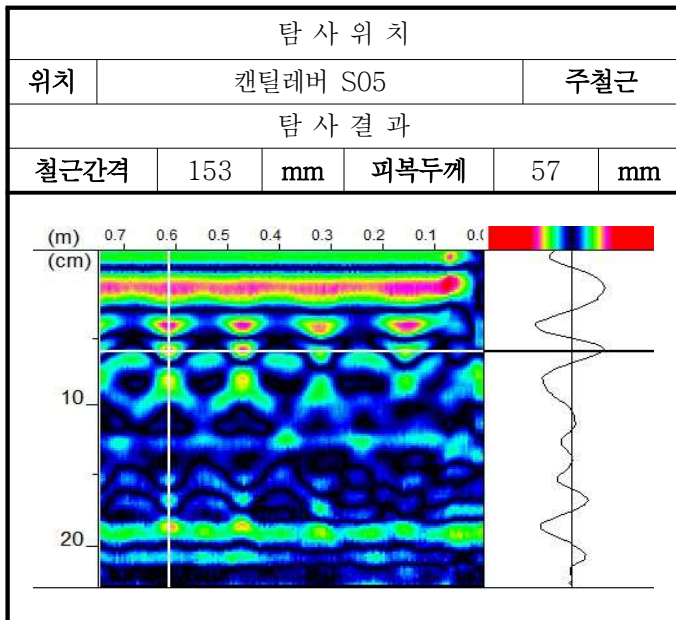
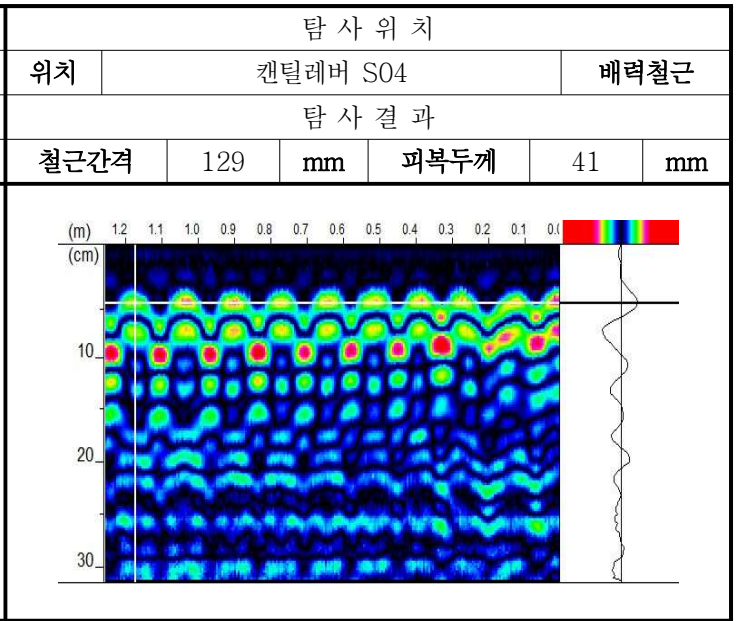
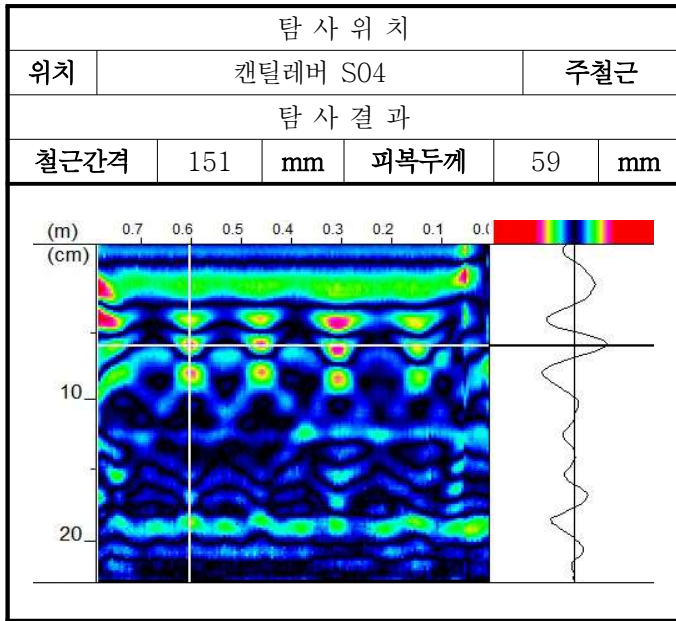
RC-RADAR		이산포IC Ramp-I교 철근탐사 자료					
PROJECT TITLE		시설물 정밀안전진단 용역[2구역]					
Company		 (주) 명 성 엔 지 니 어 링	Client		 (주) 일 산 대 교		
시험 결과							
No	위치	철근방향	실측 배근간격 (mm)	설계 배근간격 (mm)	실측 피복두께 (mm)	설계 피복두께 (mm)	비고
1	캔틸레버 S01	주철근	147	150	41	40	양호
		배력철근	122	125	41	40	양호
2	캔틸레버 S02	주철근	148	150	57	40	양호
		배력철근	132	125	41	40	양호
3	캔틸레버 S03	주철근	150	150	44	40	양호
		배력철근	130	125	41	40	양호
4	캔틸레버 S04	주철근	151	150	59	40	양호
		배력철근	129	125	41	40	양호
5	캔틸레버 S05	주철근	153	150	57	40	양호
		배력철근	129	125	41	40	양호
6	바닥판하면 측면 S06	주철근	258	250	58	70	양호
		배력철근	293	300	54	70	양호
7	바닥판하면 측면 S07	주철근	258	250	79	70	양호
		배력철근	299	300	61	70	양호
8	바닥판하면 측면 S08	주철근	256	250	79	70	양호
		배력철근	291	300	62	70	양호
9	바닥판하면 하면 S09	주철근	95	100	62	70	양호
		배력철근	148	150(300)	57	70	양호
10	바닥판하면 하면 S10	주철근	99	100	52	70	양호
		배력철근	149	150(300)	41	70	양호
11	바닥판하면 하면 S11	주철근	98	100	41	70	양호
		배력철근	313	150(300)	41	70	양호
12	바닥판하면 하면 S12	주철근	101	100	41	70	양호
		배력철근	291	150(300)	41	70	양호
13	바닥판하면 하면 S13	주철근	98	100	49	70	양호
		배력철근	291	150(300)	41	70	양호
14	바닥판하면 하면 S14	주철근	103	100	44	70	양호
		배력철근	295	150(300)	41	70	양호
15	바닥판하면 하면 S15	주철근	98	100	54	70	양호
		배력철근	148	150(300)	54	70	양호

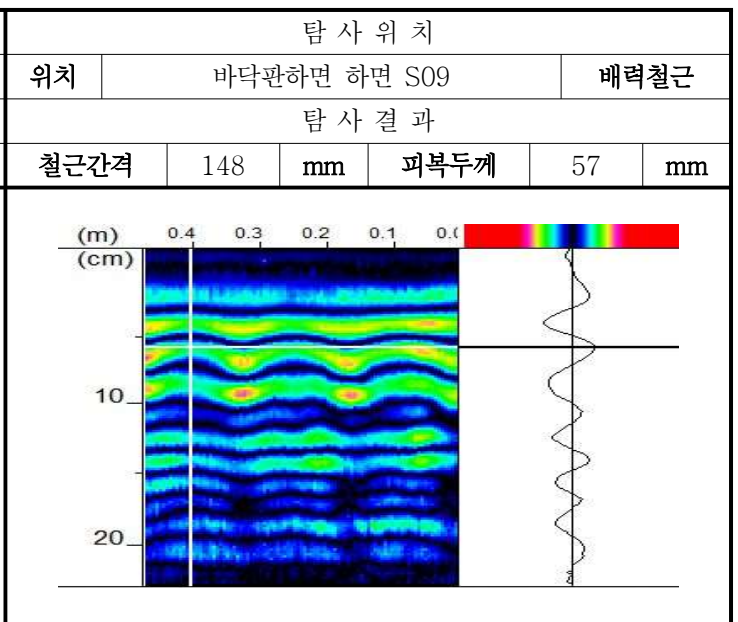
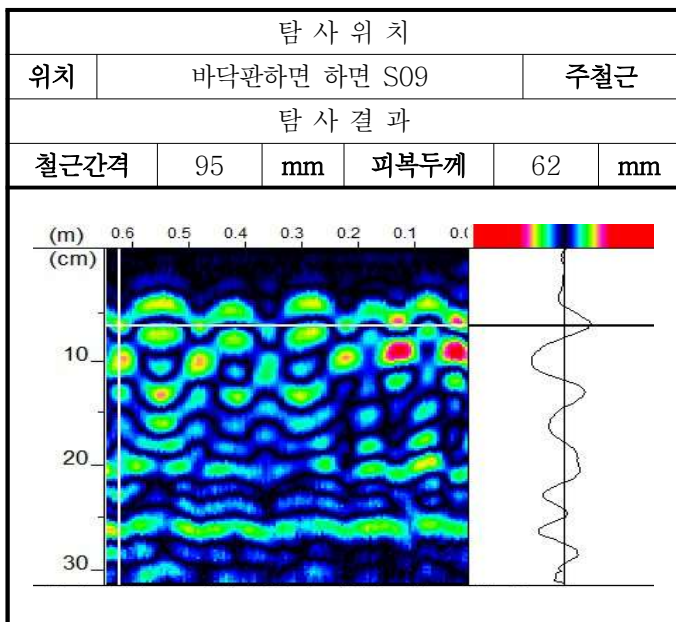
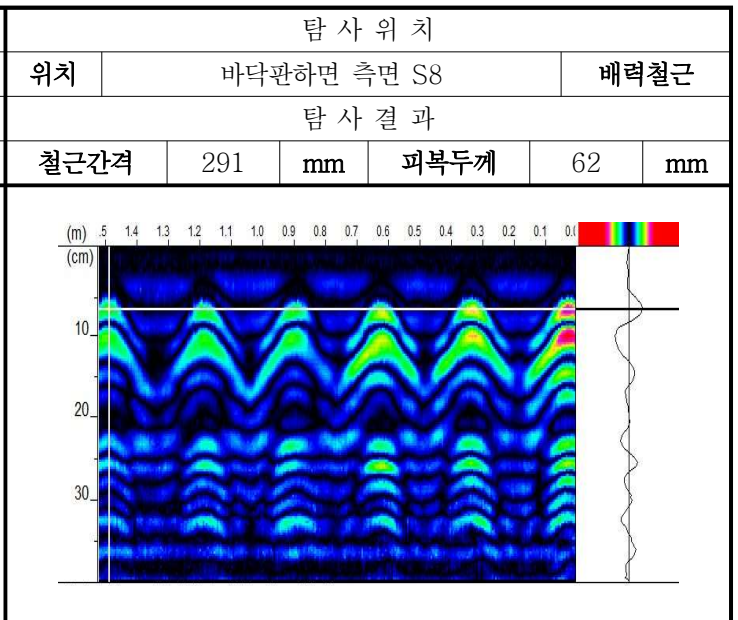
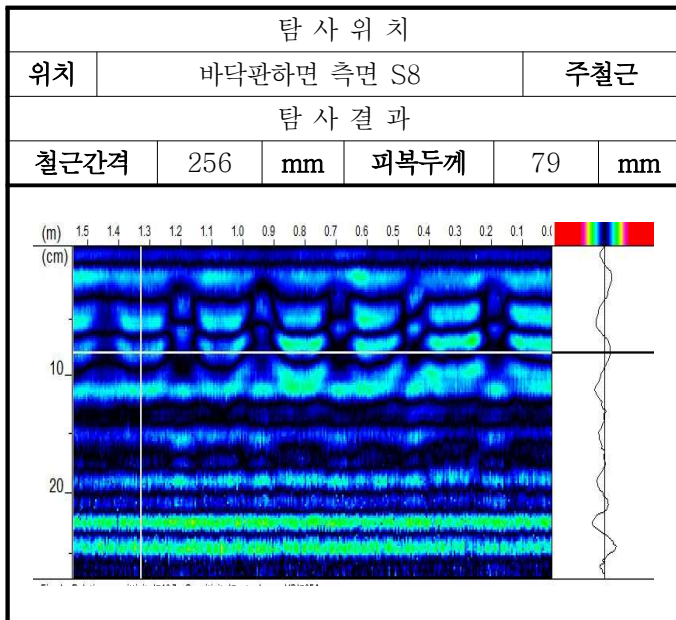
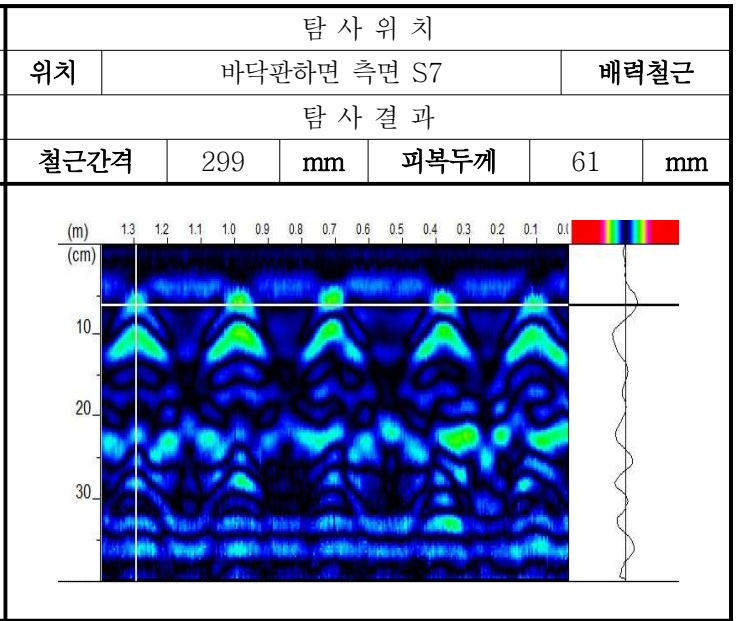
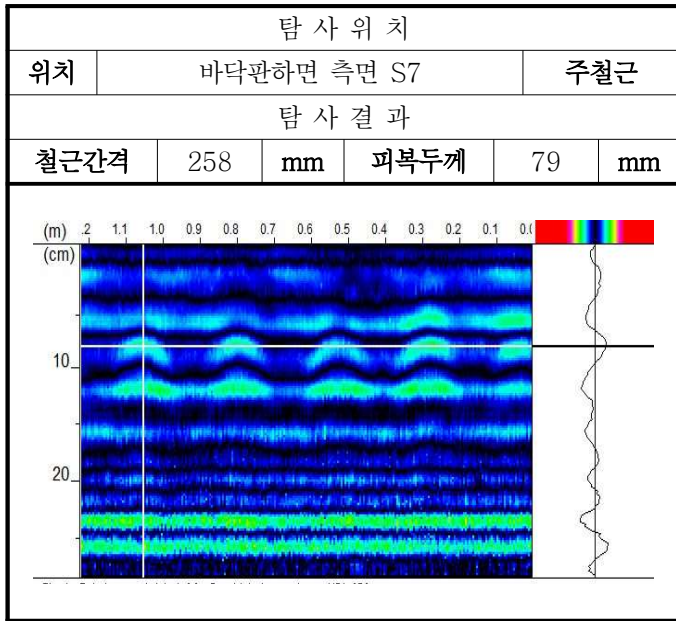
시험 결과							
16	바닥판하면 측면 S16	주철근	258	250	70	70	양호
		배력철근	306	300	58	70	양호
17	바닥판하면 측면 S17	주철근	255	250	78	70	양호
		배력철근	300	300	65	70	양호
18	바닥판하면 측면 S18	주철근	240	250	74	70	양호
		배력철근	312	300	67	70	양호
19	바닥판하면 측면 S19	주철근	256	250	90	70	양호
		배력철근	285	300	84	70	양호
20	바닥판하면 하면 S20	주철근	115	100	145	70	양호
		배력철근	150	150(300)	143	70	양호
21	바닥판하면 측면 S21	주철근	243	250	175	70	양호
		배력철근	291	300	58	70	양호
22	바닥판하면 측면 S22	주철근	258	250	175	70	양호
		배력철근	290	300	41	70	양호
23	바닥판하면 측면 S23	주철근	230	250	41	70	양호
		배력철근	283	300	39	70	양호
24	바닥판하면 측면 S24	주철근	250	250	37	70	양호
		배력철근	315	300	34	70	양호
25	바닥판하면 측면 S25	주철근	230	250	64	70	양호
		배력철근	285	300	41	70	양호
26	바닥판하면 측면 S26	주철근	246	250	79	70	양호
		배력철근	300	300	42	70	양호
27	벽체 IA1	수직철근	262	250	92	100	양호
		수평철근	148	150	88	100	양호
28	홍벽 IA2	수직철근	252	250	98	100	양호
		수평철근	148	150	84	100	양호
29	교각 코핑부 IP01	수직철근	154	150(300)	88	100	양호
		수평철근	200	200	82	100	양호
30	교각 코핑부 IP02	수직철근	295	150(300)	93	100	양호
		수평철근	200	200	79	100	양호
31	교각 코핑부 IP03	수직철근	290	150(300)	98	100	양호
		수평철근	200	200	92	100	양호
32	교각 기둥부 IP04	수직철근	133	125	94	100	양호
		수평철근	142	150(75)	87	100	양호
33	교각 기둥부 IP05	수직철근	123	125	99	100	양호
		수평철근	144	150(75)	88	100	양호

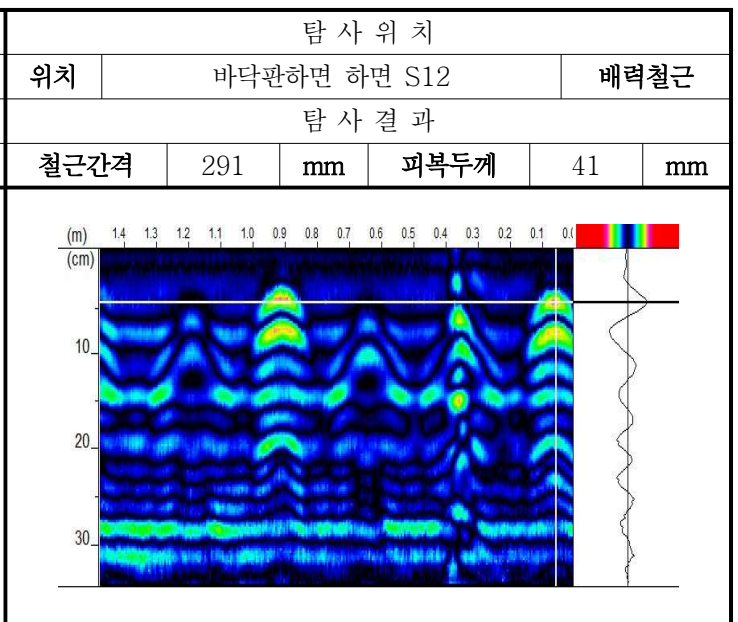
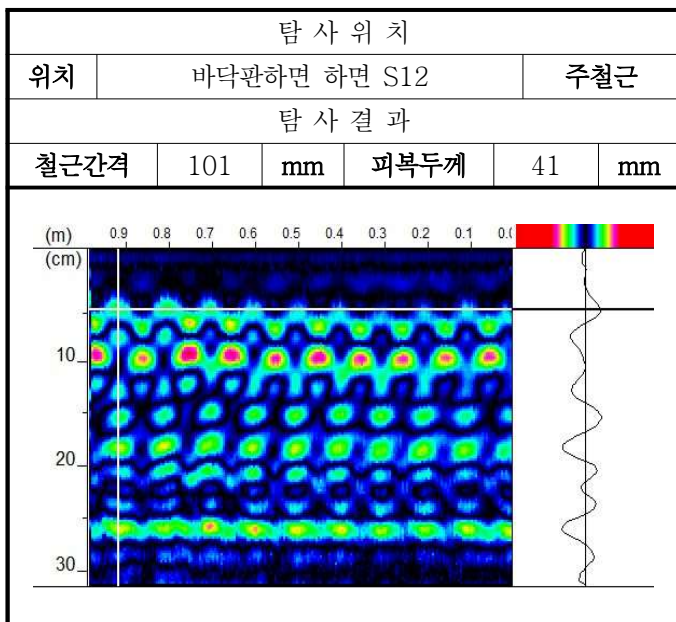
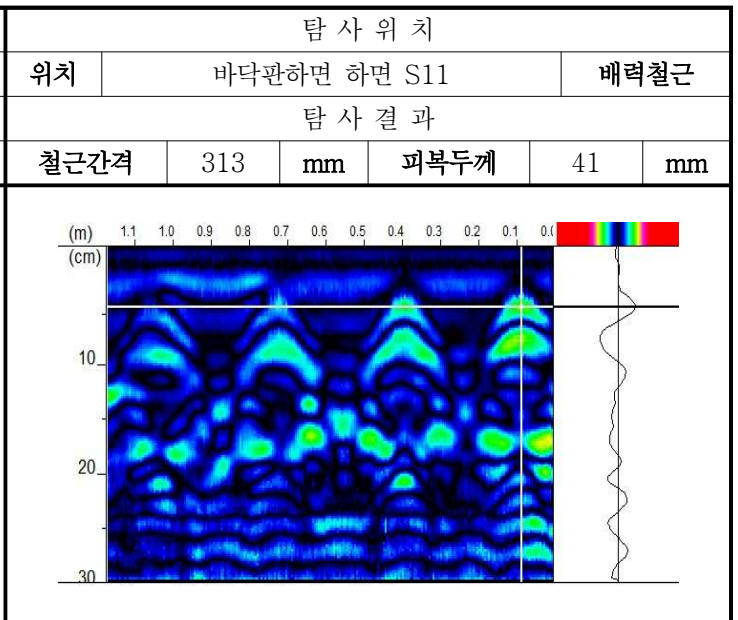
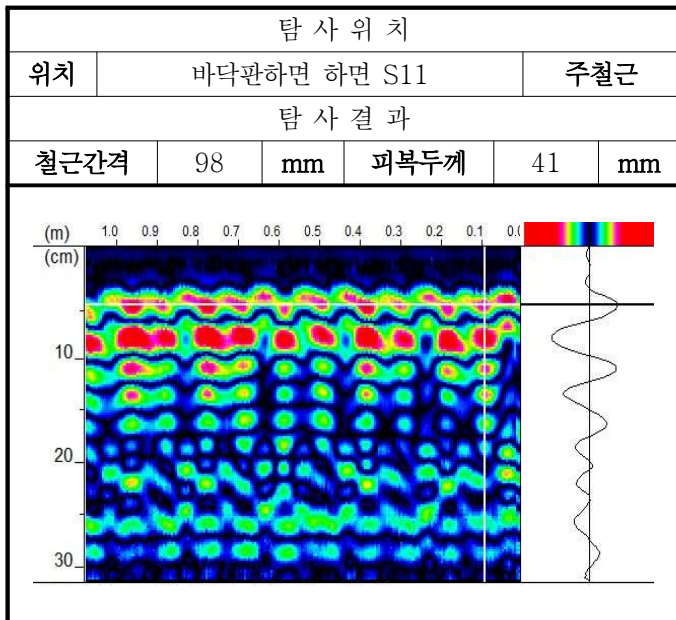
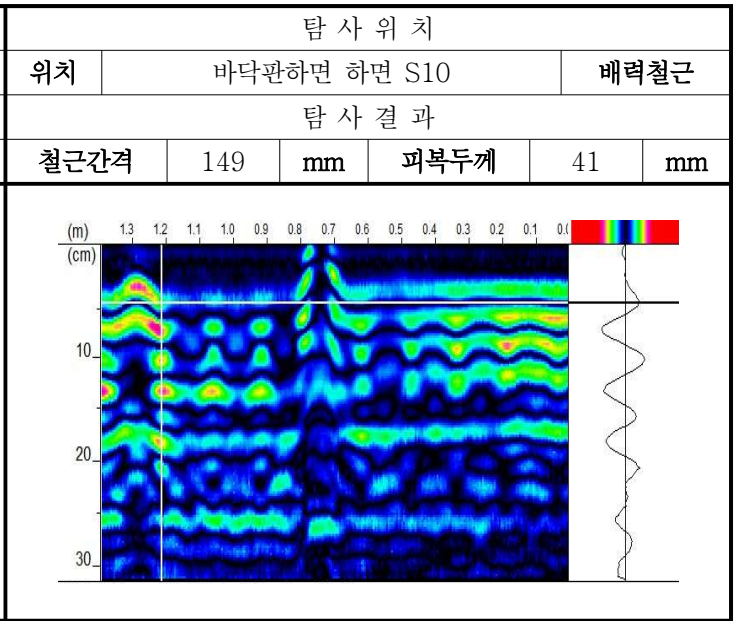
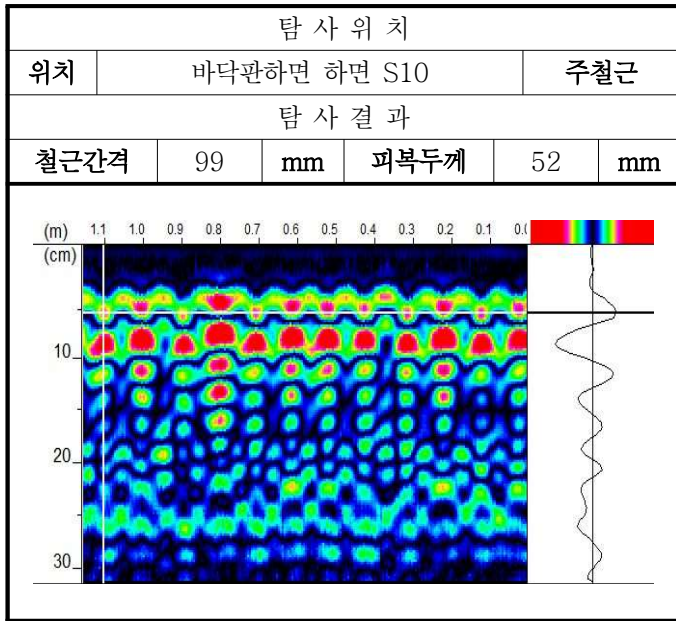
시험 결과							
34	교각 기둥부 IP06	수직철근	125	125	79	100	양호
		수평철근	152	150(75)	79	100	양호
35	교각 기둥부 IP07	수직철근	125	125	91	100	양호
		수평철근	150	150(75)	88	100	양호
36	교각 코핑부 IP08	수직철근	150	150(300)	97	100	양호
		수평철근	200	200	92	100	양호
37	교각 코핑부 IP09	수직철근	292	150(300)	102	100	양호
		수평철근	201	200	96	100	양호
38	교각 기둥부 IP10	수직철근	214	215	96	100	양호
		수평철근	150	150(75)	95	100	양호
39	교각 기둥부 IP11	수직철근	200	215	96	100	양호
		수평철근	146	150(75)	93	100	양호
40	교각 기둥부 IP12	수직철근	133	125	97	100	양호
		수평철근	148	150(75)	88	100	양호
41	교각 기둥부 IP13	수직철근	186	215	90	100	양호
		수평철근	146	150(75)	90	100	양호
42	교각 기둥부 IP14	수직철근	200	215	91	100	양호
		수평철근	150	150(75)	91	100	양호
43	교각 코핑부 IP15	수직철근	306	150(300)	100	100	양호
		수평철근	206	200	93	100	양호
44	교각 코핑부 IP16	수직철근	290	150(300)	98	100	양호
		수평철근	207	200	91	100	양호
45	교각 코핑부 IP17	수직철근	305	150(300)	93	100	양호
		수평철근	200	200	93	100	양호
46	교각 코핑부 IP18	수직철근	295	150(300)	100	100	양호
		수평철근	198	200	92	100	양호
47	교각 기둥부 IP19	수직철근	135	125	98	100	양호
		수평철근	150	150	93	100	양호
48	교각 코핑부 IP20	수직철근	143	150(300)	97	100	양호
		수평철근	200	200	94	100	양호
49	교각 코핑부 IP21	수직철근	155	150(300)	97	100	양호
		수평철근	200	200	92	100	양호
50	교각 코핑부 IP22	수직철근	148	150(300)	102	100	양호
		수평철근	200	200	96	100	양호
51	교각 코핑부 IP23	수직철근	146	150(300)	100	100	양호
		수평철근	190	200	97	100	양호

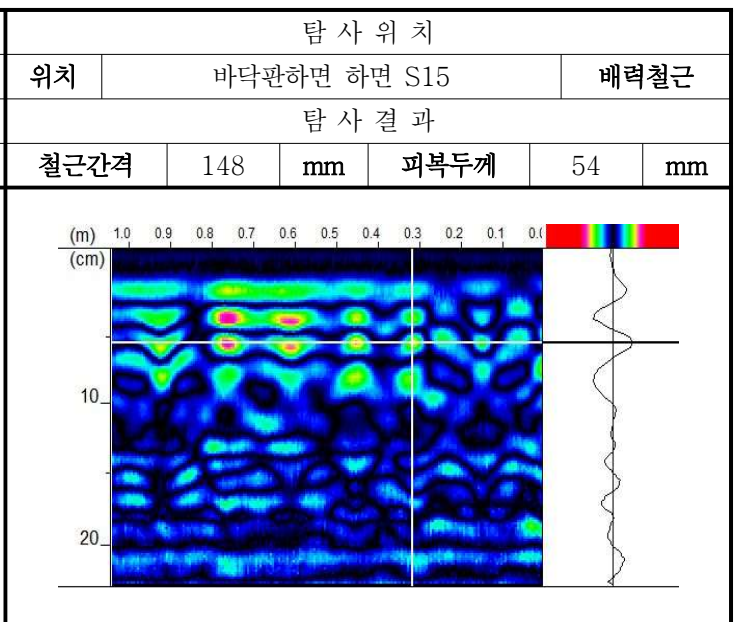
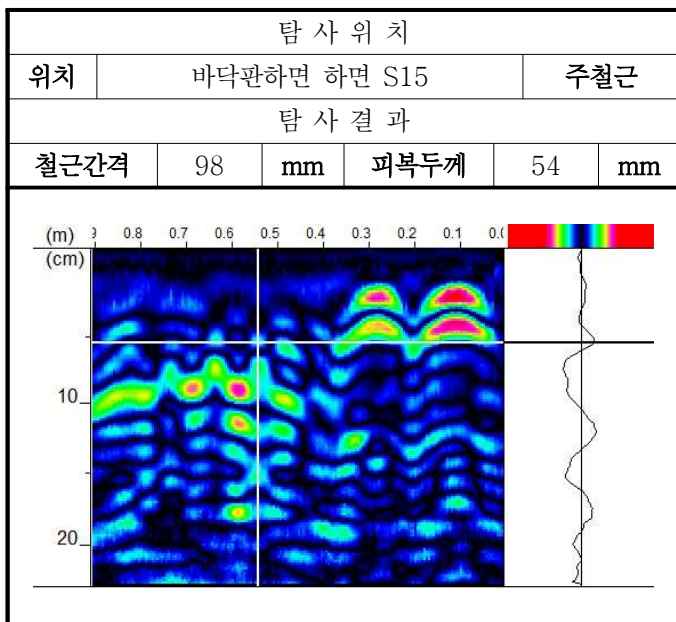
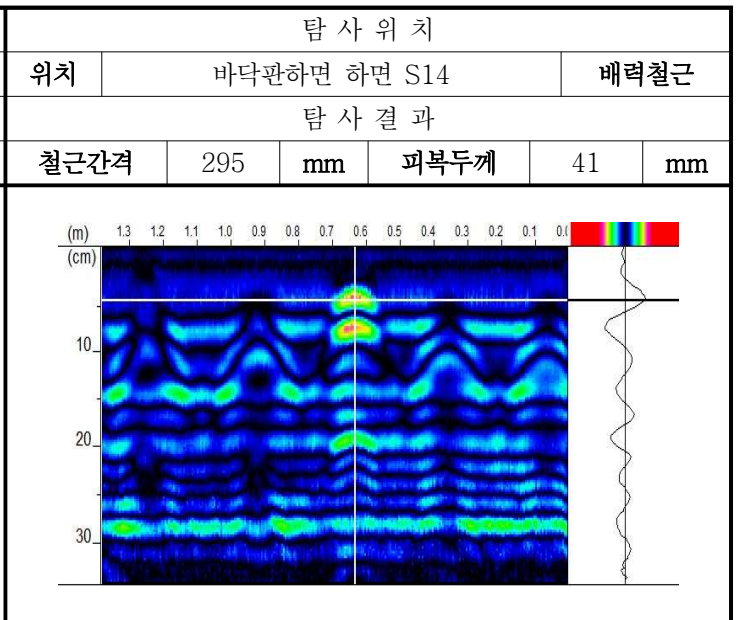
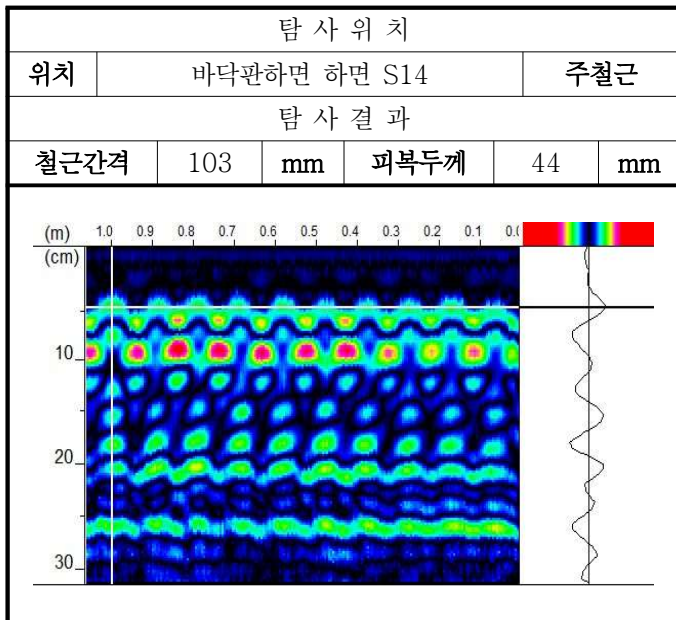
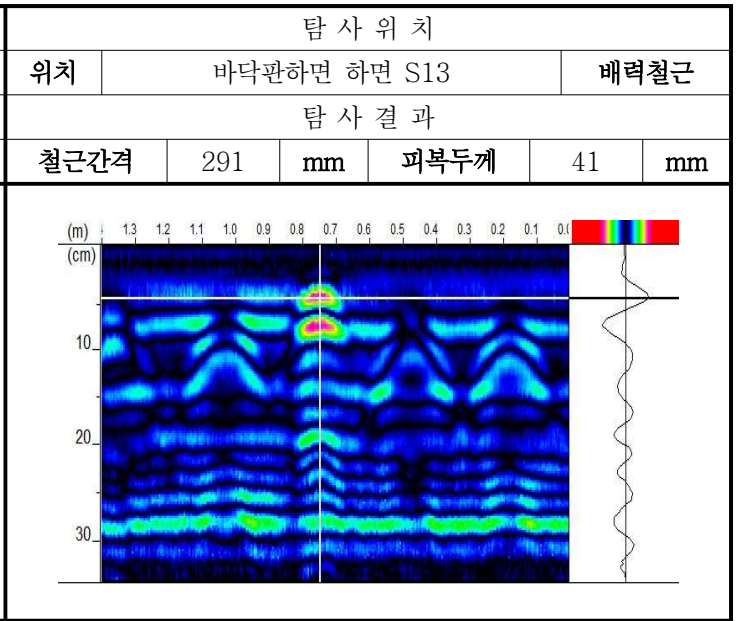
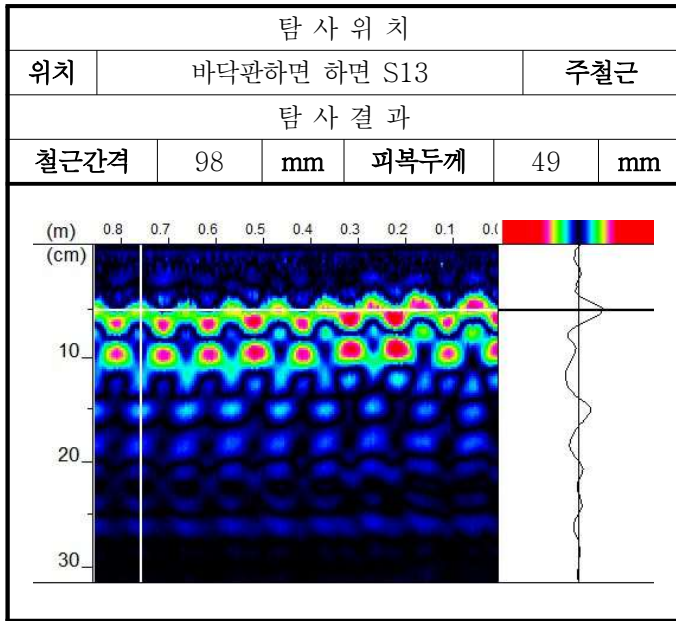
시험 결과							
52	교각 코핑부 IP24	수직철근	145	150(300)	92	100	양호
		수평철근	200	200	92	100	양호
53	교각 기둥부 IP25	수직철근	135	125	105	100	양호
		수평철근	145	150	93	100	양호

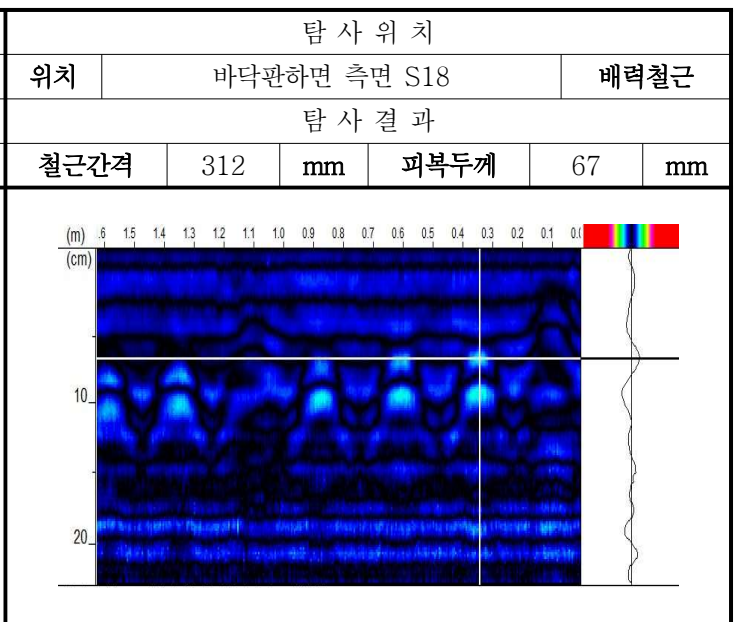
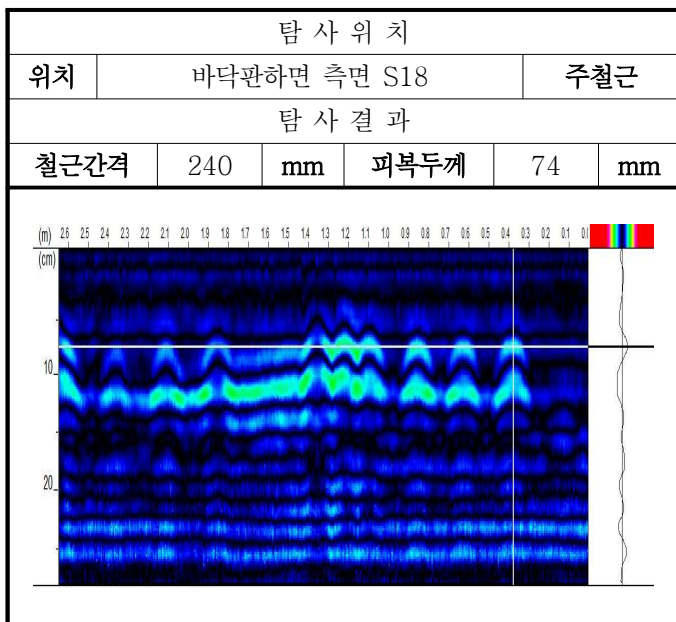
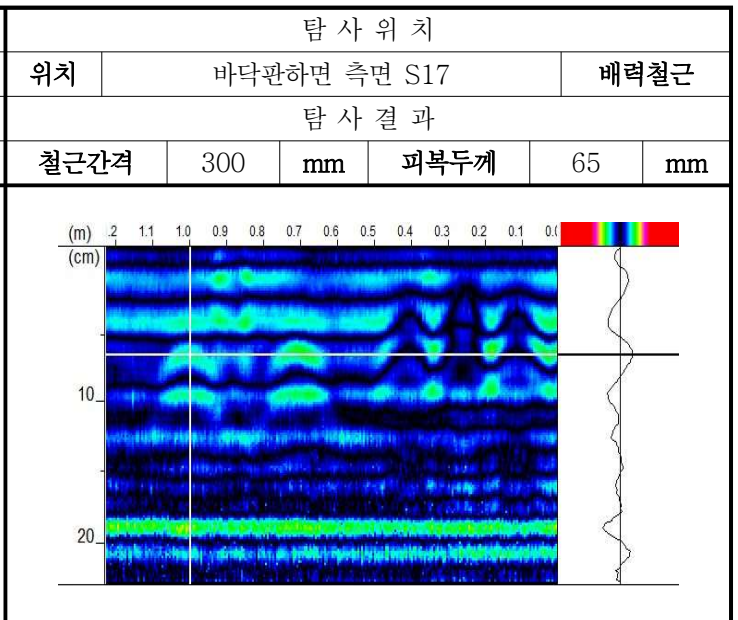
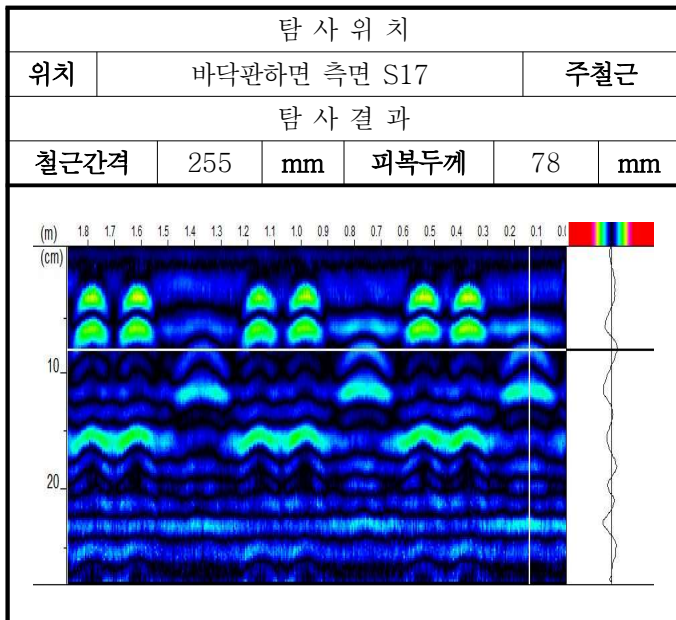
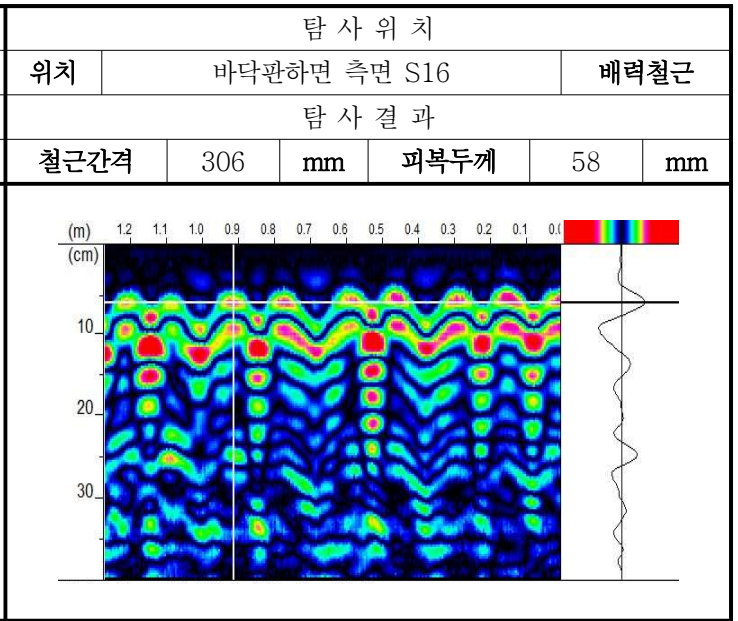
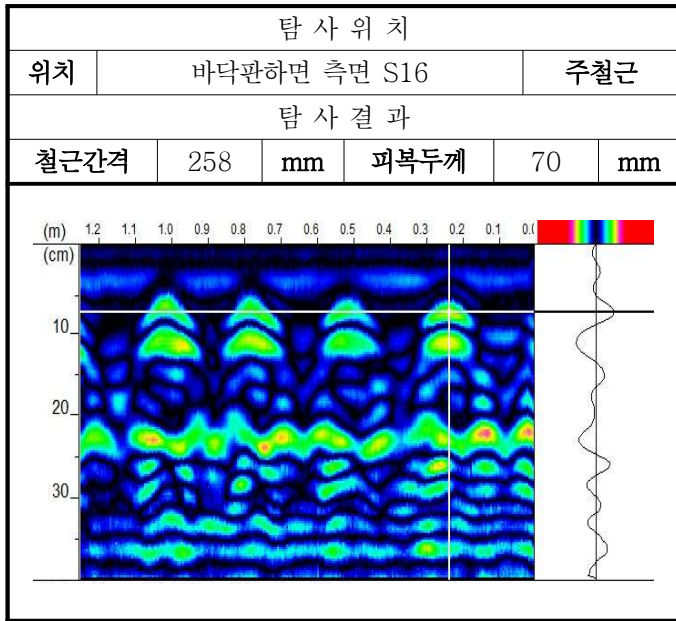


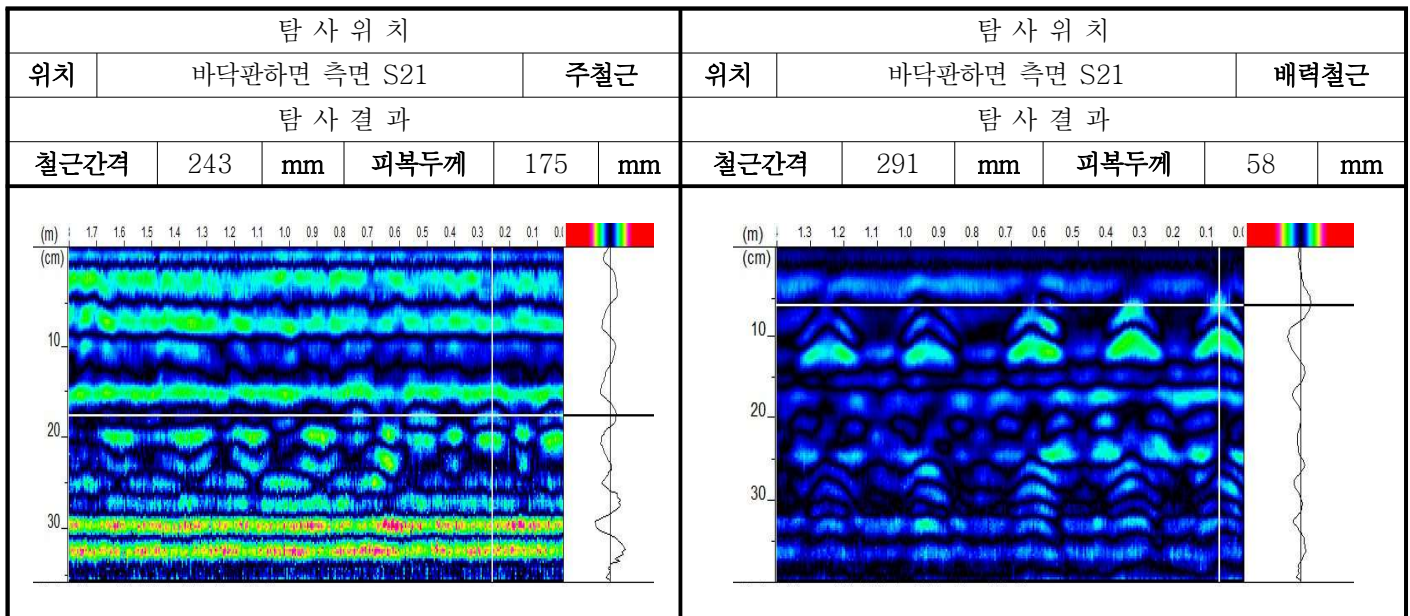
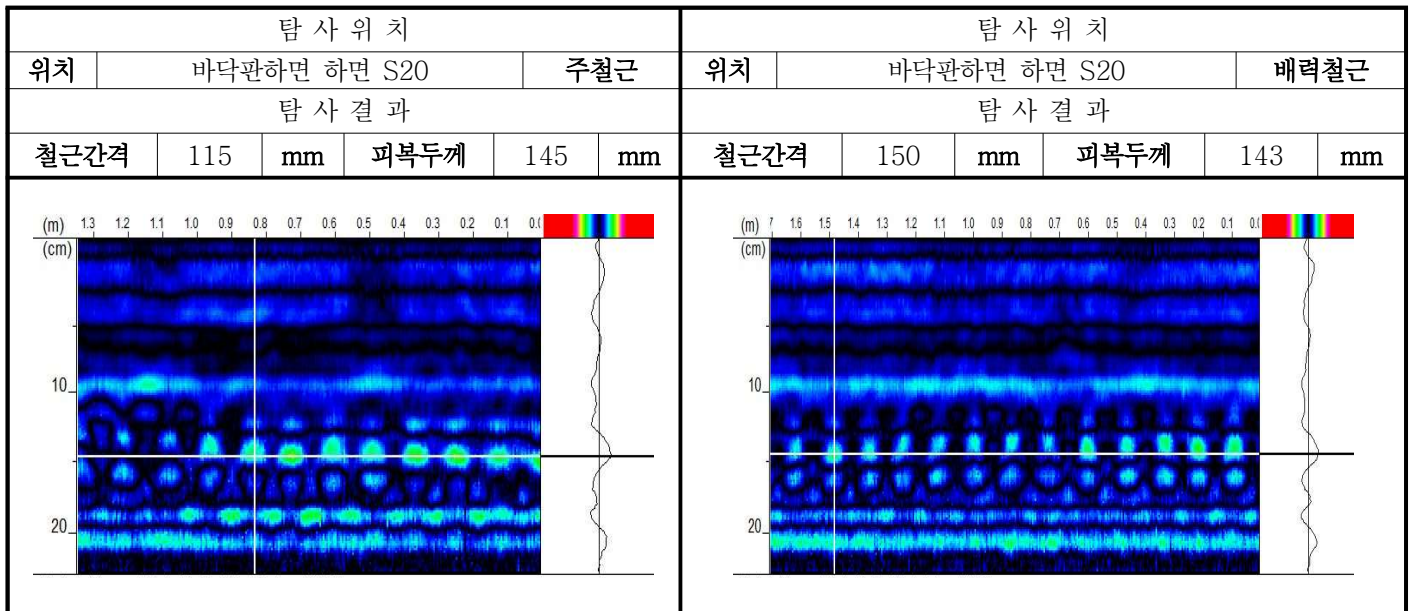
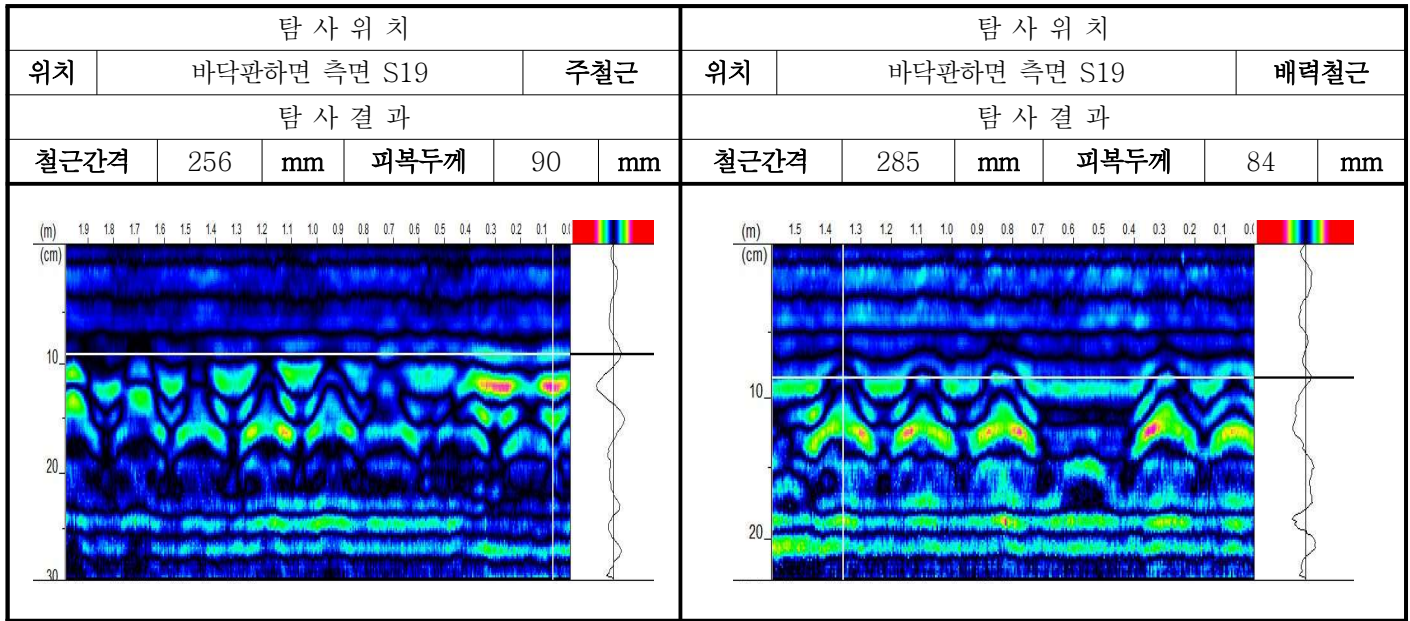


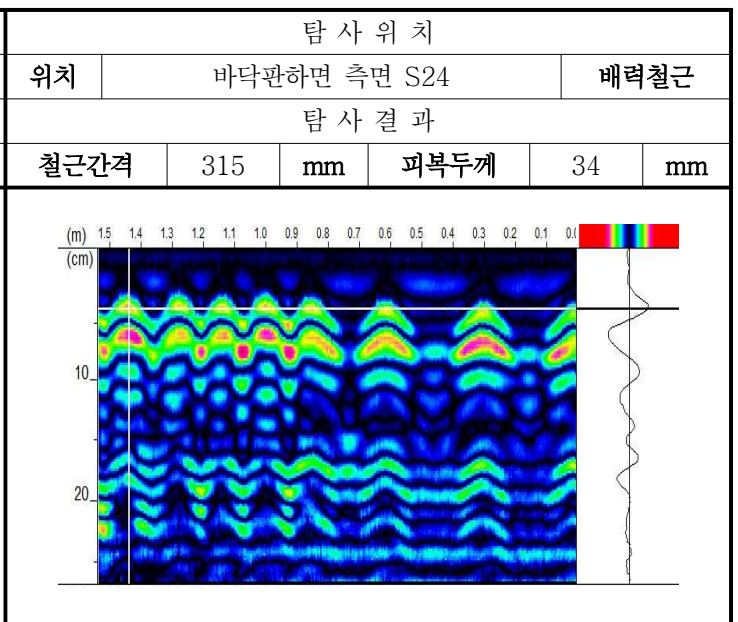
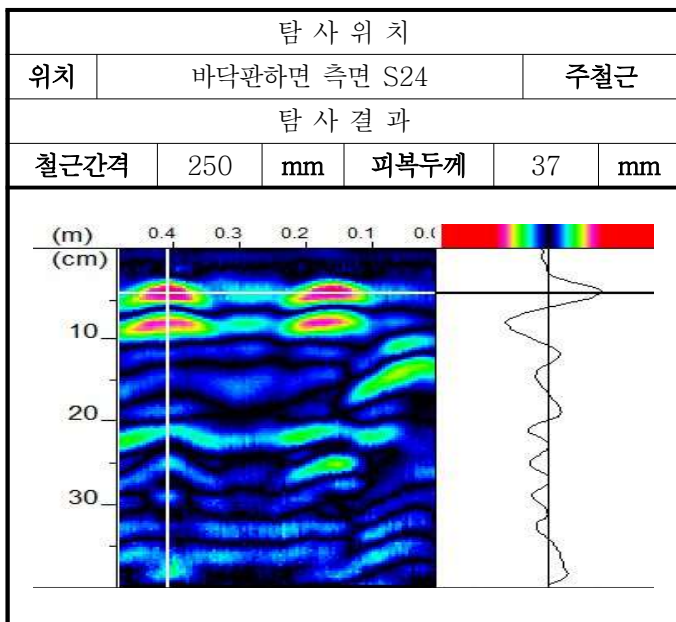
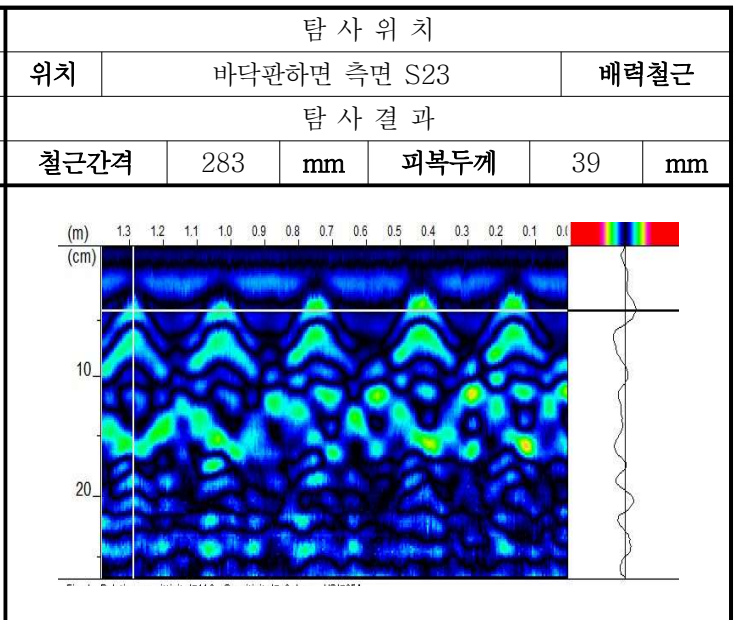
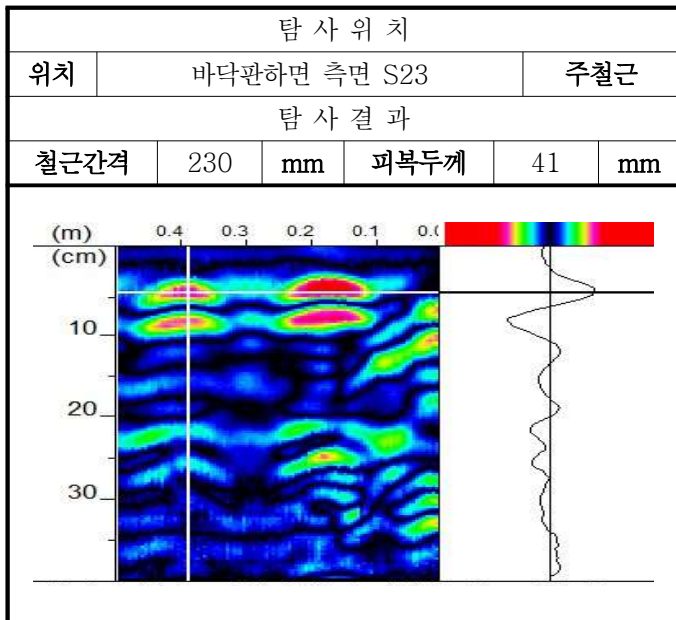
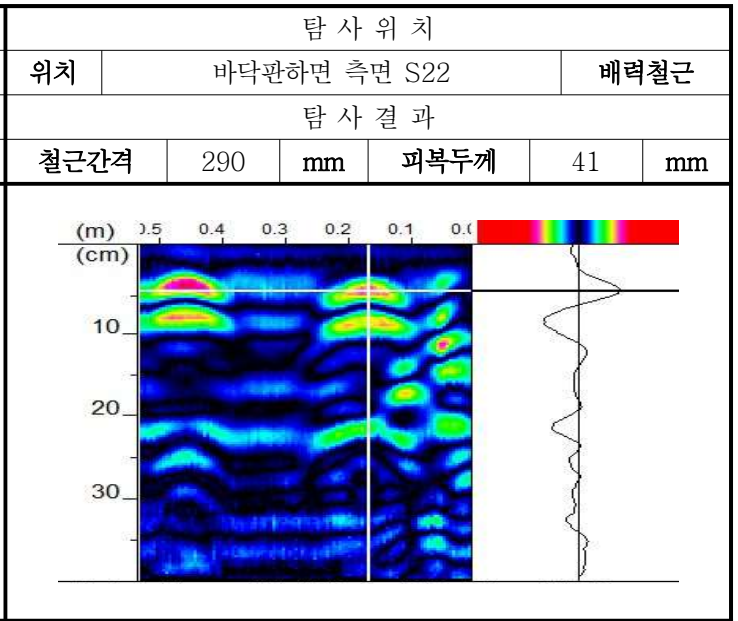
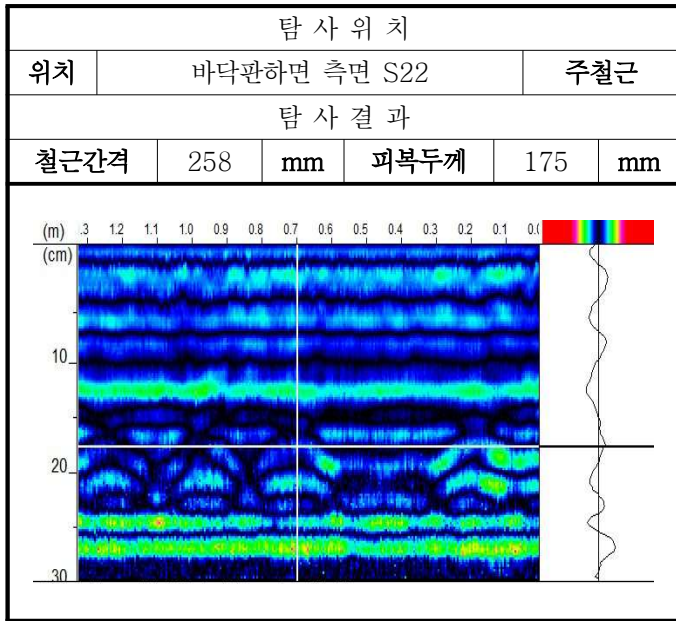


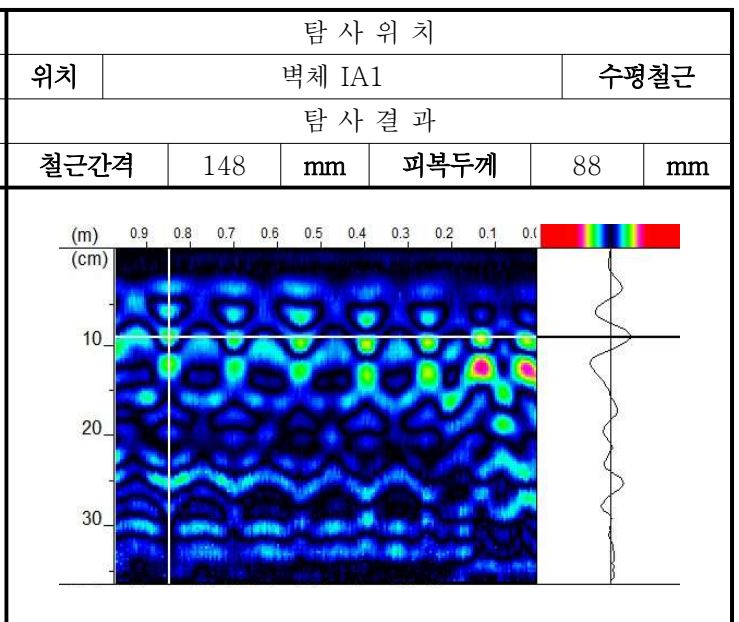
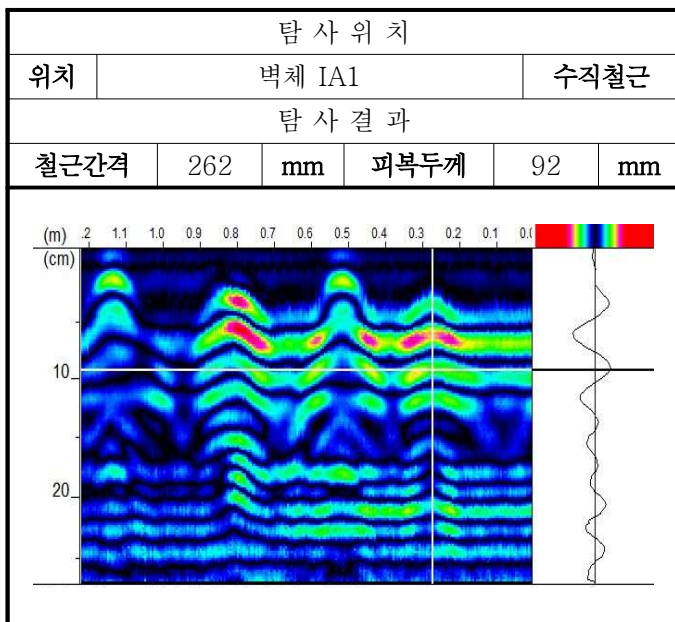
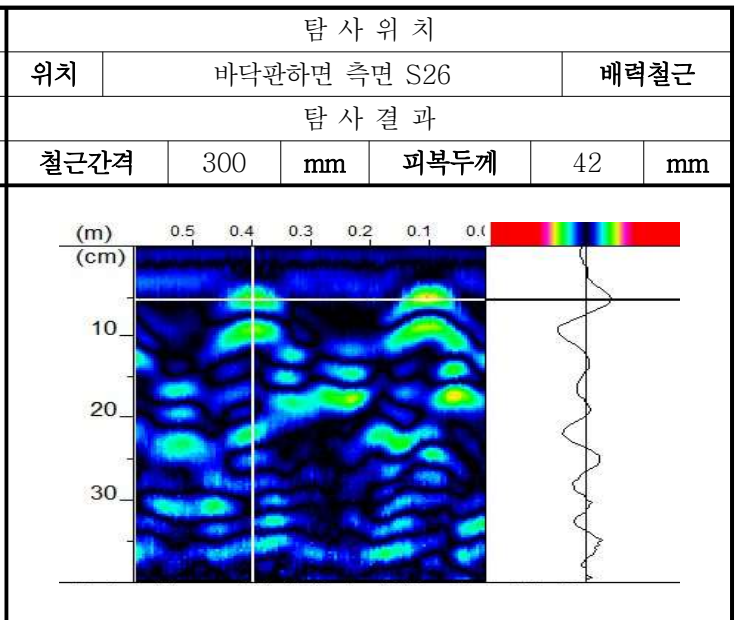
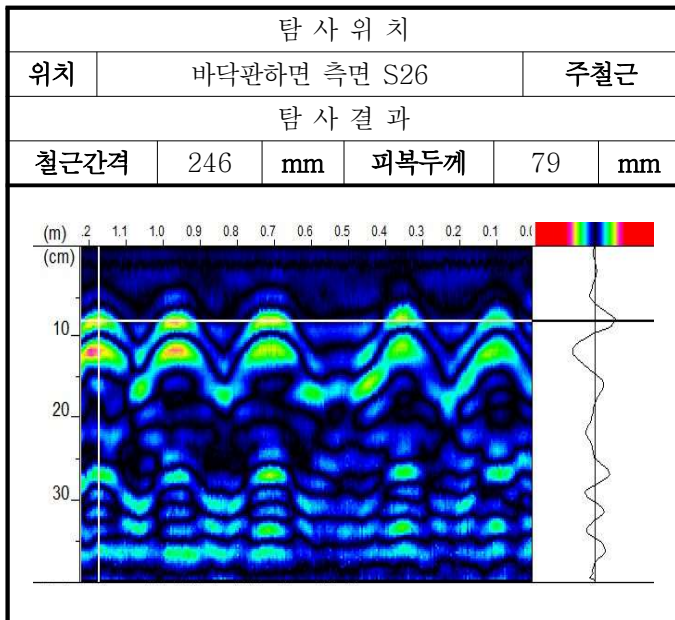
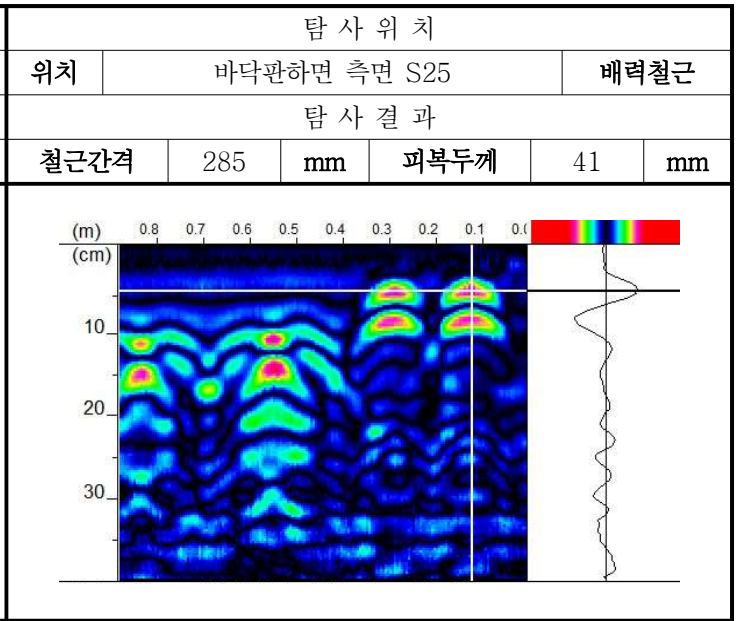
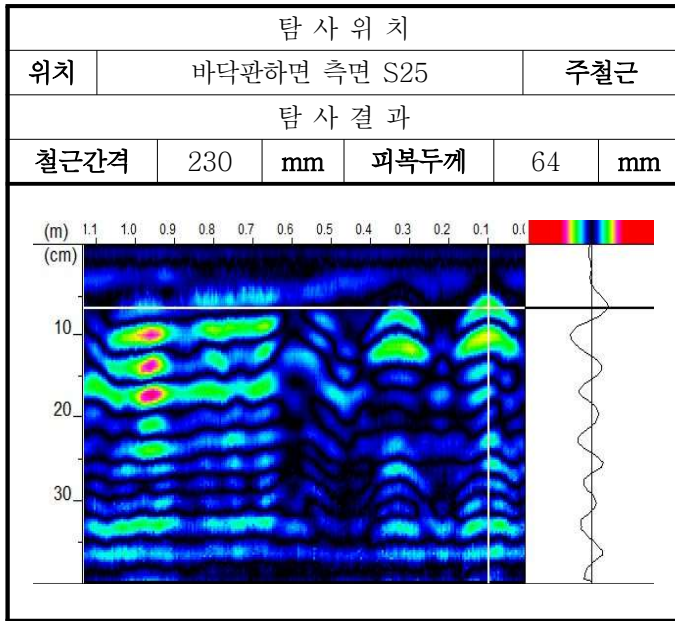


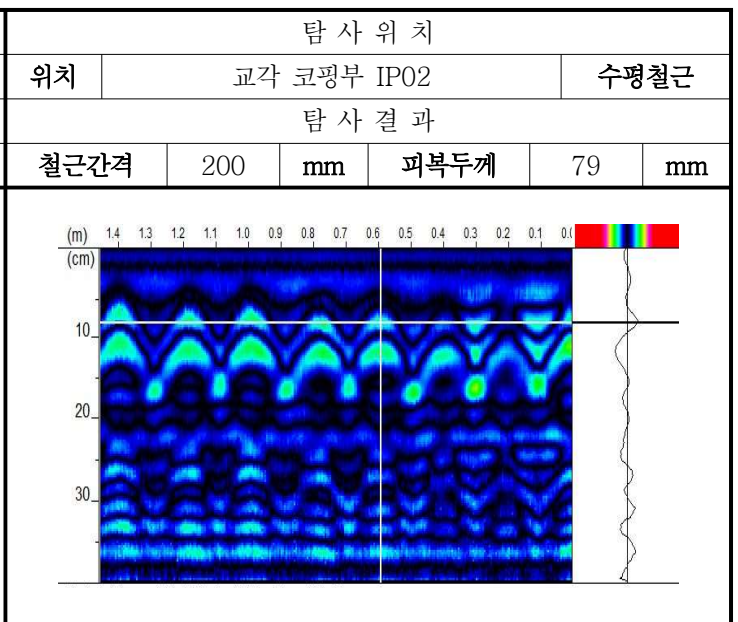
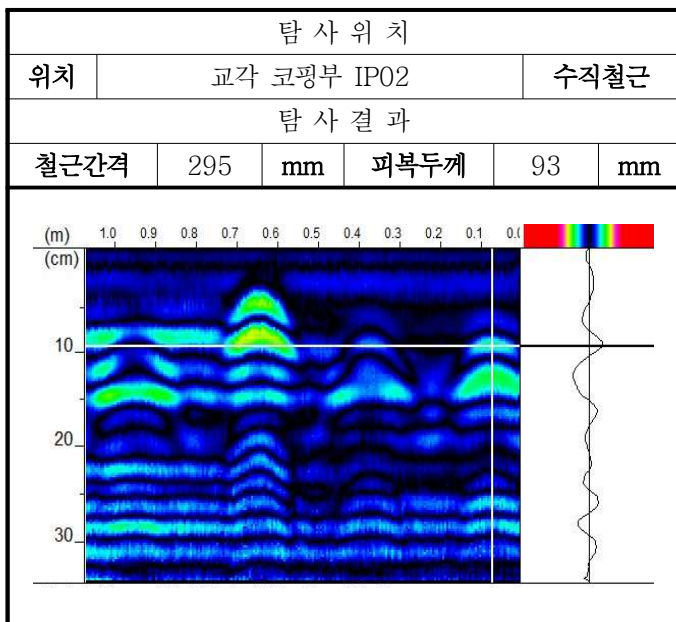
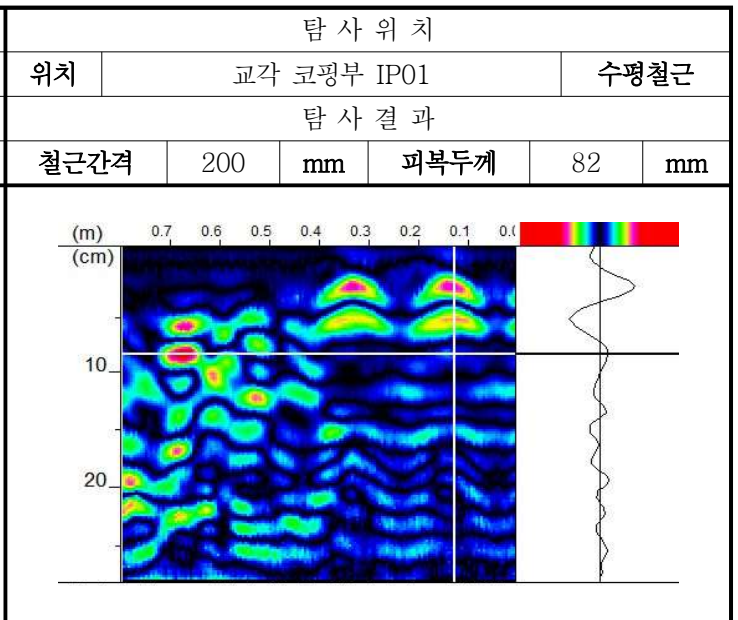
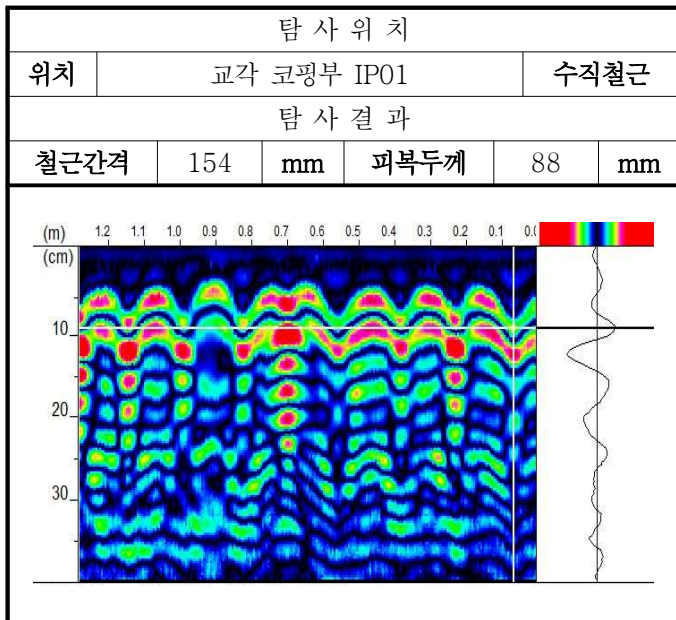
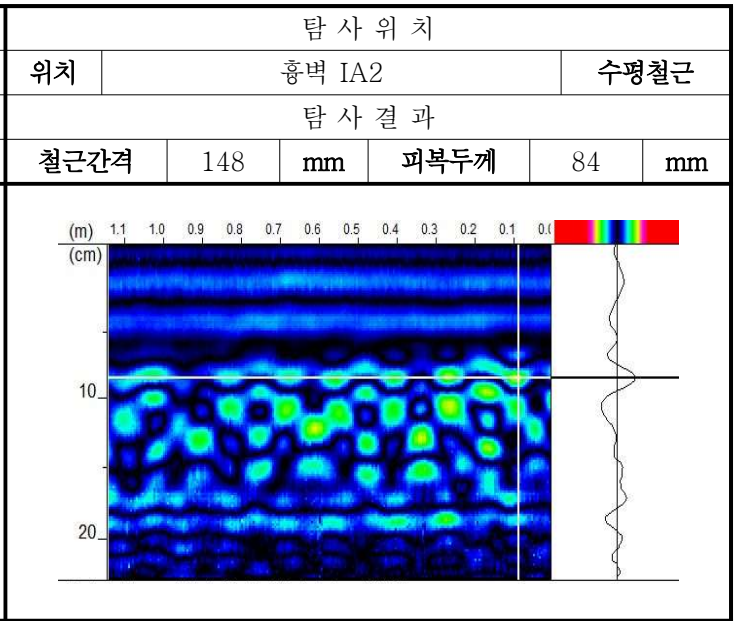
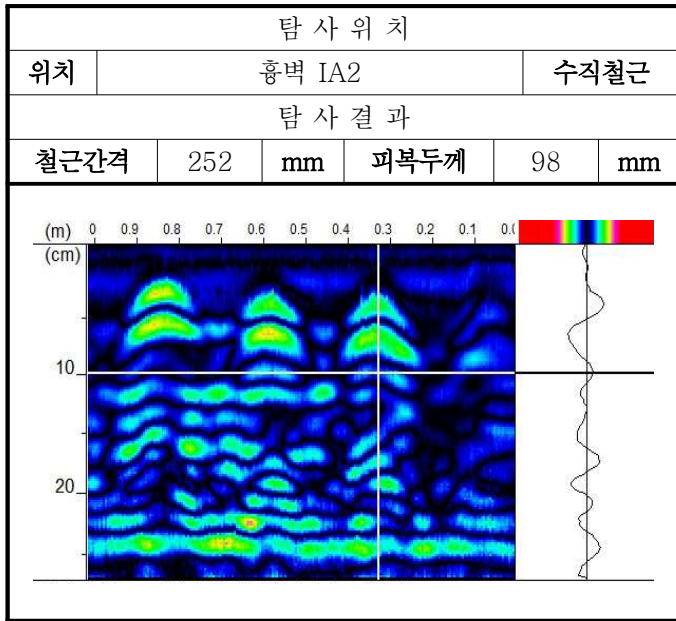


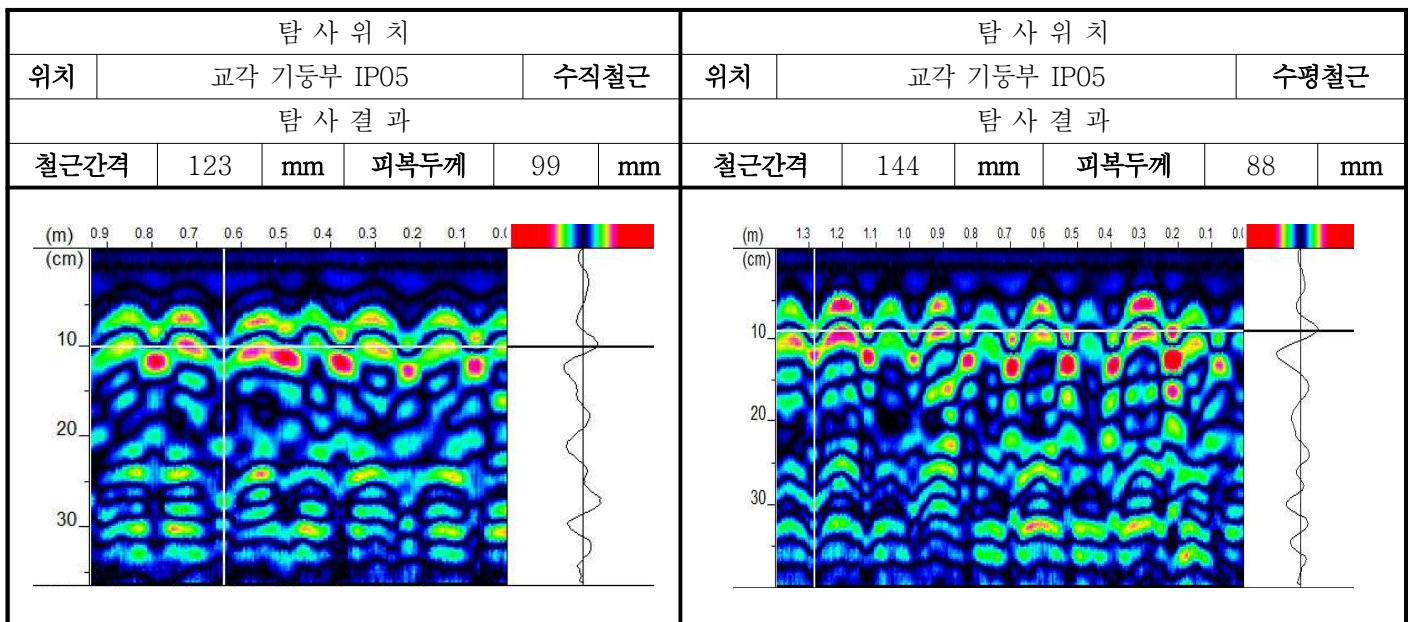
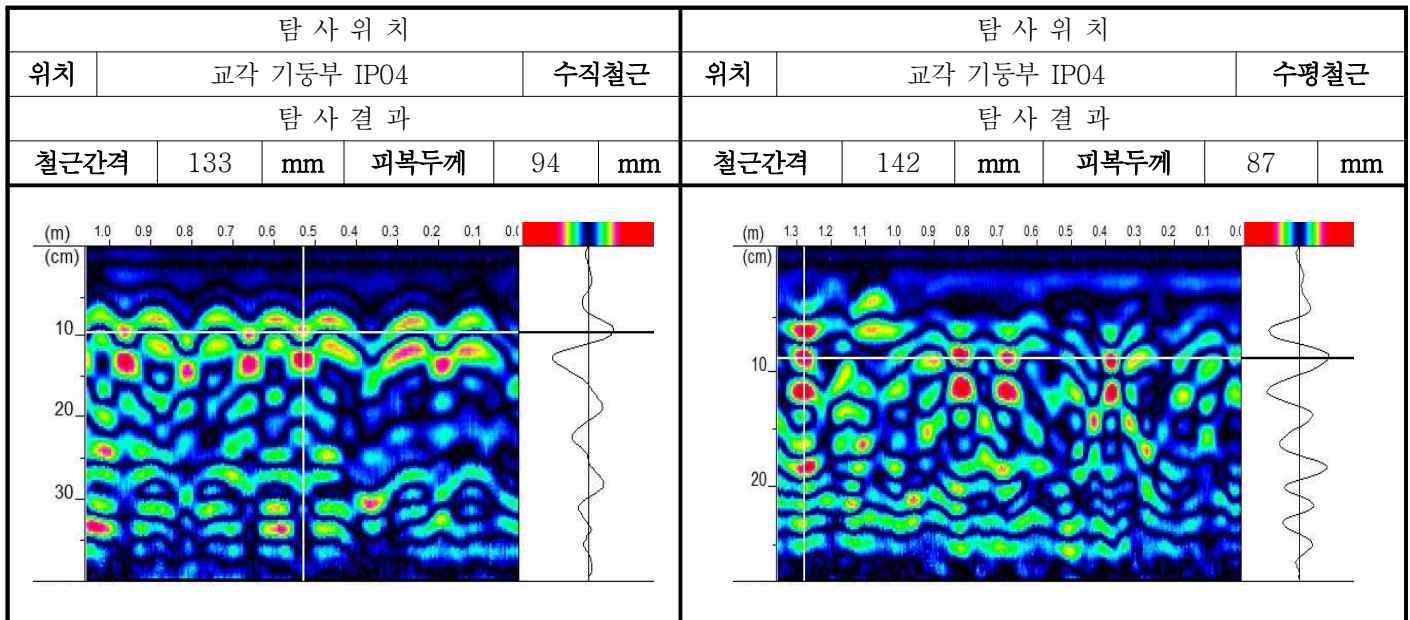
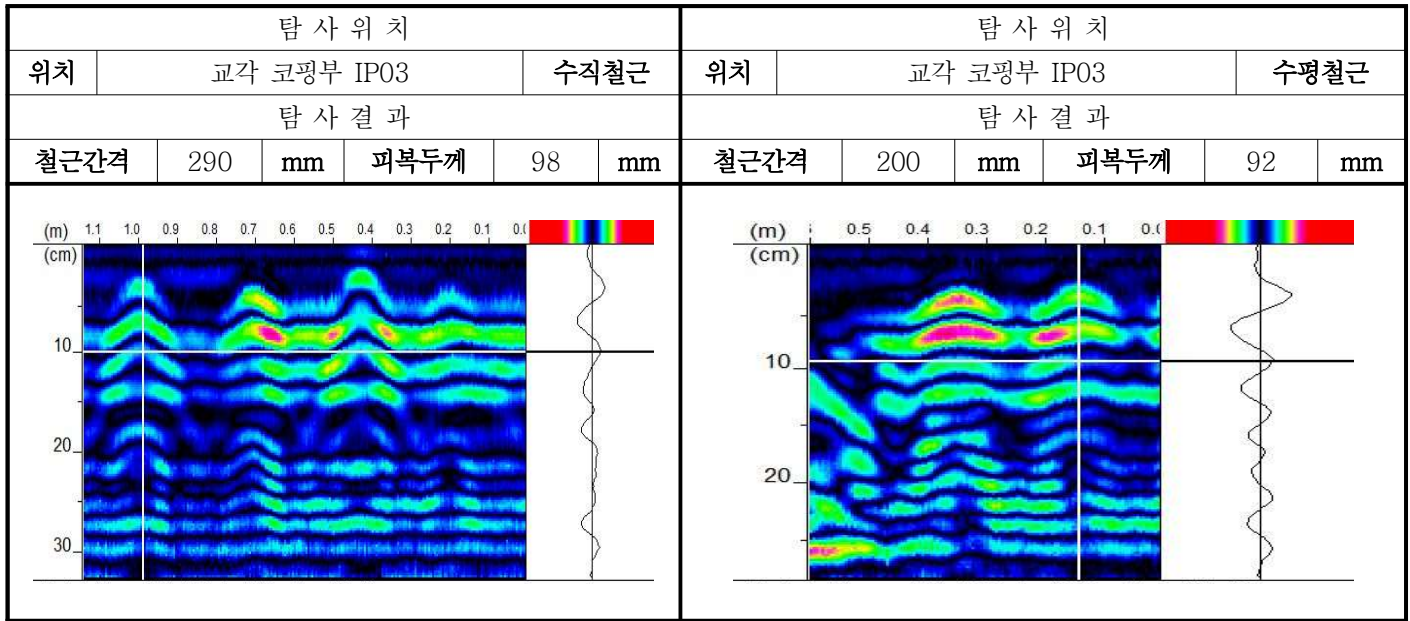


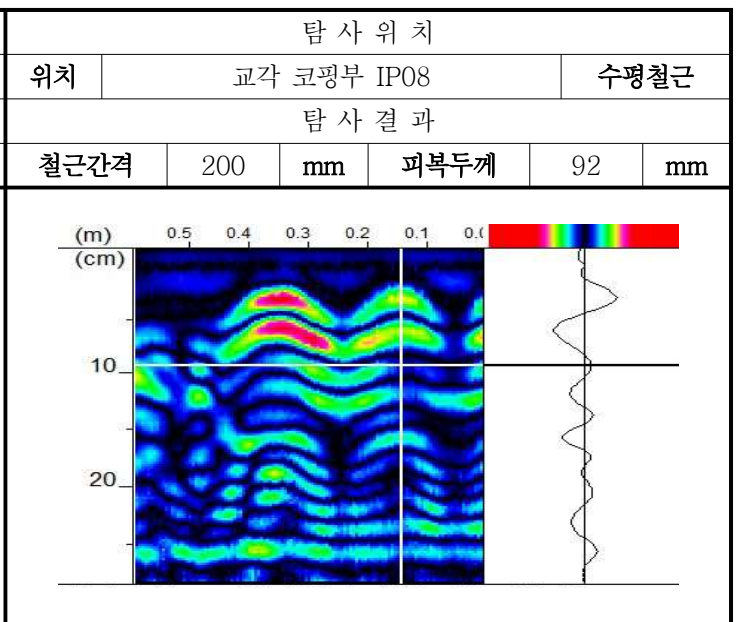
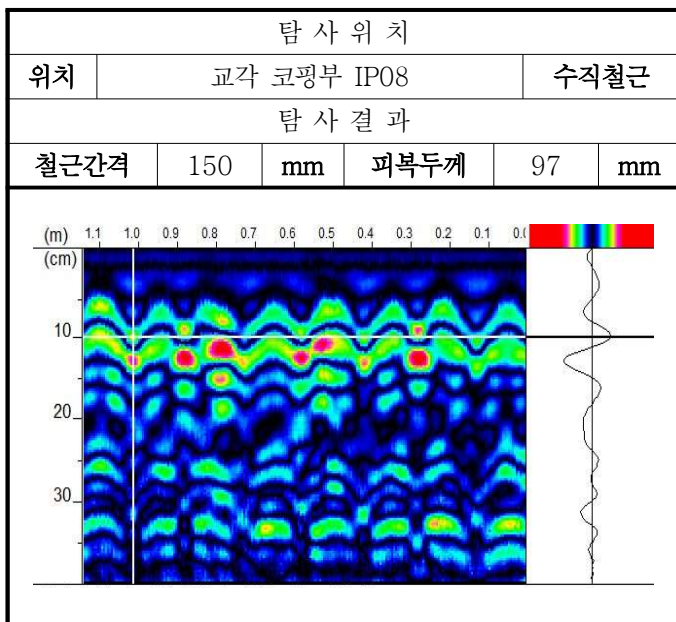
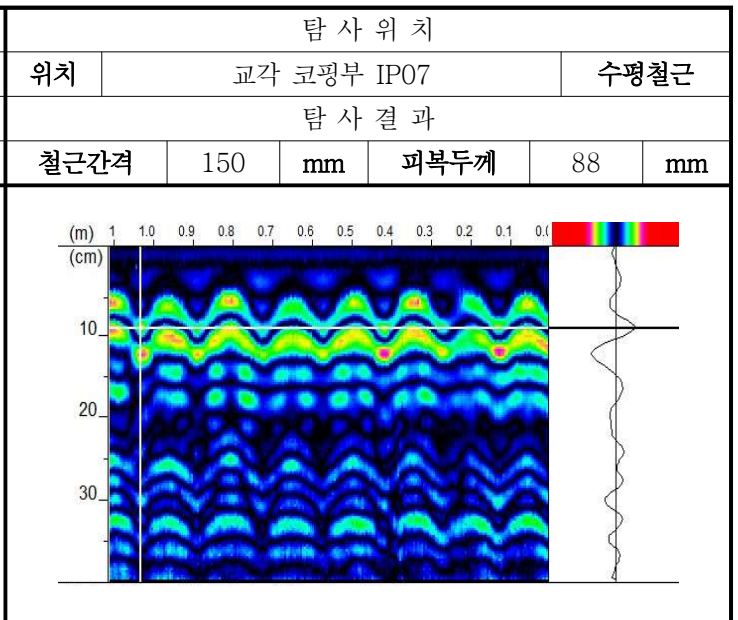
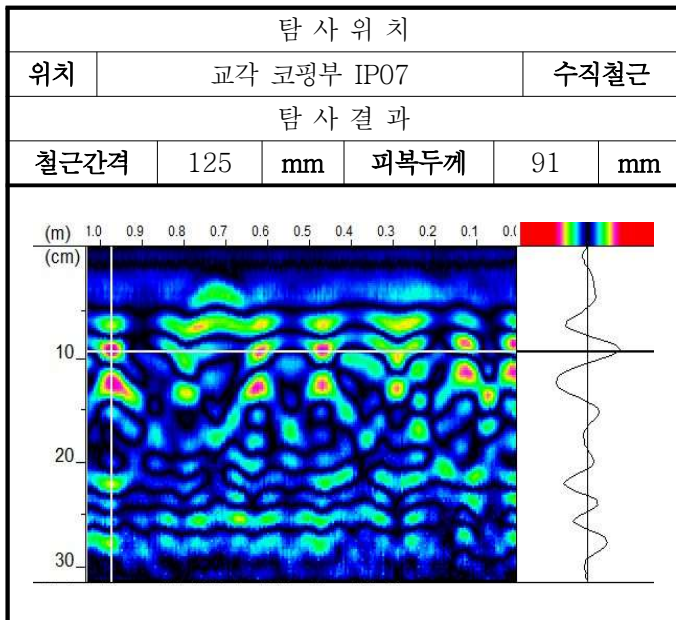
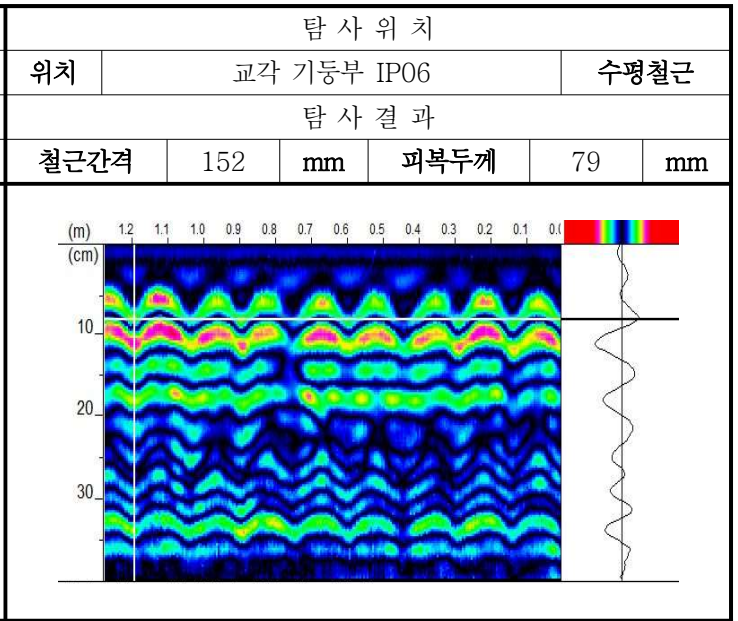
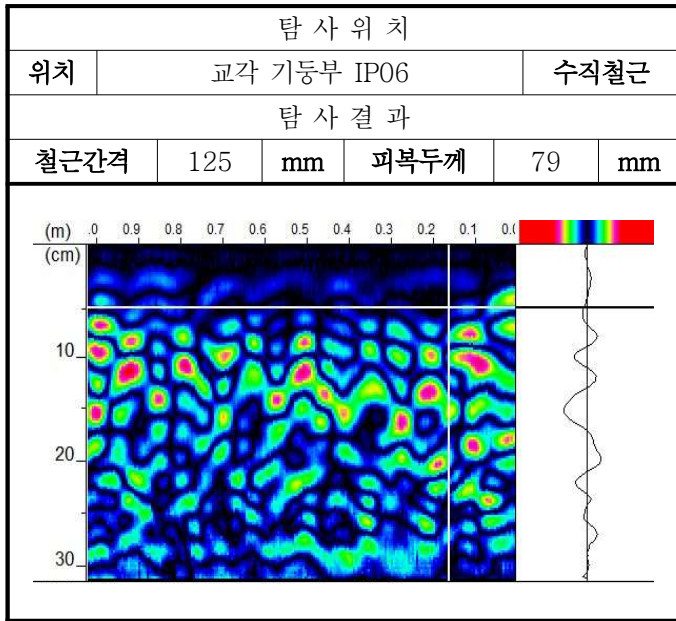


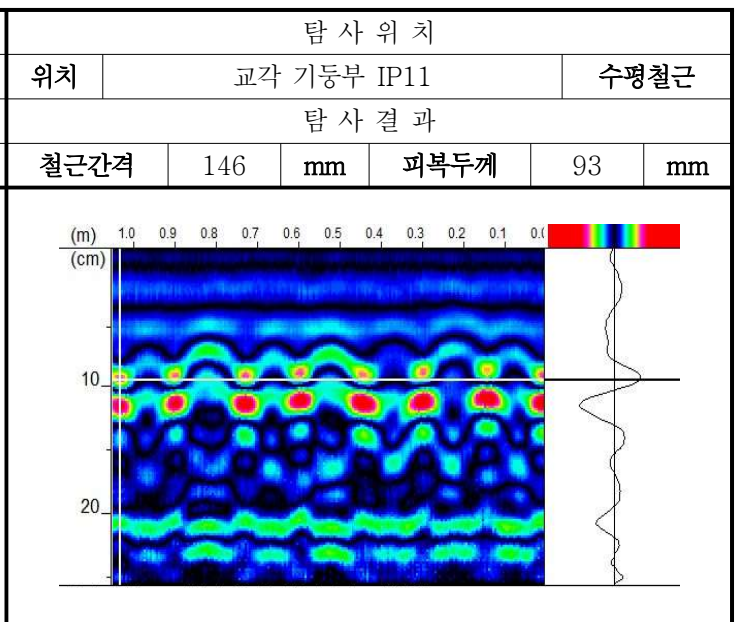
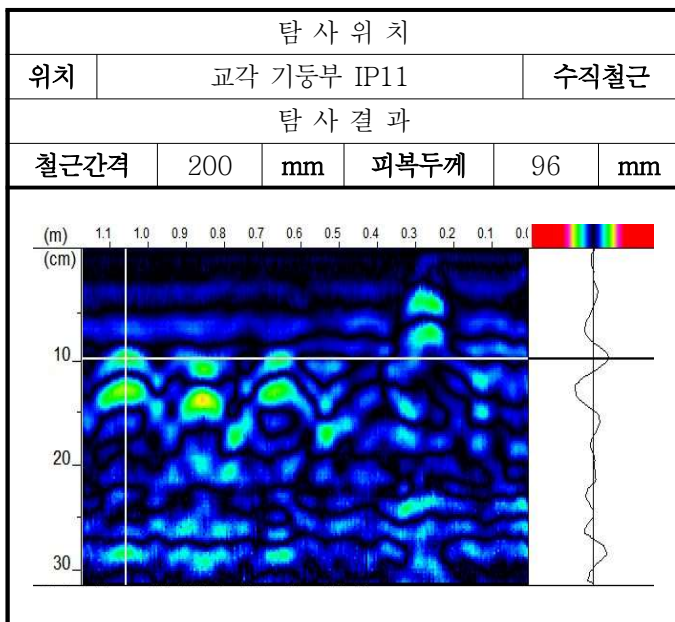
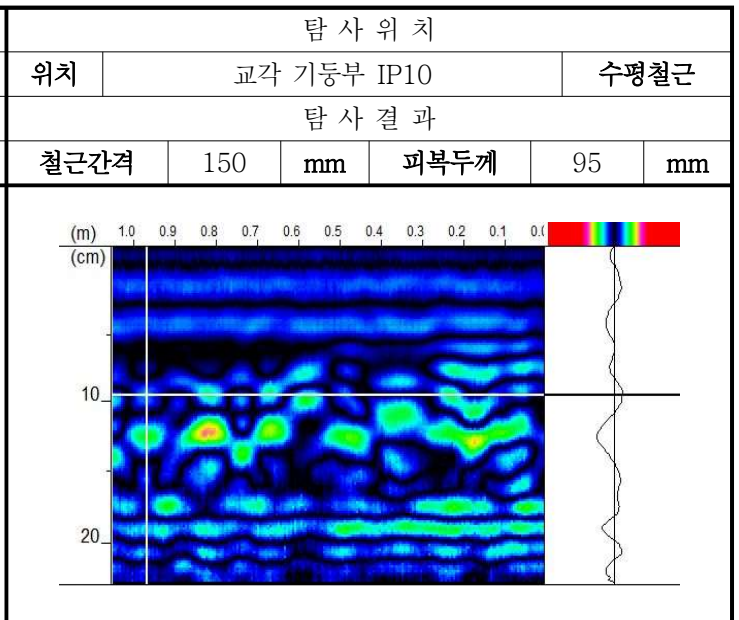
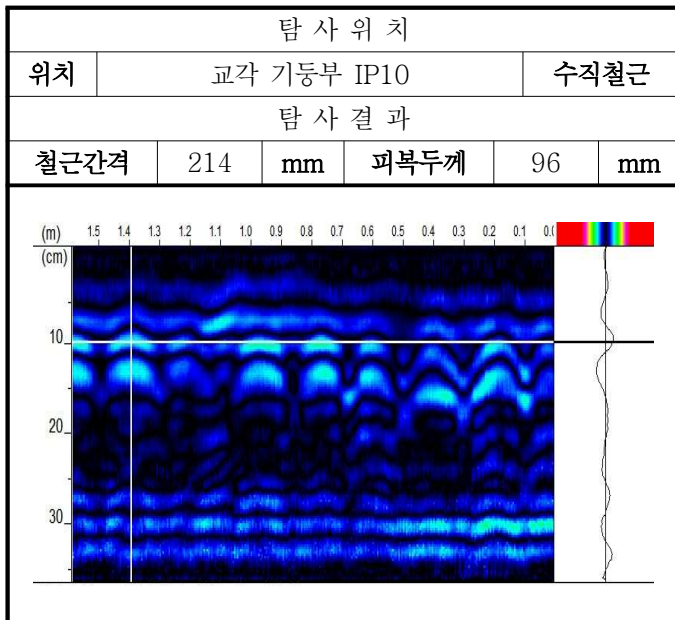
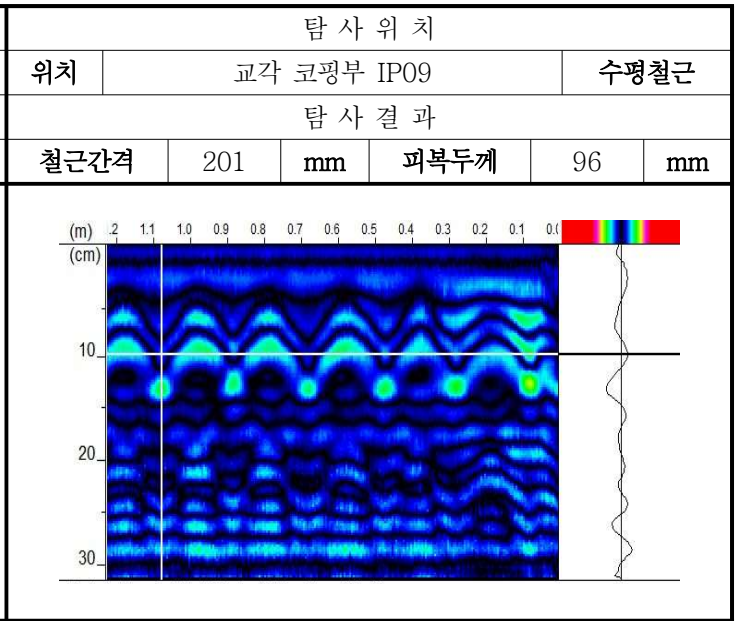
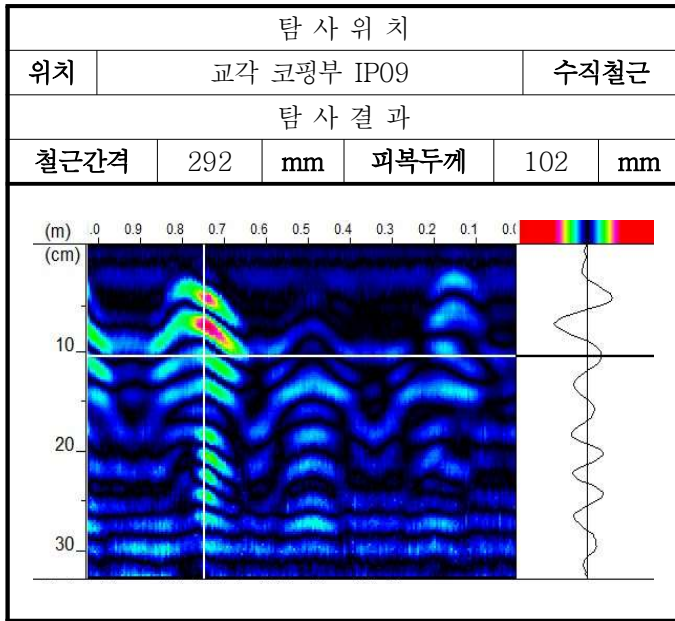


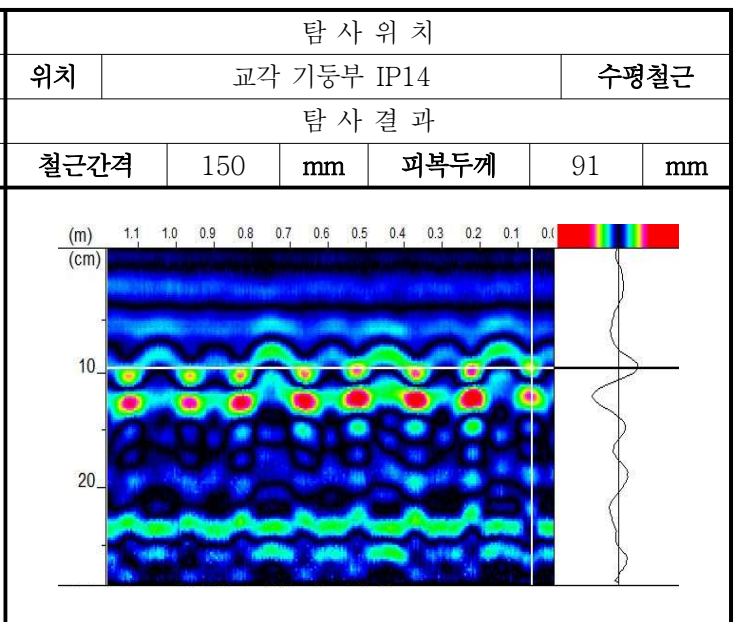
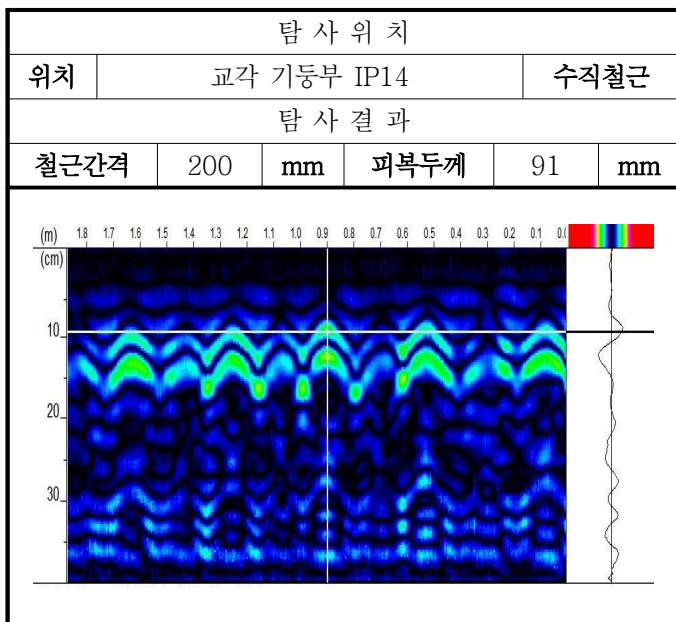
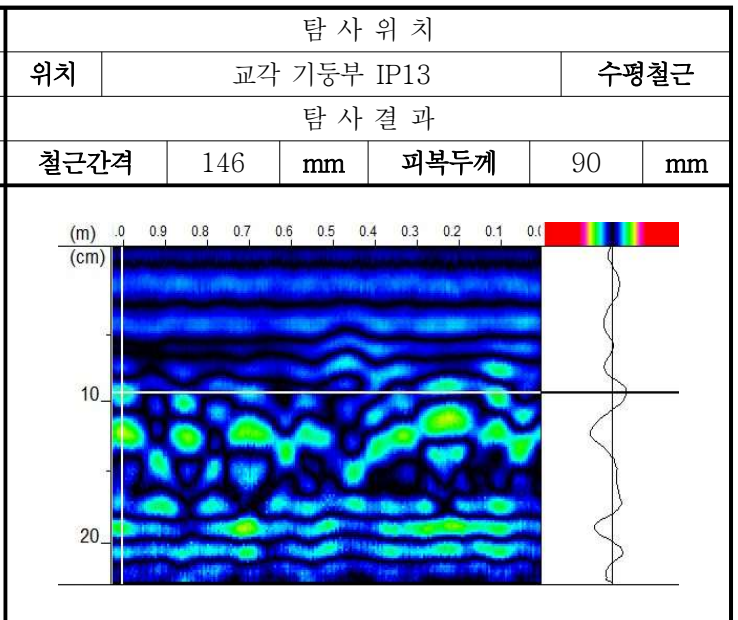
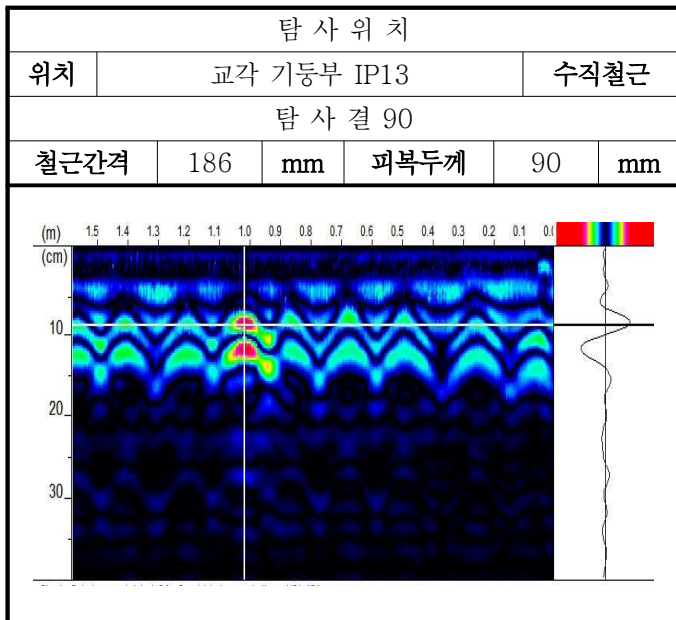
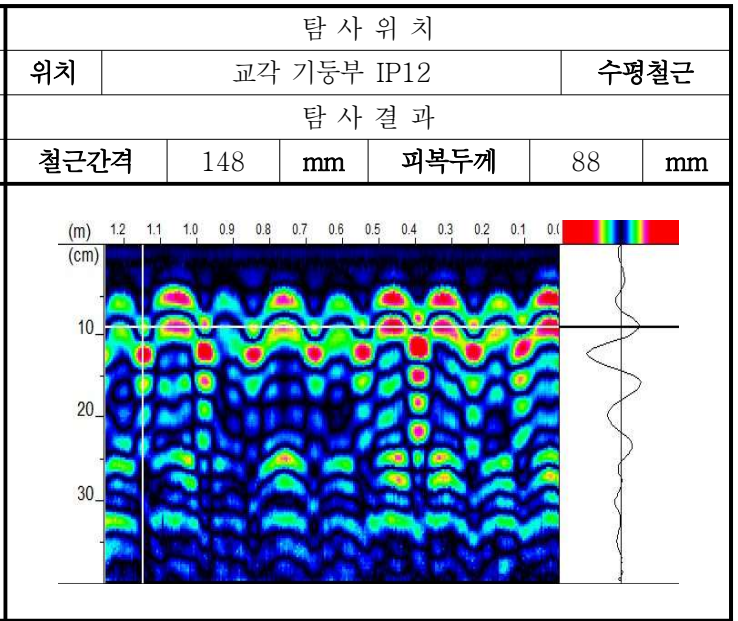
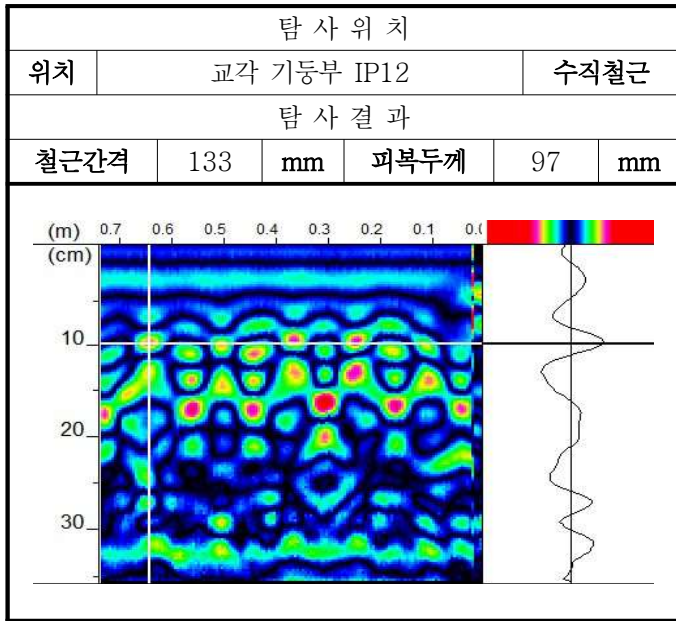


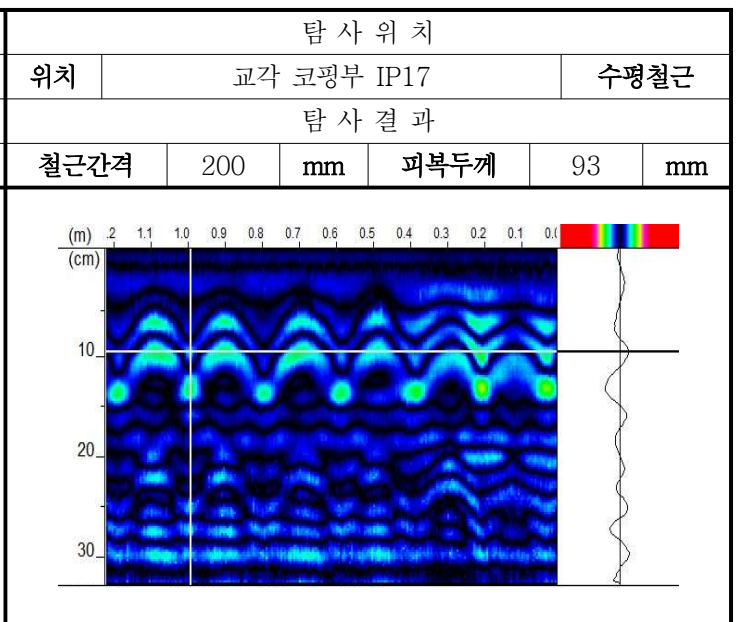
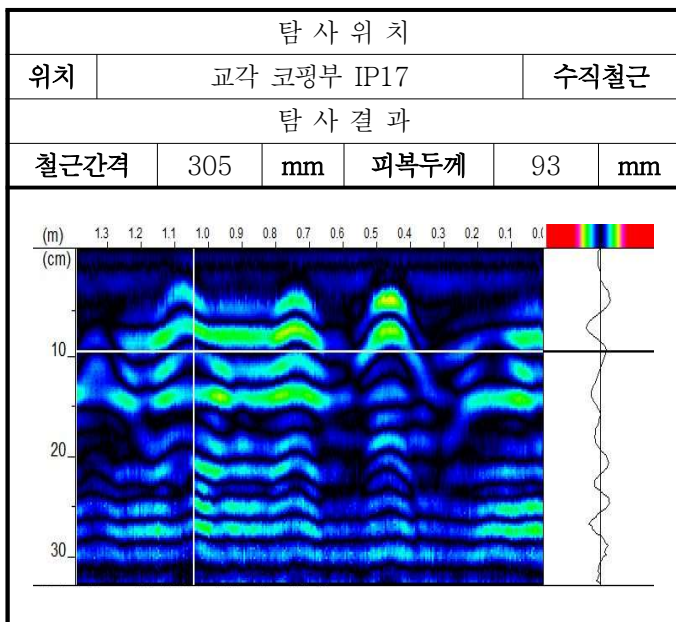
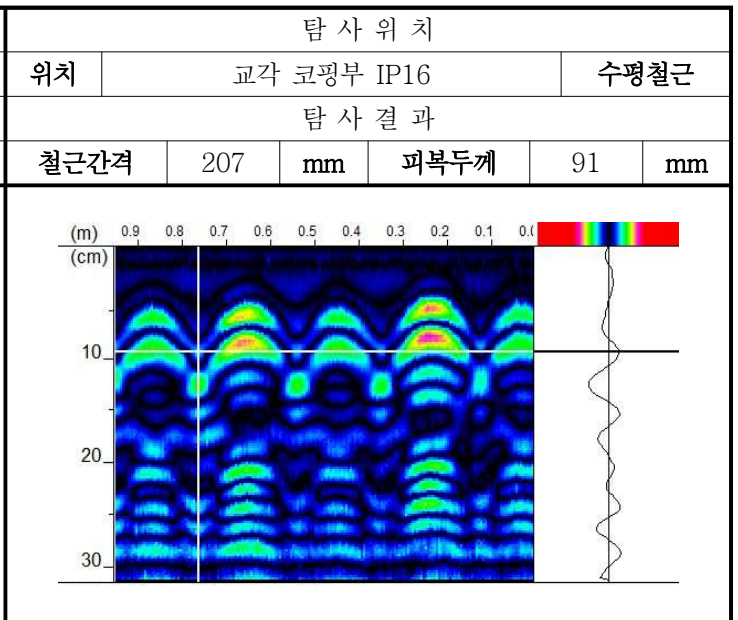
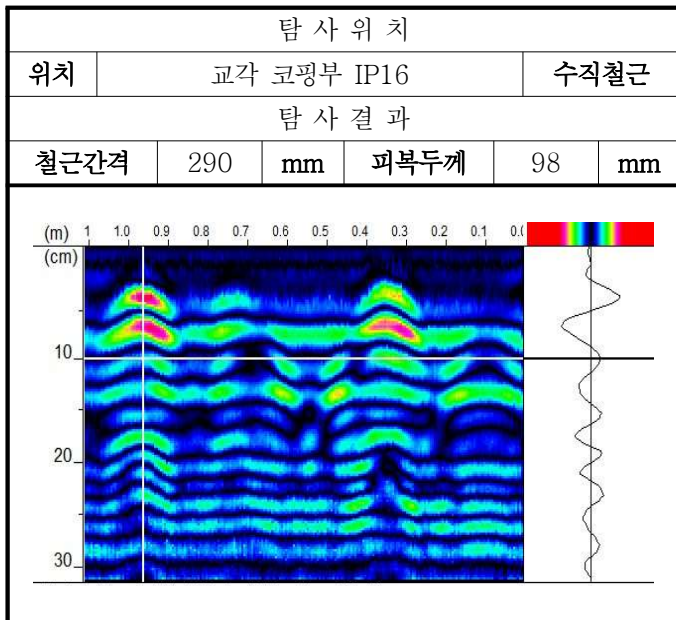
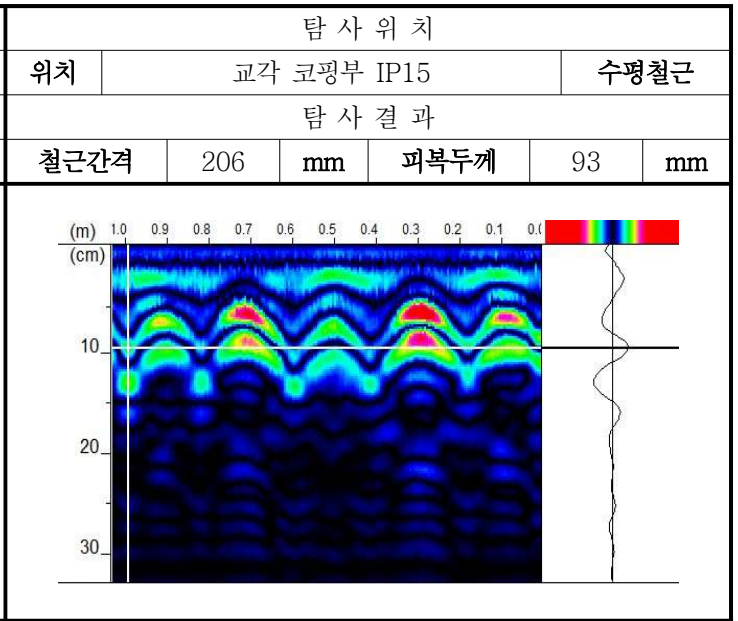
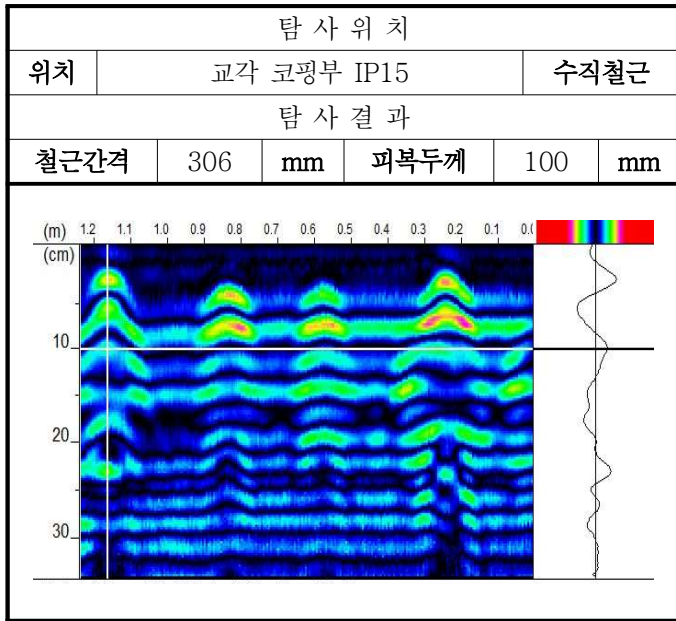


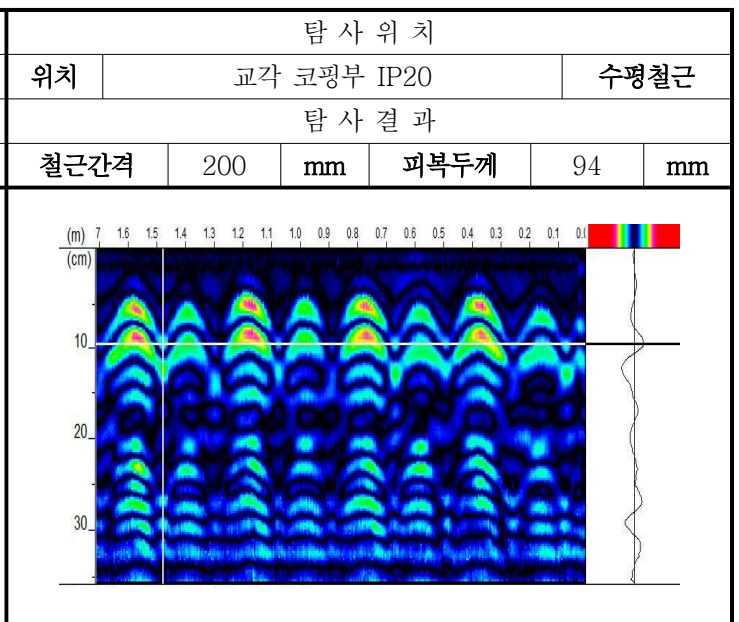
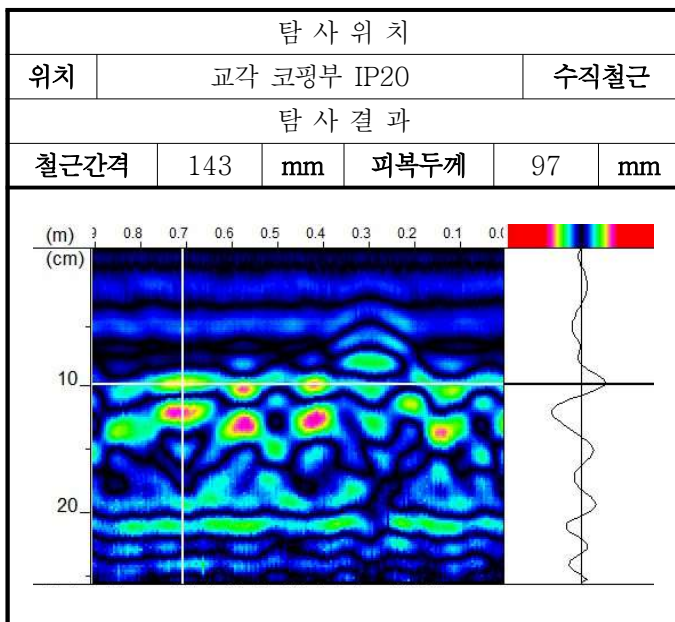
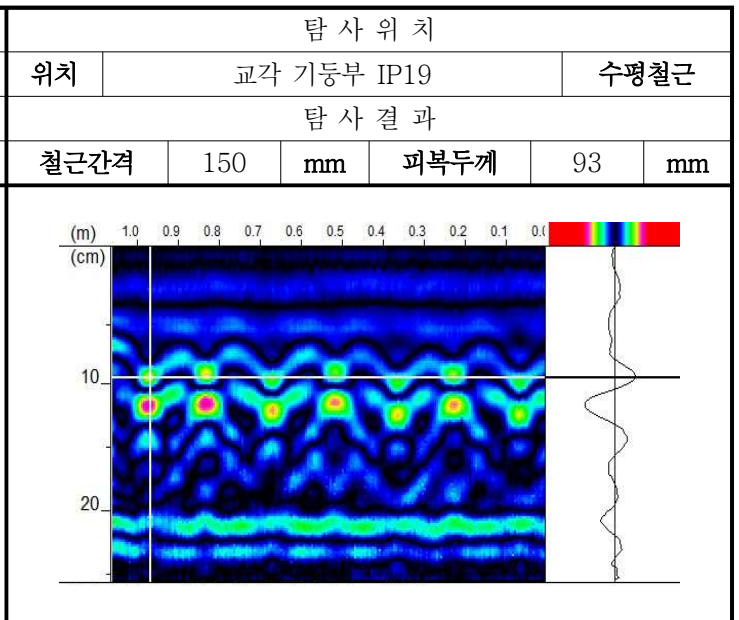
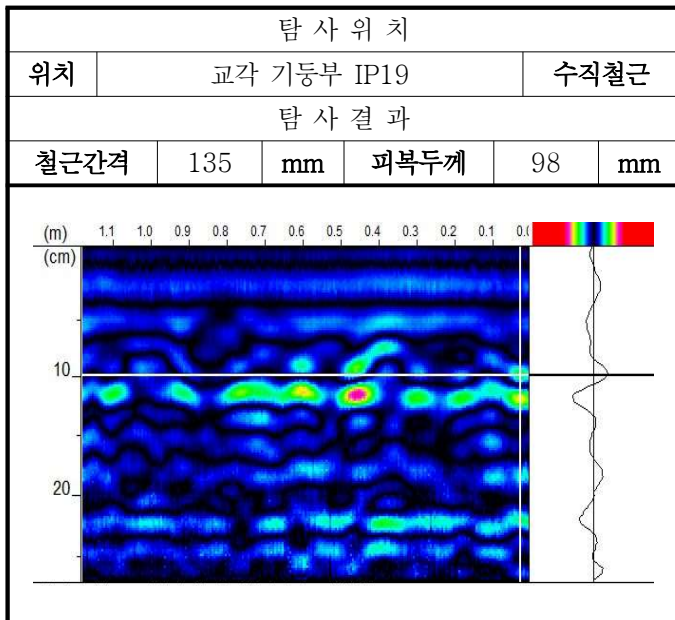
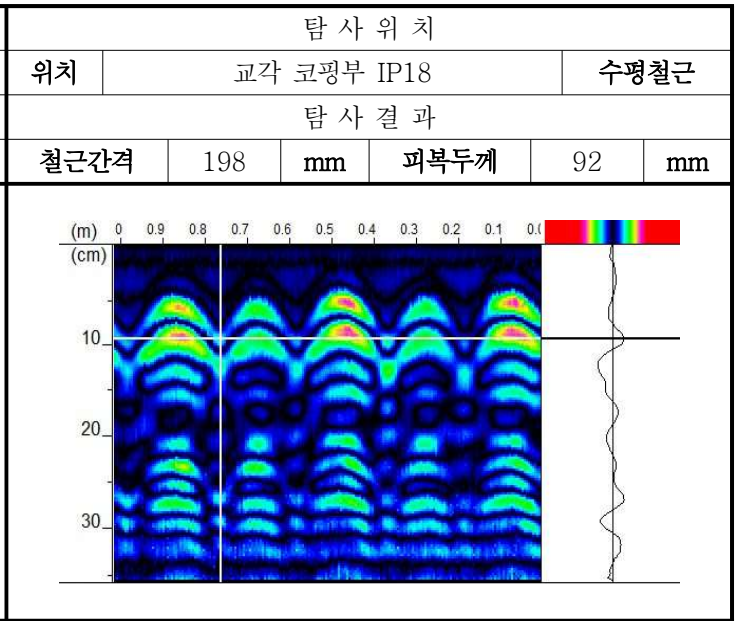
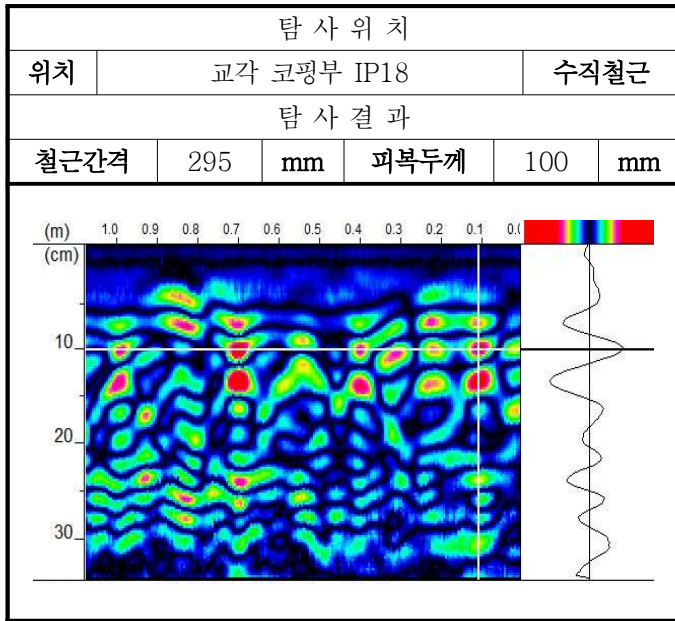


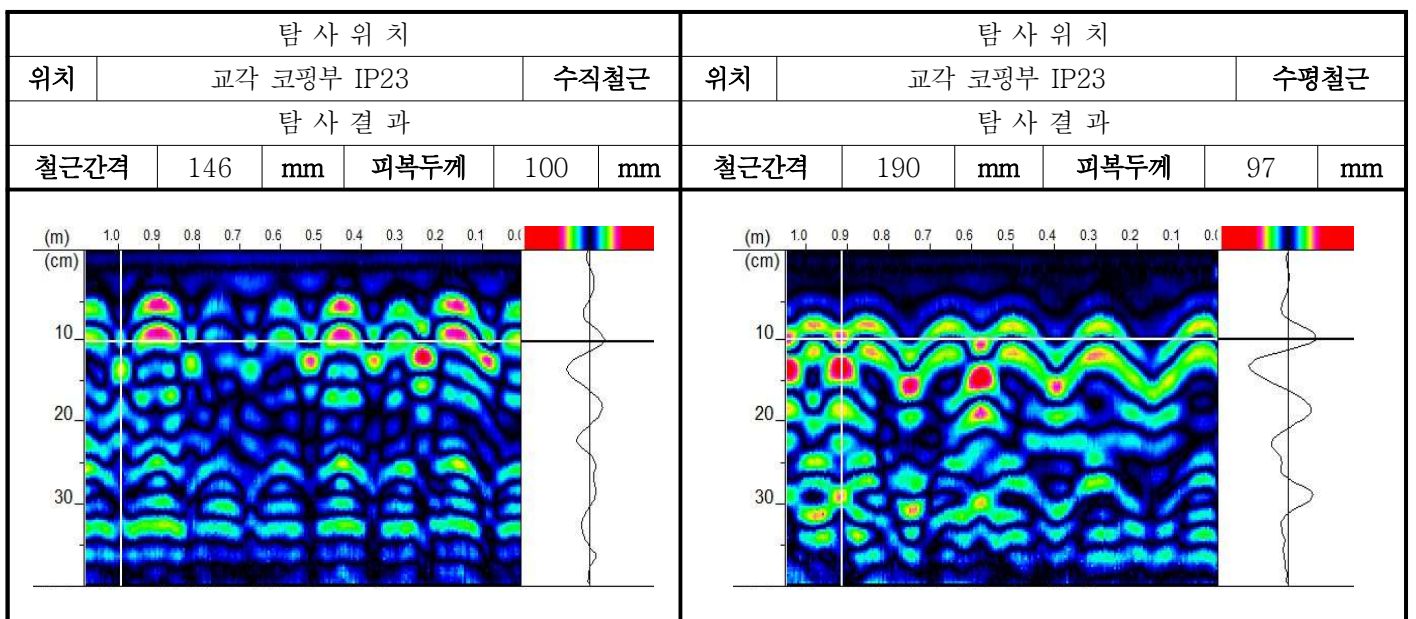
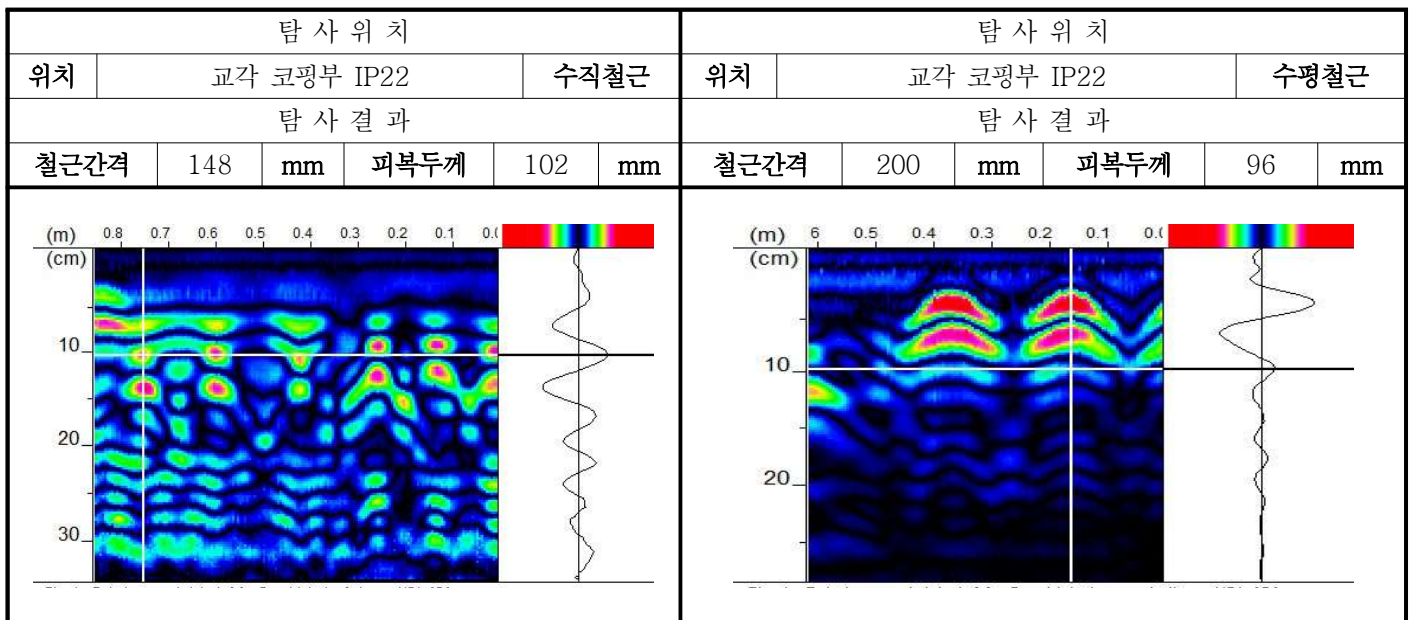
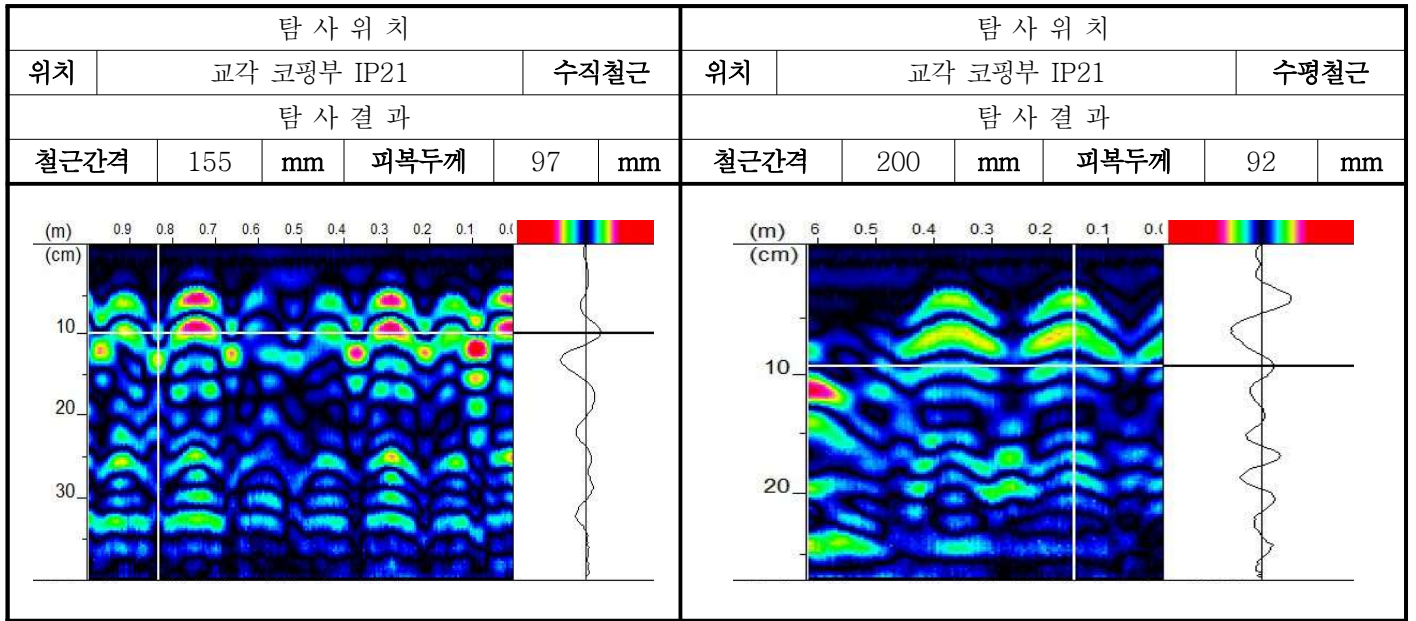


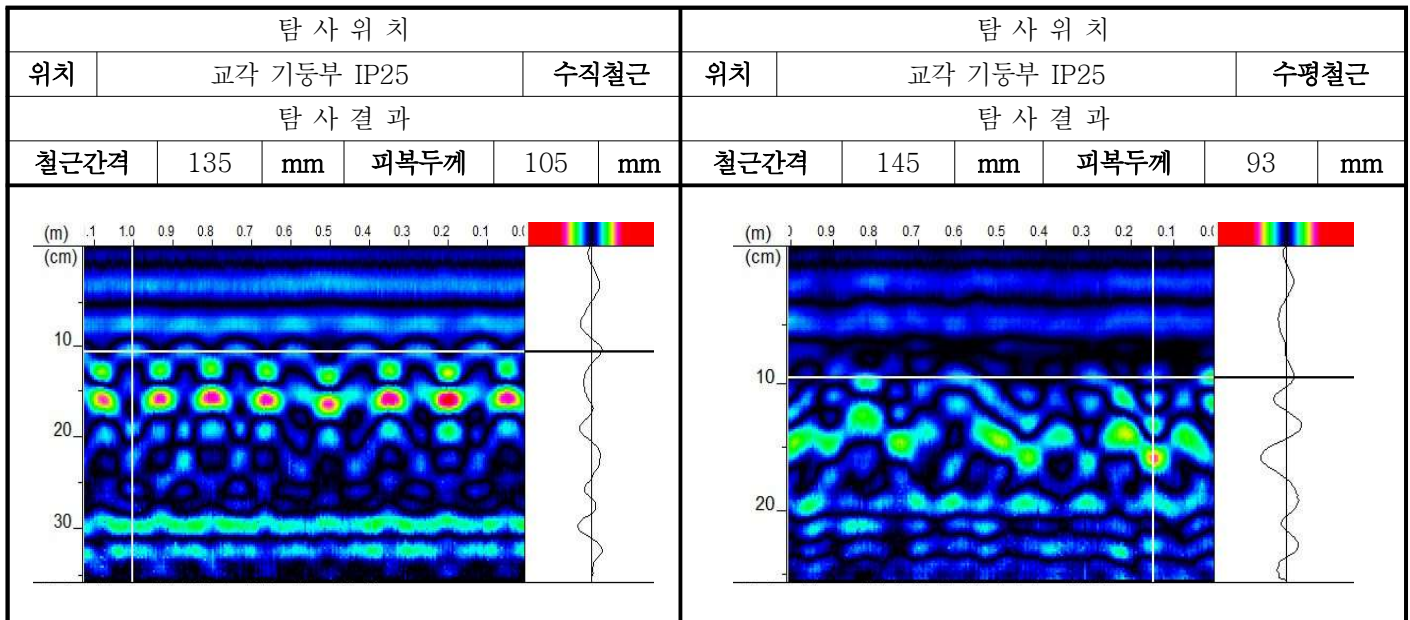
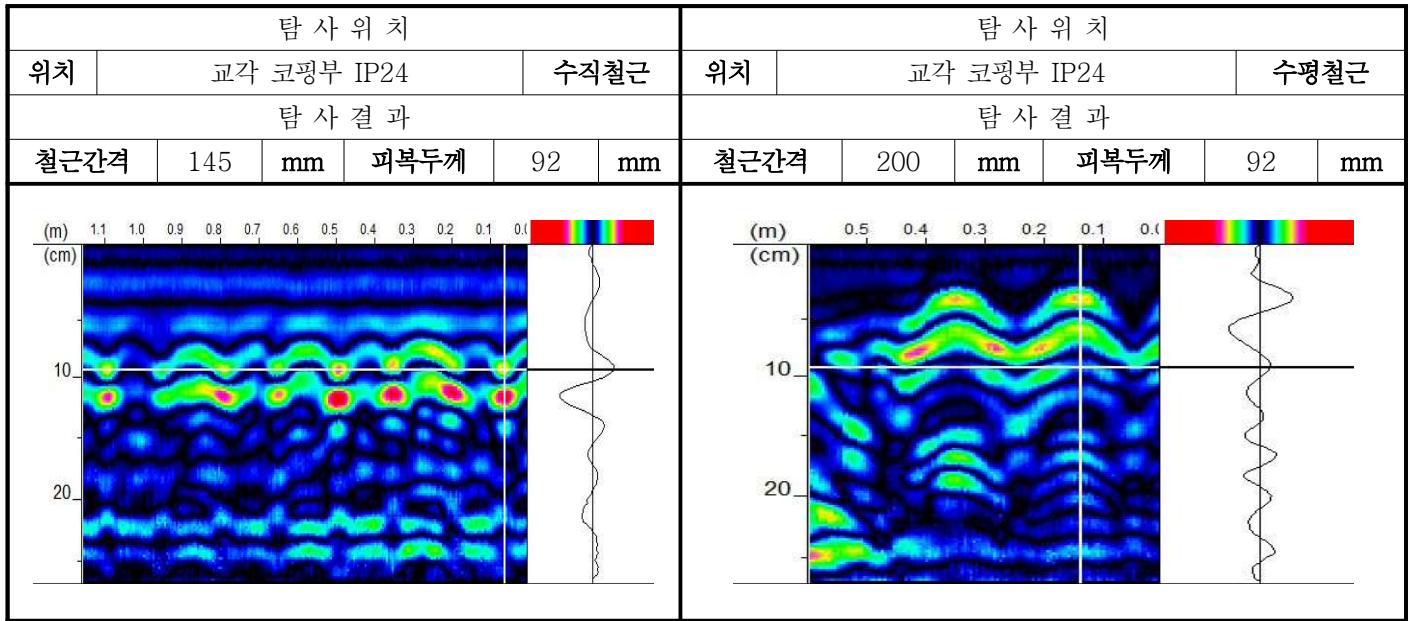












시험 성적서

시료명(생산국) : 굳은콘크리트분말

시료채취장소 : 경기도 일산서구 고양시 법곡동

성과이용목적 : 보고서제출

공사명 : 일산대교 RAMP-교 정밀안전진단용역

발주자 : ㈜명성엔지니어링

시공자 : [공란]

의뢰인 : 유재희

국가중요시설여부 : 해당없음

접수일자 : 2018년 04월 25일

시료채취일 : 2017년 10월 11일

성적서발급번호 : CSTC NO.201804-22

시료채취자 : ㈜명성엔지니어링 안전진단 유재희

시료채취입회자 : ㈜명성엔지니어링 안전진단 인증철

의뢰인주소 : 경기도 성남시 분당구 야탑로 69번길

귀하가 시험을 의뢰한 위 시료에 대해서 시험한 결과를 다음과 같이 알려드립니다.

결 과

연번	시험종목	시험방법	시험결과	확인자			시험자	
				자격종목 및 자격증번호	성명	서명	성명	서명
1	바닥판하면 S5 캔틸레버 0~10mm	KS F 2713	염화물 이온농도 0.0132 % 환산 염화물 함량 0.2987 kg/m ³	건설재료시험기사 05204140608Y	반용현		김태현	
2	바닥판하면 S5 캔틸레버 10~20mm		염화물 이온농도 0.0118 % 환산 염화물 함량 0.2670 kg/m ³					
3	바닥판하면 S5 캔틸레버 20~30mm		염화물 이온농도 0.0092 % 환산 염화물 함량 0.2082 kg/m ³					
4	바닥판하면 S15 측면 0~10mm		염화물 이온농도 0.0128 % 환산 염화물 함량 0.2897 kg/m ³					
5	바닥판하면 S15 측면 10~20mm		염화물 이온농도 0.0105 % 환산 염화물 함량 0.2376 kg/m ³					
6	바닥판하면 S15 측면 20~30mm		염화물 이온농도 0.0096 % 환산 염화물 함량 0.2172 kg/m ³					
7	교각 IP11 기둥부 0~10mm		염화물 이온농도 0.0101 % 환산 염화물 함량 0.2286 kg/m ³					
8	교각 IP11 기둥부 10~20mm		염화물 이온농도 0.0085 % 환산 염화물 함량 0.1924 kg/m ³					
9	교각 IP11 기둥부 20~30mm		염화물 이온농도 0.0080 % 환산 염화물 함량 0.1810 kg/m ³					
10	교각 IP15 기둥부 0~10mm		염화물 이온농도 0.0105 % 환산 염화물 함량 0.2376 kg/m ³					
11	교각 IP15 기둥부 10~20mm		염화물 이온농도 0.0091 % 환산 염화물 함량 0.2059 kg/m ³					
12	교각 IP15 기둥부 20~30mm		염화물 이온농도 0.0086 % 환산 염화물 함량 0.1946 kg/m ³					

이 시험·검사 결과는 당초 의뢰 시 제출된 시료에 대한 결과이므로 다른 목적으로 이용을 금지합니다.



2018년 05월 04일

(주)건설표준시험원 (건설기술용역업자) 대표 노선미

· 유의사항 : 확인자 및 시험자의 성명과 서명이 없는 경우에는 성과에 대한 보증을 할 수 없습니다.

1페이지중 1페이지



초 음 파 탐 상 검 사 보 고 서

ULTRASONIC TESTING REPORT

 주식회사 금 가 Kumga Co., Ltd.		보고서 번호 Report No.		KG - MSE - U001	
		보고서 일자 Report Date		2018년 03월 14일	
본 사 : 서울특별시 서대문구 연희로 18, 금가빌딩 3층 전 화 : TEL : (02) 796 - 3838 FAX : (02) 796 - 3858 서 울 : 서울 구로구 구로중앙로 198, 구로기계공구상가 35동304호 전 화 : TEL : (02) 2634 - 7518 FAX : (02) 2634 - 7519		페이지 번호 Report No.		1 of 2	
발주처 Client (주)명성엔지니어링			공사명 / 번호 Project Name / No. 이산포IC Ramp-I교 강재비파괴 용역		
품명 Item Name 일산대교 I-RAMP			규정 / 절차서 Code / Procedure KS B 0896 / 16E081-C01		Rev. No. 0
인식번호 / 부품번호 Heat No. / M/O No. N/A			도면번호 Drawing No. N/A		Rev. No.
적용규격 Applied Spec. KS B 0896 - 2류이상			계약번호 Job / Contract No. N/A		
재질 / Base Material Type SM490B		두께 / 크기 Thickness / Size 12.0 ~ 34.0 mm / inch		표면상태 / Surface condition As welded	
장비 Equipment	제조사 / Maker SONATEST		모델 / Model SITESCAN 130	일련번호 / Serial No. 1301342	Computerized Program ID (Rev.)
탐촉자 Search Unit	제조사 Maker TKS	모델 Model 4C8x9A70	일련번호 Serial. No ACMC879	각도 Angle 70 °	주파수 Frequency 4 MHz
	TKS	4C10N	NEEA338	0 °	4 MHz
	크기 Size Φ 8*9 mm / Φ 10 mm				
검사방법 및 형태 Method & Mode		☐ 수직법 (Straight Beam) ☒ 사각법 (Angle Beam)		☒ 접촉법 (Contact) ☐ 수침법 (Immerse)	
접촉매질 Couplant		☐ 기계유 (Machine Oil) ☒ CMC ☐ 글리세린 (Glycerin)		탐촉자 케이블 Search Unit Cable	Type : LEMO 00, LEMO 1 Length : 2M
교정시험편 Calibration Block		☒ STB A1, A2 ☐ ASME Basic Calibration		일련번호 : A1 No.009115 A2 No.9205 Serial No.	
검출레벨 Detector Level		II ~ III Level			
기준감도 Reference Level		☐ B1 % of Full Screen Height at dB ☒ Response from STB A2 Ø4X4 (NOTCH, SDH, FBH) at 65.0 dB			
탐상감도 Scanning Sensivity Level		67.0 dB Above the Primary Reference Level		시험일자/Examination Date 2018년 03월 14일	
Sketch on line, if necessary. ☒ Attached. 필요 시 실선안에 스케치 하거나 또는 첨부할 것.					
시험자 Examined By : 김 용 철			EXAMINATION AMOUNTS 20		☐ CUSTOMER 주문주 ☐ CLIENT 발주처
승인자 Approved By : 김 용 철					AUTHORIZED(NUCLEAR) INSPECTOR 공인(원자력) 검사원

초 음 파 탐 상 검 사 보 고 서

ULTRASONIC TESTING REPORT

	주식회사 금 가 Kumga Co., Ltd		보고서 번호 Report No.	KG - MSE - U001
				보 고 일 자 Report Date
본 사 : 서울특별시 서대문구 연희로 18, 금가빌딩 3층 전 화 : TEL : (02) 796 - 3838 FAX : (02) 796 - 3858 서 울 : 서울 구로구 구로중앙로 198 구로기계공구상가 35동304호 전 화 : TEL : (02) 2634 - 7518 FAX : (02) 2634 - 7519			페이지 번호 Report No.	2 of 4

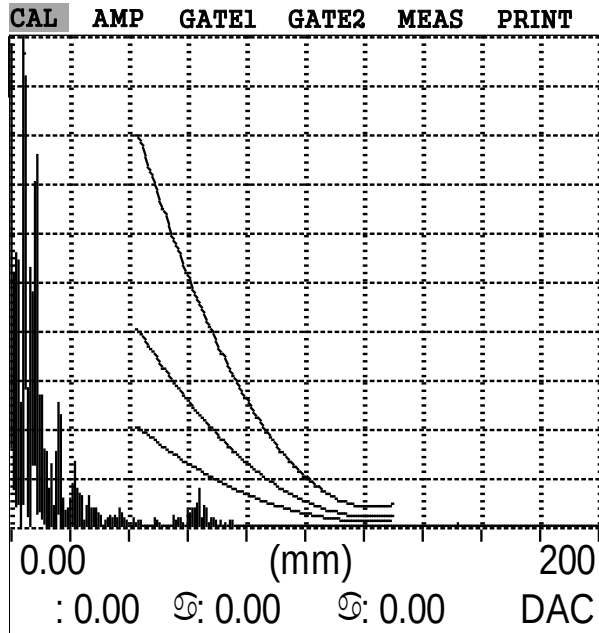
검 사 결 과 및 판 정

Results & Interpretation

확인번호 Identification No	모재두께 Material Thickness (mm)	각도 Angle (°)	위치 Location		빔거리 Sound Path (W) (mm)	결함깊이 Depth From Surface (D) (mm)	최대 DAC/dB/영역 Max. DAC/dB/Area	결함길이 Defect Length (L) (mm)	등급 Class	결과 Results		비고 Reamrks
			From "X"	From "Y"						합격 Accept	불합격 Reject	
IP1 – G1 – W2	18+26	70	0	2400	결함지시 없음			1	V			
IP1 – G1 – W3	26+34	70	0	2400	결함지시 없음			1	V			
IP1 – G2 – W1	12+18	70	0	2400	결함지시 없음			1	V			
IP1 – G2 – W3	26+34	70	0	2400	결함지시 없음			1	V			
IP2 – G1 – W2	20+26	70	0	2400	결함지시 없음			1	V			
IP2 – G1 – W3	20+26	70	0	2400	결함지시 없음			1	V			
IP2 – G2 – W2	20+26	70	0	2400	결함지시 없음			1	V			
IP2 – G2 – W3	20+26	70	0	2400	결함지시 없음			1	V			
IP3 – G1 – W3	12+18	70	0	2400	결함지시 없음			1	V			
IP3 – G1 – W4	12+16	70	0	2400	결함지시 없음			1	V			
IP3 – G2 – W1	26+34	70	0	2400	결함지시 없음			1	V			
IP3 – G2 – W4	12+16	70	0	2400	결함지시 없음			1	V			
IP4 – G1 – W2	12+14	70	0	2400	결함지시 없음			1	V			
IP4 – G1 – W3	12+16	70	0	2400	결함지시 없음			1	V			
IP4 – G2 – W2	12+14	70	0	2400	결함지시 없음			1	V			
IP4 – G2 – W3	12+16	70	0	2400	결함지시 없음			1	V			
IP5 – G1 – W1	16+24	70	0	2400	결함지시 없음			1	V			
IP5 – G1 – W3	12+14	70	0	2400	결함지시 없음			1	V			
IP5 – G2 – W1	16+24	70	0	2400	결함지시 없음			1	V			
IP5 – G2 – W3	12+14	70	0	2400	결함지시 없음			1	V			

- 이 하 여 백 -

LOCATION : IP1 - G1 - W2



ZERO ▶▶
7.434

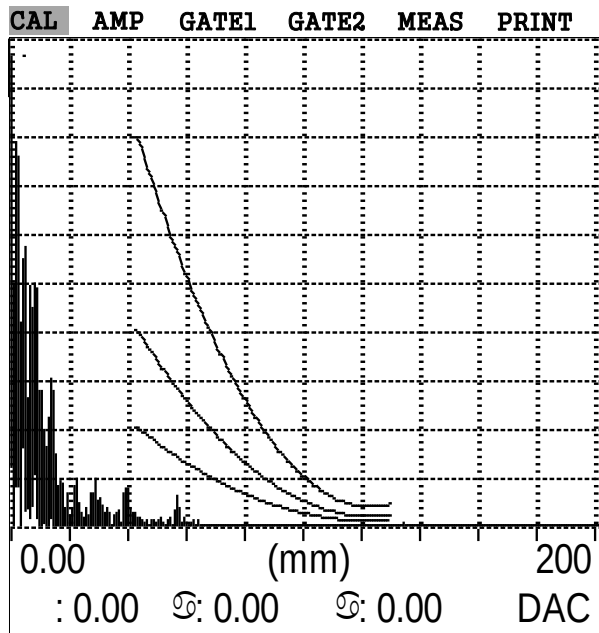
VEL ▶▶
3187

RANGE ▶▶
200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP1 - G1 - W3



ZERO ▶▶
7.434

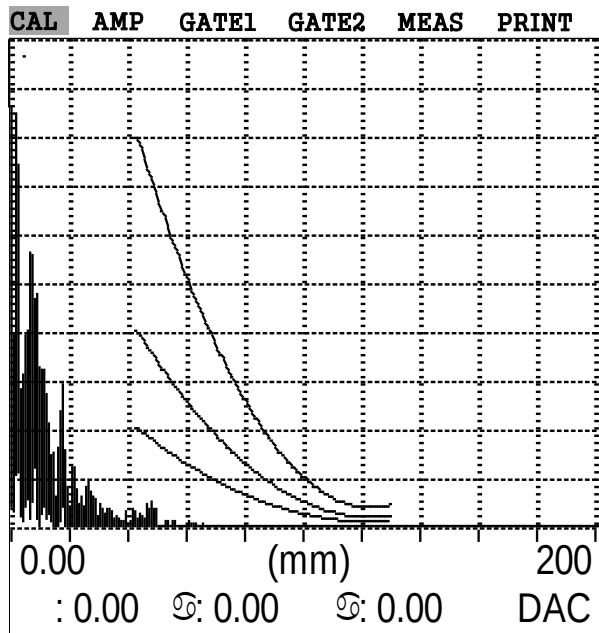
VEL ▶▶
3187

RANGE ▶▶
200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP1 - G2 - W1



ZERO ▶▶
7.434

VEL ▶▶
3187

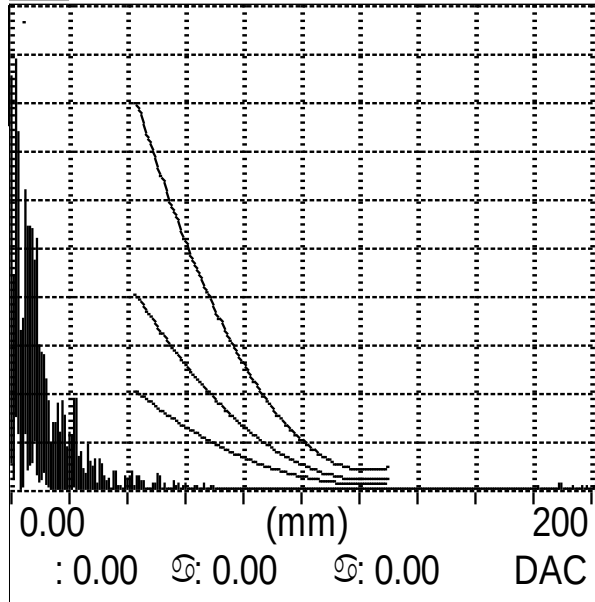
RANGE ▶▶
200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP1 - G2 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

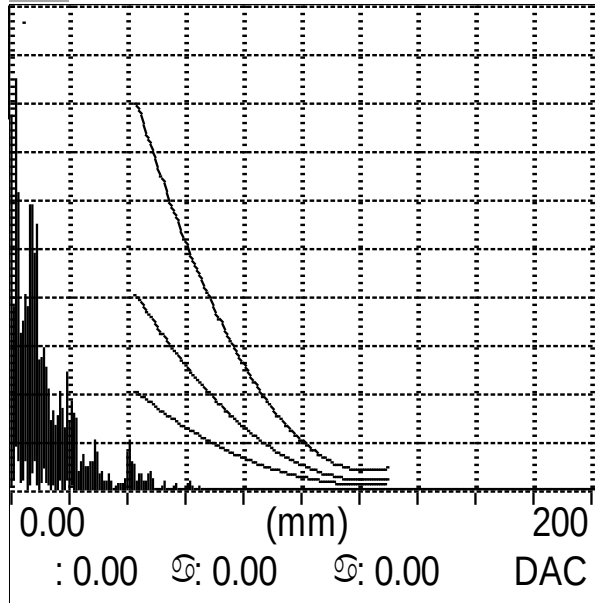
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DELAY ▶▶
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REF 65.0
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LOCATION : IP2 - G1 - W2

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

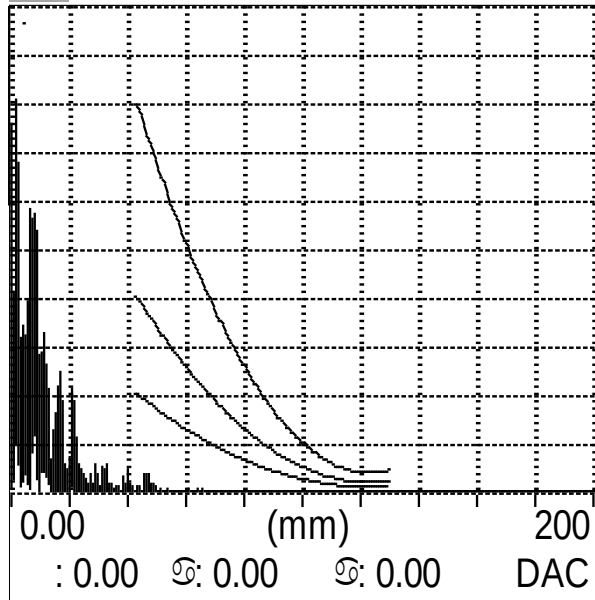
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DELAY ▶▶
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REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP2 - G1 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

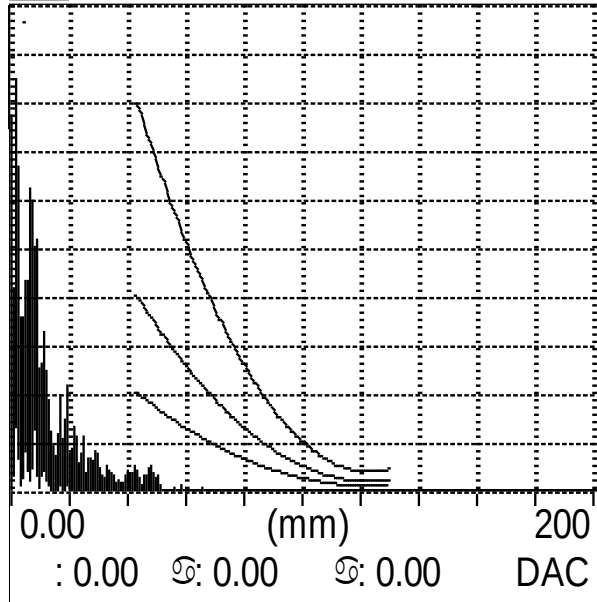
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DELAY ▶▶
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REF 65.0
GAIN 2
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SINGLE

LOCATION : IP2 - G2 - W2

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

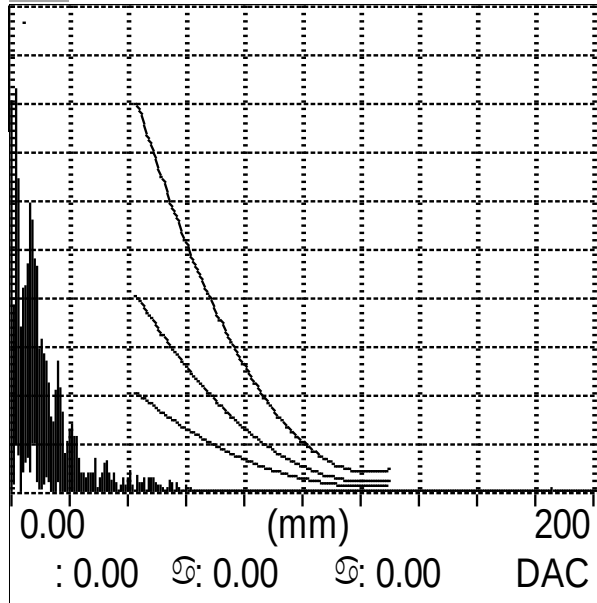
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DELAY ▶▶
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REF 65.0
GAIN 2
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SINGLE

LOCATION : IP2 - G2 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

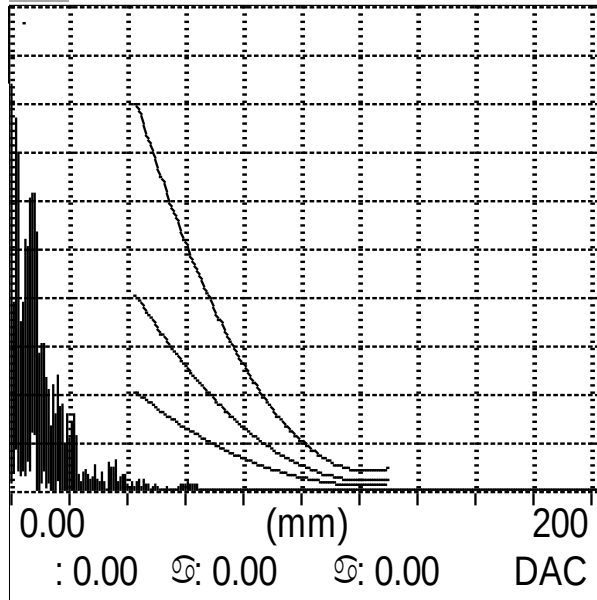
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DELAY ▶▶
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REF 65.0
GAIN 2
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SINGLE

LOCATION : IP3 - G1 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

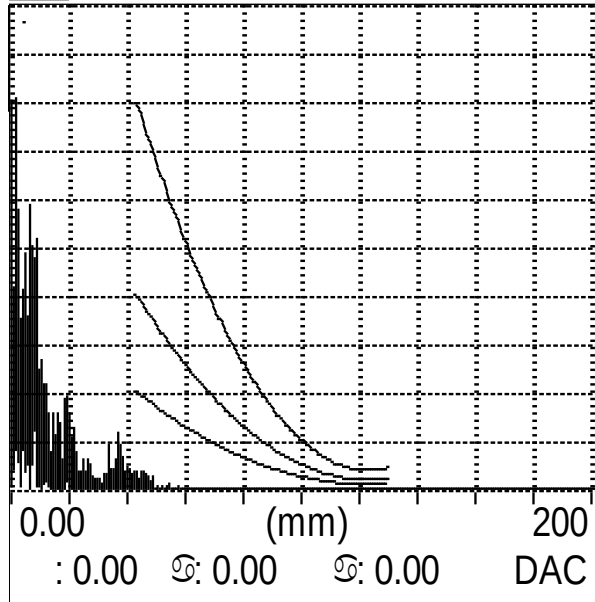
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DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP3 - G1 - W4

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ►►
7.434

VEL ►►
3187

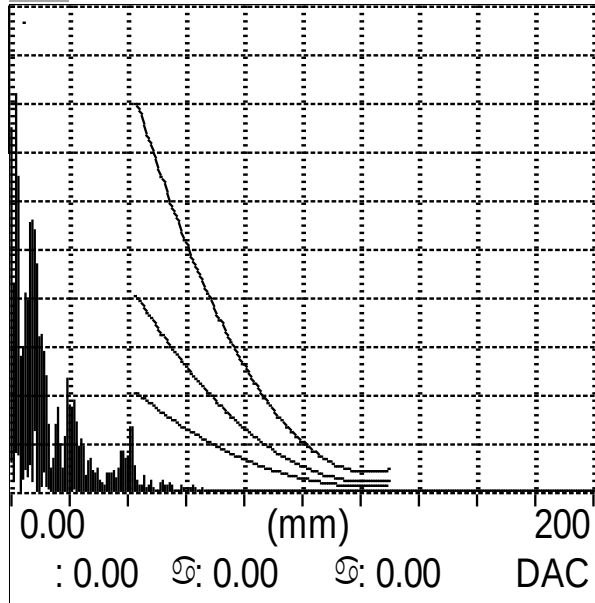
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DELAY ►►
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP3 - G2 - W1

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ►►
7.434

VEL ►►
3187

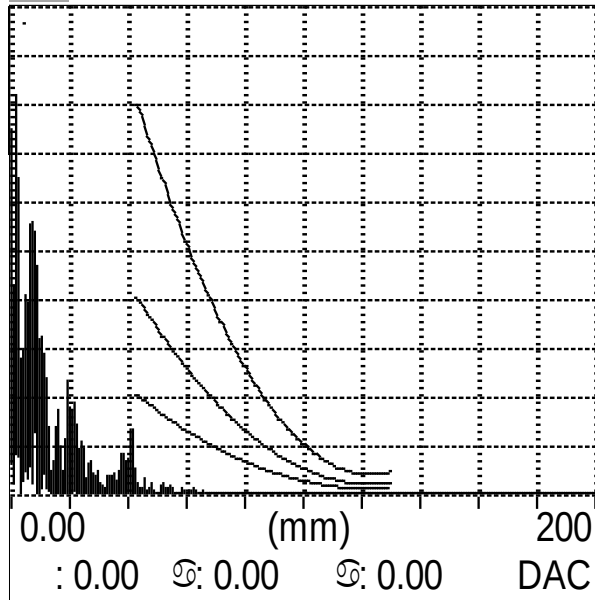
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DELAY ►►
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP3 - G2 - W4

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ►►
7.434

VEL ►►
3187

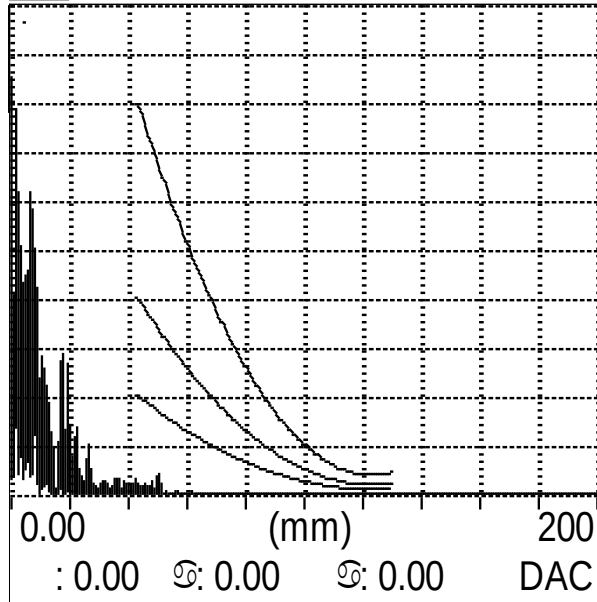
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200

DELAY ►►
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP4 - G1 - W2

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

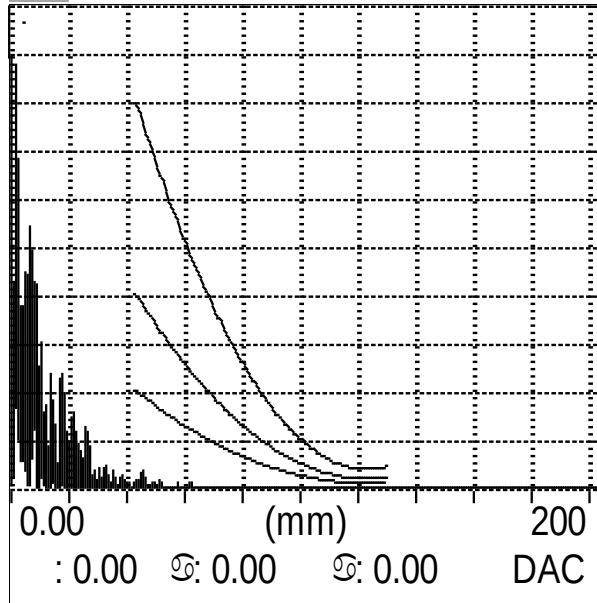
RANGE ▶▶
200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP4 - G1 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

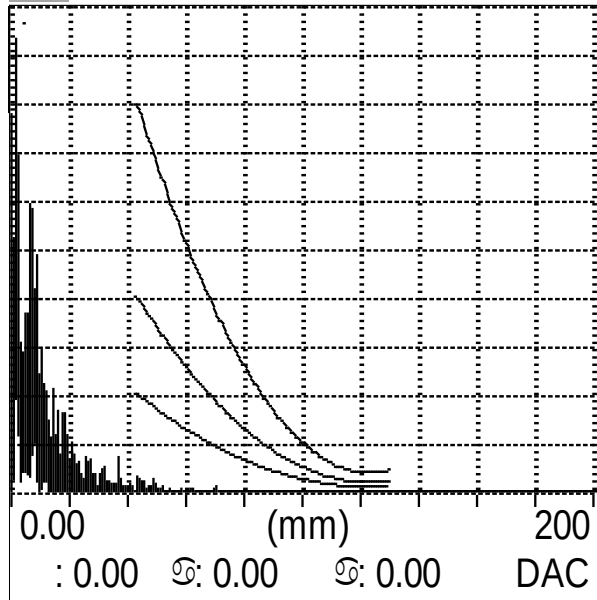
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200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP4 - G2 - W2

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

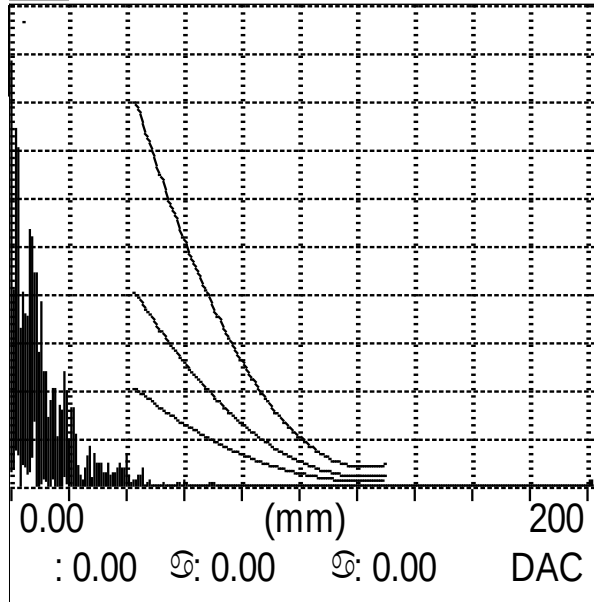
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DELAY ▶▶
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REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP4 - G2 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

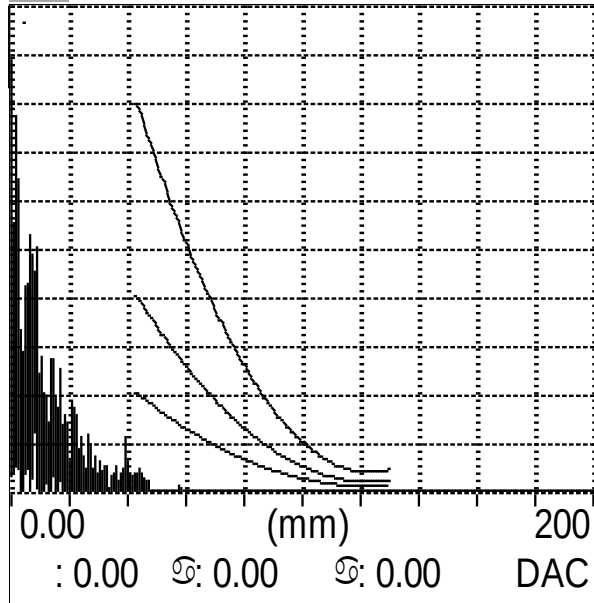
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DELAY ▶▶
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REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP5 - G1 - W1

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

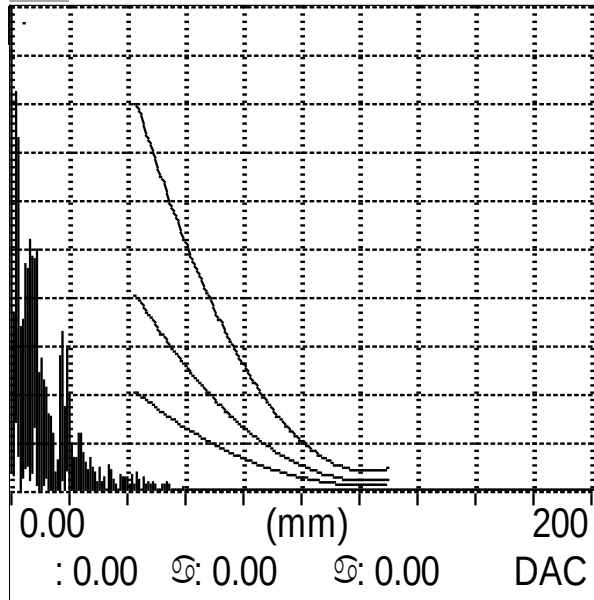
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200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP5 - G1 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ▶▶
7.434

VEL ▶▶
3187

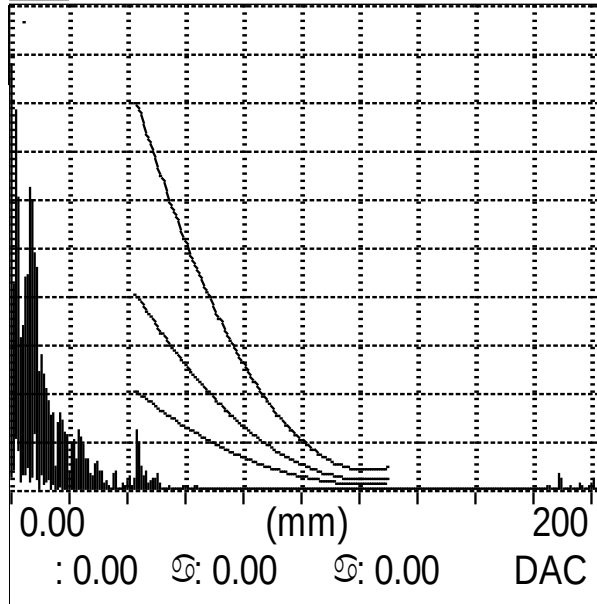
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200

DELAY ▶▶
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP5 - G2 - W1

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ►►
7.434

VEL ►►
3187

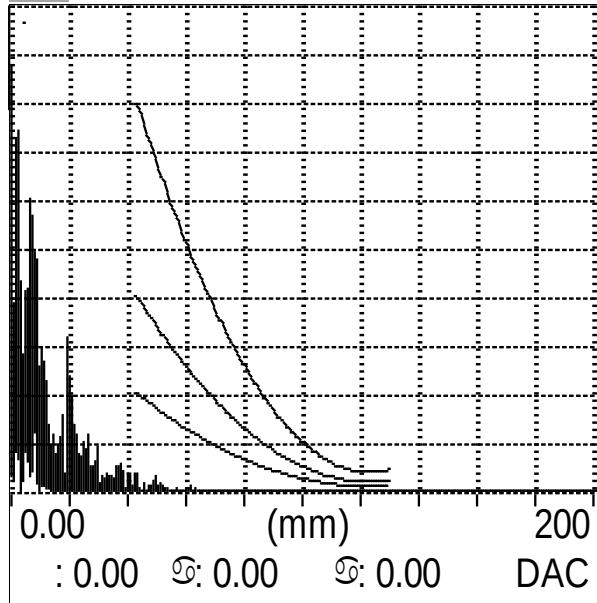
RANGE ►►
200

DELAY ►►
0.00

REF 65.0
GAIN 2
67.0
SINGLE

LOCATION : IP5 - G2 - W3

CAL AMP GATE1 GATE2 MEAS PRINT



ZERO ►►
7.434

VEL ►►
3187

RANGE ►►
200

DELAY ►►
0.00

REF 65.0
GAIN 2
67.0
SINGLE