



Managing and Maintenance of Urgent Repairs While Limiting Operational Disruptions



Presented by Ken Fyvie, Airfield Pavement Specialist

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Introductory Comments to Carefully Consider

- › Airports are complex environments, and procedures and conditions associated with airfield pavement maintenance and repair activities often affect aircraft operations and can jeopardize operational safety
- › Safety considerations are paramount and may make operational impacts unavoidable
- › Careful planning, scheduling, and coordination of construction and maintenance activities can minimize disruption of normal aircraft operations and avoid situations that compromise the airport's operational safety

From [FAA AC 150/5380-6C: Guidelines and Procedures for Maintenance of Airport Pavements](#)

Introductory Comments to Carefully Consider

- › The Airport Operator has overall responsibility for all activities on the airport, including airfield pavement maintenance and repair work
- › The Airport Operator must understand how maintenance and repair activities and aircraft operations affect one another to be able to develop an effective plan to complete the work
- › An effective airfield pavement maintenance and repair Construction Safety and Phasing Plan (CSPP) should be developed for maintenance activities

From FAA AC 150/5380-6C: Guidelines and Procedures for Maintenance of Airport Pavements

Introductory Comments to Carefully Consider

- › The development of the CSPP includes identifying the areas of the airport affected by the work; the impact to normal airport operations, if any, and any temporary changes that are required related to air traffic operations, aircraft rescue and fire fighting (ARFF) or other operations; and how risk will be managed
- › [FAA AC 150/5370-2, Operational Safety on Airports During Construction](#), provides additional information and guidance about safety on airports during construction and maintenance works

From [FAA AC 150/5380-6C: Guidelines and Procedures for Maintenance of Airport Pavements](#), and; [FAA AC 150/5370-2, Operational Safety on Airports During Construction](#)

Be Prepared for the Unplanned and the Unexpected

- › FOD and pavement surface irregularities are a major issue on airfields, and pavement damage/distresses must be corrected quickly and effectively
- › Airport Operations and Maintenance personnel play an important role in identifying FOD issues, and supporting urgent responses while limiting disruptions to ongoing operations
- › A team approach is required to manage and implement effective, emergency repair processes while limiting operational delays and maintaining safe aircraft movements on the airfield
- › A well-developed approach shared among key stakeholders, is needed

Be Prepared for the Unplanned and the Unexpected

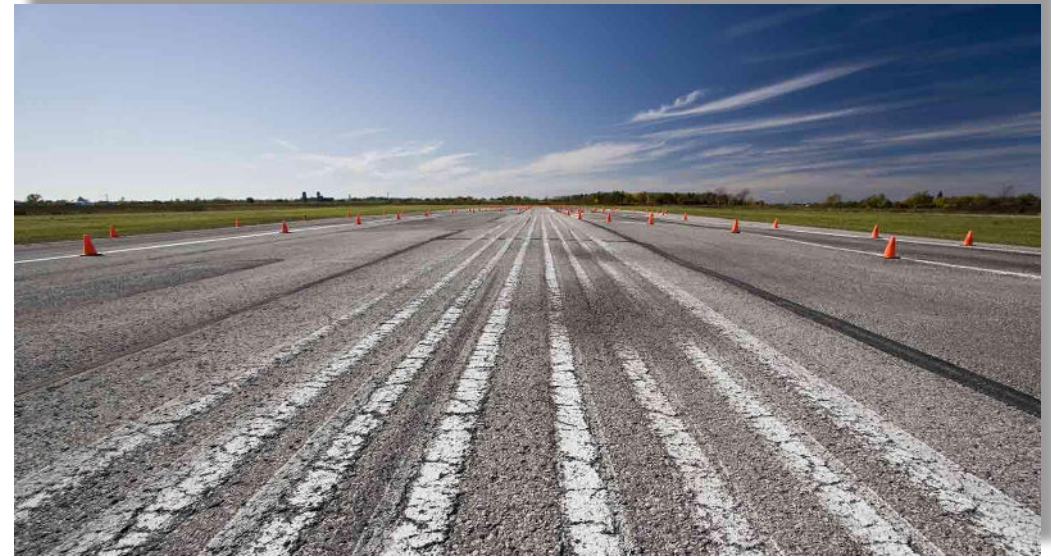


Be Prepared for the Unplanned and the Unexpected



Climate
Change

FOD Damage



Climate Change Impacts



What Can Be Done To Prepare for the Unplanned and Unexpected?

- › Be prepared with an in-house airfield maintenance team and necessary equipment, or secure an On-call Agreement with trusted Contractor/Supplier
- › Develop specifications and details for a variety of repairs for both concrete and asphalt pavements
- › Develop an Airfield Pavement Maintenance Manual in-house or through an experienced and knowledgeable service provider
- › A good start can be made using [FAA AC 150/5380-6C - Guidelines and Procedures for Maintenance of Airport Pavements](https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5380-6C.pdf), adapted to your location, conditions and your airport's proven practices

https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5380-6C.pdf

What Can Be Done To Prepare for the Unplanned and Unexpected?

- › Carry out repair trials for PCC and HMA pavement repairs in non-critical locations; document results with dates/time of day, weather conditions, materials used, costs, photographs, equipment, etc.
- › Document the products you use in trials for urgent pavement repairs, both good and bad, for future reference
- › Take photographs to provide CONTEXT
- › Include date and location of damage and repairs (GIS map?)
- › Track cost of past emergency repairs, with area treated (m^2 or yd^2 , m^3 or yd^3 , lineal metres), and cost for each location/shift. Very useful for future planning and budgeting

https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5380-6C.pdf

Example of an Excel Spreadsheet for Tracking Distresses, Material and Repair Types and Costs

Airfield Pavement Maintenance Manager - YVR, YEG. etc																	
Airfield Location	Initial Distress Observation Date	Distress Type	Photo Reference No.	Pavement type (PCC, AC)	Temp/Permanent Repair	Repair Length (m)	Repair Width (m)	Repair Depth (m)	Repair Area (m ²)	Repair Area Volume (m ³)	Repair Date	Repair Shift (Day/Night)	Photo Reference No.	Repair No.	Repair Material	Repaired By	Repair Method
TWY Alpha	2024-08-15	Alligator	8-15-0001	AC	Permanent	2.5	1.5	0.075	3.75	0.281	2024-08-25	N	8-25-0001	1	YVR Maint Hot Mix A	Co. XYZ	Machines
TWY Alpha	2024-08-15	Alligator	8-15-0002	AC	Temporary	0.5	0.5	0.075	0.25	0.019	2024-08-25	N	8-25-0002	2	Aquapave	YVR staff	Hand
TWY Alpha	2024-08-15	Alligator	8-15-0003	AC	Permanent	2.5	3.5	0.15	8.75	1.313	2024-08-25	N	8-25-0003	3	YVR Maint Hot Mix A	Co. XYZ	Machines
TWY Charlie	2024-08-15	Alligator	8-15-0004	AC	Temporary	1.5	1.5	0.075	2.25	0.169	2024-08-25	N	8-25-0004	4	Aquapave	YVR staff	Hand
TWY Charlie	2024-08-15	Alligator	8-15-0005	AC	Permanent	2	8	0.075	16	1.200	2024-08-25	N	8-25-0005	5	YVR Maint Hot Mix A	Co. XYZ	Machines
Apron I	2024-08-30	Corner Spall	8-30-0001	PCC	Permanent	1	0.5	0.15	0.5	0.075	2024-09-10	N	9-10-0001	1	Transpo T-17	Co. ABC	Hand
Apron II	2024-08-30	Corner Spall	8-30-0002	PCC	Permanent	0.75	0.5	0.15	0.375	0.056	2024-09-10	N	9-10-0002	2	Hi-early 35MPa PCC	Co. ABC	Hand
Apron II	2024-08-30	Joint Spall	8-30-0003	PCC	Permanent	2	1.5	0.15	3	0.450	2024-09-10	N	9-10-0003	3	Hi-early 35MPa PCC	Co. ABC	Hand

Taking Field Photographs – Context is Important (for others)!

- › Take photographs that provide CONTEXT for others, such as Engineers, Project Managers, and Planners (can use Timestamp Camera Basic or Timestamp Camera Enterprise app for smart phones)
- › Timestamp Camera app allows embedding of custom text blocks on photos; date, time, coordinates, compass heading, general location, photographer, remarks
- › Timestamp Camera app can be used to take photos, videos, timelapse
- › Timestamp tabs include Position, Format, Font, Input, Opacity for text inserts
- › Long list of menu settings/customization options

Timestamp Image Examples



What Can Be Done To Prepare for the Unplanned and Unexpected?

- › Document names of parties involved in previous repairs (internal staff, name of outside contractor, key personnel, dates, day or nightshifts, etc.)
- › Ensure Airside Safety Escorts are available (either airport personnel or an experienced and properly certified and qualified external supplier)
- › Prepare and/or use an Airfield Pavement Maintenance Manual

What Can Be Done To Prepare for the Unplanned and Unexpected?



What Can Be Done To Prepare for the Unplanned and Unexpected?

- › Be selective and quality conscious when choosing a contractor for On-Call repair work
- › Choose two or three experienced (airside civil) contractors to provide pricing
- › Select someone you've worked with in the past that resulted in a good experience, was cost effective, efficient and safety minded
- › Don't necessarily select the lowest cost, contractor; thoroughly evaluate each potential contractor

What Can Be Done To Prepare for the Unplanned and Unexpected?

- › Document names of parties involved in previous repairs (internal staff, name of outside contractor/supplier, key personnel, dates, days vs. nights, etc.)
- › Ensure Airside Safety Escorts are available (either airport personnel or an experienced and prequalified outside supplier)
- › Prepare and/or use an Airfield Pavement Maintenance Manual, if available

Some Sources for Content for a Pavement Maintenance Manual



Advisory Circular

Subject: Guidelines and Procedures for Maintenance of Airport Pavements **Date:** 10/10/2014 **AC No:** 150/5380-6C
Initiated by: AAS-100 **Change:**

- 1. Purpose.** This advisory circular (AC) provides guidelines and procedures for maintaining airport pavements.
- 2. Cancellation.** This AC cancels AC 150/5380-6B, Guidelines and Procedures for Maintenance of Airport Pavements, dated September 28, 2007.
- 3. Application.** The guidelines and procedures contained in this AC are recommended by the Federal Aviation Administration (FAA) for the maintenance and minor repairs of airport pavements. This AC offers general guidance for maintenance and is neither binding nor regulatory.

Use of this AC is not mandatory. For major maintenance projects, the airport should utilize plans and specifications developed under the direction of a pavement design engineer.

For all maintenance and repair projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charge (PFC) Program, the airport must use the guidelines and specifications for materials and methods in AC 150/5370-10, Standards for Specifying Construction of Airports. Pavement maintenance discussed in this AC is specific to airfield pavements. Maintenance of airport access roads and other non-aeronautical pavements may typically use state highway standards.

- 4. Principal changes.** The AC contains the following principal changes:
 - a.** Revised and reformatted entire AC.
 - b.** Added paragraph on operational safety on airports during construction in Chapter 1.
 - c.** Simplified Chapter 2. Moved information on friction, drainage, etc., into Chapter 2.
 - d.** Added paragraph on wildlife hazard attractants and mitigation with respect to drainage systems to Chapter 2.
 - e.** Split Table 6-1 into two tables; updated and simplified tables for Quick Guide for Maintenance and Repair of Common Rigid Pavement Surface Problems and Quick Guide for Maintenance and Repair of Common Flexible Pavement Surface problems.



ACRP SYNTHESIS 22

AIRPORT COOPERATIVE RESEARCH PROGRAM

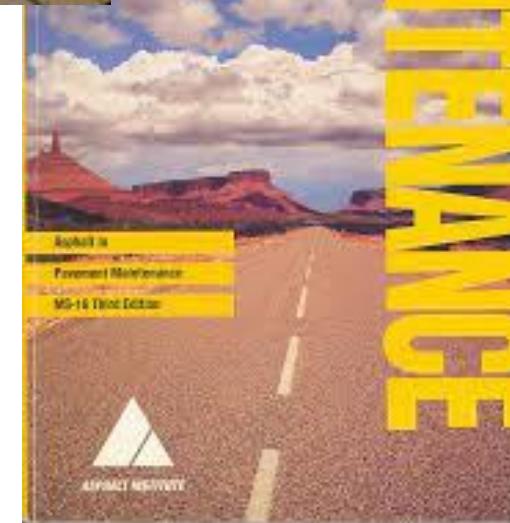
Common Airport Pavement Maintenance Practices



A Synthesis of Airport Practice

TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES

Sponsored by the Federal Aviation Administration



Potential Content for a Pavement Maintenance Manual



Potential Content for a Pavement Maintenance Manual

- › Repair area identification and delineation process (paint or chalk mark)
- › Ensure repair area extends at least 150 mm into **sound**, adjacent pavement
- › Material and specification requirements (adapted to local)
- › Acceptable weather, temperature and surface conditions
- › Pavement repair details for each type of repair/pavement type

Potential Content for a Pavement Maintenance Manual

- › Repair area preparation procedures
- › Repair area equipment needs
- › Repair procedures (for Asphalt Concrete pavements)
- › Repair procedures (for Concrete pavements)

FAA AC 150/5380-6C Excerpts - Example of Repair Procedures

10/10/2014

AC 150/5380-6C
Appendix A

A1. PROCEDURE FOR CRACK REPAIR OF FLEXIBLE PAVEMENT

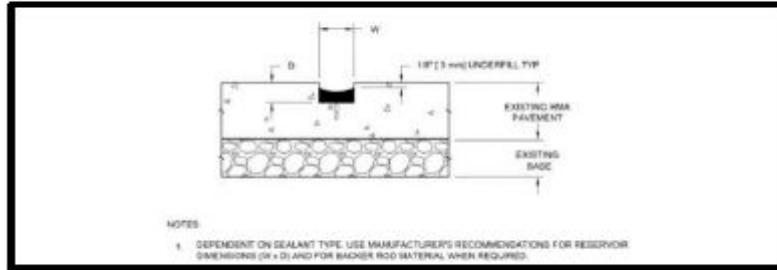


Figure A-1. Crack repair of flexible pavement

WEATHER AND TEMPERATURE REQUIREMENTS

- Do not begin crack repair during inclement weather.
- The pavement temperature should be 50°F (10°C) and rising or meet the manufacturer's recommendations at the time of application of the crack sealing material.
- Do not apply sealant if moisture is observed in the crack.

PREPARATION

To choose sealant:

- Consider your geographic area, climate, and past performance of the sealant
- Hot-applied sealants must meet the requirements of ASTM D6690
- Cold-applied sealants must meet the requirements of ASTM D977

REPAIR PROCEDURE

Use this procedure to repair cracks less than 1 inch (2.5 cm) in width in flexible pavements.

- Review the construction safety and phasing plan (CSPP). Ensure all pavement closures have all required items in place, such as lighted Xs,

- barricades, signs, etc.; and all NOTAMS have been issued for affected areas of the airfield.
- Mark the limits of the area of crack repair.
- Use an air compressor with an operable oil and water trap to clean all cracks with compressed hot air.
- If necessary, saw or rout the cracks to the required width and depth. Use the sealant manufacturer's specifications to determine the sealant reservoir dimensions ($W \times D$).
- Inspect the cracks for proper width, depth, alignment, and preparation. Make sure the crack surface faces are dry.
- To obtain the width and depth ratio required by the sealant manufacturer's specifications may require installation of backer rod. Make sure the backer rod:
 - Meets the requirements of ASTM D5249
 - Is compatible with the sealant
 - Is 25% larger in diameter than the width of the sealant reservoir
- Apply the sealant uniformly from the bottom to the top of the crack avoiding voids or entrapping air.
- Make sure the surface of the sealant remains $\frac{1}{4}$ inch to $\frac{3}{8}$ inch (6 mm to 9 mm) below the existing pavement surface.
- Do not allow traffic until the sealants have cured.
- Completely clean the work area before opening to aircraft traffic.

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10/10/2014

AC 150/5380-6C
Appendix A

A5. FULL DEPTH REPAIR IN RIGID PAVEMENT – CORNER BREAK

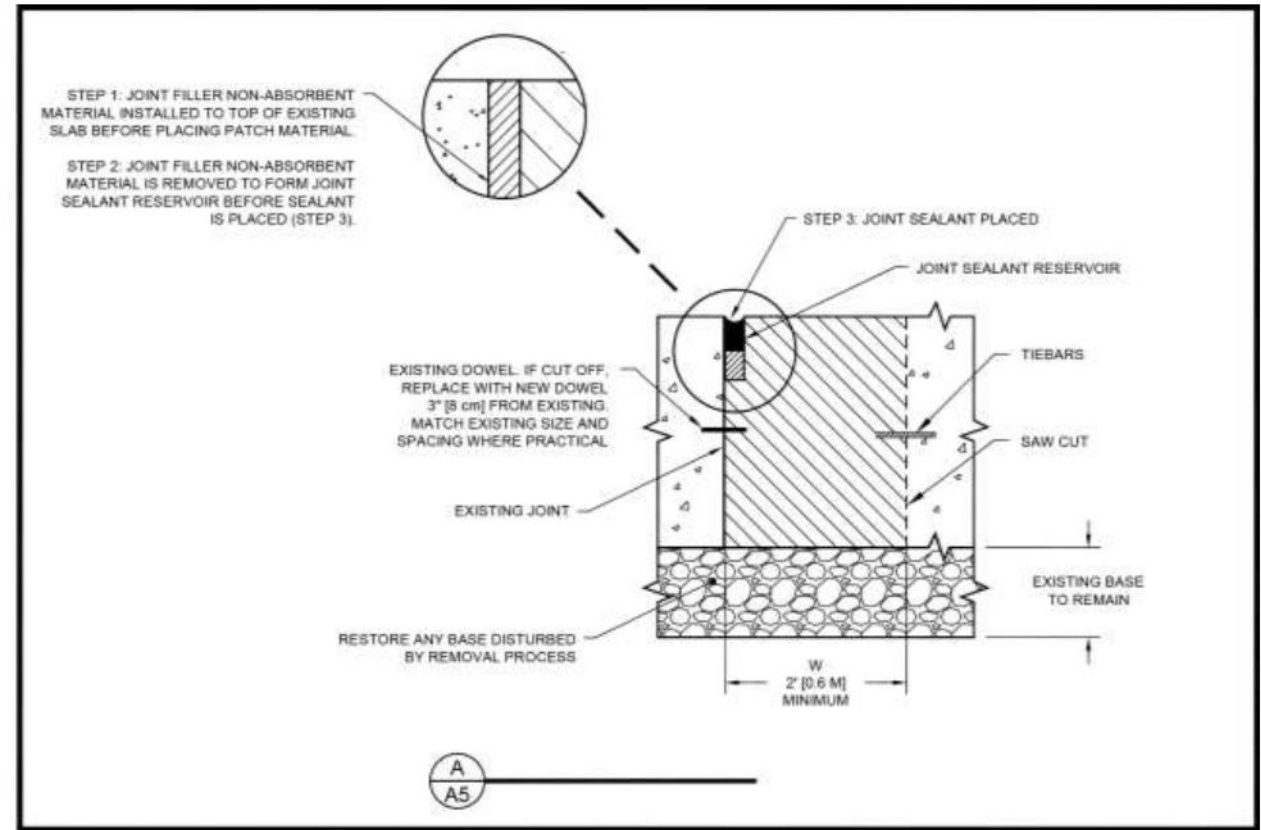


Figure A-5. Full depth repair in rigid pavement – corner break

Example Content for a (Urgent or Planned) Pavement Maintenance Manual

Table of Contents (document is useful for engineering and maintenance)

1.0 INTRODUCTION TO AIRPORT PAVEMENT MAINTENANCE

- › 1.1 General Overview
- › 1.2 The Airport Pavement Management Program (APMP)
- › 1.3 Airfield Pavement Design and Strength Reporting
- › 1.4 Application of the Airfield Pavement Maintenance Manual
- › 1.5 Operational Constraints
- › 1.6 Guidelines, Standards and References

Example Content for a (Urgent or Planned) Pavement Maintenance Manual

Table of Contents (document is useful for engineering and maintenance)

2.0 AIRPORT PAVEMENTS

- › 2.1 Types and Composition of Airfield Pavements
- › 2.2 Drainage of Airfield Pavements
- › 2.3 Pavement Characteristics

3.0 AIRFIELD PAVEMENT MAINTENANCE MANAGEMENT

- › 3.1 Background

Example Content for a (Urgent or Planned) Pavement Maintenance Manual

Table of Contents (document is useful for engineering and maintenance)

4.0 GUIDELINES FOR INSPECTION OF PAVEMENTS

- › 4.1 Introduction to Pavement Inspection
- › 4.2 Inspection Procedures

5.0 AIRFIELD PAVEMENT DISTRESSES

- › 5.1 Types of Pavement Distresses

Example Content for a (Urgent or Planned) Pavement Maintenance Manual

Table of Contents (document is useful for engineering and maintenance)

6.0 MATERIALS AND EQUIPMENT

- › 6.1 General
- › 6.2 Common Materials for Maintenance and Repair
- › 6.3 Equipment for Pavement Maintenance

7.0 AIRFIELD PAVEMENT REPAIR METHODS

- › 7.1 General
- › 7.2 Repair Methods for Flexible (Asphalt) Pavements
- › 7.3 Repair Methods for Rigid (Concrete) Pavements
- › 7.4 Temporary Patching for Rigid Pavements

Example Content for a (Urgent or Planned) Pavement Maintenance Manual

Table of Contents (document is useful for engineering and maintenance)

APPENDIX A

› Repair Procedures

- Outlines procedures for various damage/distress repairs on both flexible and rigid pavements, and includes detail sketches with minimum/maximum dimensions, crack repairs on flexible and rigid pavements, partial and full depth repairs on flexible and rigid pavements, corner breaks, joint spalls, joint sealant
- Includes weather and temperature requirements, preparation, step by step repair procedures, material requirements

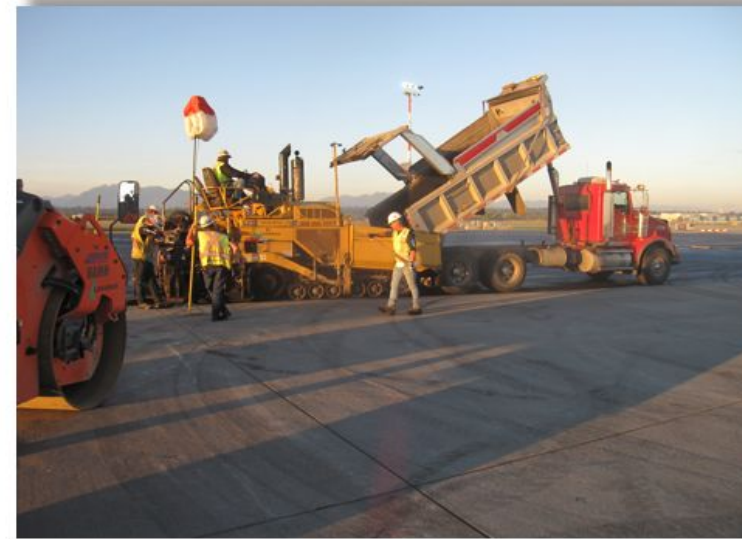
APPENDIX B

› Detailed List of Applicable Guidelines, Standards, and References for Various Distress Repairs

Provide Training Sessions for In-house Maintenance Staff – YVR Example



Asphalt Pavement Maintenance Training Session for YVR Maintenance Personnel – a 2-hour Overview



Presented by Ken Fyvie, Airfield Pavement Specialist
Pavetech Consultants Ltd.

Provide Training Sessions for In-house Maintenance Staff – YVR Example



Concrete Pavement Maintenance Training Session for YVR Maintenance Personnel – a 2-hour Overview



Presented by Ken Fyvie, Airfield Pavement Specialist
Pavetech Consultants Ltd.

Education and Training Resources for Pavement Maintenance and Repairs can include:

- › Federal Aviation Administration (FAA)
- › American Society of Civil Engineers (ASCE)
- › American Concrete Pavement Association (ACPA)
- › American Concrete Institute (ACI)
- › The Asphalt Institute (AI)
- › Portland Cement Association (PCA)
- › Cement Association of Canada (CAC)
- › American Council of Engineering Companies (ACEC)
- › Airport Cooperative Research Program (ACRP)



Education and Training Resources for Pavement Maintenance and Repairs (can include):

- › Regional Technical Associations and Societies, Chapter meetings, Workshops, Conferences
- › National Asphalt Paving Association (NAPA)
- › Canadian Technical Asphalt Association (CTAA)
- › Association of Asphalt Paving Technologists (AAPT)
- › Strategic Highway Research Program (SHRP)
- › Transportation Research Board (TRB)
- › Canadian Society for Civil Engineering (CSCE)



Identifying Distresses (standardizing terminology)


- › Refer to examples included in [ASTM D5340](#) (latest version is 2023) [Standard Test Method for Airport Pavement Condition Index Surveys](#)
- › Refer to examples included in [PAVER™](#) Reference booklet for [Asphalt Concrete Distresses](#)
- › Refer to examples included in [PAVER™](#) Reference booklet for [Concrete Pavement Distresses](#)
- › Use examples included in [PAVER™](#) Reference booklet for [Asphalt Surfaced Roads and Parking Lots](#) [ASTM D6433](#) (latest version is 2020) [Standard Practice for Roads and Parking Lots](#)

Distress Identification Guidance

ASPHALT SURFACED AIRFIELDS



PAVER™ DISTRESS IDENTIFICATION MANUAL

DEVELOPED BY:

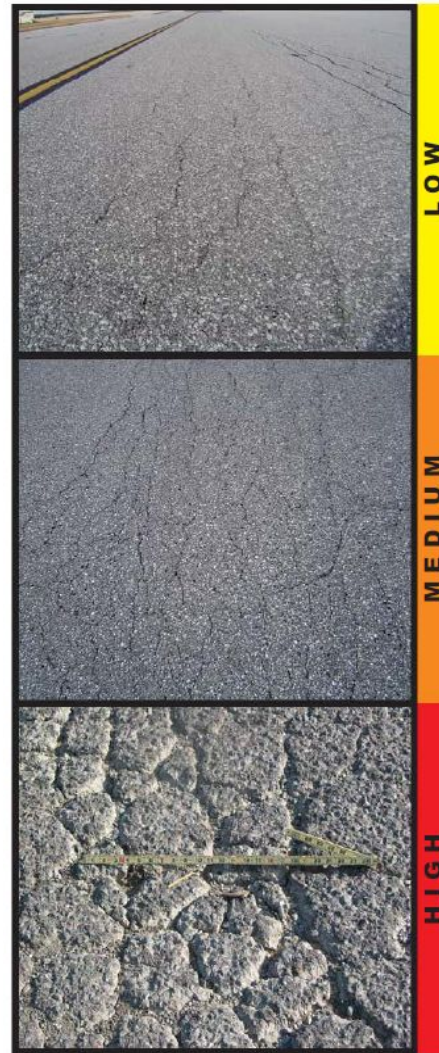


US ARMY CORPS OF ENGINEERS
ERDC-CERL

SPONSORED BY:

Saved to this PC



LOW
MEDIUM
HIGH


41 ALLIGATOR

7

CONCRETE SURFACED AIRFIELDS



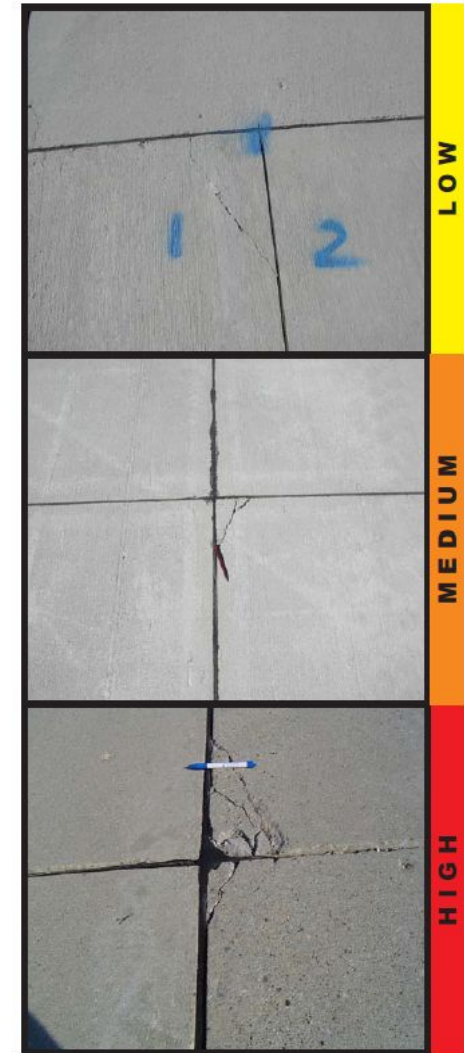
PAVER™ DISTRESS IDENTIFICATION MANUAL

DEVELOPED BY:



US ARMY CORPS OF ENGINEERS
ERDC-CERL

SPONSORED BY:

LOW
MEDIUM
HIGH

75 SPALLING, CORNER

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Steps for Urgent Airfield Pavement Maintenance and Repairs



If you see FOD, remove it!

Damage to aircraft, equipment, property or injury to personnel caused by Foreign Object Debris (FOD) is not only a serious threat to safety, but continues to create costs to operators in direct losses resulting from aircraft and equipment being out of service.

FOD may result from failure to properly clean an area and account for removed objects such as: nuts, bolts, paper, plastic, drink containers/cups/cans, rags, pavement fragments, baggage components or tags, aircraft waste, catering equipment etc...

 Airport College.com

www.airportcollege.com

Outline of Steps for Urgent Pavement Maintenance and Repairs

- › It Is Not 'One Size Fits All'
- › Determine: 1) Airport Classification 2) Climatic zone 3) Distress type 4) Treatment Options¹
- › Determine repair area dimensions and necessary repair depth, area/length, width and volume
- › Collaborate with Airport Engineering, Airport Operations Lead and Airside Security Escort management
- › Is a detailed plan needed to undertake the urgent short-term, or a permanent repair?

¹ [ACRP-09-11-Field-Guide
acrp-pavement-tool.tti.tamu.edu](https://www.acrp-pavement-tool.tti.tamu.edu)



Outline of Steps for Urgent Pavement Maintenance and Repairs

- › Can repair be initiated immediately with a temporary closure and aircraft rerouted?
- › Is a location-specific construction safety and phasing plan (CSPP) required?
- › Can refer to [ACRP Field Guide for Airport Pavement Maintenance Recommendation Tool](#) (¹ ACRP 09-11, March 2016) for a step-by-step guide (153 pages)

ACRP = Airport Cooperative Research Program

¹ [ACRP-09-11-Field-Guide
acrp-pavement-tool.tti.tamu.edu](https://www.acrp-pavement-tool.tti.tamu.edu)



Outline of Steps for Urgent Pavement Maintenance and Repairs

- › Assess urgency of repair
- › Obtain Engineering and Senior Maintenance staff review and guidance
- › Review and assess location to determine operational impact of urgent repair
- › Try/support others in determining root cause of distress/damage
- › Verify pavement type - PCC, AC, composite



Outline of Steps for Urgent Pavement Maintenance and Repairs

- › Determine if an **urgent temporary** repair is needed due to high use/criticality of pavement location
- › If an Airport On-call contractor is involved, review distresses on-site obtain and share photographs with senior personnel
- › Obtain contractor/supplier input in material options and in the selection of potential repair materials and installation methods
- › Is repair in high load/heavy aircraft, wheel-path; at a heavy use gate with slow moving or standing traffic?



Outline of Steps for Urgent Pavement Maintenance and Repairs

- › Can Gate/location be closed for a limited time period? If yes, for how long?
- › Consider material best suited for a rapid repair; fast setting concrete/chemical action mortar; cooling/stabilization time for hot mix asphalt; what is traffic-ready timeframe?
- › Are mix requirements/specifications readily available and applicable?
- › Establish and agree on material performance requirements (spec)
- › May arrange for demos of product and installation (supplier rep?)



Distress Types, Extent and Severity - Asphalt Pavement per ACRP 09-11 Guide (excerpt)

For each area of analysis, select the combinations of distress type, extent, and severity found in that area:

Distress Type and Extent		Severity	
Few Longitudinal Cracks or Joints	Low Severity	Medium Severity	High Severity
Many Longitudinal Cracks	Low Severity	Medium Severity	High Severity
A Few Edge Cracks	Low Severity	Medium Severity	High Severity
Transverse Cracks 50 Ft Apart	Low Severity	Medium Severity	High Severity
Transverse Cracks 20 Ft Apart	Low Severity	Medium Severity	High Severity
Block Cracking	Low Severity	Medium Severity	High Severity
Reflection Cracking	Low Severity	Medium Severity	High Severity
Fatigue Cracking- 10% Of Area	Low Severity	Medium Severity	High Severity
Fatigue Cracking- 30%	Low Severity	Medium Severity	High Severity
Starting to Weather	Low Severity		
Definitely Weathering		Medium Severity	
Starting to Ravel	Low Severity		
Definitely Raveling		Medium Severity	
Patching- 10% of Area	Low Severity	Medium Severity	High Severity
Patching- 30% of Area	Low Severity	Medium Severity	High Severity
Roughness	Long Wavelength Swells	Many Long Wavelength Swells	Many Short Wavelength Bumps

Distress Types, Extent and Severity - Concrete Pavement per ACRP 09-11 Guide (excerpt)

For each area of analysis, select the combinations of distress type, extent, and severity found in that area:

Distress Type and Extent		Severity		
Joint Seal Damage	None	Low Severity	Medium Severity	High Severity
Joint and Corner Spalls		Low Severity	Medium Severity	High Severity
Mid-Panel Cracks, 20% of slabs		Low Severity	Medium Severity	High Severity
Mid-Panel Cracks, 40% of slabs		Low Severity	Medium Severity	High Severity
Corner Breaks, 10% of slabs		Low Severity	Medium Severity	High Severity
Corner Breaks, 30% of slabs		Low Severity	Medium Severity	High Severity
Shattered Slabs, 10% of slabs		Low Severity	Medium Severity	High Severity
Shattered Slabs, 30% of slabs		Low Severity	Medium Severity	High Severity
Patches, 30% of slabs		Low Severity	Medium Severity	High Severity
Patches, 50% of slabs		Low Severity	Medium Severity	High Severity
Faulting, 10% of slabs		Low Severity	Medium Severity	High Severity
Faulting, 30% of slabs		Low Severity	Medium Severity	High Severity

Treatment Example - Concrete Pavements per ACRP 09-11 Guide (excerpt)

Step 4. Determine Treatment

Using either asphalt or concrete pavement treatment tables, and previously identified airport classification, climatic zone, distress type-extent-severity, select the appropriate recommended and acceptable treatment. For all treatments except sealing and patching, it is recommended that a professional engineering firm with airport experience be engaged.

Example:

Airport Classification: Local
Climatic Zone: Dry-Freeze
Pavement Type: Concrete
Distress Type: Corner Breaks, 30% of slabs, Medium severity =

Recommended: Full-depth repair (local)

Acceptable: Crack/joint seal

If there are additional distress types, repeat step 4. For each distress combination, select the preferred treatment. A facility might select the acceptable treatment instead of the recommended treatment for many reasons, such as local contractors, availability of material, the time to complete the treatment, initial cost, etc.

Once the chosen treatment for each distress combination has been identified, the asphalt or concrete pavement treatment hierarchy table is consulted to determine whether a single treatment or multiple treatments should be performed. For example, if one combination suggested a fog seal and the other combination suggested an overlay, only the overlay would be performed. However, if the second combination suggested a crack seal, both would be performed.

Introduction	Step 4: Determine Treatment	Asphalt Pavement Treatment Tables	Asphalt Maintenance Treatment Hierarchy	Concrete Pavement Treatment Tables	Concrete Maintenance Treatment Hierarchy	 49
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ACRP Report 159 Pavement Maintenance Guidelines for General Aviation Airport Management (2016)

ACRP Report 159 (Project 09-11): Pavement Maintenance Guidelines for General Aviation Airport Management provides guidance to general aviation airport managers in determining the most cost-efficient and appropriate preventative maintenance solution to common pavement issues. In addition to the guidebook, two additional products were developed (83 pages).

The Airport Pavement Maintenance Recommendation Tool ([available at http://acrppavement-tool.tti.tamu.edu](http://acrppavement-tool.tti.tamu.edu)) is an interactive tool that will assist the user in identifying pavement issues and make appropriate recommendations. The [Field Guide for the Airport Pavement Maintenance Recommendation Tool](#) is intended to assist in identifying the specific pavement issues while in the field.

Federal Aviation Administration - Airports Division, FAA Central Region

[Recommended Outline for]

Developing a Pavement Maintenance Program (Validated August 2014)

[a basic outline only, 6 pages]

We are providing this guidance to assist an airport Sponsor with developing an effective pavement maintenance program (PMP) for their airport. This guide **does not** provide a complete program the Sponsor can immediately apply to their airport. This Sponsor may use this information to develop their airport specific PMP. Larger facilities will likely require a more extensive program to ensure proper tracking of the maintenance data.

Each airport should customize the collected information to best fit the needs, conditions, and resources of the airport. This information should allow an airport to develop an initial program that can evolve over time. As with all successful endeavors, the maintenance program must be provided with sufficient resources and commitment if it is to succeed.

[Pavement-maintenance-program-development, PDF, \(www.faa.gov\)](https://www.faa.gov/pavement-maintenance-program-development)

Q & A and Discussion





Ken Fyvie, CTech, Airfield Pavement Specialist/Principal

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