

The Benefits of Runway Grooving

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Primary Reasons for Grooving

- Reduce Hydroplaning
- Reduce Stopping Distance
- Provide Greater Aircraft Safety



Grooving's Effect on Braking & Hydroplaning

- Grooves Provide Channels for Water to Escape
- Restores Tire Friction Coefficients on Wet Pavement to Near Dry Pavement Friction Levels
- Increases Braking Coefficient in Wet Conditions



Other Benefits of Grooving

- Helps Eliminate Standing Water/Runway Drainage
- Decreases Stopping Distance in Dry Conditions



Runway Grooving

In the Presence of Water, Totally Worn Aircraft Tires Experience Better Braking on Grooved Pavement than Newly Treaded Tires on Non-Grooved Pavement.



What is Runway Grooving?

Transverse to the Direction of Travel

FAA Standard:

6 mm wide x 6 mm deep x 38 mm c-t-c

Other:

10 mm wide x 10 mm deep x 80 mm c-t-c



Mechanics of Grooving



- Grooving to terminate within three meters of pavement edge
- Transverse to the direction of travel
- Can take place day or night



Factors Affecting Cost

- Type of Material to be Grooved: Concrete or Asphalt
- Type and Size of Surface Course Aggregate (i.e. Limestone, Granite, Basalt, Gravel, etc.)
- Age and Condition of Runway Surface
- Work Window for Grooving
- Dimensions of Area to be Grooved and Overall Size of Project
- Slurry Disposal
- Other Local Factors (fuel costs, support equipment, mobilization costs, etc.)

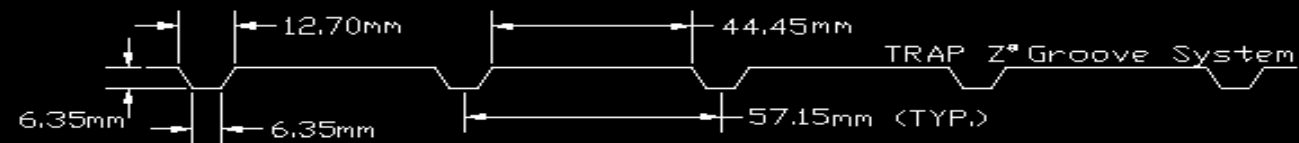


Typical Production Factors

- Type of Material to be Grooved
- Type and Size of Surface Course Aggregate
- Work Window
- Staging Area Location Relative to Runway
- In Concrete - Expect Grooving Production of 190/380 sm to 500/1000 sm per hour
- In Asphalt - Expect Grooving Production of 260/520 sm to 750/1500 sm per hour



Trapezoidal Grooving



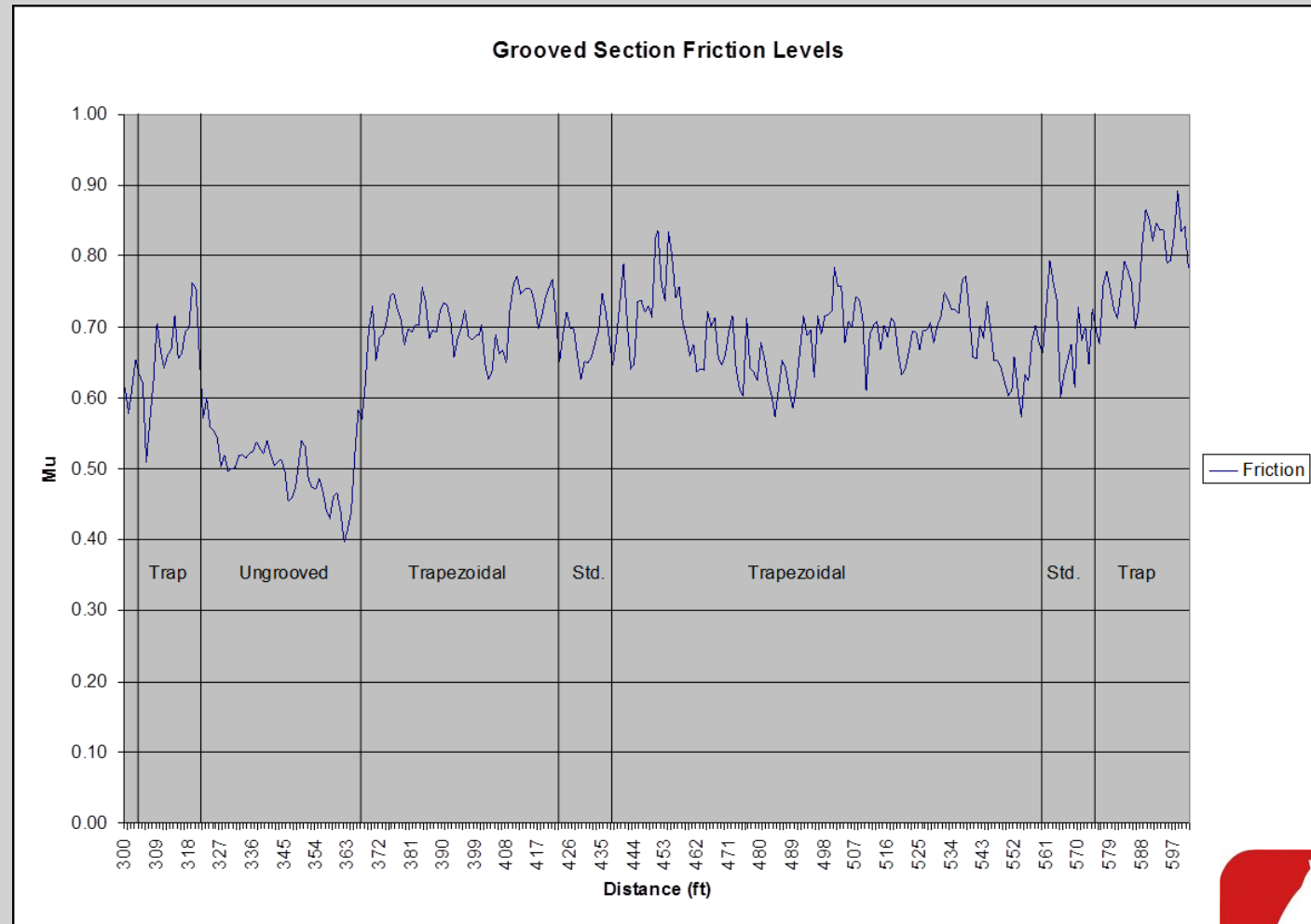
Advantages of Trapezoidal Grooving

- Comparable Coefficient of Friction
- Reduced Tire Wear
- Reduced Rubber Buildup
- Increased Pavement Life
- Reduced Chipping & Closing
- Superior Drainage Capacity



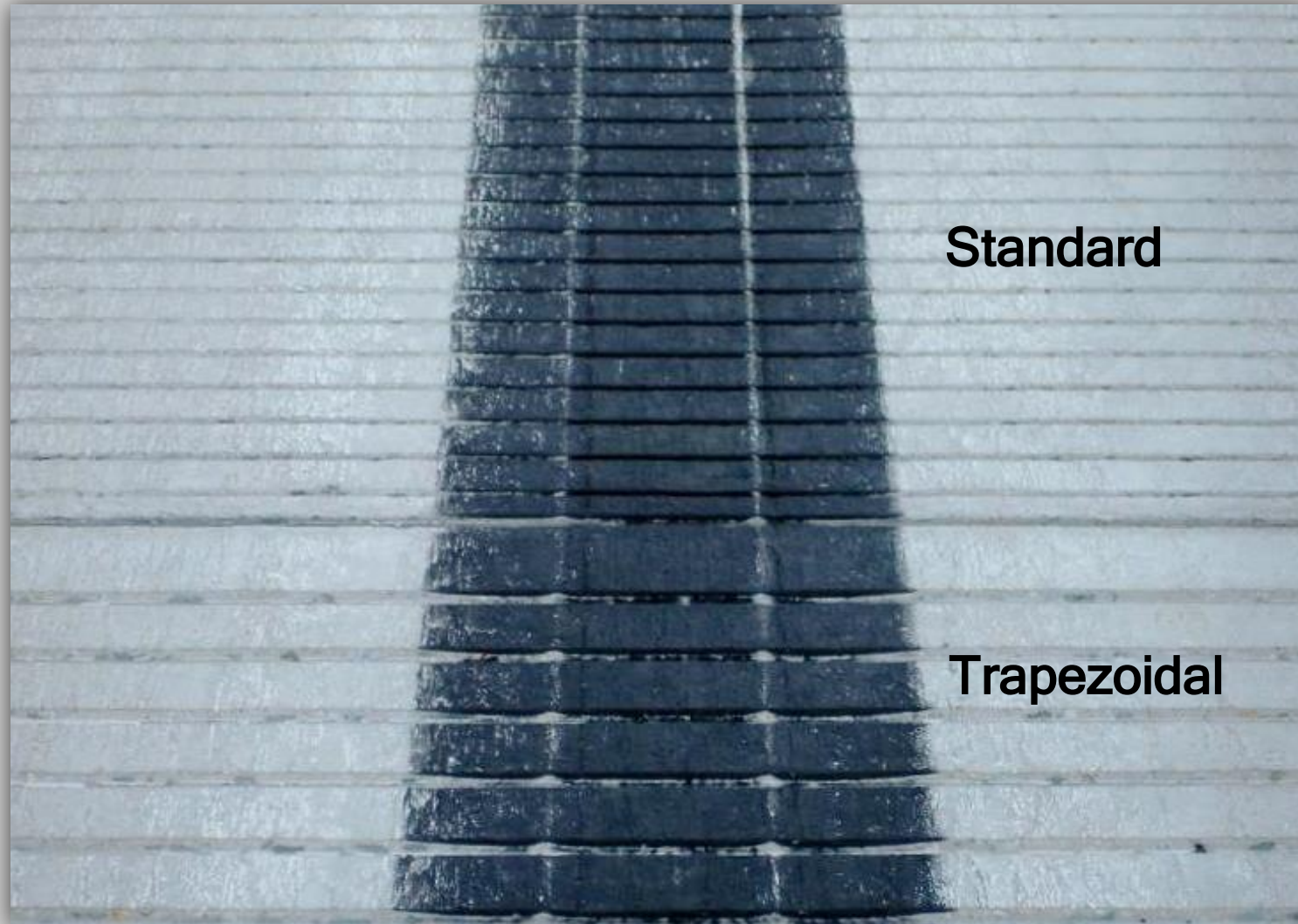
Comparable Coefficient of Friction

Square vs. Trapezoidal Grooving



Reduced Tire Wear

Reduced Rubber Buildup





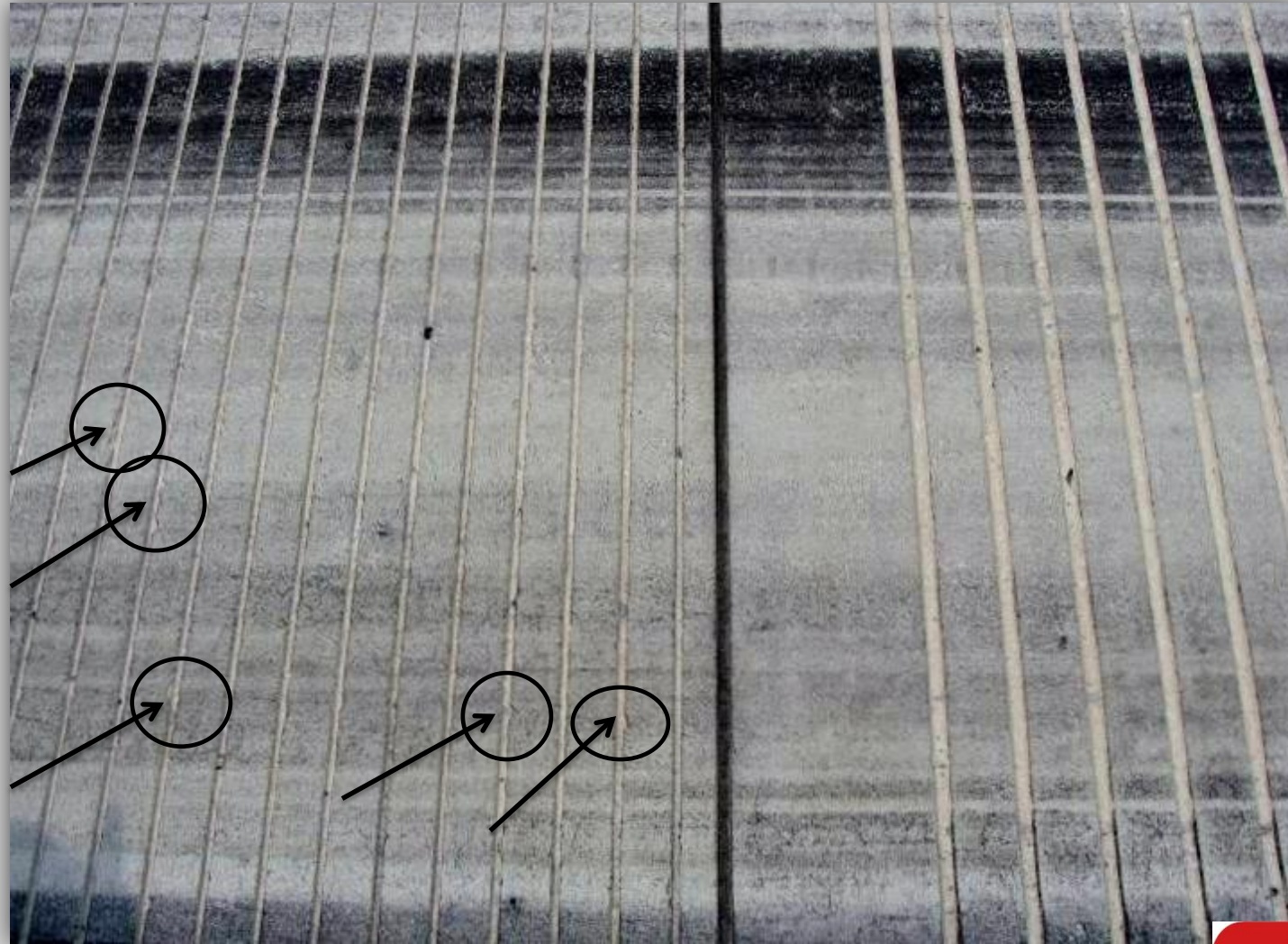
Reduced Tire Wear

Reduced Rubber Buildup



Notice Difference in Rubber on Standard Grooves

Reduced Groove Chipping & Closing



Notice Damage to Edge of Standard Grooves;
No Evidence of Damage on Trapezoidal.



Reduced Groove Chipping & Closing



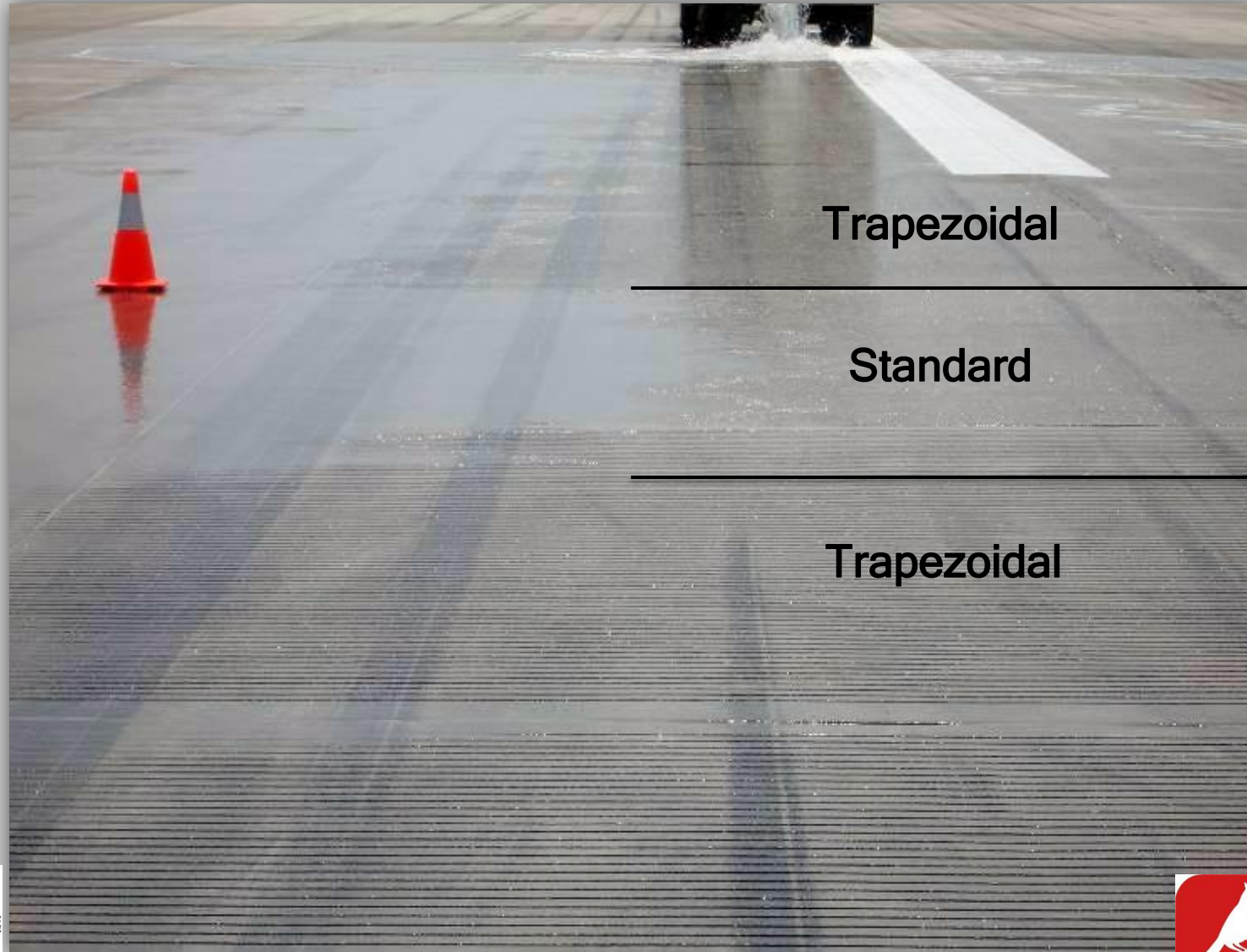
Notice Closure of Standard Grooves Trap closed slightly, but still maintained 'open' shape.



Superior Drainage Capacity



Superior Drainage Capacity



Trapezoidal

Standard

Trapezoidal



Questions

