3-GP-650
CANCELLATION
25 October 1956

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Specification
for

SPRING COMPOUND

CGSB Specification 3-GP-650, dated 31 December 1947 is cancelled as of 25 October 1956.

Cancelled 25 Oct 56

No. 3-GP-650-1947
Issued 31 December, 1947
Supersedes D.N.D. 650

CANADIAN GOVERNMENT PURCHASING STANDARDS COMMITTEE

Specification for SPRING COMPOUND

A. DEFINITION

A-1 This specification covers one grade of spring compound consisting of a calcium base grease containing fillers as specified.

B. GENERAL REQUIREMENTS

B-1 Material SPRING COMPOUND shall be a smooth homogeneous mixture of well-refined mineral oil and calcium soap, made from completely saponified animal or vegetable fats, or oils, or fatty acids.

B-2 Fillers The compound shall contain the following fillers (see paragraph C-2).
1. Foundry Talc - 8.4 per cent by weight.
2. Asbestos Fibre - 2.8 per cent by weight.

B-3 Odour The grease shall possess only a slight odour of mineral oil, and may be rejected if it has any other distinct odour.

C. DETAIL REQUIREMENTS

C-1 Physical and Chemical Requirements

	Min.	Max.	Test Method
Worked Penetration at 77°F.	330	350	35.1
Free Alkali (NaOH), per cent	-	0.2	2.3
Water, per cent	-	1.5	10.2
Dropping Point, °F.	185	-	34.1
Mineral Oil Content, per cent	88	-	8.1
Viscosity at 100°F.			
Kinematic, Centistokes	33.2	37.8	36.1
Approx. S.U. Seconds	155	175	36.2
Flash Point, °F.	275	-	27.1
Pour Point, °F.	-	-15	28.2

C-2 Fillers
The Fillers shall meet the following requirements

C-2(a) Foundry Talc

Organic Matter	Nil
Moisture, per cent	0.5 max.
Loss on Ignition, per cent	4.5 -10.0
Iron and Aluminum Oxide, ($Fe_2O_3+Al_2O_3$)	7.5 max.
Calcium Oxide, (CaO), per cent	3.0 max.
Magnesium Oxide, (MgO), per cent	30.0 min.
Residue on 74 Micron sieve percent	5.0 max.

Withdrawn/Retired

C-2(b) Asbestos Fibre		Test Method
Mineral Content, per cent	99.0 Min.	46.1
Moisture Content, when shipped, per cent	1.5 Max.	10.3

Fineness - The asbestos shall give a screen analysis within the limits:

Tyler Screen No.	U.S. Series No.	Per Cent Passing
12	14	99-100
24	25	90-99
48	50	75-88
100	100	53-66

D. USES

D-1 SPRING COMPOUND is intended for lubrication of Ford chassis springs.

E. METHODS OF SAMPLING AND TESTING

E-1 A sample of not less than five pounds of compound shall be provided for tests and shall be obtained in accordance with section 1.3 of Schedule No. 3-GP-0: Methods of Testing Petroleum and Associated Products. One-half pound of each of the fillers shall also be submitted for test.

E-2 The methods of testing shall in all cases be those described in Schedule No. 3-GP-0, using the procedure specified with each requirement.

Withdrawn/Retired

Amendment Sheet No. 1

Issued 29 May, 1944.

DND 650.

Issued 13 March, 1944.
Supersedes Issue of
5 March, 1941.

CANADIAN GOVERNMENT PURCHASING STANDARDS COMMITTEE

Wartime Specification for

Spring Compound

C-2 Fillers

2. Asbestos Fibre

Fineness,— Replace the present table with the following new table:-

Tyler Screen No.	U.S. Series No.	Per Cent Passing
12	14	99-100
24	25	90- 99
48	50	75- 88
100	100	53- 66

Withdrawn/Retirée

REFERENCE COPY

REFERENCE COPY

D.N.D. 650.

Issued 13 March, 1944.

Supersedes Issue 5 March, 1941.

CANADIAN GOVERNMENT PURCHASING STANDARDS COMMITTEE

Wartime Specification for

Spring Compound

This specification may not be reproduced or published in any form without written authority.

A. GRADE

A-1 This compound shall be of one grade.

B. GENERAL REQUIREMENTS

B-1 Material

This compound shall be a smooth homogeneous mixture of well-refined mineral oil and a calcium soap, made from animal or vegetable fats or oils or fatty acids, completely saponified with calcium hydroxide.

B-2 Fillers

The compound shall contain the following fillers (see paragraph C-2).
1. Foundry Talc - 8.4% by weight.
2. Asbestos Fibre - 2.8% by weight.

B-3 Odour

The grease shall possess only a slight odour of mineral oil, and may be rejected if it has any other distinct odour.

C. DETAIL REQUIREMENTS

C-1 Physical and Chemical Requirements

	Min.	Max.	A.S.T.M. Test No.
Worked Penetration at 77°F.	330	350	D.217-38T
Free Alkali (Calculated as NaOH), %		0.2	D.128-40
Water, %		1.5	D.128-40
Dropping Point, °F.	185		D.566-42
Mineral Oil Content, %	88		
Mineral Oil			
- Viscosity at 100°F. S.U.	155	175	D.88-38
- Flash Point, °F.	275		D.92-33
- Pour Point, °F.		-15	D.97-39

Withdrawn/Retirée

C-2 Fillers

The Fillers shall meet the following requirements:

1. Foundry Talc

Organic Matter	Nil
Moisture, %	0.5 Max.
Loss on Ignition, %	4.5 - 10.0
Iron and Aluminum Oxide, %	7.5 Max.
Calcium Oxide, %	3.0 Max.
Magnesium Oxide, %	30.0 Min.

Fineness
Not more than 5% shall be retained on a 200 mesh sieve.

2. Asbestos Fibre

Mineral Content, %	99.0 Min. See para. D-1a
Moisture Content, when shipped, %	1.5 Max. See para. D-1b

Fineness - When tested in accordance with para. D-1c, the asbestos shall give a screen analysis within the following limits:

Mesh	Fibre Retained
#12	0 - 1 %
#24	6 - 11
#32	15 - 20
#48	28 - 33
#60	34 - 39
#80	37 - 42
#100	44 - 49

D. INSPECTION & TESTS

D-1 Unless otherwise specified, all tests shall be made according to the Standards, or Tentative Standards, of the American Society for Testing Materials (A.S.T.M.) as shown in C-1.

D-1a Mineral Content of Ground Asbestos

A 1-oz. sample of the mineral shall be dried to constant weight in a weighed crucible at 212°F. The dried sample shall then be ignited in an electric furnace at 1600°F. for 1 hour, cooled to room temperature in a desiccator and weighed. The weight of ash shall be divided by the factor 0,86 to obtain the original weight of the mineral fibre. To obtain the percentage of mineral, divide the weight of mineral by the weight of the dried sample.

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D-1b Moisture Content of Ground Asbestos

Weigh about 1 gm. of sample in an aluminum dish 2" in dia., 7/8" high, place in an oven and dry for 2½ hours at 230°F. Remove from oven, place in desiccator and weigh when cold. Loss in weight divided by weight of sample and multiplied by 100, gives the percentage of moisture.

D-1c Fineness Test for Ground Asbestos

A 50-gm. sample of asbestos is screened in a rotap machine for 50 minutes on the following Tyler Standard Screens - 12, 24, 32, 48, 60, 80, 100.

D-2 Approval of Product

In addition to meeting the above General and Detailed Requirements, the grease must prove satisfactory in service. If found unsatisfactory, further use of the product may be discontinued. Decision regarding the suitability of the grease under service conditions rests with the Department of National Defence.

D-3 Analysis of Shipment

The contractor shall certify on the invoice covering each shipment that the product meets all the requirements of the specification under which it was purchased. In the event that the product supplied fails to meet the requirements of the specification, a rebate of 25% of the price charged will be required on the portion used and the balance will be returned to the contractor at his own expense for credit. The name of any contractor supplying products which do not conform to specifications required on tenders may be deleted from the list of eligible contractors until such time as the contractor can guarantee the supply of satisfactory products.

E. PACKING AND MARKING

E-1 Packing

The grease shall be packaged in approved types of containers of the sizes and containing the quantities specified in the Invitation to Tender.

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E-2 Marking

Containers must be clearly and legibly stencilled as follows:

D.N.D. 650
Spring Compound
Net weight of contents
Name of manufacturer
Date of filling.

When material to this specification is to be supplied to the Royal Canadian Air Force, the contractor will also include the R.C.A.F. Reference Number and the Contract Demand Number.

F. NOTES

F-1 This specification is based, in part, on Ford Motor Car Company Specification MC-4628, dated 11th September, 1943.

F-2 This product is intended for lubrication of Ford chassis springs.

F-3 Copies of this specification may be obtained from The Secretary, Canadian Government Purchasing Standards Committee, National Research Council, Ottawa, Canada.

Withdrawn/Retirée

REFERENCE COPY

DEPARTMENT OF NATIONAL DEFENCE M. G. O.
March 1941

Lubricant Specification

D. N. D. - 650

for

FORD SPRING LUBRICANT

NOTE

This specification is the property of the Department of National Defence, Ottawa, Canada. It is not to be reproduced or used for any purpose other than that for which it is lent.

Principal Uses	Supersedes Previous Canadian Specification	British Lubricants Replaced for Canadian Service
Spring Lubricant for Ford Vehicles	O. M. 425	Note: Meets Ford Motor Co. Spec'n M. 4628-B.

TECHNICAL SPECIFICATION

Must be a smooth homogeneous grease, made from a well-refined Mineral Oil and Lime Soap and shall contain 8% (Min.) of Foundry Talc (1) and 2.5% (Min.) of Ground Asbestos (2).

	MINIMUM	MAXIMUM
Unworked penetration at 77°F. - Cone	330	350
Free Alkali	Neutral	0.1%
Water	0.5%	1.5%
Melting point	185° F.	-
Calcium Soap	8%	10%
Viscosity of Mineral Oil - S. U. at 100° F.	150	160
Pour Test of Mineral Oil	-	+ 10° F.

Notes:

(1) Foundry Talc

Must meet Ford Motor Company Specification M-1117 Foundry Talc, as follows:

Commercial Talcum Powder with constants.

Moisture	0.5% Max.
Loss on ignition	10.0 - 14.0%
Iron and Aluminum Oxides	15.0% Max.
Calcium Oxide	8.0% Max.
Magnesium Oxide	30.0% Max.

Fineness

Not more than 5% shall be retained on a 100 mesh sieve.
Not more than 10% shall be retained on a 200 mesh sieve.
Balance through a 200 mesh sieve.

(2) Ground Asbestos

Must meet Ford Motor Company Specification M-5535 Ground Asbestos, as follows:

Mineral content not to be less than	99.0%
Moisture not to exceed	1.5%

Fineness Rotap Machine 50 minutes, Tyler screen.

Mesh	%
12	99 - 100
24	89 - 94
32	80 - 85
48	67 - 72
60	61 - 66
80	58 - 63
100	51 - 56

OTTAWA,
14-1-42.

Withdrawn/Retired