

ASSISTANT RESIDENT ENGINEER'S DAILY REPORT

CEM 4601 (REV 4/1999) CT# 7541-3504-6

JOB STAMP

04-0120F4

04-SF-80-13.2/13.9

SF0BB-SAS

Report No. 923

Date 6/23/09

S M T W T F S Circle Day

Shift Hours Start 0700 Stop 1530

Actual Hours Worked 0700-1600 in the field.

ASSISTANT RESIDENT ENGINEER'S DAILY CCO 115 Dacromet Coated Fastener Assemblies REPORT

Location & Description of Operation Testing at bolt testing conex in Pier 7 Warehouse.

Start @ 0700 with setting up program for laptop computer that runs the HT 4000 Skidmore.

0810: test run with M22 M.G. assembly. 0825: test run with a second M22 M.G. assembly.

ABF engineer Daniel Hester present part time all day.

ABF engineer Levi Gatos present ~ 2 hrs. (0800-1000)

Rob Bonsta (LeJeune) & Salm Brahimi (IBECA) run tests.

EQUIPMENT AND / OR LABOR:

EQPT. NO.	NO. PERSONS	DESCRIPTION (Of Equipment or Labor)	HOURS - ITEM NO.							REMARKS (Reason for idleness or other remarks)
			1	2	3	4	5	6	7	
000612		Skidmore HT 4000	8							
		Compressor		1/2						
	1	Ironworker - App. <u>Serina Lafleur</u>		1/2						Serina Lafleur
		Skidmore MS		1/2						

After 0900, ABF safety staff use compressor, Skidmore, and ironworker to run up a Dacromet coated fastener assembly with an impact gun to check amount of Dacromet that flakes off. This is item work.

Signature Curve Testing of lots 1B (4ea.), 1A (3ea.), 1C (3ea.), 1D (3ea.), 1E (3ea.), 2B (5ea.), 2C (5ea.), 2D (5ea.), 2E (6ea.), 35C (3ea.), 36A (3ea.), 36B (3ea.), 36C (3ea.), 36D (3ea.), 15B (3ea.), 15C (3ea.), 15D (4ea.), 15E (3ea.), 16B (5ea.), 16C (5ea.), 16D (5ea.), 16E (5ea.), 49C (1ea.), 50A (3ea.), 50B (3ea.), 50C (3ea.), 50D (3ea.). 97 Signature Curves. Last test @ 1555.

See Attached email for additional info on the testing.

PRINT NAME: Bob Brignano SIGNATURE: [Signature] TITLE: TE

Bob
Brignano/D04/Caltrans/CAGov
06/23/2009 06:27 PM

To Mark Woods/D04/Caltrans/CAGov@DOT, Mohammad
Awal/D04/Caltrans/CAGov@DOT, Saman
Soheilifard/D04/Caltrans/CAGov@DOT, Douglas
Wright/D04/Caltrans/CAGov@DOT, Doug
Coe/D04/Caltrans/CAGov@DOT, Kannu
Balan/D03/Caltrans/CAGov@DOT, Ken
Lee/D04/Caltrans/CAGov@DOT, Brian
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cc

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Subject Dacromet Testing - Day 1

Attached in the below email is the spreadsheet from LeJeune listing out all of the different samples we have. The "Test Number" labels are what we are using to track the tests. The Skidmore is hooked up to a computer and we have separate files for each "Test Number". Attached in this email is a scan of the spreadsheet with notes on how many assemblies we tested today for signature curves.

Today's testing started out with some experimenting with the computer controls and output. Also, the ABF safety staff got an ironworker to run up a couple of the inch series bolts with an impact gun to see how much Dacromet flaked off for a typical field operation. We generally did the planned 5 assemblies of each coater combination of the 0.018" overlap condition. For some of the testing we did with different conditions (not first priority options described below), we did not do as much testing. Due to various data/computer errors, we lost data on a few of the tests.

We did a total of 97 tests, which works out to 5 minutes per test over an 8-hour day. Note that due to setup issues at the start of the day, it really was not an 8-hour day during that run of 97 tests.

After a late start, we did some testing of black bolts and some of the 0.008" overlap nuts with the Grade 2 Dip Spin application and Grade 5 Spray application. Those are planned contingencies for which we did not plan on testing unless we had to, but Salim wanted to test some of those to see how they behaved (like baseline testing). Some of them did not work out very well. The black bolts/nuts without lubricant got low tension with high torque and galled the threads. The Grade 2 Dip Spin application on the nuts also did not work. We only did a few of those - because of the lack of lubricant (Dacromet is apparently not lubricious enough on its own without a lubricated sealer), we could not torque them very well. It was not a problem with high torque, but rather a problem with the nut binding, then slipping, then binding again, etc. The Spray application of Grade 5 Dacromet on the nuts probably worked but it was not as good as the Grade 5 dip spin on the 0.012" and 0.018" overlapped nuts. The Spray application on 0.008" overlapped nuts had lower tension and higher torque when compared with the dip spin application of Grade 5 Dacromet on 0.012" and 0.018" overlapped nuts, but it was not a major difference and may prove to be acceptable. We suspect the problem with the Spray application on 0.008" overlapped nuts is having less lubricant in the thread area.

All of the samples with the dip spin application of Grade 5 Dacromet on 0.012" and 0.018" overlapped nuts performed close to each other (very similar tension and torque). Compared to the other conditions, they had the highest tension and the lowest torque. Every once in a while, we got an assembly that had slightly higher torque, probably due to variations in coating thickness. Also, when running the nuts up by hand, we occasionally got stopped by some thread nicks, but those could easily be overcome by hand and will not be a problem with a spud wrench or impact wrench.

Out of all the testing performed today, we only had thread galling problems with the 3 black bolts/nuts and one of the Grade 5 Spray application on 0.008" nuts. All the other assemblies had passing threads, which is very good when you consider that we went well above the traditional rocap test and almost to fracture of the bolt. It is interesting that the thread failure was on the bolt for the assembly with Grade 5 Spray application on 0.008" nuts. In another test, when we first started, we took one of the assemblies up too far and broke the bolt - it is interesting that despite taking it up beyond the peak and all the way to tension failure, the threaded portion would still accept a nut, meaning the bolt failed in tension before any failure of the threads.

Salim will look at the data, and unless he comes up with a different conclusion than we figured during today's work, we will start doing signature curves on all the rest of the assemblies with the 0.018" overlapped nuts. We will probably also do a small number of signature curves with the 0.012" overlapped nuts with dip spin application of Grade 5 Dacromet and with the 0.008" overlapped nuts with

spray application of Grade 2 Dacromet. That signature curve testing will probably run Wednesday and Thursday.



090623 Day1DacrometTesting.pdf

----- Forwarded by Bob Brignano/D04/Caltrans/CAGov on 06/23/2009 06:12 PM -----



"Daniel Hester"
<dhester@abfjv.com>
06/23/2009 02:28 PM

To "Bob Brignano" <bob_brignano@dot.ca.gov>
cc

Subject FW: ABFJV Testing Data Master.xls

From: Chad Larson [mailto:CLarson@lejeunebolt.com]
Sent: Tuesday, June 23, 2009 7:28 AM
To: dhester@abfjv.com; salim.brahimi@ibeca.ca
Subject: ABFJV Testing Data Master.xls

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believed to be clean. ABFJV Testing Data Master.xls