Alchemco Crack Assessment Guide

Identification, Testing & Evaluation for ETT Systems

Understanding Cracks Before Treatment

Cracks are pathways for water migration and must be properly assessed before any ETT treatment is applied. Accurate identification of static, dynamic, and structural cracks will be required for the successful application of ETT waterproofing systems.



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Identify & Map the Crack

Before selecting a treatment method, ***document all relevant crack information.***

Measure Crack Width

Classification	Hairline	Fine	Moderate	Large	Severe / Structural Concern
Width	< 0.10 mm	0.10 – 0.50 mm	0.50 – 2.00 mm	> 2.00 mm	> 3.00 mm
Cracks					

Recommended Documentation

Record the following information for each crack:

- **Location**
- **Crack type**
- **Width**
- **Evidence of leakage**
- **Photographs**
- **Environmental conditions**

Identify the Crack Pattern

Different crack patterns may indicate different causes and treatment requirements.

Shrinkage / Random Map Cracks	**Linear Cracks**	**Cracks Parallel to Construction or Expansion Joints**	**Diagonal Cracks Near Columns or Structural Elements**	**Progressive, Widespread, or Irregular Cracking**
Typically non-structural cracks caused by drying shrinkage.	Require further evaluation and may indicate movement or structural influence.	May be associated with joint movement.	Potential indication of structural stress.	May require additional structural assessment before waterproofing treatment.
				

Is the Crack Active?

Determining whether a crack is moving is critical to selecting the ***correct treatment strategy.***

Potential Dynamic Crack (Moving)
Common indicators include:

- Sharp, clean crack edges
- Differential elevation
- Reopening after wet/dry cycles
- Increasing crack width over time
- Location near expansion or movement joints

Potential Static Crack (Non-Moving)
Common indicators include:

- Stable appearance
- Consistent crack pattern
- No known movement history
- Typical shrinkage crack behavior

Glass Plate Test

A simple field method can be used to evaluate crack movement.

Procedure



1- Clean the surface thoroughly.



2- Apply a glass strip across the crack.

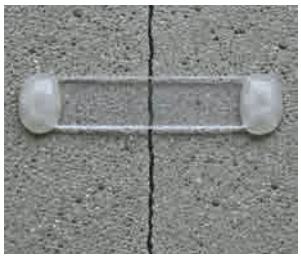


3- Record the installation date and take a photograph.

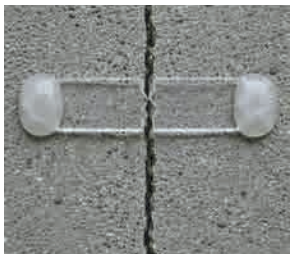


4- Inspect after 24 hours or longer if necessary.

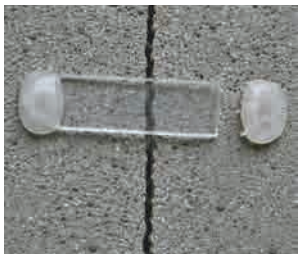
Interpretation



Unbroken Plate
Indicates little or no crack movement



Broken Plate
Indicates active crack movement.



Loose Plate
Retest may be required.

Important Note

Environmental conditions, structural loading, and crack location can influence results. When uncertainty exists, consult Alchemco Technical Services before proceeding with treatment.

Is It a Through Crack?

Water testing helps determine whether the ***crack extends fully through the concrete section.***

Water Test Procedure

Apply water to the surface and observe the underside/soffit of the concrete structure.

Leakage Within 10 Minutes



This condition typically indicates a through crack.

- Rapid leakage
- Visible moisture on the opposite surface
- Efflorescence or active water migration

Typical Treatment Sequence

- Blow out the crack
- On the underside/soffit of the through crack, close the through crack with enduratite repair grout
- Flood with ETT
- Allow approximately one hour for absorption
- Proceed with full ETT application

No Leakage or Delayed Leakage



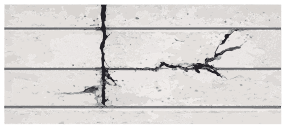
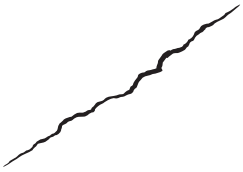
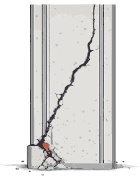
- Partial through crack
- Matrix migration pathway
- Capillary moisture movement

Typical Treatment Sequence

- Blow out the crack
- Flood with ETT
- Allow approximately one hour for absorption
- Proceed with field application

Structural Indicators - Warning Signs

Certain crack characteristics may indicate structural concern requiring 3rd party testing from a structural engineer

				
Cracks wider than 3 mm	**Diagonal cracking near columns**	**Progressive crack growth**	**Cracking parallel to joints with displacement**	**Widespread irregular cracking**

When these indicators are present, Alchemco recommends evaluation by a qualified structural engineer before treatment begins.

Interpret the Findings

Use a structured process to ***identify the correct treatment path.***

Every crack should be evaluated using the same sequence of assessments. This approach helps distinguish movement-related cracks, identify moisture pathways, and ensure the selected treatment matches actual field conditions.

Step 1

Identify and map the crack

Document crack width, location, pattern, and visible signs of leakage.

Step 2

Determine whether the crack is dynamic

Use visual indicators and the 24-hour glass plate test to identify movement.

Step 3

Determine whether it is a through crack

Perform a water test to evaluate whether moisture can migrate completely through the concrete section.

Step 4

Classify the crack condition

Assessment Result	Classification
Non-moving crack	Static
Moving crack	Dynamic
Water passes through crack	Through Crack
Water migrates through matrix	Partial / Matrix Pathway

Step 5

Determine the treatment path

Use the assessment results to select the appropriate ETT treatment procedure.

Final Verification

Review structural indicators before proceeding

Cracks showing structural warning signs should be evaluated before treatment begins.



Determine Treatment Path

Choose the treatment sequence that best matches the observed condition.



Cracks SMALLER than the ETT current crack sealing capabilities:

- Blow cracks out using a jet-air compressor wand to remove dust and debris.
- Flood cracks with ETT.
- Wait 1 hour and let the ETT absorb.
- Field application (see ETT Application Procedure)

Cracks LARGER than the ETT current crack sealing capabilities:

(non-through cracks, and underside is accessible with no leaks)

- Route cracks. (see Types of Cuts)
- Blow cracks out using a jet-air compressor wand to remove dust and debris.
- Flood cracks with ETT.
- Wait 1 hour and let the ETT absorb.
- Field application. (see ETT Application Procedure)
- Apply ACRtec PU24 Elastomeric Sealant for dynamic cracks.
- Apply ACRtec L43 Crack Filler for static cracks.

Through Crack

If cracks begin to leak within 10 minutes after applying water to the surface:

- Blow cracks out using a jet-air compressor wand to remove dust and debris.
- Treat soffit (underside of cracks) with enDuraTite Repair Grout.
- Flood cracks with ETT.
- Wait 1 hour and let the ETT absorb.
- Field application (see ETT application procedure)

Cracks where the soffit (underside) of the slab is not accessible:

- Blow cracks out using a jet-air compressor wand to remove dust and debris.
- Flood cracks with ETT and let FULLY absorb.
- Apply ACRtec Crack Accelerating Agent into cracks
- Field Application. (see ETT Application Procedure)
- If necessary, clean cracks thoroughly for sealant adhesion. (may require grinding)

If cracks are LARGER than ETT current crack sealing capabilities:

- Route cracks. (see Types of Cuts)
- Blow cracks out using a jet-air compressor wand to remove dust and debris.
- Flood cracks with ETT and let FULLY absorb.
- Apply ACRtec Crack Accelerating Agent into cracks.
- Field Application. (see ETT Application Procedure)
- If necessary, clean cracks thoroughly for sealant adhesion. (may require grinding)
- Apply ACRtec PU24 Elastomeric Sealant for dynamic cracks.
- Apply ACRtec L43 Crack Filler for static cracks.

Routing Types

Routing may be required ***when crack width exceeds current treatment capability.***

V-Cut

Best For
- Non-through cracks
- Accessible underside conditions
- No active leakage

Benefits
- Good bonding surface area
- Efficient installation



Box-Cut

Best For
- Parallel cracks
- Shallow spalling
- Unknown pathway capture

Guideline
- Width should approximately equal depth.



Arrow-Cut

Best For
- Repeated repair failures
- Difficult leakage conditions

Best Combined With
- Dry-pack repair system

Consideration
- Higher labor requirement and installation time.



Product Crack Capability

Maximum Recommended ***Crack Width***

Product	*Current Crack Sealing*	*Future Crack Sealing*
TechCrete® 2500 Waterproofing Agent	2.0 mm	1.5 mm
Nexus WaterproofingAgent	Coming Soon	Coming Soon
BridgeDECK Waterproofing Agent	2.0 mm	1.0 mm
BridgeDECK PROtectant Plus	1.5 mm	0.3 mm
BridgeDECK PROtectant	1.0 mm	N/A
CretePRO Ultra Plus	2.0 mm	1.0 mm
CretePRO Ultra	2.0 mm	0.5 mm
CretePRO FasTrac	1.0 mm	0.5 mm

Additional Note

Routed dynamic cracks may require ACRtec PU24 Elastomeric Sealant.
Routed static cracks may require ACRtec L43.

Technical Guidance: If active leaks, structural repairs may be required.
For uncertain conditions, contact the Alchemco Technical Department for project-specifc guidance.