



Test Monitoring Center

6555 Penn Avenue
Pittsburgh, PA 15206-4489
(412) 365-1000

1K/1N Information Letter No. 05-2
Sequence No. 26
December 8, 2005

ASTM consensus has not yet been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Single Cylinder Diesel Mailing List

SUBJECT: Update of Correction Factors for 1Y3998 1N Tests
Removal of Requirement for Surface Finish Measurement of 1Y3998 Cylinder Liners
Information Letter 04-01 Changes Omitted from D 6750

During a teleconference held September 28, 2005 the Single Cylinder Surveillance Panel updated the correction factors used on test results produced using the 1Y3998 cylinder liner. All 1N tests ending on or after September 28, 2005 are required to add -0.451 to the transformed TLHC result (in addition to any lab severity adjustment that might exist). Correction factors for all other parameters were revised to 0.

Since 1Y3998 cylinder liners are plateau honed, the liner surface finish specification does not apply to them. Consequently, the requirement to measure surface finish has been removed for those liners.

Due to an editing error, the changes required by Information Letter 04-01 to sections 9.2.7.15, 9.2.7.16, and 9.2.7.19 did not make it into D 6750. The omitted changes appear again in this information letter.

The updated sections of ASTM Test Method D 6750 are attached.

Abdul Cassim
Project Engineer
Caterpillar, Inc.

John L. Zalar
Administrator
ASTM Test Monitoring Center

Attachment

cc: ftp://ftp.astmtmc.cmu.edu/docs/diesel/scote/procedure_and_ils/1k-1n/il05-02.pdf

Distribution: Email

(Revises Test Method D 6750-05 as modified by Information Letter 05-01)

- 9.2.7.15 Using mineral spirits, repeat steps 9.2.7.9- 9.2.7.14 until the discharge is clean. Three-to-four flushes with mineral spirits are usually sufficient to remove all traces of the flushing mixture from the engine.
- 9.2.7.16 Drain the mineral spirits from the crankcase, governor housing, engine and flushing pump unit filters, oil cooler, oil pump accessory drive housing, and oil scale reservoir.
- 9.2.7.19 Connect the flushing pump outlet to the engine oil cooler drain location. Start the flushing pump and oil scale pumps and force any mineral spirits left in the system out through the crankcase drain. After the mineral spirits have been forced out of the system, connect the inlet line of the flushing pump to the crankcase drain. Install the dummy piston and the assembled cylinder block and liner. The dummy piston with a poly(methyl methacrylate) top is shown in Figs. A9.10 and A9.11. Re-install the oil filler spout and 1.27 cm (1/2 in.) pipe plug in the modified governor housing cover (see Fig. A9.6).
- 9.3.4 Cylinder Liner—Use a 1Y3555 liner having a surface finish of 0.4 to 0.8 μm for 1K testing. Use a 1Y3998 liner for 1N testing. No surface finish measurement is required for 1Y3998 liners. Remove the protective grease with mineral spirits, then clean the liner bore with a hot water/detergent solution (see 7.5) and rinse with hot water.
- 13.1.3 Reporting Top Groove Fill (TGF):
- 13.1.3.1 Add the appropriate industry correction factor from Table 2
- 13.1.3.2 Add any lab severity adjustment
- 13.1.4 Reporting Weighted Demerits (WD):
- 13.1.4.1 Add the appropriate industry correction factor from Table 2
- 13.1.4.2 Add any lab severity adjustment
- 13.1.5 Reporting Top Land Heavy Carbon (TLHC) and Transformed Top Land Heavy Carbon (TTLHC):
- 13.1.5.1 Convert TLHC percent to transformed units: $\text{TTLHC} = \ln(\text{TLHC}+1)$
- 13.1.5.2 Add the appropriate industry correction factor from Table 2 to TTLHC
- 13.1.5.3 Add any lab severity adjustment to TTLHC
- 13.1.5.4 Convert the transformed total back to TLHC percent: $\text{final TLHC} = \exp(\text{final TTLHC}) - 1$
- 13.1.6 Reporting Brake Specific Oil Consumption (BSOC):

- 13.1.6.1 Add the appropriate industry correction factor from Table 2
- 13.1.6.2 Add any lab severity adjustment
- 13.1.7 Reporting End of Test Oil Consumption (ETOC):
 - 13.1.7.1 Add the appropriate industry correction factor from Table 2
 - 13.1.7.2 Add any lab severity adjustment

Renumber old section 13.1.3 and subsequent sections accordingly.

After 13.1.7.2, add new Table 2 (below) and renumber subsequent tables accordingly.

TABLE 2 Test Parameter Correction Factors

	TGF	WD	TTLHC	BSOC	ETOC
Conditions:					
1K, 1Y3998 cylinder liner	0	0	0	0	0
1N, 1Y3998 cylinder liner	0	0	-0.451	0	0

Note – For tests not meeting any of the tabulated conditions the correction factor for all parameters is 0.