APPENDIX C:
COMBINED TEST RESULTS TABLE

Robert's New Type.

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. TuFI - 2

Date: 12/10/98
Time: 4:00
Conditions: Rainy 46°F
Staff: _____

Target Description:

Serial No. Robert's Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 1" X 1" X 1"
Projectile Weight (g): _____
Sabot Weight (g): _____
Total Weight (g): .6

Gun Pressure (psi): P1: 600, P2: 180, P3: 600

Velocity Measurement:

Measurement	Time (us)		Velocity (fps)
1	_____		_____
2	_____		_____
		Ave.	1575

Tile Damage Assessment:

Crater (Y/N): Length:_____ Width:_____ Depth:_____

Volume:_____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):
Coating Delamination 2.5" X 1.5"

Comments:
- Special New Tile Design
- Intended Velocity 1600
- Projectile Slightly Broken Up - OK
- Good Test

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. TUFI - 1

Date: 12/11/98
Time: 10:50
Conditions: 43° F
Staff: _____

Target Description:

Serial No. TUFI-1
Obliquity (deg.): ~~60~~ 50°
→ 40°

Projectile Description:

Projectile Dimensions: 1" x 1" x 3"
Projectile Weight (g): 1.22
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 200, P3: 600

Velocity Measurement:

Measurement	Time (us)	Velocity (fps)
1	_____	_____
2	_____	_____
Ave.	_____	_____ guess 1432 fps

Tile Damage Assessment:

Crater (Y/N) Length: 1.5" dia Width: _____ Depth: 1/8"

Volume: _____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):

_____

_____

Comments:

- No Impact / No Velocity
- Probably Broken Projectile like test 60

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. New 104

Date: 1/5/98
Time: 3:45
Conditions: Sunny 55°
Staff: DLG

Target Description:

Serial No. FIT Tile
Obliquity (deg.): 30°

Projectile Description:

Projectile Dimensions: 3/8" X 3.0"
Projectile Weight (g): .23
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 110, P3: 600

Velocity Measurement:

Measurement	Time (us)		Velocity (fps)
1	_____		_____
2	_____		_____
		Ave.	1250

Tile Damage Assessment:

Crater (Y/N): Length:_____ Width:_____ Depth:_____

Volume:_____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):

≈ 1.01" dia X 0.9" deep

Comments:

- Same FIT Tile as Test No. New99B - new spot
- Good Test - Velocity (+50 fps)
- Projectile slightly broken up

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. New 103

Date: 1/5/99
Time: 5:01
Conditions: Sunny 55°
Staff: DLG

Target Description:

Serial No. Flt Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 3/8" dia x 3.0" Lgth
Projectile Weight (g): .23g
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 60, P3: 600

Velocity Measurement:

Measurement	Time (us)	Velocity (fps)
1	_____	_____
2	_____	_____
	Ave.	1071

Tile Damage Assessment:

Crater (Y/N): Length: 1.5" Width: 1.0" Depth: 0.5"

Volume: _____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):

Comments:

Air → PT 0.1

- Pretest Cracks
- Good Test Velocity (+46 fps)
- Projectile Slightly Broken up - Back 1/4

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. New 101 B ← used for both 101 and 102

Date: 1/5/98
Time: 4:50
Conditions: Sunny 55°
Staff: DLG

Target Description:

Serial No. Eg Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 3/8" dia x 3.0" Length
Projectile Weight (g): .23 g
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 85, P3: 600

Velocity Measurement:

Measurement	Time (us)		Velocity (fps)
1	_____		_____
2	_____		_____
		Ave.	1319

Tile Damage Assessment:

Crater (Y/N): Length: 1.85" Width: 1.08" Depth: 0.5"

Volume: _____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):

Comments:

- Good Test - Velocity (+191 fps)

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. New 101A

Date: 1/5/99
Time: 4:40
Conditions: Sunny 55°
Staff: DLG

Target Description:

Serial No. Eng Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 3/8" dia x 3.0"
Projectile Weight (g): .23g
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 400, P3: 600

Velocity Measurement:

Measurement	Time (us)	Velocity (fps)
1	_____	_____
2	_____	_____
Ave.		1400

Tile Damage Assessment:

Crater (Y/N): Length: 1.6" Width: 0.8" Depth: 0.58

Volume: _____ (Weight of Sand _____ x Sand Density _____)

Tile Cracking (Y/N – Describe):

Comments:

New Eng Tile
Good Test - Velocity (+104 fps)
Too Fast

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. New 101

Date: 1/5/98
Time: 4:30
Conditions: Sunny 55°
Staff: DLG

Target Description:

Serial No. FIT Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 3/8" dia X 3.0" Length
Projectile Weight (g): .23g
Sabot Weight (g): _____
Total Weight (g): _____

Gun Pressure (psi): P1: 600, P2: 110, P3: 600

Velocity Measurement:

Measurement	Time (us)		Velocity (fps)
1	_____		_____
2	_____		_____
		Ave.	1567

Tile Damage Assessment:

Crater (Y/N): Length: 2.09" Width: .87" Depth: 0.58"

Volume: _____ (Weight of Sand _____ x Sand Density _____)

Tile Cracking (Y/N – Describe):

Comments:

- Some FIT Tile as Test # New 98A - New Spot
- Projectile Broke into Pieces
- Velocity (+ 361 fps) - Too Fast
- Big Gouge

NASA - JSC
Orbiter Tile Impact Testing
SwRI Project No. 06-7503-005

Test No. 97 (~~[illegible]~~)

This will be used as Test # 100 in the Matrix

Date: 12/9/98
Time: 9:15
Conditions: Cloudy 51°F
Staff: DLG, LB, DJG

Target Description:

Serial No. Eng Tile
Obliquity (deg.): 60°

Projectile Description:

Projectile Dimensions: 3/8" dia x 1.0" Length
Projectile Weight (g): .089
Sabot Weight (g): —
Total Weight (g): .08

Gun Pressure (psi): P1: 600 **, P2:** 50 **, P3:** 600

Velocity Measurement:

Measurement	Time (us)		Velocity (fps)
1			
2			
		Ave.	929

Tile Damage Assessment:

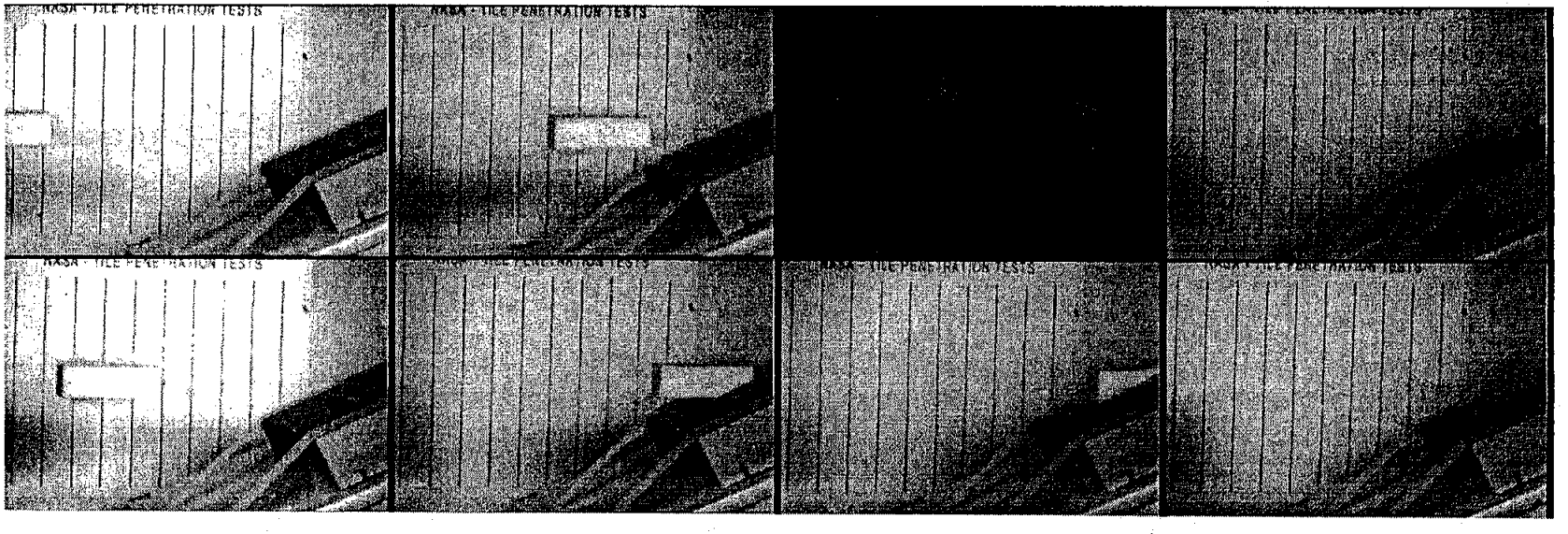
Crater (Y/N): Length:_____ Width:_____ Depth:_____

Volume:_____ (Weight of Sand _____ x Sand Density ____)

Tile Cracking (Y/N – Describe):

Comments:

- 10" Standoff from Barrell to Impact site
- New Eng. Tile – NO cracking
- No Damage
- Intended Velocity 1009 (-80 fps)



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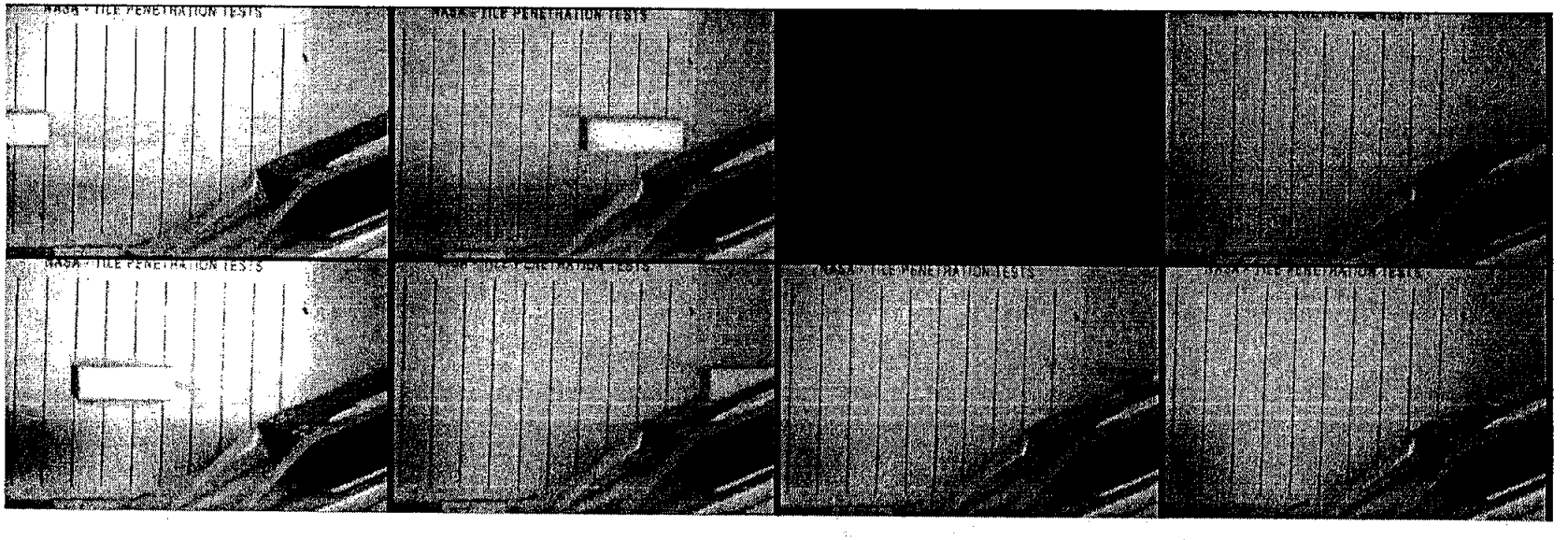

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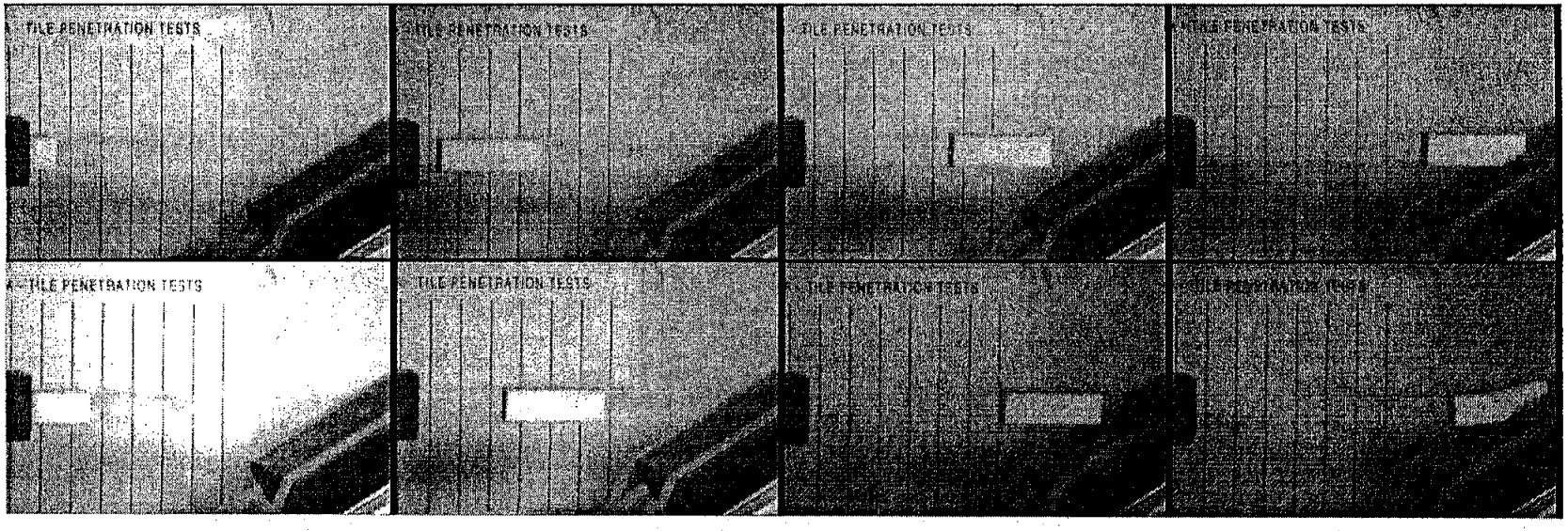
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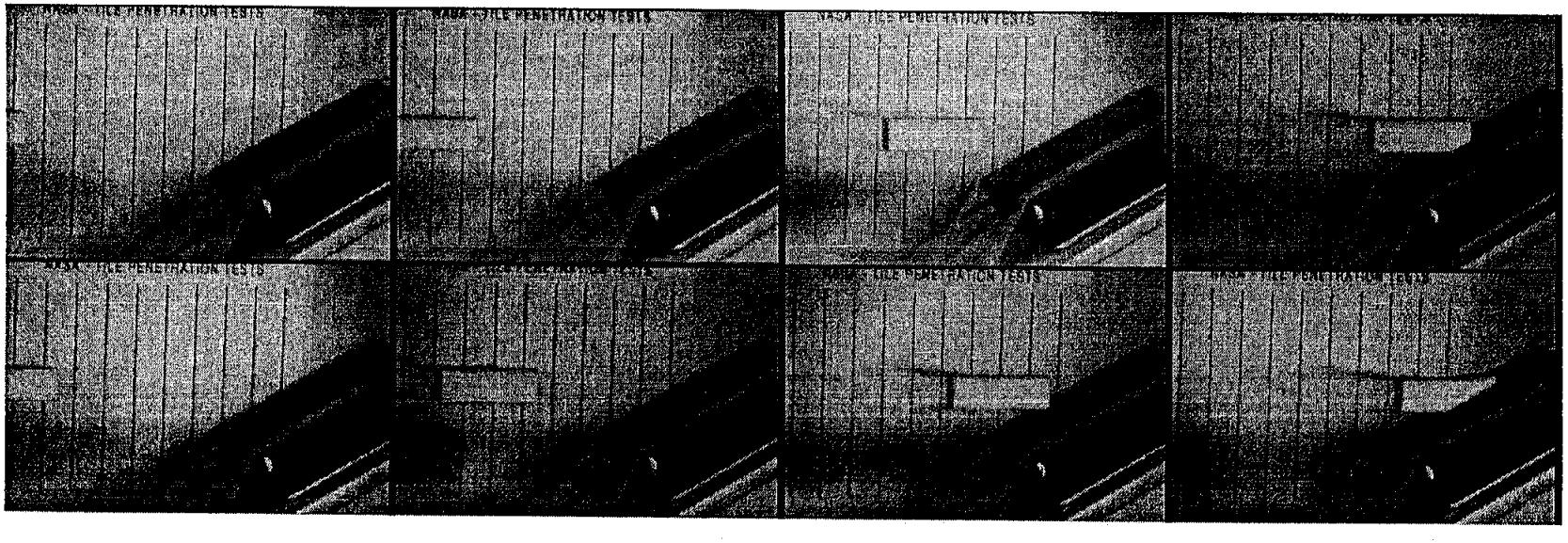

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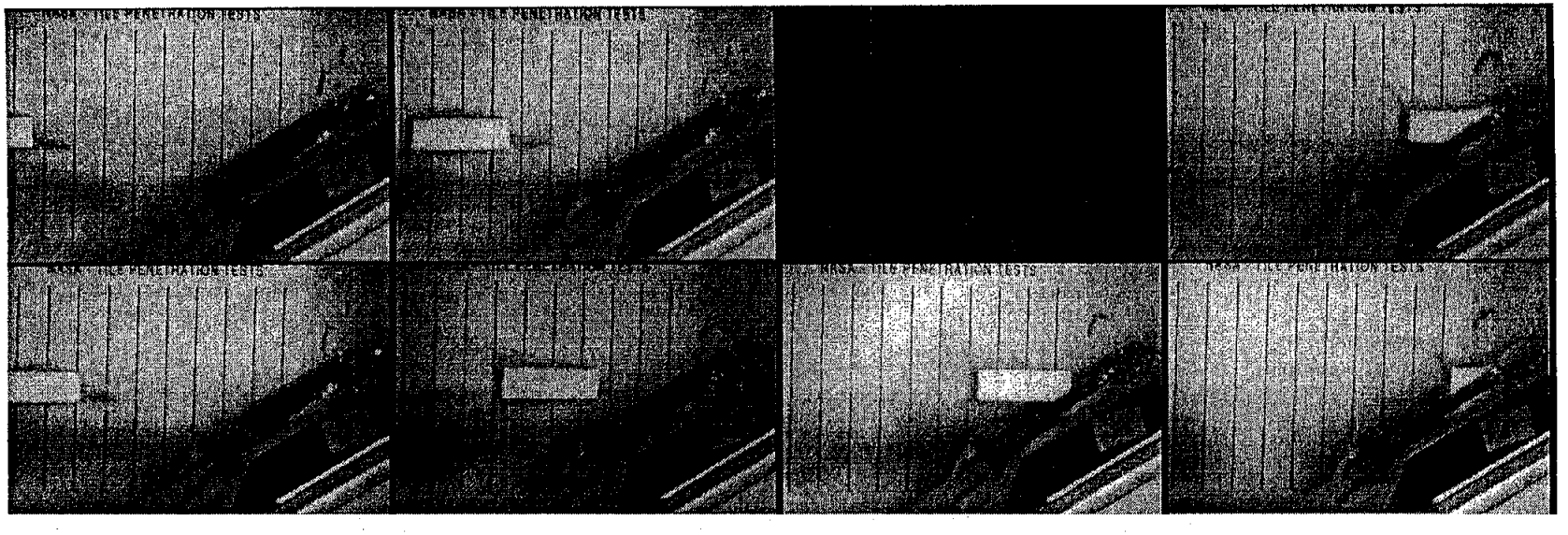

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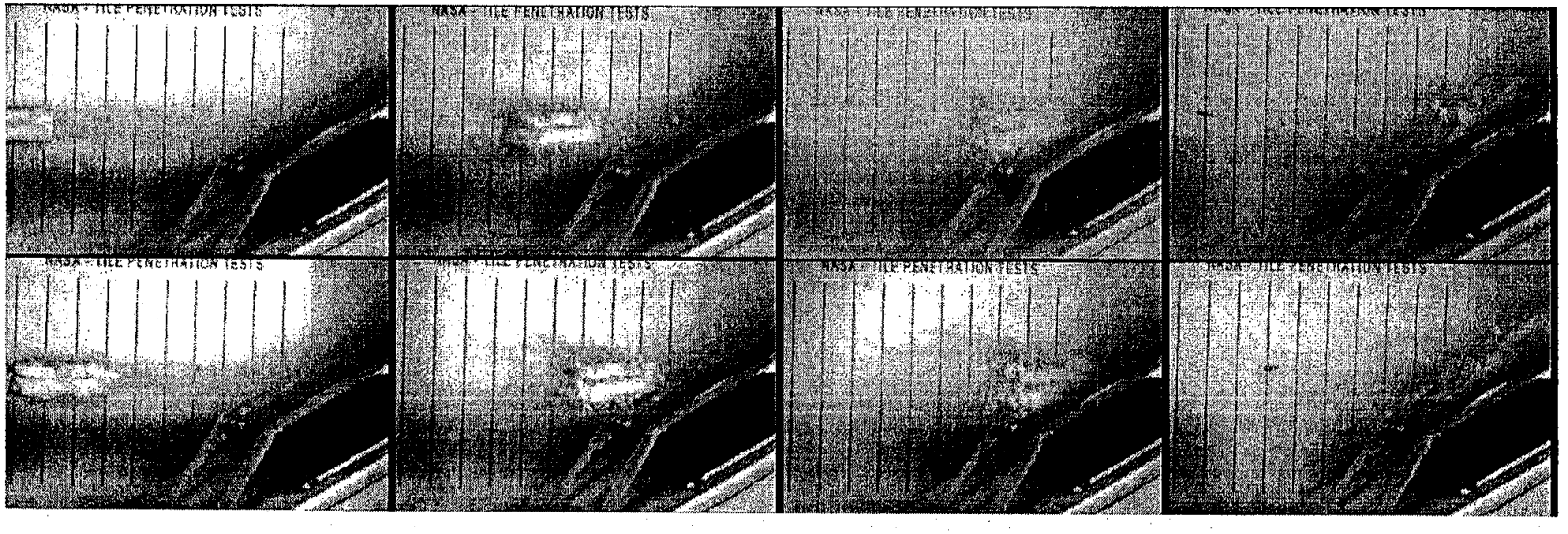
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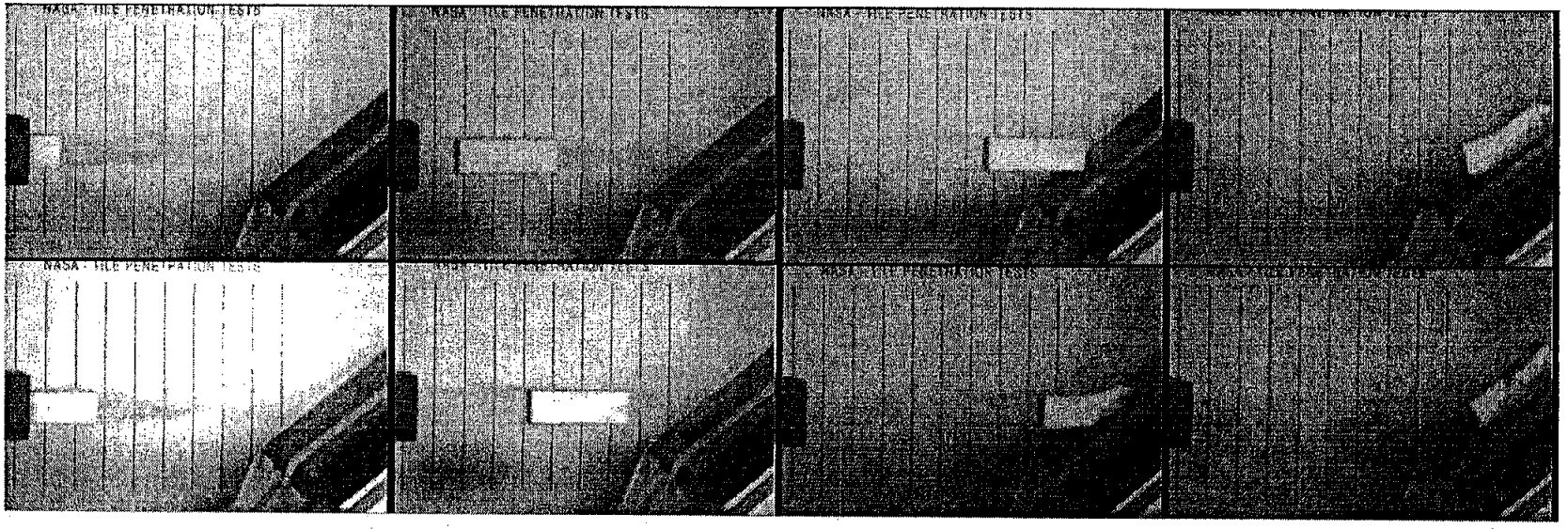

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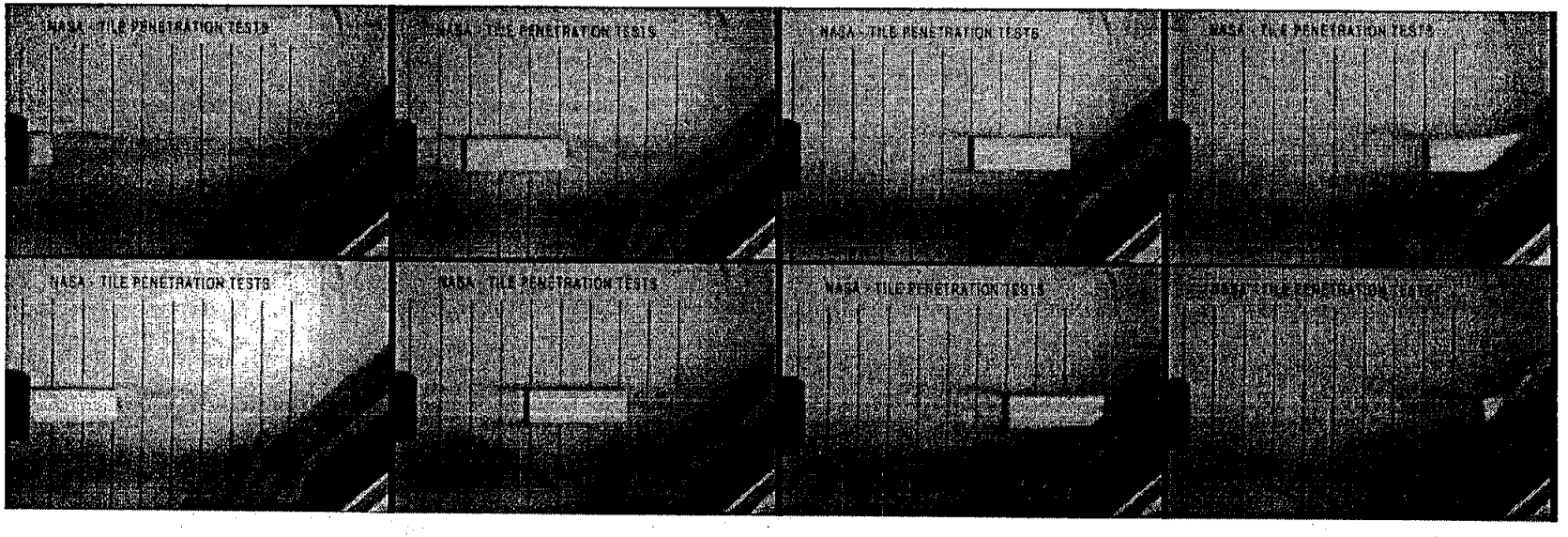
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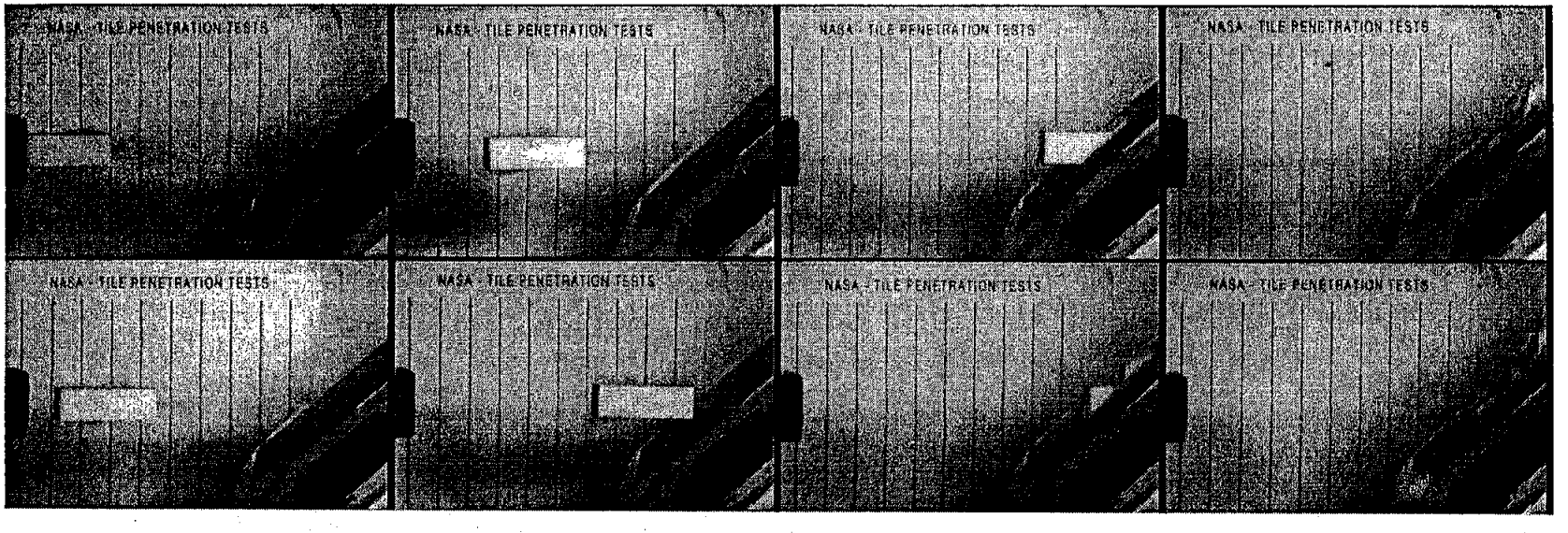
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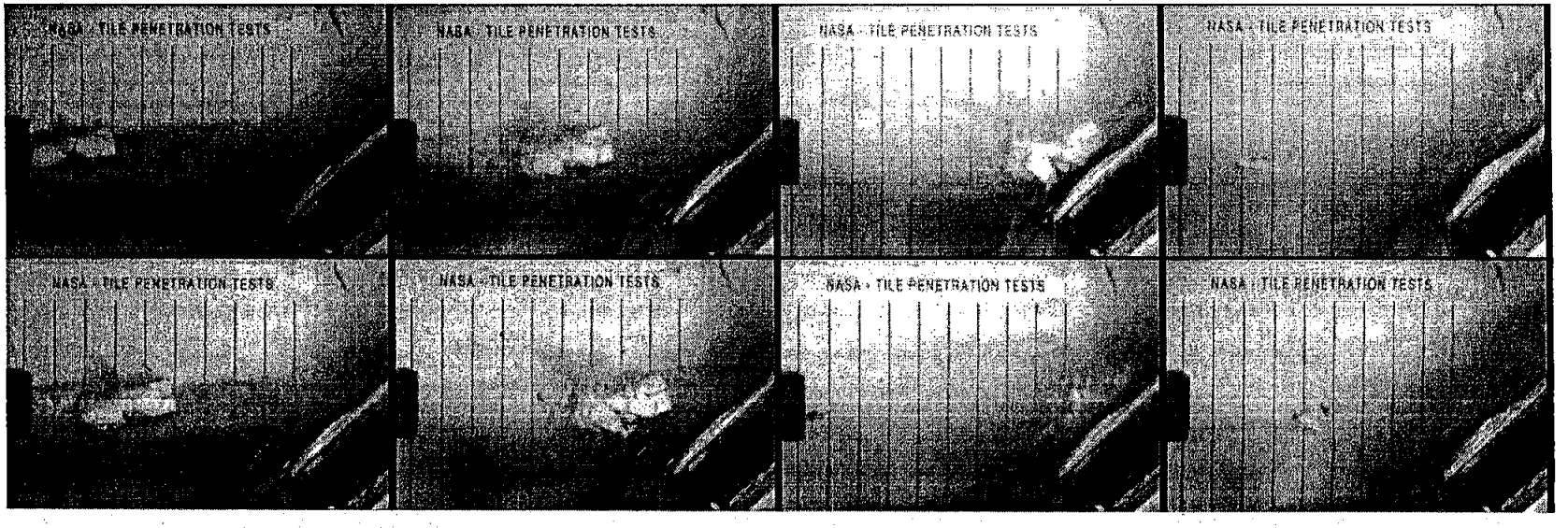
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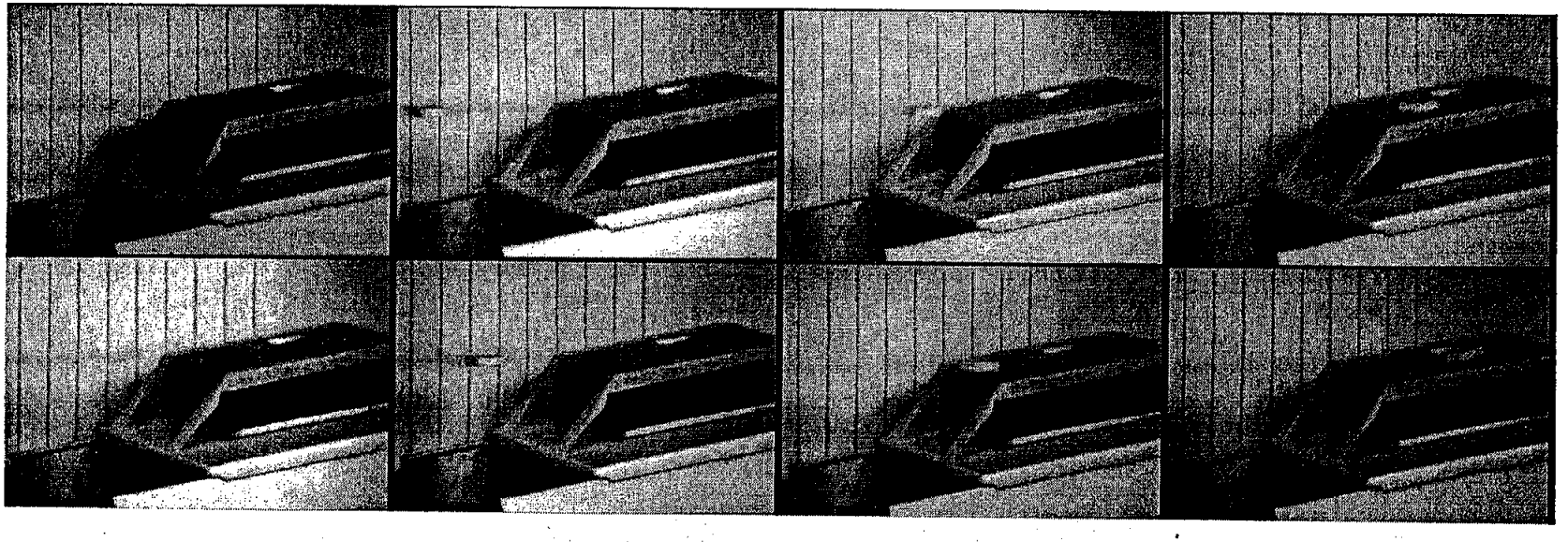

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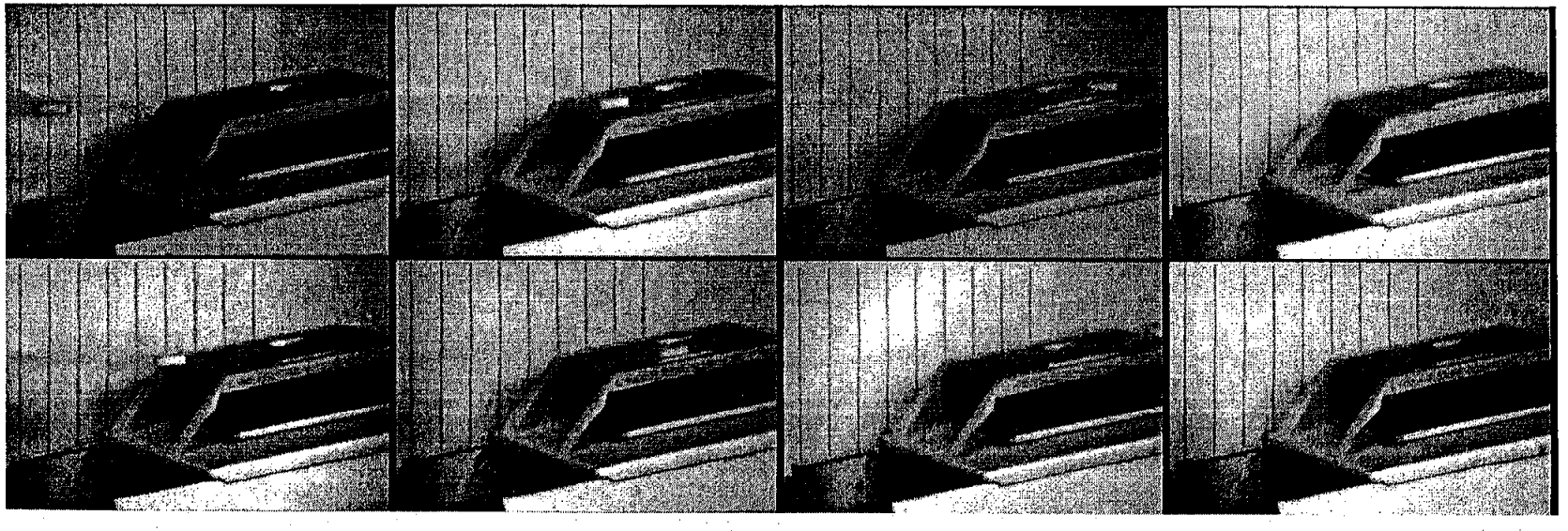

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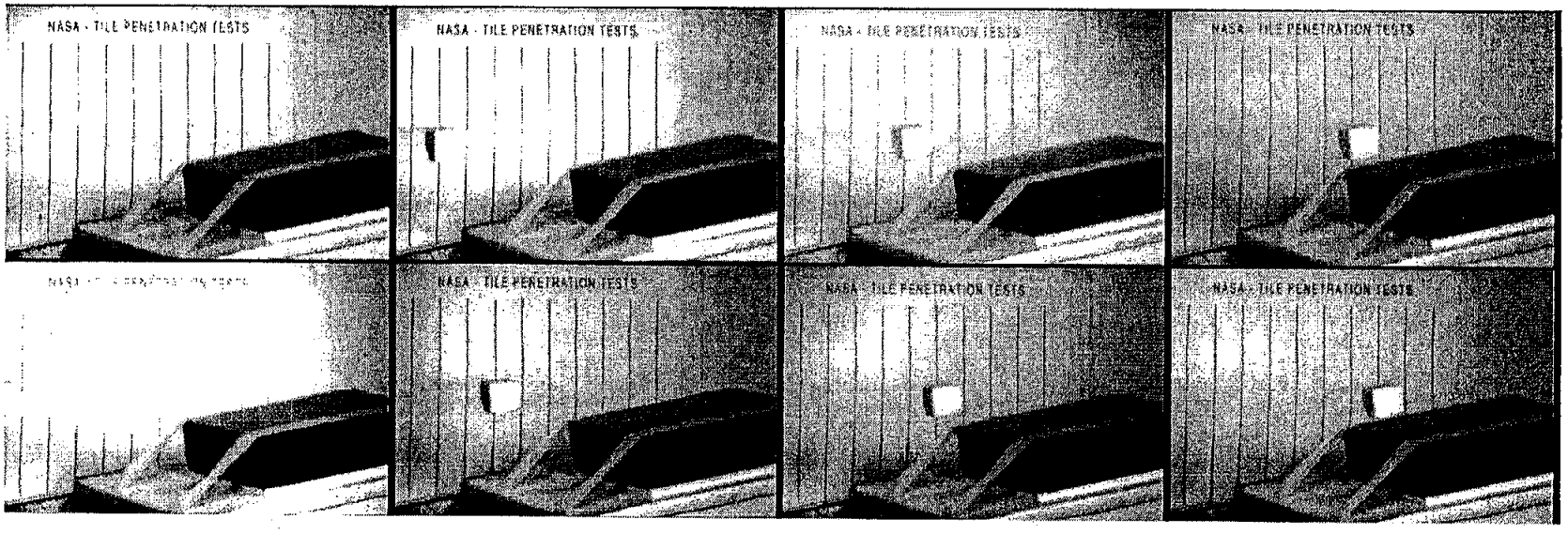
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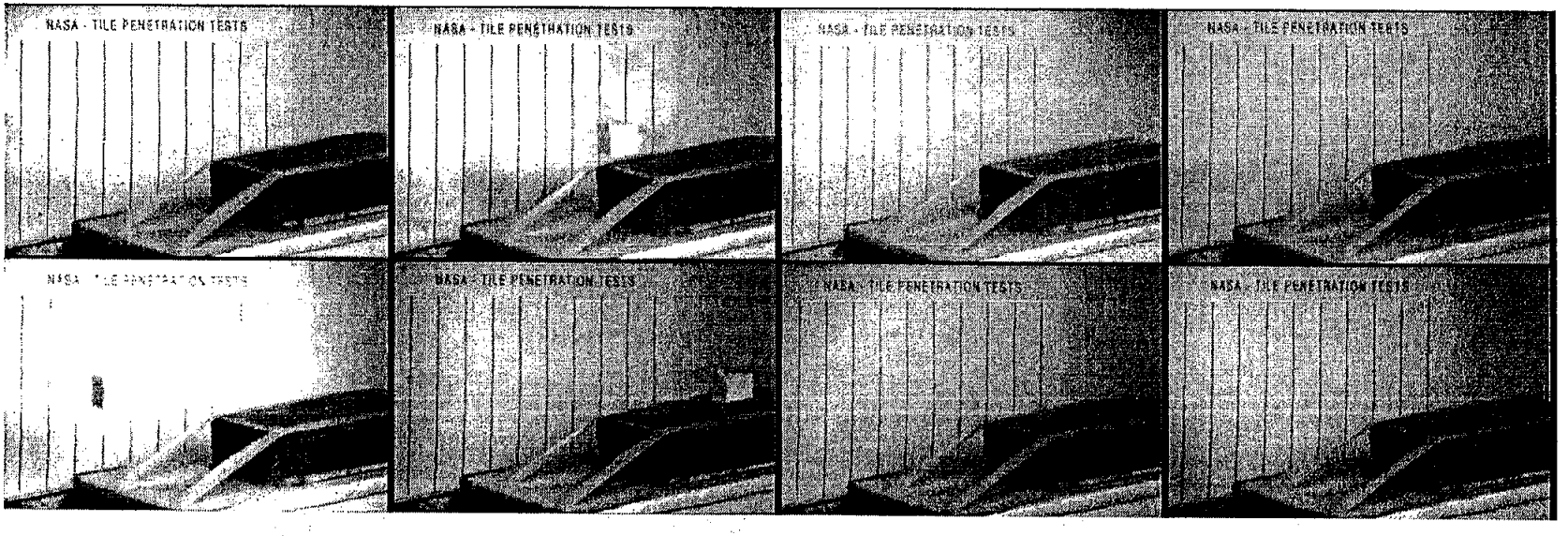
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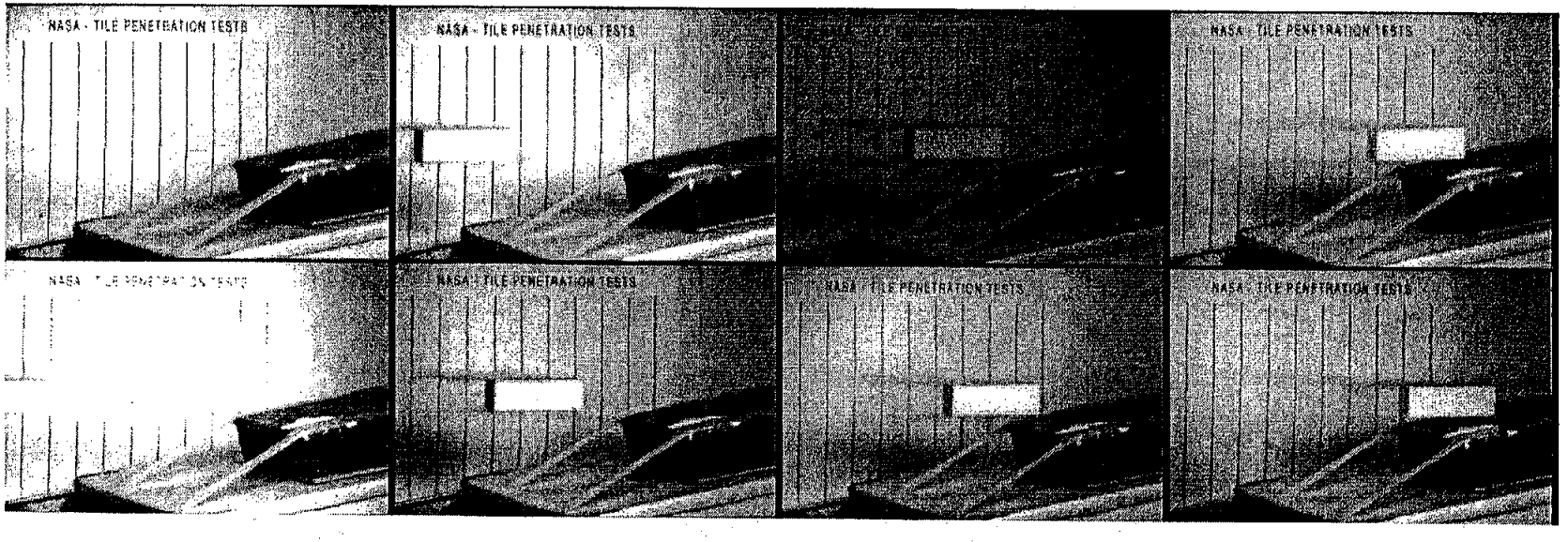
Test No. 84B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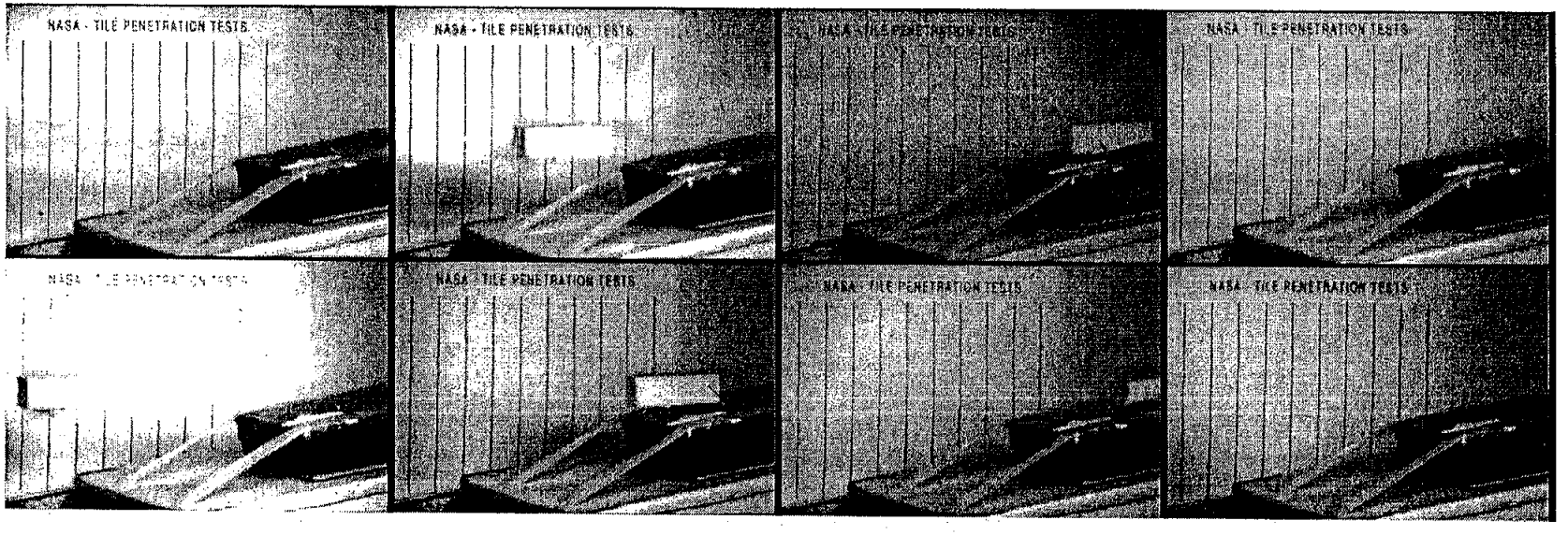
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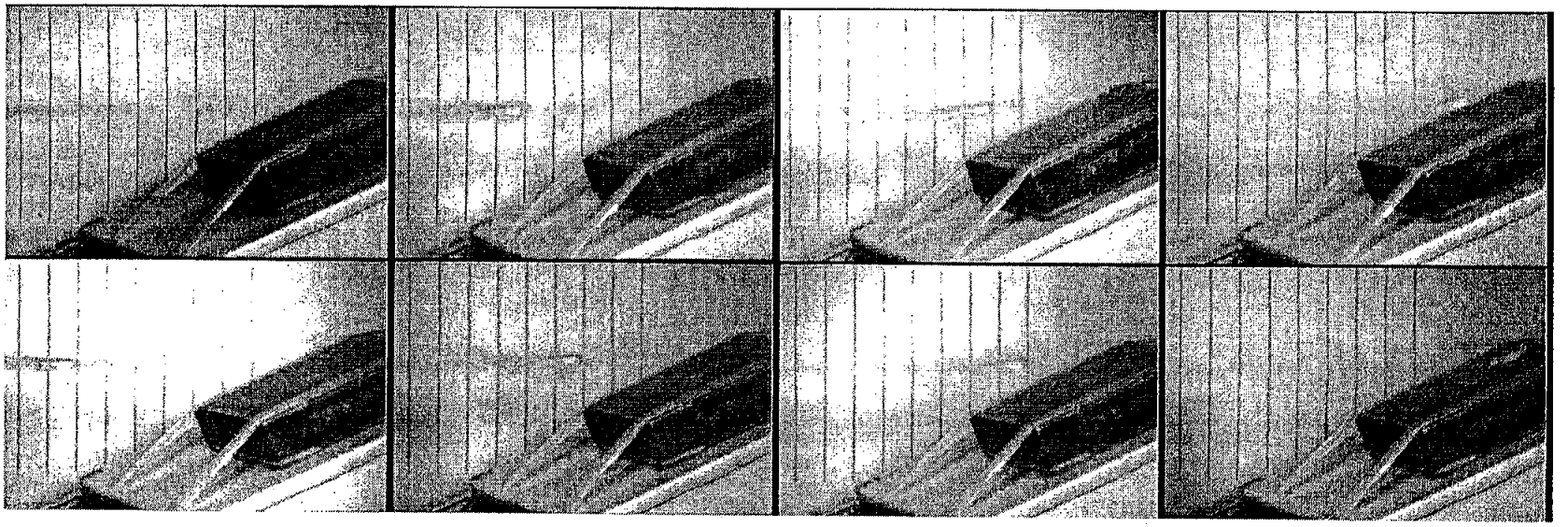

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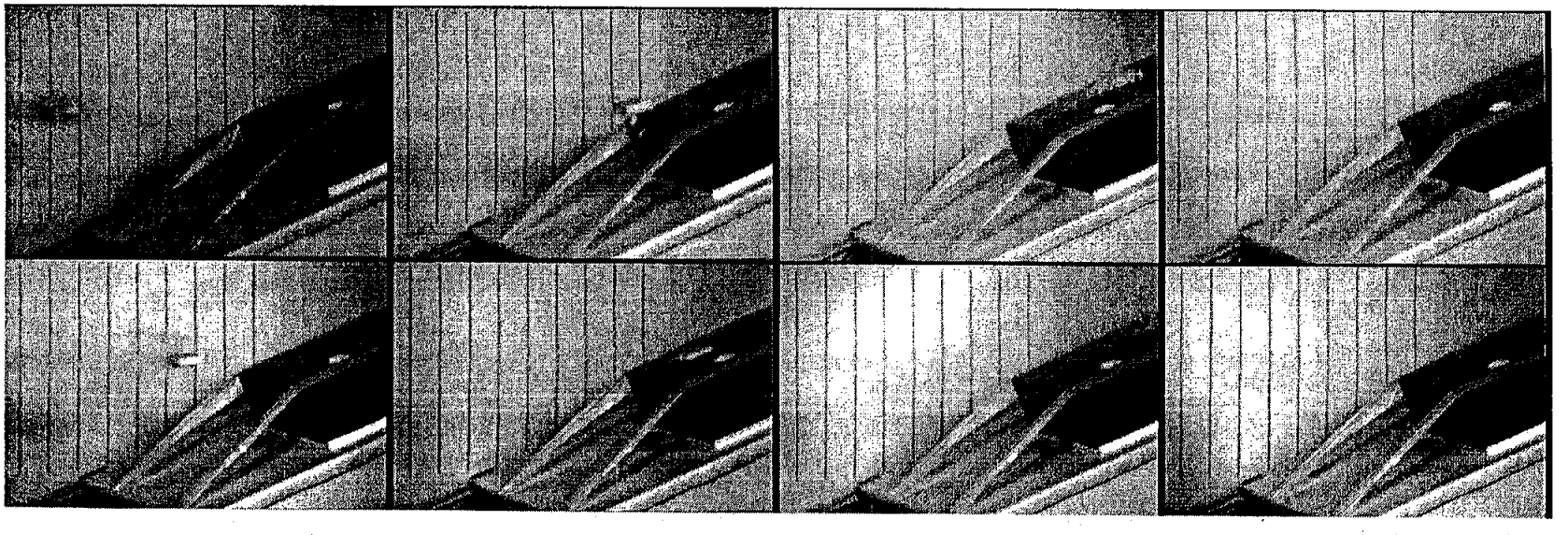

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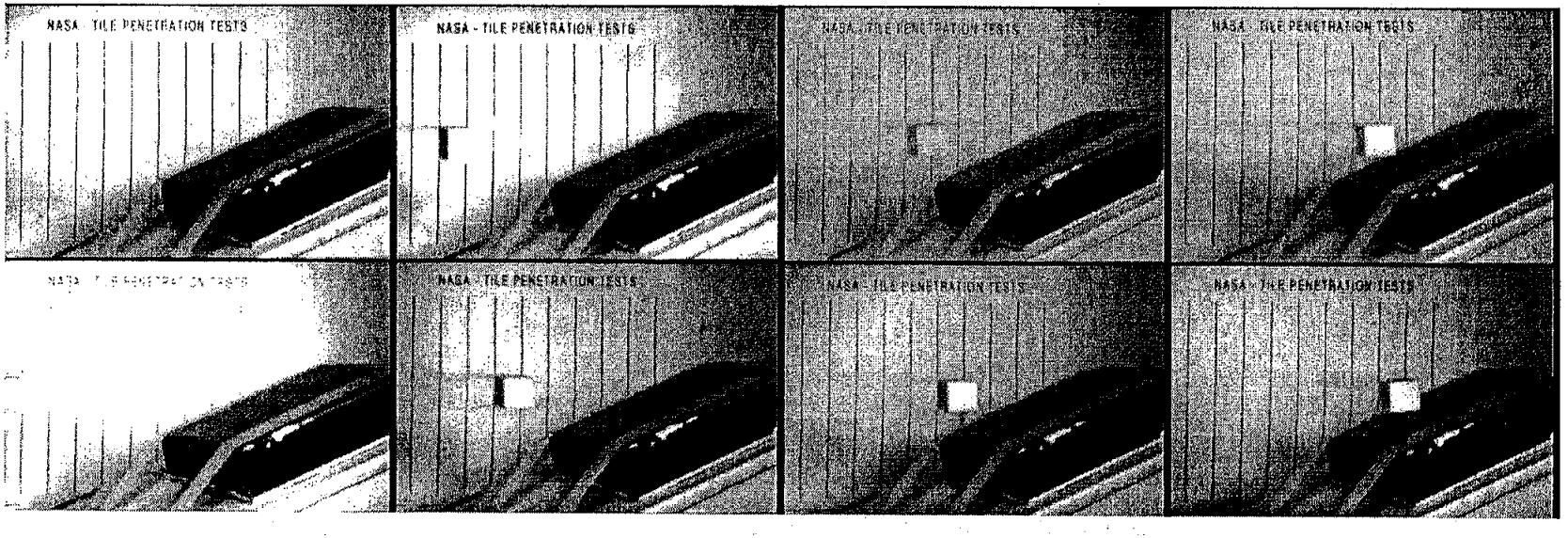
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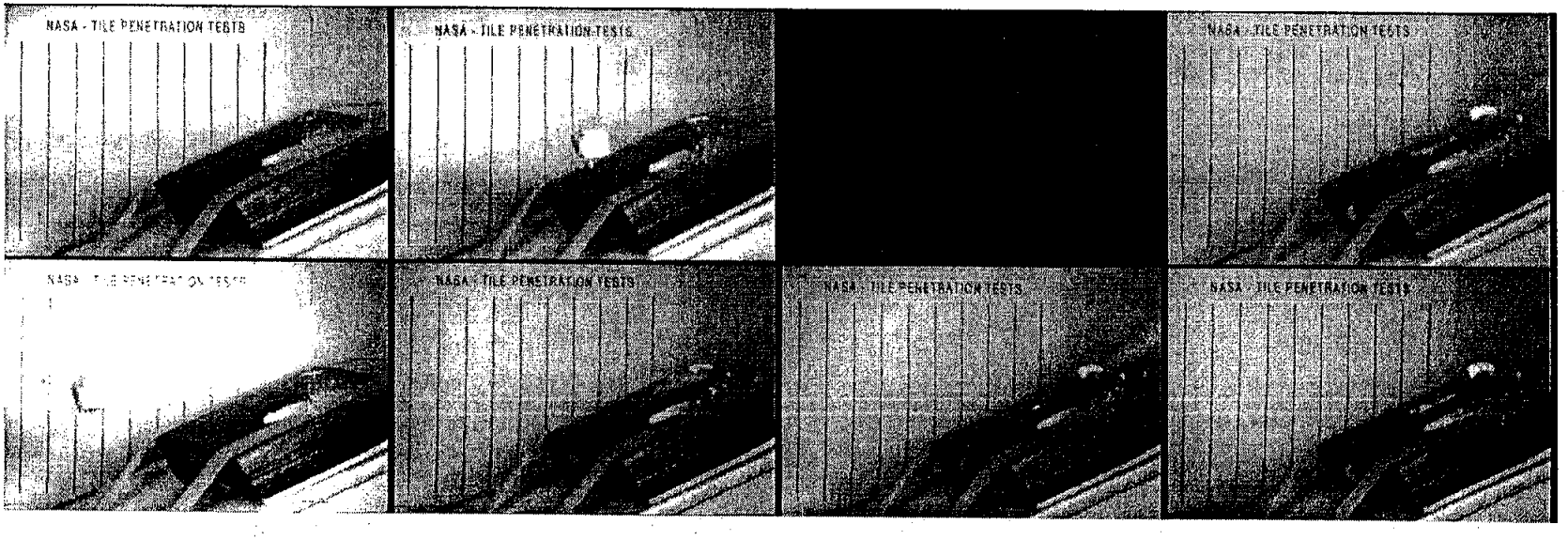
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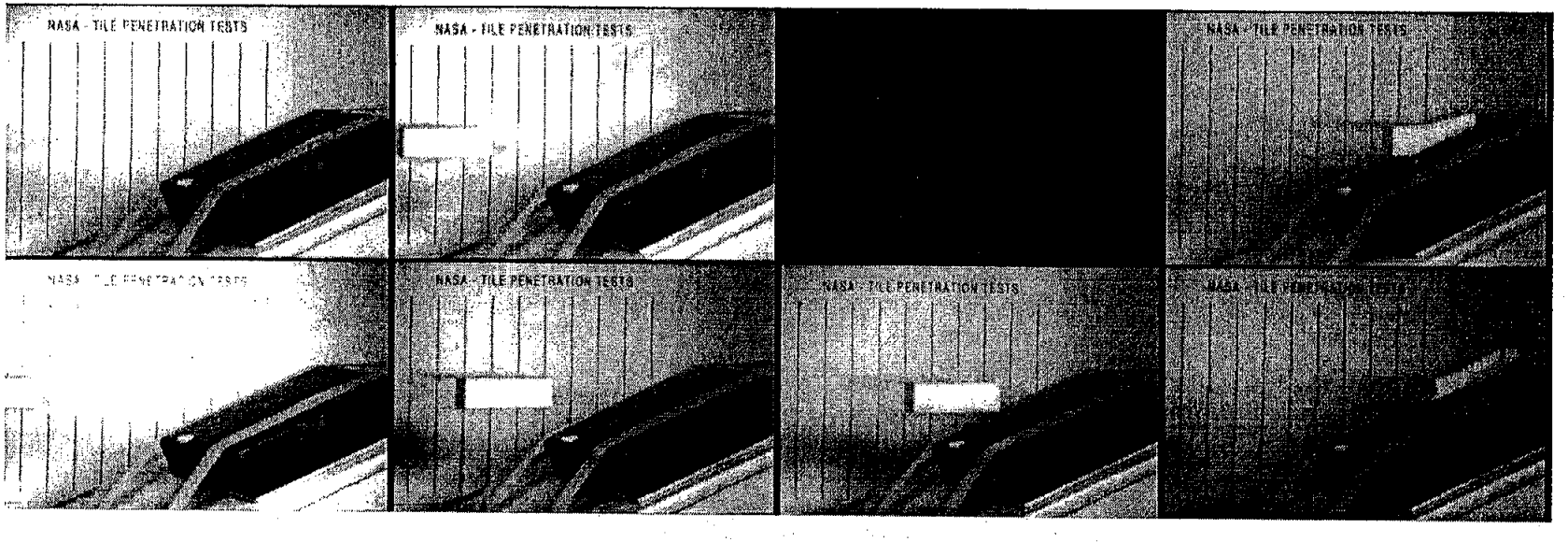
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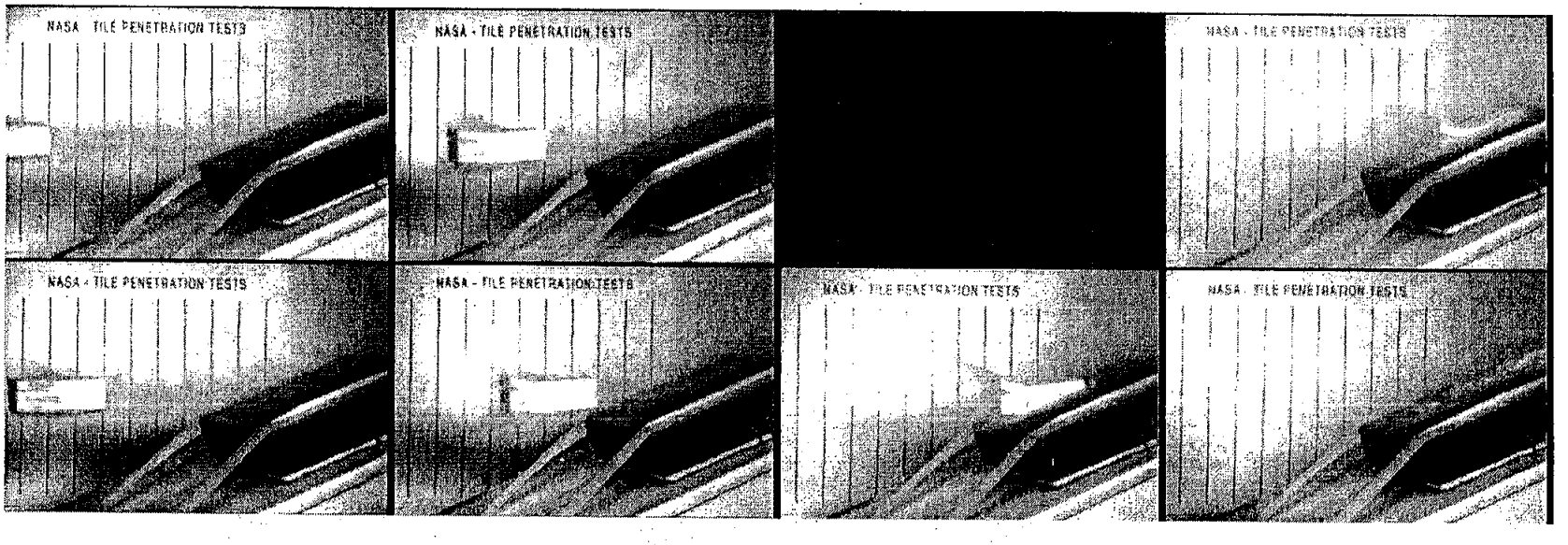
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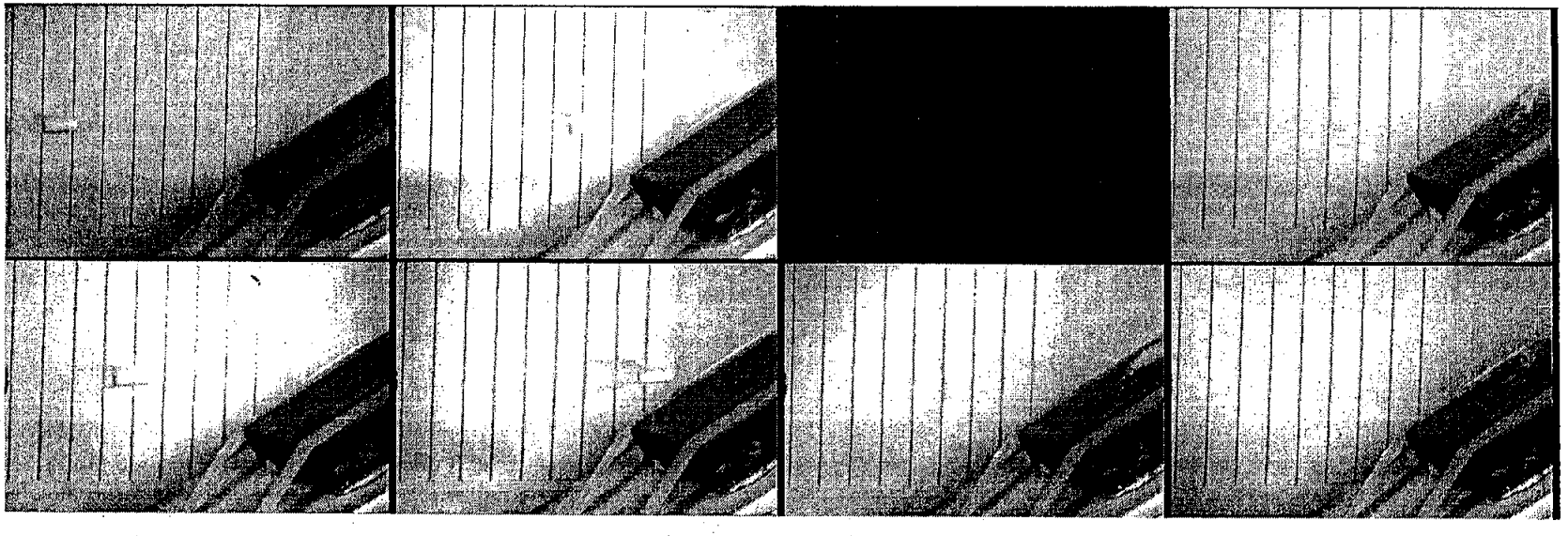
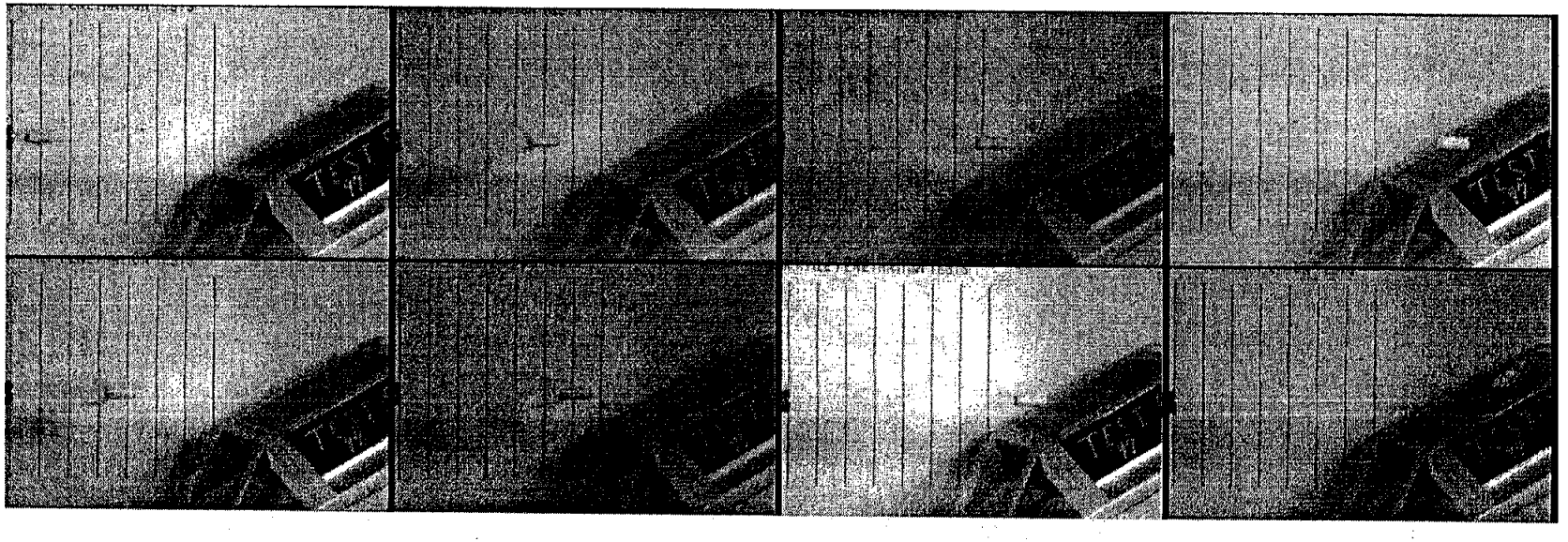
Test No. 94A

Test No. 97



Test No. 98A

Test No. 99B



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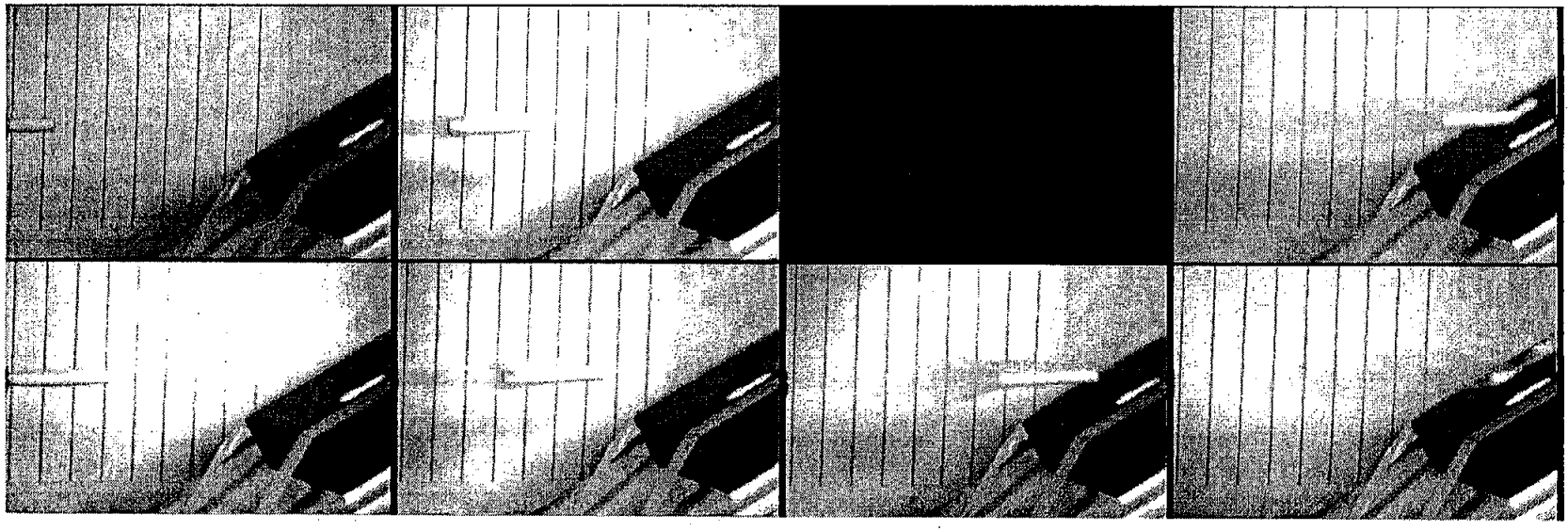

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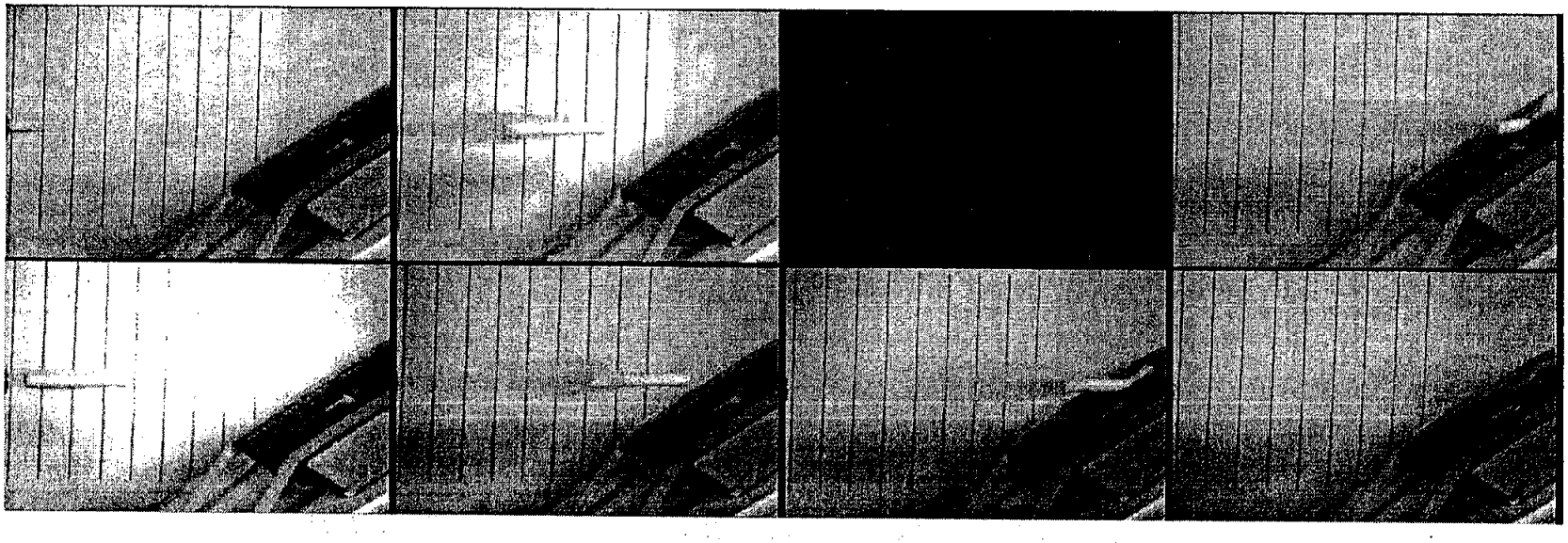

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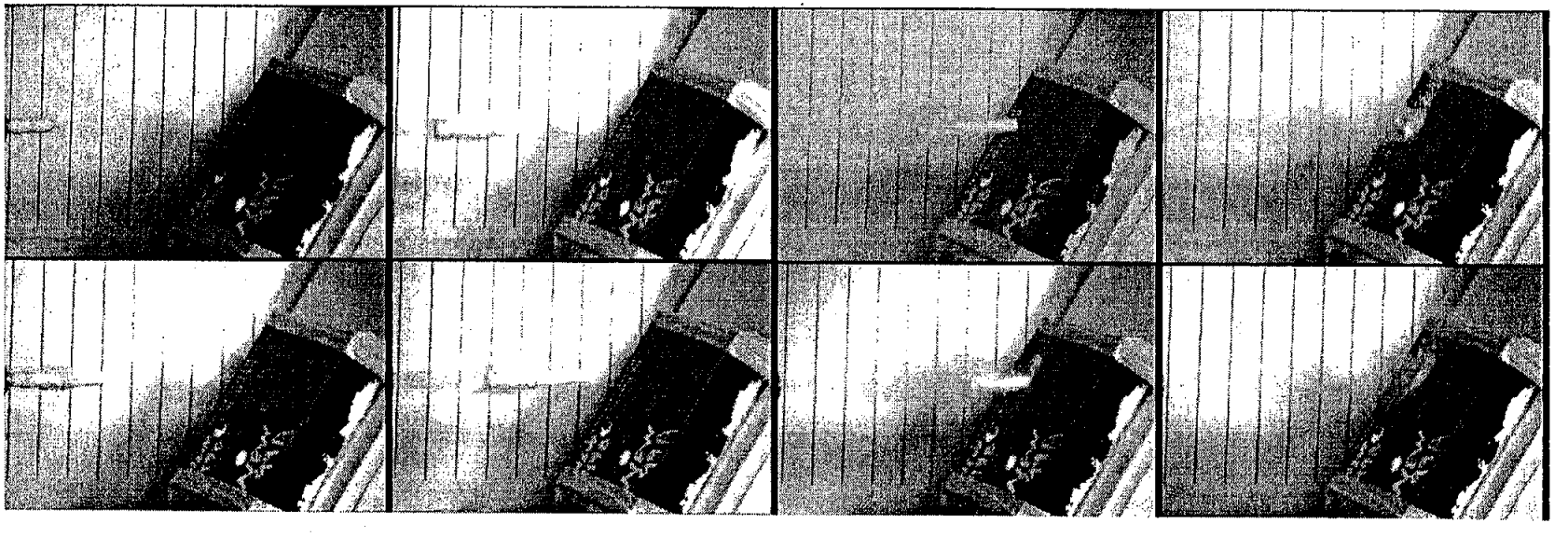

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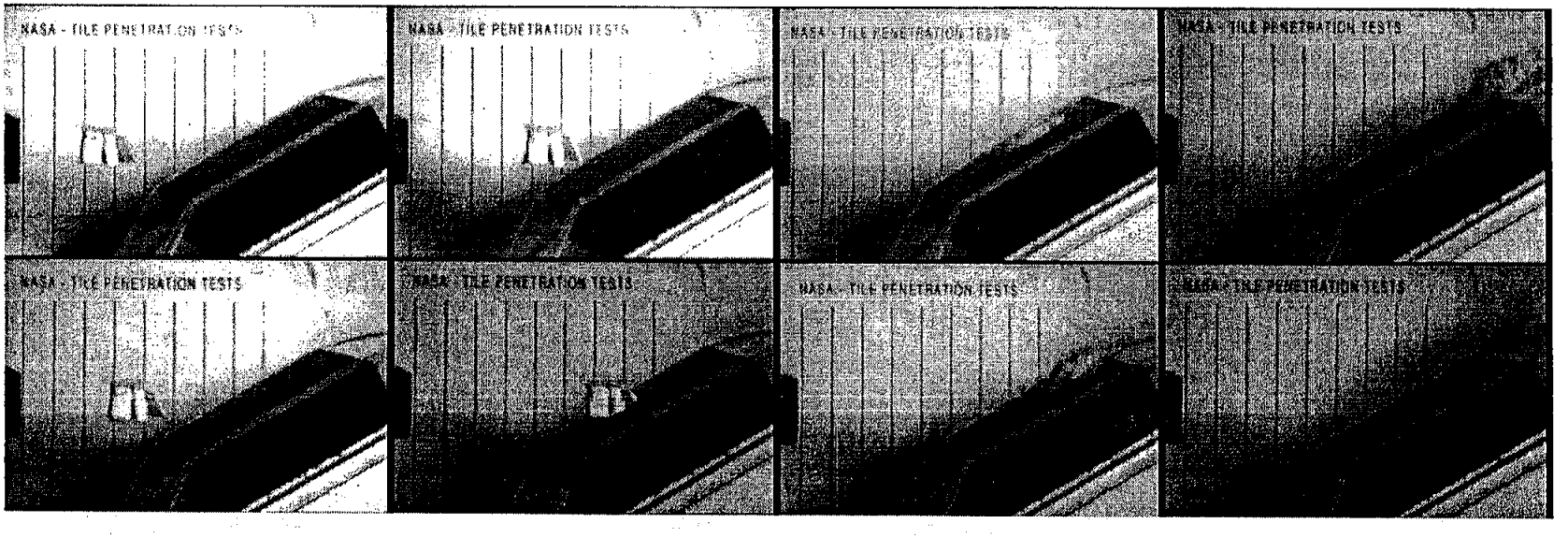

Test No. Tufi-2