



Nondestructive Testing for Tunnels (R06G)

Tool Selection Matrix



U.S. Department of Transportation
Federal Highway Administration



Nondestructive Testing Techniques Versus Bridge Sounding

NDT Technique	Mode of Deterioration Detected	System	Resolution	Lane Closure
IE	1) Deeper cracks - top and bottom rebar mat 2) Shallow delamination 3) Concrete degradation	1) Scanning 2) Point by Point	High Grid size	Yes Yes
GPR	1) Rebar Mapping 2) Cracks (if associated with moisture intrusion or deicing salt) 3) Concrete degradation	1) Air Coupled Scanning 2) Ground coupled	Lower High	No/Maybe Yes
LiDAR	1) Liner Distortion/Movement 2) Asset Mapping 3) Crack Mapping	1) Scanning	High Low	Yes No
IR	1) Shallow/Tile delamination 2) Moisture Intrusion	1) Scanning 2) Handheld	High High	No Yes
SASW	1) Vertical cracks 2) Concrete degradation	1) Scanning 2) Point by point	High Grid size	Yes Yes

Vs.

Sounding	Only shallow delamination	Manual		Yes
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Program vs Project NDT

