



## Test Monitoring Center

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L-60-1 Information Letter 13-1  
Sequence Number 42  
March 1, 2013

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

TO: L-60-1 Mailing List

SUBJECT: 

1. Change to Supplier Information for Screen-Kut Sanding Paper
2. Use of Gear Rating Jig
3. Update Occurrences of CRC Manual 20 to ASTM Deposit Rating Manual 20

During a November 30, 2012 teleconference, the L-60-1 Surveillance Panel revised the ordering information for the Screen-Kut abrasive used to prepare the gears for testing. Neither the manufacturer nor material has been changed; only the ordering information. Footnote 23 of D 5704 has been updated.

During a February 6, 2013 meeting, the panel accepted the Gear Rating Taskforce's recommendation to adopt the gear rating jig that has been developed over the past two years. Use of this jig is required for all tests starting with the first reference test on each stand on or after August 1, 2013. Sections 11.3 and 11.4 of D 5704 have been updated.

Editorially, occurrences of "CRC Manual 20" have been updated to "ASTM Deposit Rating Manual 20".

Larry Hamilton  
Chairman  
L-60-1 Surveillance Panel

Frank M. Farber  
Director  
ASTM Test Monitoring Center

Attachment

cc: [ftp://ftp.astmtmc.cmu.edu/docs/gear/1601/procedure\\_and\\_ils/il13-1.pdf](ftp://ftp.astmtmc.cmu.edu/docs/gear/1601/procedure_and_ils/il13-1.pdf)

Distribution: Email

**(Revises Test Method D 5704-12A, as modified by Information Letters 12-1, 12-2, and 12-3)**

Replace footnote 23 with:

<sup>23</sup> Johnson Abrasives Screen-Kut Part No. 11003. The sole source of supply known to the committee at this time is: Johnson Abrasives Co Inc., 49 Fitzgerald Drive, Jaffrey, NH 03452, ATT. Scott Johnson (phone: 800-628-8005)

Section 11., delete reference to Footnote 26.

Delete current Footnote 26.

Replace current 11.3 and 11.4 with the following:

*11.3 Gear Sludge Rating:*

11.3.1 To fix the distance from the rating light to the gear face and to control the angle of incidence of the light on the gear, mount the gear being rated onto the L-60-1 Gear Rating Jig<sup>26</sup>.

11.3.2 Handle the gears at the gear teeth lands to avoid any contact with the rated area.

11.3.3 Use a cool white type fluorescent 4500 K color temperature light with a minimum illumination level of 200 fc (2150 lx).

11.3.4 Place the gear on the L-60-1 Gear Rating Jig with the keyway vertical and the front side up.

11.3.5 Using a lint-free cloth, wipe an approximately  $\frac{3}{4}$  in (20 mm) wide area across the diameter of the face of the gear along the keyway. Wipe the gear five times in the same direction.

11.3.6 Position the light on the two brackets on the top of the L-60-1 Gear Rating Jig. Verify light fixture is approximately level in all directions.

11.3.7 Rate the top half of the gear looking down on the gear.

11.3.8 Subdivide the total ratable area into percentage areas of different sludge depths and ratings using ASTM Deposit Rating Manual 20<sup>27</sup>. Use the sludge scale and sludge gage included in the manual. Calculate and record the sludge volume factor for each subdivided area. The total volume factor for a gear face is determined by adding the individual area volume factors for that gear face.

11.3.9 Convert the total volume factor for each gear face to a merit rating using ASTM Deposit Rating Manual 20. Report this rating to two decimal places.

11.3.10 Do not rate the wiped area, the gear teeth or the spacer bushing contact area for sludge.

11.3.11 Rotate the gear 180 degrees and rate the other half of the gear.

11.3.12 Repeat the same steps for the small gear.

11.3.13 The sludge rating is defined as the average of the four merit ratings of the four gear faces.

*11.4 Gear Carbon/Varnish Rating:*

11.4.1 To fix the distance from the rating light to the gear face and to control the angle of incidence of the light on the gear, mount the gear being rated onto the L-60-1 Gear Rating Jig.

11.4.2 Handle the gears at the gear teeth lands to avoid any contact with the rated area.

11.4.3 Use a cool white type fluorescent 4500 K color temperature light with a minimum illumination level of 200 fc (2150 lx).

11.4.4 Place the gear on the L-60-1 Gear Rating Jig with the keyway vertical and the front side up.

11.4.5 If not already done for previous sludge rating, use a lint-free cloth to wipe an approximately  $\frac{3}{4}$  in (20 mm) wide area across the diameter of the face of the gear along the keyway. Wipe the gear five times in the same direction.

11.4.6 Position the light on the two brackets on the top of the L-60-1 Gear Rating Jig. Verify light fixture is approximately level in all directions.

11.4.7 Rate the top half of the gear looking down on the gear.

11.4.8 The wiped area on each gear face, excluding the gear teeth and spacer bushing contact area, is the ratable area. Subdivide the total ratable area into percentage areas of different carbon depths and varnish intensities. Use any of the three Rating Scales (A, B, or C) of the ASTM Rust/Varnish/Lacquer Rating Scale for Non-Rubbing Parts found in ASTM Deposit Rating Manual 20 to determine varnish rating

factors for each subdivision containing varnish deposits.

11.4.9 Rate carbon from 0.00 (heavy carbon) to 0.99 (trace carbon) using an expanded rating scale. Determine carbon rating factors by referring to the ASTM L-60-1 Rating Aid in ASTM Deposit Rating Manual 20. Calculate the carbon merit rating by multiplying the rating factor by the percentage area. Report this rating to two decimal places.

11.4.10 Rotate the gear 180 degrees and rate the other half of the gear.

11.4.11 Determine the carbon/varnish merit rating for a gear face by adding the individual area merit ratings for the wiped area of that face. Determine the carbon/varnish rating using the large gear only. The small gear may be rated for additional information. Rate the front and back faces of both gears individually.

11.4.12 The carbon/varnish rating is defined as the average of the front and back face merit ratings for the large gear. The small gear should be rated similarly, but separately, for additional information.

Add new footnotes<sup>26</sup> and <sup>27</sup>:

<sup>26</sup> L-60-1 Gear Rating Jig. The sole source of supply is: ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA 15206

<sup>27</sup> ASTM Deposit Rating Manual 20 available at the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org).

Remove Annex A10; the entirety of its information has been incorporated into sections 11.3 and 11.4.

11.6 For the test rating to be valid, the gears shall be rated by an individual who has participated in an ASTM-sponsored, high-volume, gear-rater calibration workshop within the previous twelve months.