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Test Monitoring Center

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L-33-1 Information Letter 23-1
Sequence Number 32
August 22, 2023

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-33-1 Surveillance Panel

SUBJECT: Addition of E-type Thermocouples for Temperature Control Systems

On August 9, 2023, the L-33-1 Surveillance Panel voted to allow the use of E-type thermocouples in temperature control systems for the L-33-1 test.

Sections 6.26. and 6.2.7 have been updated accordingly and are attached. These changes are effective immediately.

Anthony Lange
Chairman
L-33-1 Surveillance Panel

Jeffrey A. Clark
Executive Director
ASTM Test Monitoring Center

Attachment

c: https://www.astmtmc.org/ftp/docs/gear/l331/procedure_and_ils/il23-1_l331.pdf

Distribution: Email

(Revises Test Method D 7038-22a)

Replace the text of sections 6.2.6 and 6.2.7 with the following:

6.2.6 Temperature Control System, Motoring Phase—During the motoring phase, the bulk oil temperature is sensed by a resistance temperature device (RTD) or thermocouple (E, J or K type). The controller switches on a pair of 250 W lamps or cooling fan, or both, that are directed toward the differential as needed to control bulk oil temperature at 180 °F ± 1 °F (82 °C ± 0.6 °C). A household-type electric fan having 12.0 in. (310 mm) diameter blades has been shown to provide acceptable cooling capability. Fig. A5.3 shows an example of the location of the heat lamp pair and the cooling fan. Fig. A5.4 shows the location of the temperature sensor in the differential housing.

6.2.7 Storage Box and Temperature Control System, Storage Phase—During the storage phase of the test, a double-walled aluminum or stainless steel box covers the differential housing assembly. An RTD or thermocouple (E, J or K type) in conjunction with the controller regulates heat input from four strip heaters giving a total output of 1700 Btu/h (500 W). A small electric motor turns a fabricated impeller at 1700 r/min ± 100 r/min to provide air circulation within the box. Dayton part number 3M562 available from Grainger has been found suitable for this purpose.[10,9] Control the bulk oil temperature at 125 °F ± 1 °F (52 °C ± 0.6 °C). Fig. A5.5 shows details of the impeller. Fig. A5.6 shows construction and electrical details of this box.