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2-GP-140P
CANCELLATION
7 July 1961

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Provisional Specification
for

SYNTHETIC DETERGENT TYPE CLEANER FOR USE ON ASPHALT TILE FLOORS

CGSB Provisional Specification 2-GP-140P dated 29 January 1954 amended 5 May 1954, is cancelled as of 29 July 1961. It is suggested that 2-GP-107a detergent be considered for use on asphalt tile floors.

2-GP-140P
29 January 1954
AMENDMENT NO. 1
5 May 1954

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Provisional Specification
for

SYNTHETIC DETERGENT TYPE CLEANER FOR USE ON ASPHALT TILE FLOORS

Withdrawn/Retiree

3. DETAIL REQUIREMENTS

Add the following requirements to the specification:

3.4 Active Ingredient - The minimum content of anhydrous salt-free anionic and/or nonionic detergent of the cleaner, as received, shall be as specified below, when determined by the prescribed method and expressed on a per cent by weight basis. Cationics shall not be present.

Form	Min. Active Ingredient Per cent by Weight
Powder or Flake	20
Paste	14
Liquid	10

Method attached

3.5 Cleaning Efficiency - The reflectance of the standard soiled cloth after washing with a 0.2 per cent aqueous solution of the detergent in accordance with the prescribed procedure shall be not less than 45.

Method attached

METHOD FOR ACTIVE INGREDIENT

A 2 gm. sample of the material is weighed accurately into a 250 ml. beaker and digested with 100 ml. isopropanol (99 per cent) on a steam bath until all soluble matter is in solution. Filter the solution, washing well with isopropanol at 50 to 60°C. The solution is transferred quantitatively to a tared porcelain or platinum evaporating dish, portion-wise if necessary, and evaporated on a steam bath until the alcohol is driven off. The dish is then placed in an air oven at 105 ± 2°C. and dried to constant weight. Calculate the per cent of anhydrous salt-free detergent from the weight of the dried residue.

The residual material is dissolved in 25 ml. distilled water. To 10 ml. of the aqueous solution add 1 ml. of indicator solution (0.05 per cent Uranine and 0.05 per cent Methylene Blue). Take 10 ml. distilled water for comparison adding the same quantity of indicator solution. Deeper blue color than the comparison solution (distilled water) indicates the presence of cationics, various shades of green (depending on the concentration and nature of the active material) indicate anionics. Nonionics do not affect the color.

METHOD FOR DETERMINING CLEANING EFFICIENCY

Two 3" x 4" swatches of soiled cloth* are placed in each of two 3-1/2" x 8" stainless steel Launderometer jars, together with 50, 1/4" diameter, stainless steel balls. To each jar is added 150 ml. of detergent solution made up at the specified concentration, the jars and solution having been previously brought to 120°F. The jars and contents are then run in the Launderometer for 20 minutes. The sudsing process is repeated on the same swatches using a fresh 150 ml. portion of detergent solution under the same conditions. The swatches are rinsed by hand 3 times in distilled water at 100 to 110°F. and dried on a metal screen, followed by pressing under a damp cloth. The final reflectancies of the four swatches are read and the results averaged.

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*F.D.S. artificially soiled cotton produced by Foster D. Snell Inc., 29 West 15th Street, New York 11, N.Y.

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2-GP-140P*
29 January 1954

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SYNTHETIC DETERGENT TYPE CLEANER FOR USE ON ASPHALT TILE FLOORS

Withdrawn/Retirée

1. DEFINITION

1.1 This specification applies to asphalt tile cleaners of the synthetic organic detergent type either in liquid, paste, powder, or flake form.

2. GENERAL REQUIREMENTS

2.1 The cleaner shall contain no soap.

2.2 It shall contain no oils, organic solvents, or other material that have an injurious effect on asphalt tile.

2.3 The cleaner shall not be irritating to the skin.

2.4 The cleaner shall be free from offensive odors and shall contain no highly toxic materials.

2.5 The liquid cleaner shall show no trace of sediment, shall not gel, and shall pour easily from the container. The paste cleaner shall show no separation of the liquid portion as evidenced by liquid on the surface. It shall be easily removed from the container. The powder and flake cleaners shall not cake and shall be easily removed from the container.

2.6 The cleaner shall be stable and not lose effectiveness or otherwise deteriorate when stored in a closed container at normal temperatures.

2.7 The cleaner shall be free-rinsing and shall leave no deposits of dirt, grease, or sediment on the tile.

2.8 The manufacturer shall provide with each package a complete set of clear and concise instructions for use of the cleaner.

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*This provisional specification has been issued for interim procurement. It has not been formally approved by the Committee on Specifications for Soaps and Detergents nor the Canadian Government Specifications Board. The specification has been based on the latest recommendations of the Asphalt Tile Institute.

3. DETAIL REQUIREMENTS

3.1 Hydrogen Ion Concentration - The pH value of a 1.0 per cent distilled water solution (by weight) of the cleaner shall be not less than 5.5 nor more than 10.0 when tested in accordance with Section 4.3.1.

3.2 Solubility - The cleaner shall be free from abrasives and shall be completely soluble in distilled water when tested in accordance with Section 4.3.2.

3.3 Deleterious Action on Tile

3.3.1 Softening of Tile - The cleaner, when applied to asphalt tile and tested in accordance with Section 4.3.3 shall not cause an increase in scratch width of more than 40 per cent.

3.3.2 Color Spreading and Change in Color - During application, the cleaner shall show no tendency to remove the color from asphalt tile or to spread the color from one tile to another. After thorough rinsing and drying, the tile shall show no objectionable change in color.

4. SAMPLING AND TESTING

4.1 Sampling - For routine laboratory examination for the acceptability of a shipment the cleaner shall be sampled as follows:

4.1.1 Liquid Cleaner - A sample of not less than 0.5 pint shall be taken at random from not less than 1.0 per cent of the shipping containers, provided such containers contain not less than 10 gallons each. In the case of smaller containers, a sample of not less than 0.5 pint shall be taken at random from each lot of containers totalling not more than 1,000 gallons. The gross sample shall in all cases consist of not less than three portions of 0.5 pint each taken at random from separate containers.

Before drawing the sample from the container selected, the contents of the container shall be thoroughly agitated. The gross sample drawn shall be thoroughly mixed, placed in clean, dry cans or bottles, which shall be completely filled and securely stoppered with clean corks or caps, then sealed, marked, and sent to the laboratory for test.

4.1.2 Paste Cleaner - (When packed in cans or cartons of 5 pounds or less) one can or carton shall be taken at random from not less than 1 per cent of the shipping containers, provided such containers contain not less than 50 pounds. In case of smaller containers, a can or carton shall be taken at random from each lot of containers, totalling not more than 5,000 pounds or fraction thereof. The gross sample shall in all cases consist of not less than 3 cans or cartons taken at random from separate containers.

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The sample cans or cartons shall be wrapped, sealed, marked, and sent to the laboratory for test.

4.1.3 Powder and Flake Cleaner - (When packed in cans or cartons) one can or carton shall be taken at random from not less than 1 per cent of the shipping containers, provided such containers contain not less than 50 pounds. In case of smaller containers, a can or carton shall be taken at random from each lot of containers, totalling not more than 5,000 pounds or fraction thereof. The gross sample shall in all cases consist of not less than 3 cans or cartons taken at random from separate containers.

The sample cans or cartons shall be wrapped, sealed, marked, and sent to the laboratory for test.

4.2 Preparation of Samples for Testing - The samples of cleaner taken above shall be prepared for test in the following manner:

4.2.1 Liquid Cleaner - No preparation of the sample, other than thorough mixing, is necessary unless it is received during very cold weather, when it should be allowed to stand at least one hour after it has warmed up to room temperature before it is tested.

4.2.2 Paste Cleaner - Mix thoroughly by kneading and quarter down to about one pound. Weigh out all portions for analysis promptly, and preserve remainder in an airtight container in a cool place.

4.2.3 Powder and Flake Cleaner - Rapidly disintegrate and mix the sample; if desired, quarter down to about 1 pound. Weigh out all portions for analysis promptly, and preserve remainder in a cool place.

4.3 Methods of Test

4.3.1 Hydrogen Ion Concentration - Dissolve 1.0 gram of the cleaner in 100 ml. of freshly boiled and cool (to room temperature) distilled water, and mix. Determine the pH value of this solution, or a portion of it, to the nearest 0.10 units at 25°C. by means of suitable pH meter which employs the glass electrode. No correction for sodium ion concentration shall be made.

4.3.2 Solubility - Dilute about 5 grams of the cleaner with 100 ml. of distilled water. Stir vigorously for 5 minutes at room temperature. Centrfuge the solution in a clear glass tube and inspect for abrasive or other undissolved material either in the bottom of the tube or at the surface of the liquid.

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4.3.3 Softening of Tile - A solution of the cleaning agent to be tested shall be prepared according to the manufacturer's instructions. Use distilled water and weigh the proportions to plus or minus 0.5 percent.

Five samples of asphalt tile, each 4 inches square, shall be cut, one sample from each of five 9" x 9" tile complying with CSA A100-1949: Specification for Asphalt Floor Tile (A100-1949). The samples shall then be sawed, or otherwise cut in half, each half (or specimen) being marked for identification as follows: 1a, 1b; 2a, 2b; etc.

The five specimens marked 1a, 2a, etc., shall be placed in a bath containing 500 to 800 milliliters of the cleaning solution. The five specimens marked 1b, 2b, etc., shall be placed in a bath containing a similar amount of distilled water. Separation of at least 1/8" shall be provided between each specimen. The specimens shall be immersed for a period of 24 hours. The solution shall be agitated by means of a stirrer during immersion and shall be maintained at 70°F. to 75°F. during the entire period.

After 24 hours of immersion, remove each pair of specimens and blot with a paper towel. Place halves 1a (cleaner immersed) and 1b (water immersed) on the table of a Taber Abraser and make a three inch long scratch on each specimen with the Shear Tool under a load of 500 grams. The width of the three inch long scratch on each half shall immediately be read to 0.001 inch in three places and the average recorded. The measurement should not be taken on the first part of the scratch where the tool may dig deeper at the start. Repeat the procedure for 2a and b, 3a and b, etc.

Preparation of scratch tool - The scratch tool used shall produce a scratch on the tile before immersion of 0.050 ± 0.005 inch when unexposed specimens are tested as described in the preceding paragraphs. If the width of scratch obtained by the tool on the unexposed specimens is greater than 0.055 inch, the tool shall be dulled to produce the required width by drawing it across unexposed tile. If after having dulled the tool as above, the tool is still shaving the material being tested, continue to dull the tool until it no longer cuts the surface of the unexposed tile. In any case, the mark shall not be less than 0.045 inches. This may happen especially in the predulling of a new tool. Care should be taken in handling and storing the tool so that the cutting edge will not be damaged.

The percentage increase in scratch width from the water immersed to the cleaner immersed specimens shall be calculated as follows:

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$$\text{Per cent increase} = \frac{\text{Width (cleaner immersed)} - \text{Width (water immersed)}}{\text{Width (water immersed)}} \times 100$$

If the increase in scratch width, as determined above, falls between 30 per cent and 50 per cent, two more tests shall be run and the average of all three tests shall be taken as the final figure. If this average is more than that specified in the specification, the cleaner shall be rejected.

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Correspondence regarding this specification should be addressed to the Secretary, Canadian Government Specifications Board, National Research Council, Ottawa, Canada.