



PennDOT Email to NTSB April 14, 2023

Pittsburgh, PA

HWY22MH003

(4 pages)

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: [External] Question related to PennDOT Publication 100A
Date: Friday, April 14, 2023 7:55:18 AM
Attachments: [REDACTED]

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Good morning Steve,

The 2007 edition of Publication 100A only had the three examples shown below for a P0:

Priority Code Rating of 0:

- Severe scour or undermined substructure foundation
- Fractured primary member due to fatigue or vehicle damage
- Missing load posting or vertical clearance signs (includes advance signs)

In 2009, we introduced the FCM maintenance item (see below). In general, the 2007 edition had very basic examples overall and the 2009 Edition is when we went to the current format with very detailed examples.

TIMBER:	62-A744601 - Stringer(Rep/Repl)
STEEL:	25-A744602 - Stringer(Rep/Repl)
	50-B744602 - Floorbeam(Rep/Repl)
	49-C744602 - Girder(Repair)
REINF. CONC. /	
PRESTRESSED CONC.:	42-A744603 - Stringer(Rep/Repl)
TRUSS:	36-A744701 - Members (Strengthen/Rep/Repl)
	82-B744701 - Portal (Modify)

9. **Fracture Critical Members (FCM):**

- a. **Impact Damage:** Impact damage that results in gouging or tearing of FCM components in tension. Since gouging/tearing are considered locations of stress risers and crack initiation points in a tension member, unexpected fracture could result.
- b. **Direct Stress Cracks :** Direct stress cracks are those in the base metal or weld materials that are perpendicular to the tensile stress carried by the member. Use Priority code 1 if supported by a structural evaluation. FCM examples include, but are not limited to:
 - Truss members in direct tension or reversible tension/compression including welded or riveted members, eyebars and loop rods
 - Tension zones of gusset plates connecting FCMs
 - Tension component or tension zone of a girder, cross girder, steel pier cap or floorbeam
- c. **Severe Corrosion:** Holes due to corrosion in FCM girder flanges, webs or in truss members.
- d. **Cracks Parallel to Stress in FCMs:** Initial cracking found in the tension zone of FCMs that is oriented parallel to the primary stress carried by the member. This type of cracking may be the result of out-of-plane distortion, bi-axial restraint or poor weld details, and could suddenly change direction under service conditions without mitigation, and become more serious.

If you have any other questions, please let me know.

Thanks,
Rich

Richard W. Runyen, P.E. | Director
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From: Prouty Steven [REDACTED]
Sent: Thursday, April 13, 2023 7:34 AM
To: Runyen, Richard W [REDACTED]
Cc: Collins Dennis [REDACTED] Walsh Daniel [REDACTED] Buck, Jonathan (FHWA)
[REDACTED]
Subject: [External] Question related to PennDOT Publication 100A

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Hi Rich -

I hope you are doing well.

I have a couple of questions about PennDOT's Publication 100A that I am hoping you can help me with. In the 2019 version of Pub. 100A, a priority code - 0 example for FCMs is provided on page 3-333 (item 9 c - Severe Corrosion in Fracture Critical Members) indicating that: "Holes due to corrosion in FCM girder flanges, webs or in truss members" would be an example of a finding that should be a priority code - 0.

My questions are:

- Which previous versions, if any, of Publication 100A included 'holes due to corrosion in FCM girder flanges webs, or in truss members' as an example of a priority code - 0?
- What was the date on which the earliest version of Publication 100A that contained 'holes due to corrosion in FCM girder flanges, webs or in truss members' as an example of a priority code - 0, went into effect? If the effective date is not available, knowing at least the year should be sufficient.

Thanks,
Steve



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