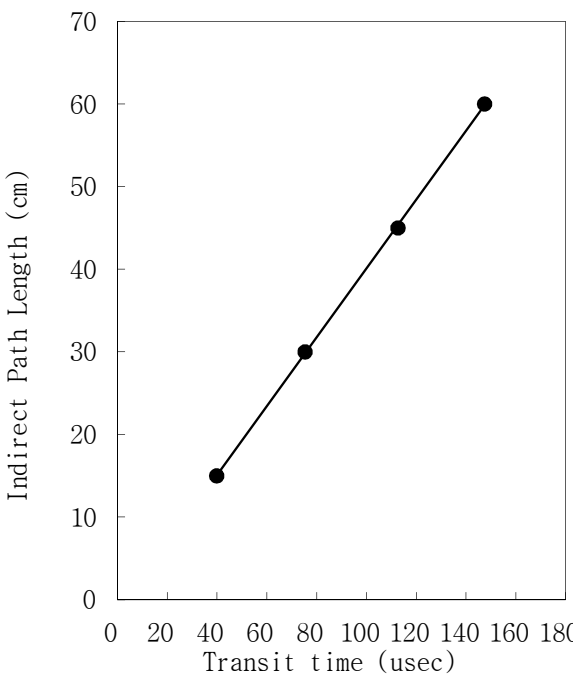
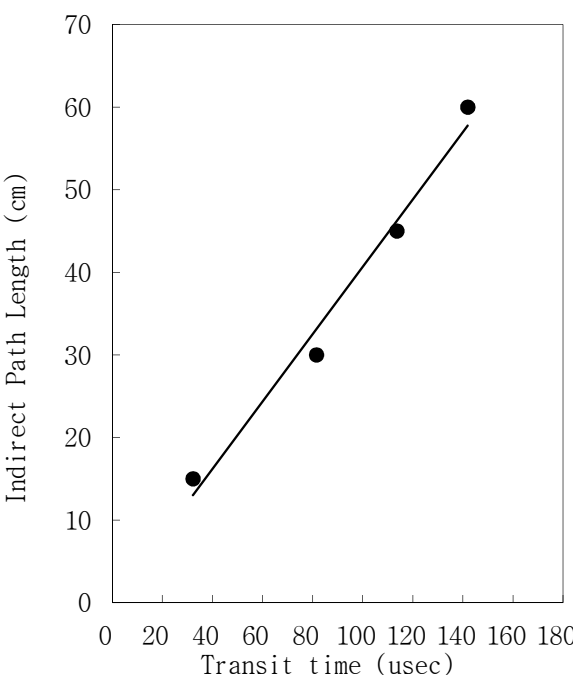


PUNDIT		웅진대교 논산방향 초음파탐사 DATA			
PROJECT TITLE :		시설물 정밀안전진단 용역[2공구]			
Company	 (주) 한국구조물안전연구원	Client		 (주)천안논산고속도로	
	 (주) 한 맥 기 술	Method		초음파법	
Pulse Velocity Data					
(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)					
부 재 명	S1(건전부)		부 재 명	S2(건전부)	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
39.8	15		32.2	15	
75.3	30		81.5	30	
112.6	45		113.6	45	
147.4	60		141.9	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 4.165 X - 15.558			Y = 4.078 X - 1.426		
Vi (km/s)		4.165	Vi (km/s)	4.078	
Correction Ration (Vi → Vd)		4.373	Correction Ration (Vi → Vd)	4.282	
압축강도(F')		31.4	압축강도(F')	29.5	
					

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	
36.3	15		38.5	15	
75.4	30		73.8	30	
107.5	45		110.4	45	
146.5	60		148.6	60	
Best fit line (Equation)			Best fit line (Equation)		
$Y = 4.130 X - 2.547$			$Y = 4.087 X - 4.378$		
Vi (km/s)	4.130		Vi (km/s)	4.087	
Correction Ration (Vi → Vd)	4.337		Correction Ration (Vi → Vd)	4.291	
압축강도(F')	30.6		압축강도(F')	29.7	

Indirect Path Length (cm)

Transit time (usec)

Indirect Path Length (cm)

Transit time (usec)

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	
37.8	15		37.4	15	
72.5	30		80.1	30	
112.0	45		107.5	45	
148.5	60		147.8	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 4.034 X + 1.016			Y = 4.156 X - 12.367		
Vi (km/s)	4.034		Vi (km/s)	4.156	
Correction Ration (Vi → Vd)	4.236		Correction Ration (Vi → Vd)	4.364	
압축강도(F')	28.5		압축강도(F')	31.2	

Indirect Path Length (cm)

Transit time (usec)

Indirect Path Length (cm)

Transit time (usec)

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	
39.4	15		35.6	15	
74.6	30		73.1	30	
112.8	45		110.5	45	
147.5	60		144.2	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 4.137 X - 12.079			Y = 4.127 X + 0.036		
Vi (km/s)	4.137		Vi (km/s)	4.127	
Correction Ration (Vi → Vd)	4.344		Correction Ration (Vi → Vd)	4.333	
압축강도(F')	30.8		압축강도(F')	30.6	

Scatter plot for S7 showing Indirect Path Length (cm) vs Transit time (usec). The data points are (39.4, 15), (74.6, 30), (112.8, 45), and (147.5, 60). A linear fit line is shown.

Scatter plot for S8 showing Indirect Path Length (cm) vs Transit time (usec). The data points are (35.6, 15), (73.1, 30), (110.5, 45), and (144.2, 60). A linear fit line is shown.

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	
36.1	15		35.8	15	
70.7	30		80.1	30	
115.7	45		109.1	45	
140.2	60		145.2	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 4.151 X - 1.349			Y = 4.172 X - 11.112		
Vi (km/s)	4.151		Vi (km/s)	4.172	
Correction Ration (Vi → Vd)	4.359		Correction Ration (Vi → Vd)	4.381	
압축강도(F')	31.1		압축강도(F')	31.6	

Indirect Path Length (cm)

Transit time (usec)

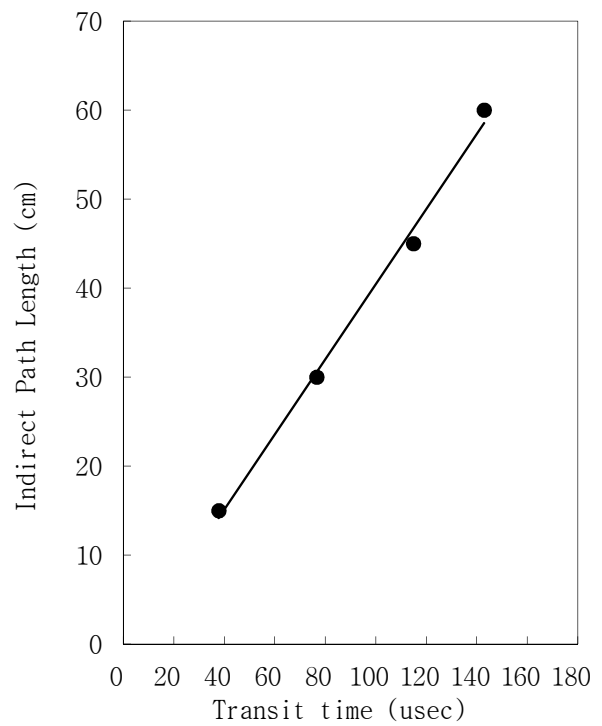
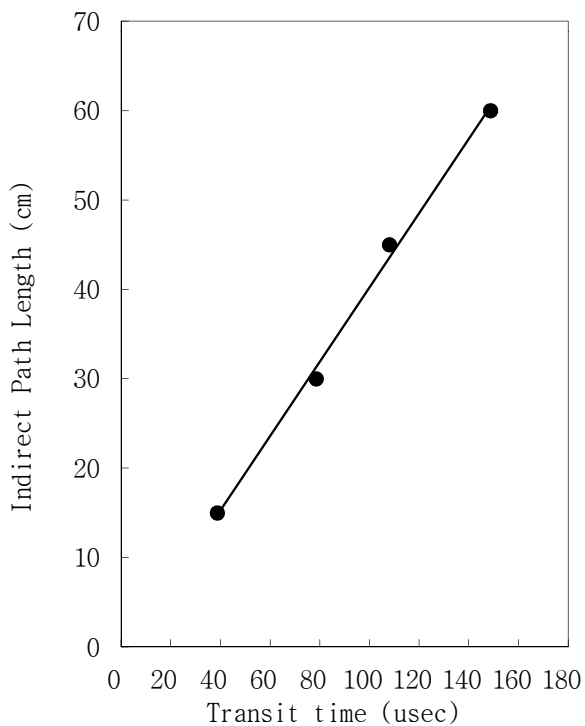
Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

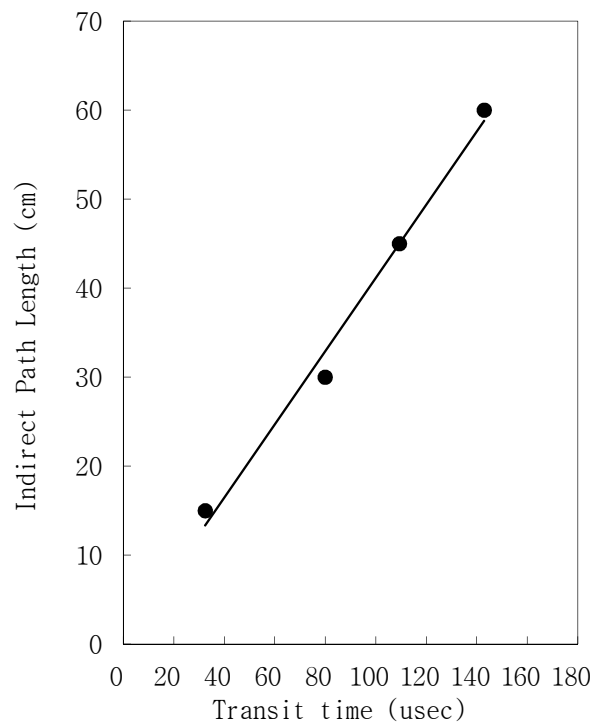
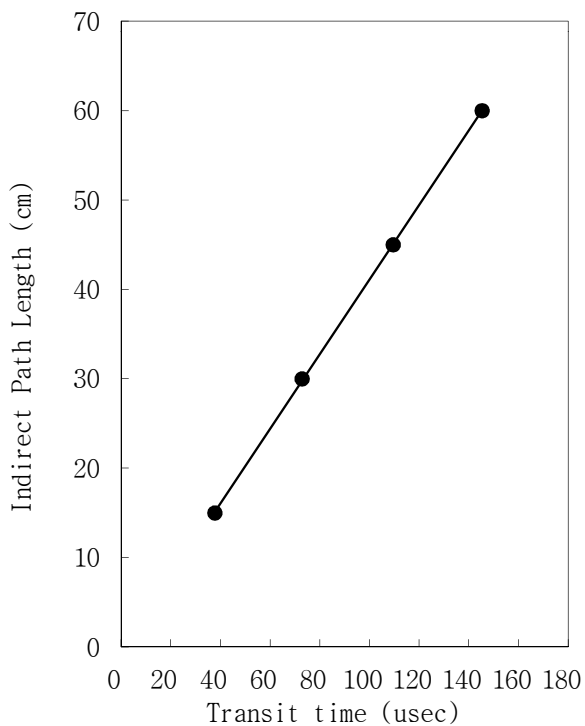
부 재 명	S11(건전부)	부 재 명	S12(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
38.7	15	37.8	15
78.5	30	76.6	30
108.0	45	114.9	45
148.7	60	142.9	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.157 X - 13.619$		$Y = 4.219 X - 17.593$	
Vi (km/s)	4.157	Vi (km/s)	4.219
Correction Ration (Vi → Vd)	4.365	Correction Ration (Vi → Vd)	4.430
압축강도(F')	31.2	압축강도(F')	32.6



Pulse Velocity Data

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

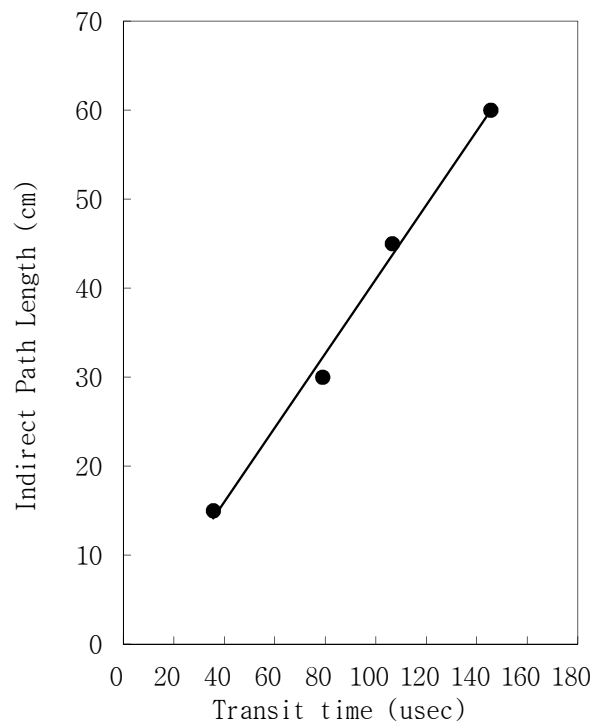
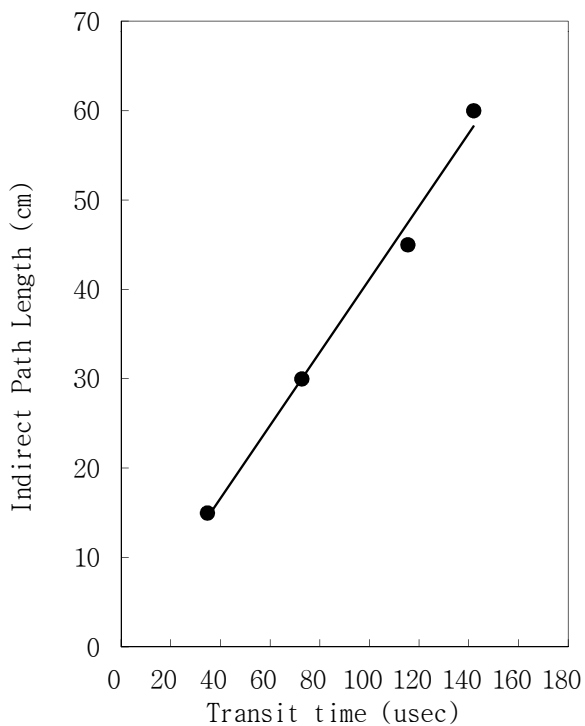
부 재 명	S13(건전부)	부 재 명	S14(건전부)
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
37.7	15	32.4	15
72.8	30	79.9	30
109.5	45	109.3	45
145.3	60	142.9	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.172 X - 6.024$		$Y = 4.110 X + 0.467$	
Vi (km/s)	4.172	Vi (km/s)	4.110
Correction Ration (Vi → Vd)	4.381	Correction Ration (Vi → Vd)	4.316
압축강도(F')	31.6	압축강도(F')	30.2



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
34.7	15	35.6	15
72.7	30	78.9	30
115.4	45	106.5	45
141.9	60	145.5	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.084 X + 2.669$		$Y = 4.171 X - 7.18$	
Vi (km/s)	4.084	Vi (km/s)	4.171
Correction Ration (Vi → Vd)	4.288	Correction Ration (Vi → Vd)	4.380
압축강도(F')	29.6	압축강도(F')	31.6



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	
32.5	15		36.1	15	
78.6	30		77.7	30	
113.2	45		114.2	45	
139.5	60		144.5	60	
Best fit line (Equation)			Best fit line (Equation)		
$Y = 4.154 X - 2.761$			$Y = 4.127 X - 9.318$		
Vi (km/s)	4.154		Vi (km/s)	4.127	
Correction Ration (Vi → Vd)	4.362		Correction Ration (Vi → Vd)	4.333	
압축강도(F')	31.2		압축강도(F')	30.6	

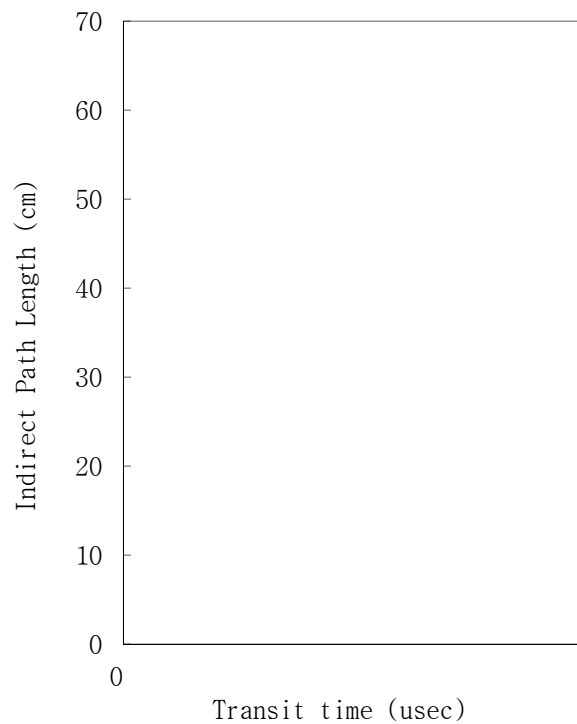
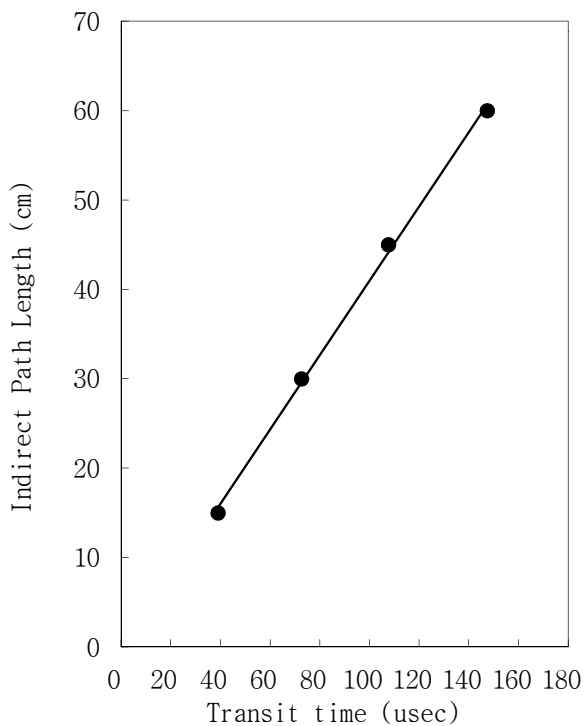
S17 Data Plot

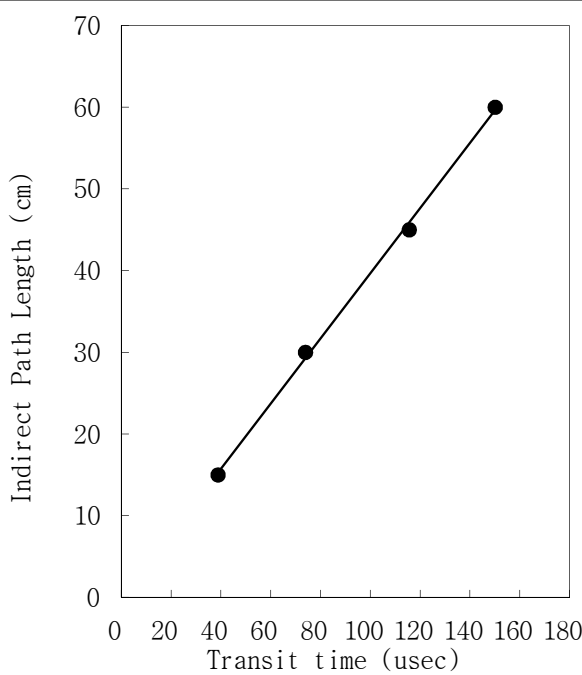
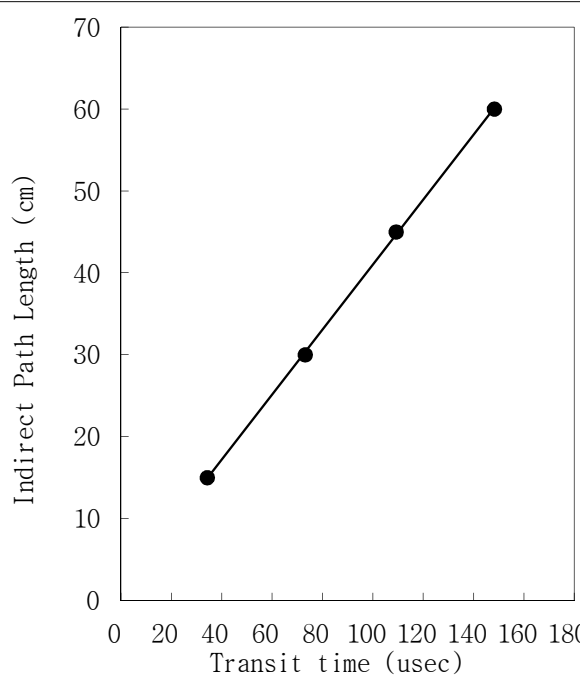
S18 Data Plot

Pulse Velocity Data

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

부 재 명	S19(건전부)	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
39.0	15		15
72.6	30		30
107.6	45		45
147.4	60		60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.158 X - 6.065$		#DIV/0!	
Vi (km/s)	4.158	Vi (km/s)	
Correction Ration (Vi → Vd)	4.366	Correction Ration (Vi → Vd)	
압축강도(F')	31.3	압축강도(F')	



PUNDIT		웅진대교 논산방향 초음파탐사 DATA			
PROJECT TITLE :		시설물 정밀안전진단 용역[2공구]			
Company	 (주) 한국구조물안전연구원	Client		 (주)천안논산고속도로	
	 (주) 한 맥 기 술	Method		초음파법	
Pulse Velocity Data					
(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)					
부 재 명	A1 벽체		부 재 명	A2 벽체	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
38.8	15		34.2	15	
73.9	30		73.1	30	
115.6	45		109.2	45	
150.1	60		148.2	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.988 X - 2.281			Y = 3.966 X + 13.372		
Vi (km/s)		3.988	Vi (km/s)	3.966	
Correction Ration (Vi → Vd)		4.187	Correction Ration (Vi → Vd)	4.164	
압축강도(F')		27.5	압축강도(F')	27.0	
					

Pulse Velocity Data

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

부 재 명	P1 코핑부		부 재 명	P2 기둥부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
32.9	15		31.6	15	
72.5	30		74.1	30	
109.3	45		115.8	45	
146.4	60		140.2	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.974 X + 16.204			Y = 4.025 X + 11.066		
Vi (km/s)	3.974		Vi (km/s)	4.025	
Correction Ration (Vi → Vd)	4.173		Correction Ration (Vi → Vd)	4.226	
압축강도(F')	27.2		압축강도(F')	28.4	

Indirect Path Length (cm) Transit time (usec)	Indirect Path Length (cm) Transit time (usec)
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Pulse Velocity Data

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

부 재 명	P3 코펑부		부 재 명	P4 기둥부	
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		30.7	15	
76.4	30		72.9	30	
110.9	45		108.5	45	
147.4	60		144.6	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.951 X + 12.067			Y = 3.969 X + 21.062		
Vi (km/s)	3.951		Vi (km/s)	3.969	
Correction Ration (Vi → Vd)	4.149		Correction Ration (Vi → Vd)	4.167	
압축강도(F')	26.7		압축강도(F')	27.1	

Indirect Path Length (cm)

Transit time (usec)

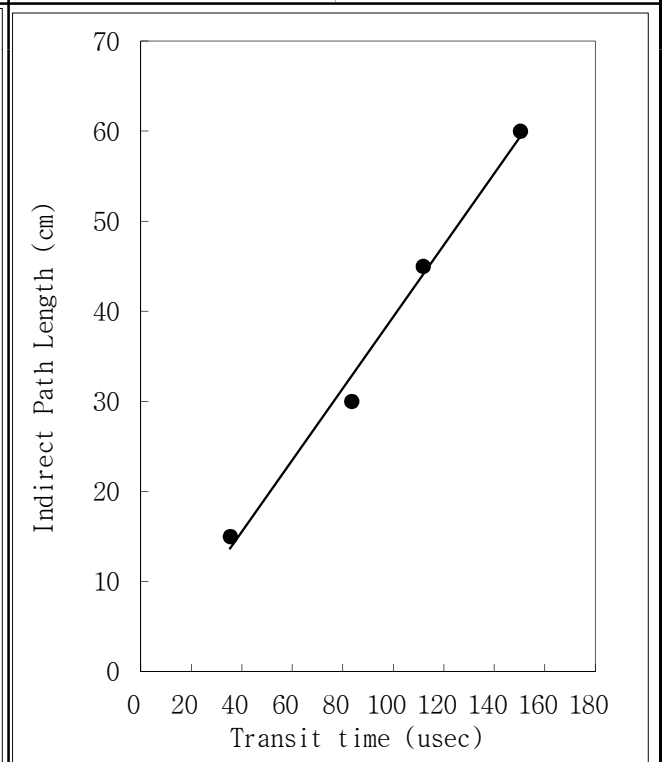
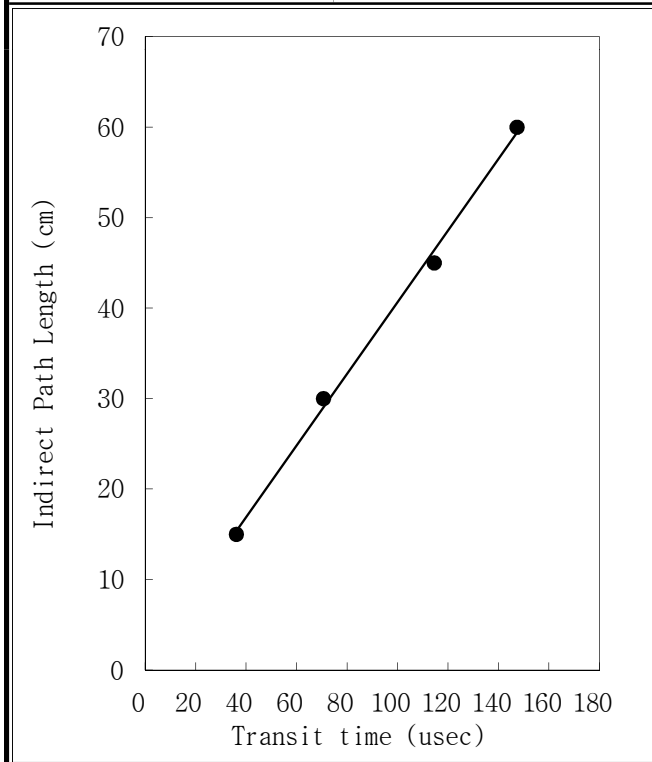
Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

부 재 명	P5 기둥부	부 재 명	P6 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
36.1	15	35.4	15
70.6	30	83.5	30
114.5	45	111.8	45
147.3	60	150.3	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 3.961 X + 10.054$		$Y = 3.982 X - 4.333$	
Vi (km/s)	3.961	Vi (km/s)	3.982
Correction Ration (Vi → Vd)	4.159	Correction Ration (Vi → Vd)	4.181
압축강도(F')	26.9	압축강도(F')	27.4



Pulse Velocity Data

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

부 재 명	P7 코핑부		부 재 명	P8 코핑부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
31.5	15		35.9	15	
76.9	30		74.3	30	
112.5	45		109.1	45	
146.1	60		149.6	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.933 X + 14.154			Y = 3.987 X + 7.266		
Vi (km/s)	3.933		Vi (km/s)	3.987	
Correction Ration (Vi → Vd)	4.130		Correction Ration (Vi → Vd)	4.186	
압축강도(F')	26.3		압축강도(F')	27.5	

Indirect Path Length (cm)

Transit time (usec)

Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

부 재 명	P9 기둥부		부 재 명	P10 기둥부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X		Y	X		Y
37.2		15	33.8		15
70.0		30	74.8		30
116.5		45	110.1		45
145.9		60	147.4		60
Best fit line (Equation)			Best fit line (Equation)		
$Y = 3.997 X + 5.697$			$Y = 3.985 X + 10.3$		
Vi (km/s)	3.997		Vi (km/s)	3.985	
Correction Ration (Vi → Vd)	4.197		Correction Ration (Vi → Vd)	4.184	
압축강도(F')	27.7		압축강도(F')	27.5	

Indirect Path Length (cm)

Transit time (usec)

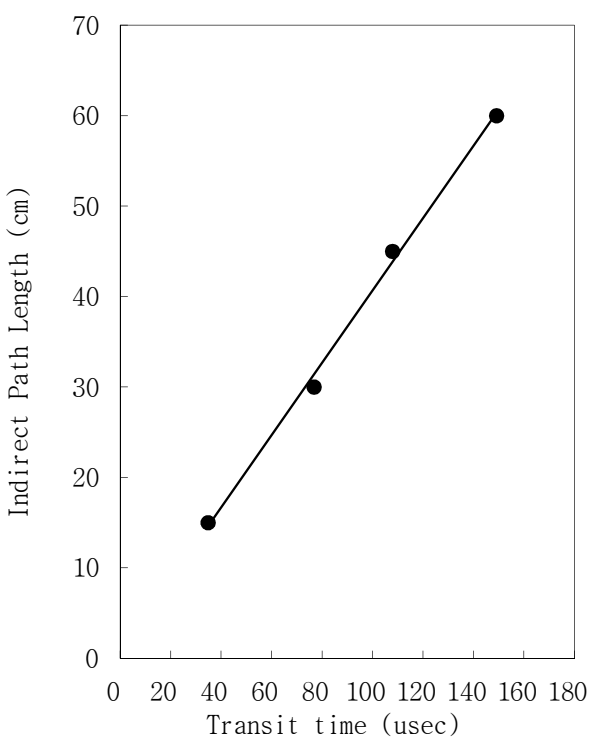
Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

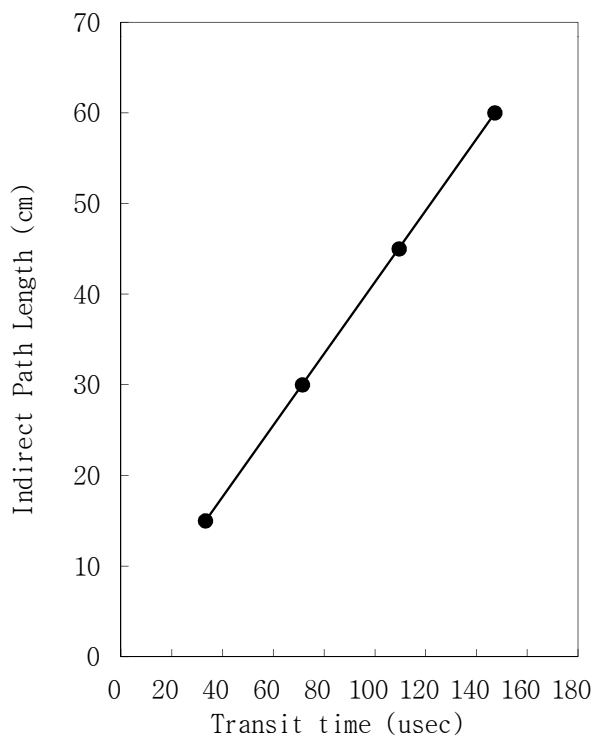
(Vi : Indirect Pluse Velocity, Vd : Direct Pluse Velocity)

부 재 명	P11 코핑부		부 재 명	P12 코핑부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
34.8	15		33.2	15	
76.8	30		71.4	30	
107.9	45		109.5	45	
149.1	60		147.2	60	
Best fit line (Equation)			Best fit line (Equation)		
$Y = 3.998 X + 6.584$			$Y = 3.946 X + 18.551$		
Vi (km/s)	3.998		Vi (km/s)	3.946	
Correction Ration (Vi → Vd)	4.198		Correction Ration (Vi → Vd)	4.143	
압축강도(F')	27.8		압축강도(F')	26.6	



Indirect Path Length (cm)

Transit time (usec)



Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

부 재 명	P13 기둥부		부 재 명	P14 코핑부	
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		34.4	15	
79.1	30		70.5	30	
109.5	45		114.4	45	
148.4	60		145.5	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.973 X + 7.077			Y = 3.961 X + 13.723		
Vi (km/s)	3.973		Vi (km/s)	3.961	
Correction Ration (Vi → Vd)	4.172		Correction Ration (Vi → Vd)	4.159	
압축강도(F')	27.2		압축강도(F')	26.9	

Indirect Path Length (cm)

Transit time (usec)

Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

부 재 명	P15 코핑부		부 재 명	P16 기둥부	
X	Transit Time (usec)		X	Transit Time (usec)	
Y	Indirect Path Length (cm)		Y	Indirect Path Length (cm)	
X	Y		X	Y	
32.9	15		37.5	15	
71.8	30		72.7	30	
109.3	45		116.9	45	
145.4	60		148.2	60	
Best fit line (Equation)			Best fit line (Equation)		
Y = 3.999 X + 15.7			Y = 3.971 X + 2.458		
Vi (km/s)	3.999		Vi (km/s)	3.971	
Correction Ration (Vi → Vd)	4.199		Correction Ration (Vi → Vd)	4.170	
압축강도(F')	27.8		압축강도(F')	27.2	

Indirect Path Length (cm)

Transit time (usec)

Indirect Path Length (cm)

Transit time (usec)

Pulse Velocity Data

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

부 재 명	P17 기둥부	부 재 명	P18 기둥부
X	Transit Time (usec)	X	Transit Time (usec)
Y	Indirect Path Length (cm)	Y	Indirect Path Length (cm)
X	Y	X	Y
37.2	15	31.2	15
70.8	30	77.5	30
112.0	45	114.7	45
148.3	60	143.5	60
Best fit line (Equation)		Best fit line (Equation)	
$Y = 4.000 X + 6.714$		$Y = 3.966 X + 11.199$	
Vi (km/s)	4.000	Vi (km/s)	3.966
Correction Ration (Vi → Vd)	4.200	Correction Ration (Vi → Vd)	4.164
압축강도(F')	27.8	압축강도(F')	27.0

