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CAN/CGSB-3.0
No./N° 49.6-2004

ICS 71.040.50

WITHDRAWAL

December 2009

Methods of Testing Petroleum and Associated Products

Water Wash Resistance and Sea Water Corrosion Protection

This CGSB method is hereby withdrawn due to limited use and support for its revision.

RETRAIT

Décembre 2009

Méthodes d'essai des produits pétroliers et produits connexes

Résistance à l'eau et protection contre la corrosion par l'eau de mer

Cette méthode de l'ONGC est retirée par le présent avis en raison de son utilisation limitée et du manque de support pour sa révision.

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No. 49.6-95

Methods of Testing Petroleum and Associated Products

Water Wash Resistance and Sea Water Corrosion Protection

Withdrawn/Retirée



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NATIONAL STANDARD OF CANADA

CAN/CGSB-3.0
No. 49.6-95

METHODS OF TESTING PETROLEUM AND ASSOCIATED PRODUCTS

WATER WASH RESISTANCE AND SEA WATER CORROSION PROTECTION

This method supersedes issue of December 1987.

Withdrawn/Retiree

Prepared by the
Canadian General Standards Board CGSB

Approved by the
Standards Council of Canada

Published July 1995 by the
Canadian General Standards Board
Ottawa, Canada K1A 1G6

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Acknowledgment is made for the translation of this National Standard of Canada by the Translation Bureau of the Department of the Secretary of State.

National Standard of Canada

CGSB Ottawa Canada K1A 1G6	METHODS OF TESTING PETROLEUM AND ASSOCIATED PRODUCTS	CAN/CGSB-3.0
	Water Wash Resistance and Sea Water Corrosion Protection	No. 49.6-95

Supersedes Issue of
December 1987

Withdrawn/Retirée

1. SCOPE

1.1 This method is used to assess the ability of a grease to maintain a continuous film, and to prevent corrosion of steel under the conditions of the test.

1.2 The testing and evaluation of a product against this method may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this method has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any existing applicable regulatory requirements prior to its use.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this method:

2.1.1 American Society for Testing and Materials (ASTM)

D 665 — Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water.

2.1.2 U.S. Federal Specification

P-D-680 — Dry Cleaning Solvent.

2.2 Reference to the above publications is to the latest issues, unless otherwise specified by the authority applying this method. The sources of these publications are shown in the Notes section.

3. SUMMARY OF METHOD

3.1 A new steel test specimen is coated with the sample grease, immersed in distilled water and rotated for 2 h at 4300 r/min. The continuity of the grease on the test specimen is recorded. The specimen is then tested in accordance with ASTM D 665 for 24 h.

4. SIGNIFICANCE AND USE

4.1 This method shows how effective the grease is in preventing the rusting of ferrous materials by maintaining a continuous film when washed with sea water.

5. APPARATUS

5.1 **Drill Press** — With variable speed drive.

5.2 **Apparatus** — As described in ASTM D 665.

6. REAGENT AND MATERIAL

6.1 **Solvent** — A dry-cleaning solvent, in accordance with U.S. Federal Specification P-D-680.

6.2 **Synthetic Sea Water** — As prescribed in ASTM D 665. (Synthetic sea water having a pH higher than 8.2 must be discarded. A high pH such as this occasionally arises from the use of old stock solutions.)

6.3 **Steel Specimen** — As described in Figure 1.

6.4 **Aluminum Oxide Cloth (150 grit)** — As prescribed in ASTM D 665.

6.5 **Aluminum Plate** — Smooth, flat and rectangular, 0.16 cm thick, 10 cm long and wide enough to be held securely in a clamp. (Make sure that the 10 cm long edge is free from burrs.)

7. PROCEDURE

7.1 Wash the surface of a new steel specimen with a petroleum-based dry-cleaning solvent, and air dry it.

7.2 Mount the specimen (Figure 1) in the drill press chuck and, while rotating the specimen at 1725 ± 100 r/min, apply the aluminum oxide cloth lightly to produce a new surface. Finish by wiping the surface of the specimen with a clean lintless material wetted with dry-cleaning solvent.

CAUTIONARY NOTE: The test specimen must not be touched with the hands after it has been polished. Handle the specimen with a lintless cloth or forceps.

7.3 While the steel specimen is mounted on the drill press chuck, clamp the aluminum plate with its 10 cm edge parallel to the steel specimen, pointing towards the axis of rotation and 0.15 ± 0.005 cm away from the outside surface of the steel specimen. With a spatula apply the grease to the steel specimen while it is rotating at 10 r/min. The edge of the aluminum plate will wipe the grease producing a uniform, even surface. Strike off the grease about 0.3 cm below the bottom end of the specimen.

7.4 Pour 900 mL of the distilled or de-ionized water into a 1 L stainless steel beaker and position it below the specimen so that when the specimen is lowered there will be 2.5 cm from the side of the beaker to the closest edge of the specimen. Immerse the specimen to a depth of about 11.5 cm and lock the press in position. Rotate the specimen at 4300 ± 200 r/min for 120 ± 2 min in the water at 21 ± 3°C. Then raise the specimen and record the continuity of the grease coating, discounting the water-air interface region and 0.3 cm at the lower end of the specimen.

7.5 Transfer the specimen to the ASTM D 665 apparatus and immerse it in synthetic sea water as described in ASTM D 665. Suspend the specimen with a pin through the predrilled hole and secure it with a clamp. Start the stirrer and maintain the sea water temperature at 21 ± 3°C for 24 h.

7.6 Remove the specimen and record the appearance of the grease coating, noting particularly the location and the extent of the rust.

7.7 Wash the remaining grease from the specimen with a dry-cleaning solvent conforming to P-D-680. Blot dry with clean filter paper and record the appearance and extent of rust in accordance with ASTM D 665.

8. REPORT

8.1 Report the degree of grease wash-off and corrosion protection afforded the specimen by the test grease.

9. REFERENCE

9.1 The above method was developed by the National Research Council of Canada, Fuels and Lubricants Laboratory. Their assistance is gratefully acknowledged.

10. NOTES

10.1 Sources of the Referenced Publications

10.1.1 The publication referred to in par. 2.1.1 may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, U.S.A., or photocopies are available from the Canadian General Standards Board, Sales Centre, Ottawa, Canada K1A 1G6. Telephone (613) 941-8703 or 1-800-665-CGSB (Canada only). Fax (613) 941-8705.

10.1.2 The publication referred to in par. 2.1.2 may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, U.S.A.

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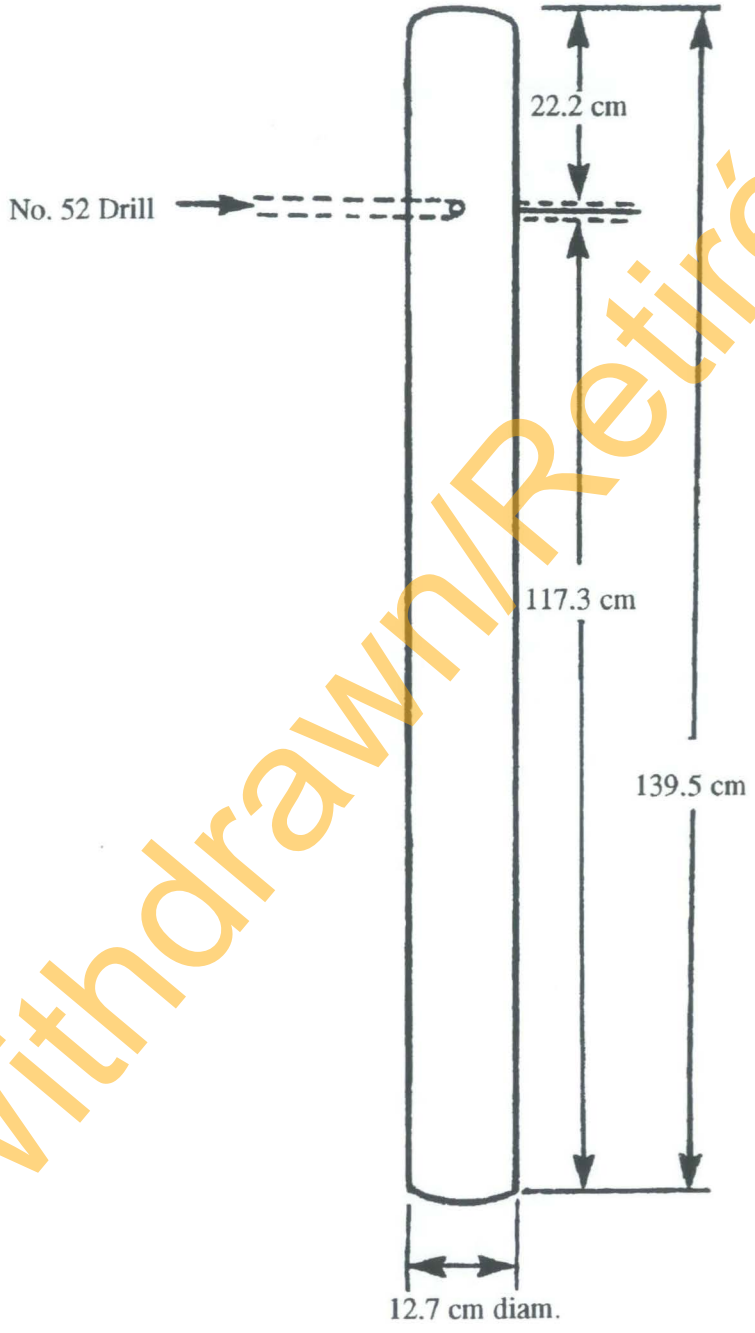


FIGURE 1

Steel Specimen

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