

MIL-D-21631A(SHIPS)
21 August 1974
SUPERSEDING
MIL-D-21631(SHIPS)
4 December 1958
(See 6.5)

MILITARY SPECIFICATION

DECK COVERING, LATEX CONCRETE

This specification is approved for use by the Naval Sea Systems Command and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers a non-sparking, fire retardant, latex concrete deck surfacing for use over aluminum or steel decking or between metallic channels in the holds of ammunition spaces.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

P-D-220 - Detergent, General Purpose.
TT-E-485 - Enamel, Semi-Gloss, Rust Inhibiting.
UU-S-48 - Sacks, Shipping, Paper.
PPP-B-35 - Bags, Textile-Shipping, Burlap, Cotton and Waterproof Laminates.
PPP-B-1714 - Bags, Shipping, Woven Polypropylene.
PPP-P-704 - Pails, Metal: (Shipping, Steel, 1 through 12 Gallon).

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-147 - Palletized Unit Loads for 40" X 48" Pallets.
MIL-STD-1623 - Fire Performance Requirements and Approved Specifications For Interior Finish Materials and Furnishings (Naval Shipboard Use).

FEDERAL

FED-STD-595 - Colors.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Rules

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification Rules

(Application for copies should be addressed to the National Motor Freight Traffic Association, Inc., 1616 P Street, N.W., Washington, D.C. 20036.)

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3. REQUIREMENTS

3.1 Qualification. Latex concrete deck covering furnished under this specification shall be products which are qualified for listing on the applicable qualified products list at the time set for opening of bids (see 4.3 and 6.3).

3.2 Material. The material used for forming the deck covering shall consist essentially of an intimate mixture of dry ingredients and a liquid latex proportioned to form a covering which will be suitable for application with a trowel. The ingredients shall be capable of being mixed and laid to the specified thickness and shall be capable of producing wearing surfaces which are smooth, dense, non-corrosive to aluminum or steel, and relatively free from waves, trowel marks, depressions, and other surface defects. The finished product shall conform to the requirements in table 1.

Table I - Requirements and test methods.

	Requirement	Test method
Adhering/bonding	3.3	----
Resistance to staining	3.4	4.5.2
Weight	3.5	4.5.3
Resistance to impact	3.6	4.5.4
Indentation	3.7	4.5.5
Resistance to elevated temperature	3.8	4.5.6
Moisture absorption	3.9	4.5.7
Oil absorption	3.10	4.5.8
Non-slip properties	3.11	4.5.9 and 4.5.10.1
Wear resistance	3.12	4.5.10
Fire resistance	3.13	4.5.11
Bond strength	3.14	4.5.12
Sparking resistance	3.15	4.5.13
Electrical conductivity	3.16	4.5.14
Load resistance	3.17	4.5.15
Ease of repair	3.18	4.5.16
Application instructions	3.19	----

3.3 Adhesion or bonding. The deck covering shall be capable of adhering to the deck or structure on which applied without the use of clips or other devices welded to the deck.

3.4 Resistance to staining. The deck covering shall be capable of being readily cleaned at frequent intervals without appreciable loss of surface or color, and shall not be adversely affected by detergents, such as soap powder conforming to P-D-220, when tested as specified in 4.5.2.

3.5 Weight. The deck covering after curing shall not exceed 24.5 pounds per square foot (lb/ft²) for a thickness of 2 inches (see 4.5.3).

3.6 Resistance to impact. When tested as specified in 4.5.4, the deck covering shall show no visible signs of chipping, cracking, or detachment from the steel plate. There shall be not more than 1/8 inch of permanent indentation.

3.7 Indentation. When tested as specified in 4.5.5, the initial indentation of the deck covering shall be not more than 1.5 percent of the actual thickness of the covering. The covering shall show no signs of cracking or becoming detached from the steel base plate as a result of the indentation.

3.8 Resistance to elevated temperature. The deck covering shall not flow or slip in any part more than 1/16 inch, nor soften, when tested as specified in 4.5.6.

3.9 Moisture absorption. The deck covering shall not absorb more than 2.0 percent of water, based on its weight at normal atmospheric conditions, when tested as specified in 4.5.7.

3.10 Oil absorption. When tested as specified in 4.5.8, the deck covering shall not soften and shall not show more than 2.0 percent change in weight.

3.11 Nonslip properties. The deck covering shall show coefficients of friction not less than those shown in table II when tested as specified in 4.5.9 in the "as prepared" condition and after 1500 revolutions of the wear test machine specified in 4.5.10.1.

Table II - Nonslip properties.

	Contacting surface conditions		
	Dry	Wet	Oily
Coefficient of static friction:			
Leather	0.30	0.50	----
Rubber	.60	.60	0.25
Coefficient of sliding friction:			
Leather	.30	.40	----
Rubber	.60	.60	0.30

3.12 Resistance to wear. The deck covering shall show wear not to exceed 0.150 inch, when tested as specified in 4.5.10.

3.13 Fire resistance. The deck covering shall conform to the fire test requirements set forth in MIL-STD-1623 (see 4.5.11).

3.14 Bond strength in shear. The initial bond strength in shear and bond strength in shear after oxygen bomb aging of the deck covering when bonded to steel shall be not less than 200 pounds per square inch (psi) when tested as specified in 4.5.12.

3.15 Sparking resistance. The deck covering shall show no evidence of sparking when tested as specified in 4.5.13.

3.16 Electrical conductivity. The deck covering shall show electrical resistance not to exceed 3 megohms when tested as specified in 4.5.14.

3.17 Live load resistance. The deck covering shall show no signs of cracking or becoming detached from the steel base plates when subjected to a 3000 pound roller load and shall show an average indentation not greater than 0.050 inch when tested as specified in 4.5.15.

3.18 Ease of repair. The deck covering shall be easily repairable, showing good bond between cured and new material when tested as specified in 4.5.16.

3.19 Directions for application. Each container shall be clearly labeled with instructions for application of the covering.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- (a) Qualification inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).

4.3 Qualification tests. Qualification tests shall be conducted at a laboratory satisfactory to the Naval Ship Engineering Center. Qualification tests shall consist of the examination of 4.4.2 and the tests specified in 4.5. Application for Qualification tests shall be made in accordance with "Provisions Governing Qualification SD-6" (see 6.3 and 6.3.1).

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4.4 Quality conformance inspection.4.4.1 Sampling for quality conformance.

4.4.1.1 Lot. For purposes of sampling, a lot shall consist of all unmixed ingredients offered for delivery at one time.

4.4.1.2 Sampling for examination of filled containers. A random sample of containers shall be selected from each lot offered for examination in accordance with MIL-STD-105 at inspection level I and acceptable quality level = 2.5 percent defective to verify compliance with this specification in regard to fill, closure, and marking. Each type of container shall be sampled separately.

4.4.1.3 Sampling procedure for acceptance inspection. A random sample of unmixed ingredients shall be selected from each inspection lot in accordance with table III. Each sample shall consist of sufficient material to provide for the application of 9 square feet, approximately 2 inches thick.

Table III - Sampling for acceptance inspection.

Lot size in pounds	Number of samples
500 and under	None
501 to 1,500	2
1,501 to 4,000	3
4,001 to 8,000	4
8,001 to 15,000	5
15,001 to 25,000	6
25,001 to 40,000	7
40,001 to 60,000	8
60,001 to 90,000	9
90,001 to 120,000	10
120,001 to 200,000	12
200,001 to 300,000	14
300,001 and over	16

4.4.2 Examination of filled containers. Each sample filled container selected as specified in 4.4.1.2 shall be examined for defects of construction of the container and closure, for evidence of leakage, and for unsatisfactory markings; each filled container shall also be weighed to determine the amount of contents. Any filled container in the sample having one or more defects, or under required fill, shall be rejected, and if the number of defective containers in any sample exceeds the acceptance number for the appropriate sampling plan of MIL-STD-105, the lot represented by the sample shall be rejected.

4.4.3 Quality conformance tests. Quality conformance tests shall consist of all tests not performed under lot acceptance tests (see 4.4.4); except the fire resistance test of 4.5.11.

4.4.4 Lot acceptance tests. Material selected in accordance with 4.4.1.3 shall be mixed in accordance with the manufacturer's instructions, and subjected separately to the tests specified in 4.5.3, 4.5.4, 4.5.5, 4.5.12 (initial only), and 4.5.13. If any sample is found to be not in conformance with this specification, the entire lot shall be rejected.

4.5 Test procedures.

4.5.1 Preparation of specimens. Specimens of the sizes as required for the following tests shall be made on clean 1/8 inch thick mild steel plates unless otherwise specified herein. The deck covering shall be prepared in accordance with the manufacturer's instructions and trowelled on the steel plates to the specified thickness. The specimens shall then be cured for 7 days at a temperature $70^{\circ} \pm 5^{\circ}$ Fahrenheit (F) and a relative humidity of 50 ± 2 percent.

4.5.2 Resistance to staining. A specimen 6 by 2 inches by 1/2 inch thick shall be immersed for one hour in the solution specified herein so that a 3-inch section of the specimen is immersed in the solution and the upper half remains unexposed for purposes of comparison. The liquid solution shall be made by dissolving soap powder, conforming to P-D-220, in tepid water to form a 1/2 of one percent solution, then adding lamp black until the solution is dark gray. After immersion, the specimen shall be rinsed for one minute with tap water at 140°F and dried with an air jet. The specimen shall then be examined for softening, stains, streaking, or loss of color.

4.5.3 Weight. The 4 specimens prepared for the moisture and oil absorption tests shall each be weighed to the nearest 0.05 ounce. The length and width shall be measured to the nearest 0.01 inch and the thickness to the nearest 0.001 inch. The thickness shall be determined by measuring the specimen at 16 equally distributed points, by means of a dial thickness gage and a template. The actual weight of the specimens shall be computed in lb/ft² per 2 inch thickness. The final computed weight shall be the average of the four specimens.

4.5.4 Resistance to impact. Two specimens 12 inches square by 2 inches thick shall be applied to 12 inch square by 1/4 inch thick mild steel plates. Each specimen shall be tested separately while being firmly supported on a solid-horizontal base. A 7-3/4 pound steel ball shall be dropped vertically from a height of 8 feet so that the impact will be at the center of the specimen. Each specimen shall be subjected to two impacts of the ball.

4.5.5 Indentation. One specimen 12 inches square by 2 inches thick shall be applied to a 12 inch square by 1/4 inch thick mild steel plate. Three indentations shall be made on the specimen and the results averaged. The center of each indentation shall be not less than 4 inches from the edge of the specimen and not less than 4 inches from the center of the adjoining indentation.

4.5.5.1 A load of 2,000 pounds shall be applied on the deck covering for 30 minutes by means of a circular indenter with a cross sectional area of 1 square inch and a radius of 1/64 inch on the perimeter of the indenting flat face. The thickness of the deck surfacing shall be measured by means of a dial thickness gage before and after the 2,000 pound load has been applied, and the thickness of the steel base plate shall be subtracted in each case. The indentation shall be taken as the percent change in the thickness of the material.

4.5.6 Resistance to elevated temperature. The resistance of the material to elevated temperature shall be determined as follows:

4.5.6.1 Flow or slip. A specimen 6 by 2 inches by 2 inches thick shall be scribed with a line parallel to and approximately 1 inch from a 2-inch edge used as a reference. The distance between this line and the edge of the steel base plate shall be measured to the nearest 0.01 inch. The specimen shall then be suspended vertically from the end opposite the reference and in an oven maintained at a constant temperature of 158°F for 5 hours. When the specimen has cooled to room temperature, the distance between the reference edge and the line shall be measured again. The difference between the two measurements is called the flow or slip.

4.5.6.2 Softening. The deck covering shall be examined by touch, immediately after the specimen has been removed from the oven, to determine whether the material has softened under the action of the heat.

4.5.7 Moisture absorption. Two specimens 6 inches square by 2 inches thick shall be prepared by applying the deck covering to oiled surfaces of steel plate, in such a manner that upon drying the specimens will not adhere to the plates. Each specimen without the steel backing plate shall be weighed dry, dipped into tap water at room temperature, lightly wiped on all surfaces with a paper towel, and again weighed to the nearest 0.05 ounce. Immediately after weighing, the specimen shall again be immersed in the tap water for 24 hours, lightly wiped and again weighed. The percent gain in moisture shall be based on the weight of the dry specimen and the difference between the weight after 24 hour immersion and the weight after dipping and wiping.

4.5.8 Oil absorption. Two specimens 6 inches square by 2 inches thick shall be prepared as specified in 4.5.7. Each specimen without the steel backing plate shall be weighed dry, dipped into SAE 10W oil, lightly wiped on all surfaces with a paper towel and again weighed to the nearest 0.05 ounce. Immediately after weighing, the specimen shall be immersed for 24 hours in the SAE 10W oil, lightly wiped and again weighed. The percent gain in weight shall be based on the weight of the dry specimen and the difference between the weight after 24 hour immersion and the weight after dipping and wiping.

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4.5.9 Nonslip properties. The coefficients of friction of the deck covering against leather and rubber, respectively, shall be determined. The leather shall be oak-tanned sole leather which has been sanded smooth with grade O garnet paper. The rubber shall be a vulcanized compound with a hardness range of 60 to 80 Durometer "A". Tests shall be made with the contact surface dry, wet with a solution of 4 percent sodium chloride in water and oiled, using SAE 10W oil. A load of 33 pounds shall be applied uniformly over a 2 by 4 inch specimen 1/2 inch thick. The determination of static and sliding friction may be made by the inclined plane method or by determining the pull on a spring balance required to start the test piece from rest and then to maintain a constant velocity. The factor of friction shall be the average of four readings.

4.5.10 Resistance to wear. Specimens 3 inches long by 2 inches wide and 1/2 inch thick shall be prepared so that an area of approximately 6 square inches is presented to the abrasive in the machine specified in 4.5.10.1. The abrasive grit shall be No. 80 aluminum oxide. Before wear-testing, the thickness shall be measured at 12 equally distributed points on the specimen by means of a dial thickness gage and a template. The specimen shall then be subjected to 1,500 revolutions of the wear test machine, and the thickness obtained at the same points previously measured. The difference in thickness shall be averaged to determine the thickness of material worn away by the abrasive.

4.5.10.1 Wear test machine. The wear test machine shown on figures 1 and 2 shall have the following essential mechanical characteristics:

- (a) Mild steel, abrasion disk, 14-1/8 inches in diameter and 1/2 inch thick, revolved clockwise at a constant speed of 23.5 revolutions per minute (r/min).
- (b) Specimen holder, 2 by 4 inches, attached to a 5/8 inch diameter shaft by means of a universal coupling. The distance between centers of the disk and the specimen holder shaft is 5.1 inches. A specimen of decking material is secured in specimen holder by means of clamps at each end of the holder. The holder revolves clockwise at a constant speed of 32.5 r/min.
- (c) Hardened tool-steel cam attached to the specimen holder shaft by means of set screws. In each 1/2 revolution of the shaft, the specimen is lifted a distance of 1/16 inch and then dropped back on disk specified in 4.5.10.1(a) under a 10 pound weight. Change in the lift due to wear of the specimen is compensated by adjustment of the cam at regular intervals, so that the lift is maintained at a practically constant distance.
- (d) Weight 10 pounds, the maximum found suitable for use with this test machine.
- (e) Distributor for abrasive grits. The grits flow by gravity from the hopper specified in 4.5.10.1(f) through a 13/64 inch inside diameter tube and into the center of the distribution chamber. An impeller in the chamber provides an evenly distributed feed of the grits through eight 3/64 inch diameter holes centered on a 1-5/8 inch diameter pitch circle. A uniform distribution of grits falls to disk specified in 4.5.10.1(a) in path of the test specimen. The distributor is revolved at a constant speed of 9 r/min.
- (f) Hopper for feeding abrasive grits.
- (g) Bevel drive gear.
- (h) Predetermining revolution counter and switch.
- (i) One-third horsepower compound wound direct current (d.c.) motor.
- (j) Hopper for collecting used abrasive grit.
- (k) Steel frame.

Details of the distributor for the abrasive grit, the cam and specimen holder are shown on figures 3 and 4, respectively.

4.5.10.2 Procedure. The steel disk specified in 4.5.10.1(a) revolves while the weighted specimen of deck covering in holder specified in 4.5.10.1(b) is lifted and dropped by a cam while it is being revolved. When the specimen is dropped through motion of the cam, it falls a distance of 1/16 inch and meets disk (see 4.5.10.1(a)) with impact simulating the fall of a foot on the deck surface. Foot action is further simulated in that the revolving specimen contacts the disk with a sliding and twisting motion until lifted clear by the cam. Continuous rotation of the specimen introduces the element of wear in all directions on the decking material. Free abrasive grits of No. 80 aluminum oxide are fed at a steady rate from the hopper (see 4.5.10.1(f)) and distributed uniformly on the steel disk in the path of the specimen. The revolving motions of the steel disk and the test specimen keep the abrasive grits circulating to the outer side of the path of the specimen. The grits fall from the edge of the steel disk into hopper (see 4.5.10.1(j)), from which they are collected and then screened to eliminate undesired particles before replacement in the upper feeding hopper (see 4.5.10.1(f)).

4.5.11 Fire resistance test. The material shall be tested in accordance with the test procedure set forth in MIL-STD-1623.

4.5.12 Bond strength in shear. Twelve specimens shall be prepared by applying the deck covering in an area 2 inches square and 1/2 inch thick to 2 by 6 inches by 1/8 inch thick mild steel plates, such that 1 inch of the plate is exposed at one end and 3 inches exposed at the opposite end. Specimens shall be tested by measuring the load required to shear the 2-inch square area of deck covering from the steel plate by means of a shear test jig as shown on figure 5. Six specimens shall be tested to determine the initial bond strength in shear and six specimens shall be tested after aging in an oxygen bomb for 96 hours under a pressure of 300 psi and temperature of 158°F.

4.5.13 Sparking resistance. The three specimens used for the live load test shall be tested for sparking resistance by abrading the specimens with a rotating stiff wire wheel attached to an electric drill and by striking the specimens glancing blows with a steel hammer. These tests shall be run in a darkened room and the presence or absence of sparks shall be noted.

4.5.14 Electrical conductivity. The electrical resistance of the deck covering shall be conducted on the three specimens prepared for the resistance to impact and indentation tests as follows:

- (a) A brass electrode shall be used for the electrical resistance measurements. The electrode shall be 2-1/2 inches in diameter, weigh 5 pounds and have a rubber pad base of 55 durometer hardness cemented to one face. The contact surface of the electrode shall be covered with a sheet of aluminum foil 0.003 inch in thickness, held to the sides of the electrode with elastic bands.
- (b) The electrical resistance shall be measured between two points, one directly at the center of the top surface of the deck covering where the electrode is placed and the other at the steel base plate.
- (c) The instrument used shall be an insulation tester of the true ohmmeter type, having a mechanically operated generator with an output of 500 volts d.c. and a short circuit current of 5 milliamperes.

4.5.15 Live load resistance. Three specimens, 8 inches wide and 10 inches long and 2 inches thick, shall be prepared in steel boxes. The steel box shall have a 1/4 inch thick base plate, 8-1/2 by 13 inches and 1/8 inch thick sides, 8 by 10 inches by 2 inches high. Each specimen shall be mounted on the live load apparatus and subjected to the following loading procedure:

- (a) A roller preload of 400 pounds shall be applied and initial thickness readings taken at four equally spaced positions of the roller as it passes over the specimen.
- (b) A roller load of 1000 pounds shall then be applied and the specimens subjected to 25 cycles of reciprocation under this load.
- (c) The roller load shall then be increased in 500 pound increments 25 cycles applied at each loading, until a maximum roller load of 3000 pounds is attained.
- (d) At the end of the loading procedure the final thickness of each specimen shall be measured at the four equally spaced positions with the roller load reset at 400 pounds. The average decrease of thickness for each specimen is then determined by the difference between the initial and final thickness readings.

4.5.15.1 Live load apparatus. The live load apparatus shall consist essentially of a reciprocating table that carries a specimen of the material under test, and a roller that is brought to bear against the specimen by a pneumatic cylinder having a piston diameter of 8 inches. The axis of the roller shall be parallel to the plane of the specimen and perpendicular to the specimen's line of motion, so that the roller rotates as the specimen reciprocates under it. The specimen table shall oscillate at approximately 9 cycles per minute through a stroke of 5 inches. The roller shall be of brass, 4 inches in diameter, 3-1/8 inches wide, with a 1/4 inch radius at both ends. The roller contacting force shall be controlled by varying the pressure in the loading cylinder.

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4.5.16 Ease of repair. The three specimens used for the electrical conductivity determination shall be tested for ease of repair by gouging out areas of various sizes to a minimum depth of 1/8 inch with a hammer and a 1/2 inch chisel. These areas shall then be patched, noting the ease of repair and the material's ability to featheredge as well as the bond between the patch and the original covering.

4.6 Inspection of preparation for delivery. The packaging, packing, and marking shall be inspected for compliance with section 5 of this document.

5. PREPARATION FOR DELIVERY

(The preparation for delivery requirements specified herein apply only for direct Government procurements. For the extent of applicability of the preparation for delivery requirements of referenced documents listed in section 2, see 6.4.)

5.1 Preservation-packaging. Not applicable.

5.2 Packing. The component parts of the deck covering shall be individually packed for the level specified (see 6.2) as follows:

5.2.1 Levels A and B.

5.2.1.1 Binder. The latex binder shall be furnished in 5-gallon capacity pails conforming to Type I, Class 5 or Type II, class 4 of PPP-P-704. Container selection shall be at the suppliers option. Interior and exterior coatings are required except exterior coating shall approximate color number 26270 of FED-STD-595.

5.2.1.2 Dry ingredients. The dry ingredients shall be furnished in any one of the following containers, net capacity 94-pounds at the suppliers option:

<u>Specification</u>	<u>Container</u>	<u>Container Number</u>
UU-S-48	Sack, Shipping, Paper	17-17X
PPP-B-35	Bags, Textile, Shipping	P15B
PPP-B-1714	Bags, Shipping	PP-4-6

Container closures shall be in accordance with the applicable specification or appendix thereto.

5.2.2 Level C. The binder and dry ingredients shall be packed for shipment in containers which will insure acceptance by the common carrier and safe delivery to destination at the lowest applicable rate. Containers, packing, and method of shipment shall comply with the Uniform Freight or National Motor Freight Classification Rules and Regulations or other carrier rules as applicable to the mode of transportation.

5.3 Palletized unit loads. When specified (see 6.2), shipping containers shall be palletized in accordance with MIL-STD-147.

5.4 Marking. In addition to any special marking required, (see 3.19 and 6.2), shipping containers and palletized unit loads shall be marked in accordance with MIL-STD-129 and the applicable container specification.

6. NOTES

6.1 Intended use. Latex concrete is intended for use between aluminum channels in cargo ammunition holds or on aluminum (or steel) plate where a nonsparking, fire resistant, heavy duty flooring is required.

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Level of packing required (see 5.2).
- (c) When pallets are required (see 5.3).
- (d) Marking required (see 5.4).

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6.3 With respect to products requiring qualification, awards will be made only for products which are at the time set for opening of bids, qualified for inclusion in applicable Qualified Products List QPL-21631 whether or not such products have actually been so listed by that date. The attention of the suppliers is called to this requirement, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Ship Engineering Center, Prince George's Center, Center Building, Hyattsville, Maryland 20782, and information pertaining to qualification of products may be obtained from that activity. Application for Qualification tests shall be made in accordance with "Provisions Governing Qualification SD-6" (see 6.3.1).

6.3.1 Copies of "Provisions Governing Qualification SD-6" may be obtained upon application to Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.

6.4 Sub-contracted material and parts. The preparation for delivery requirements of referenced documents listed in section 2 do not apply when material and parts are procured by the supplier for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.5 THE MARGINS OF THIS SPECIFICATION ARE MARKED "*" TO INDICATE WHERE CHANGES (ADDITIONS, MODIFICATIONS, CORRECTIONS, DELETIONS) FROM THE PREVIOUS ISSUE HAVE BEEN MADE. THIS WAS DONE AS A CONVENIENCE ONLY AND THE GOVERNMENT ASSUMES NO LIABILITY WHATSOEVER FOR ANY INACCURACIES IN THESE NOTATIONS. BIDDERS AND CONTRACTORS ARE CAUTIONED TO EVALUATE THE REQUIREMENTS OF THIS DOCUMENT BASED ON THE ENTIRE CONTENT IRRESPECTIVE OF THE MARGINAL NOTATIONS AND RELATIONSHIP TO THE LAST PREVIOUS ISSUE.

Preparing activity:
Navy - SH
(Project 5610-N025)

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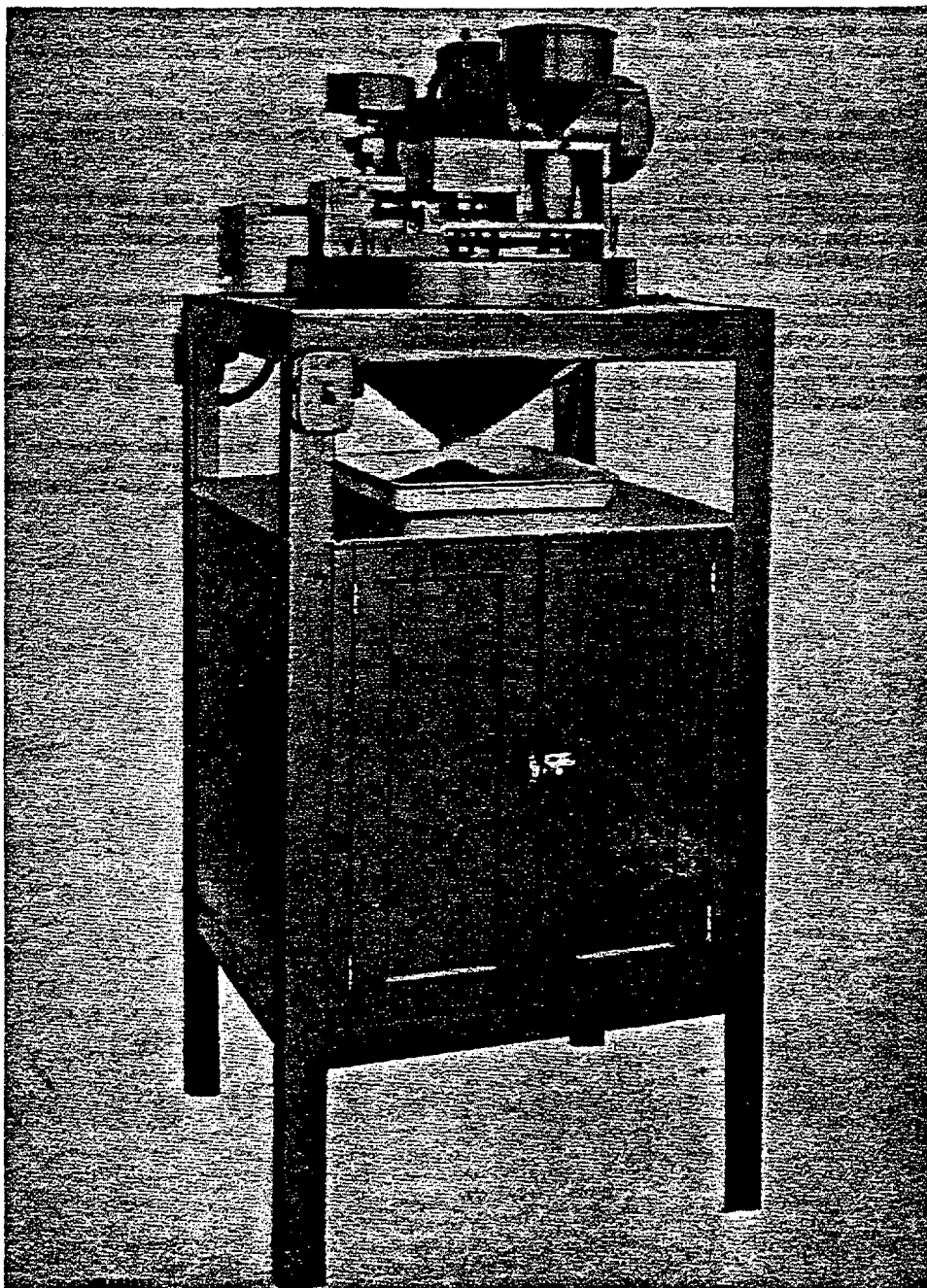


Figure 1 - Wear test machine.

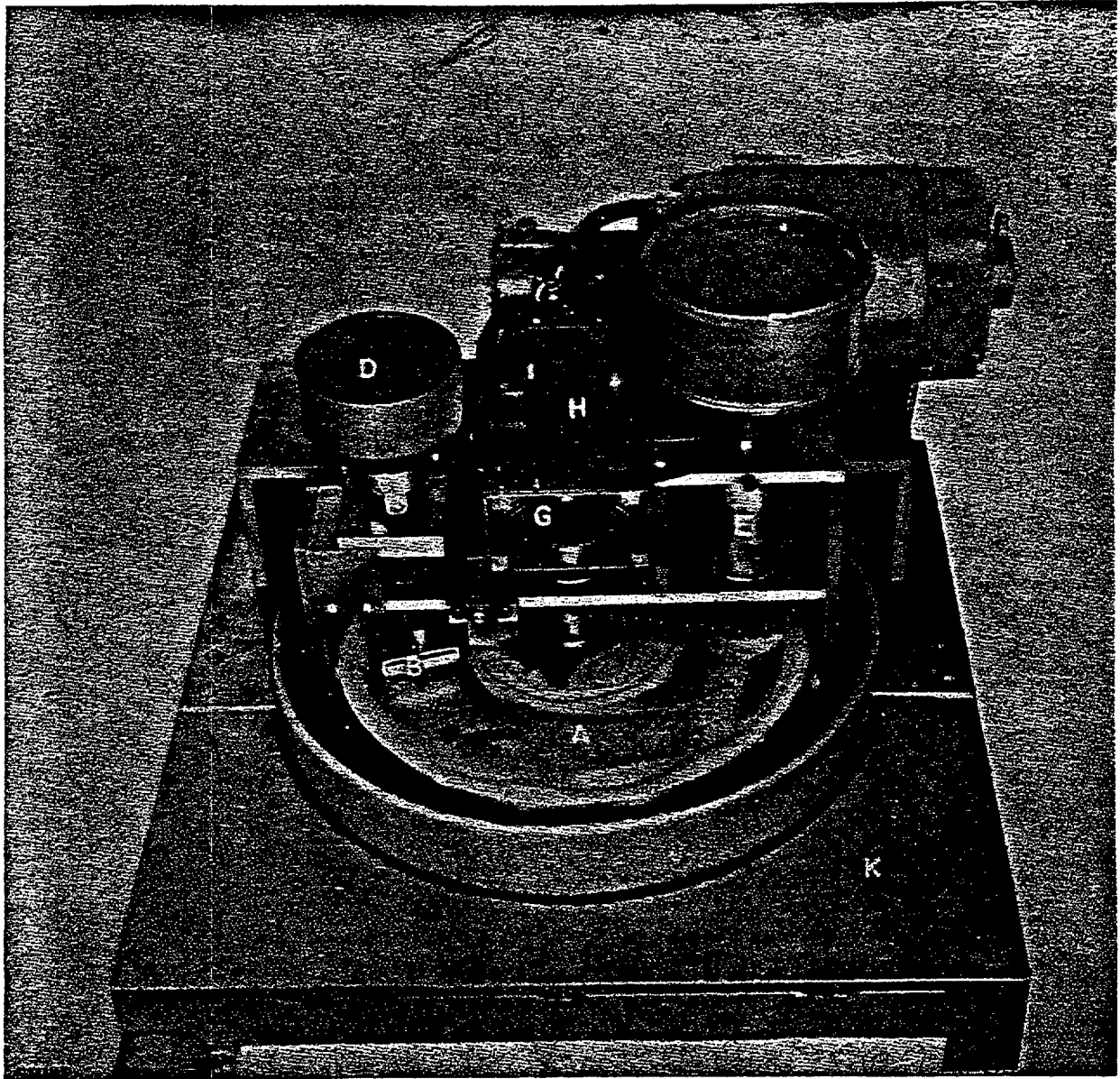


Figure 2 - Detail view of wear test machine.

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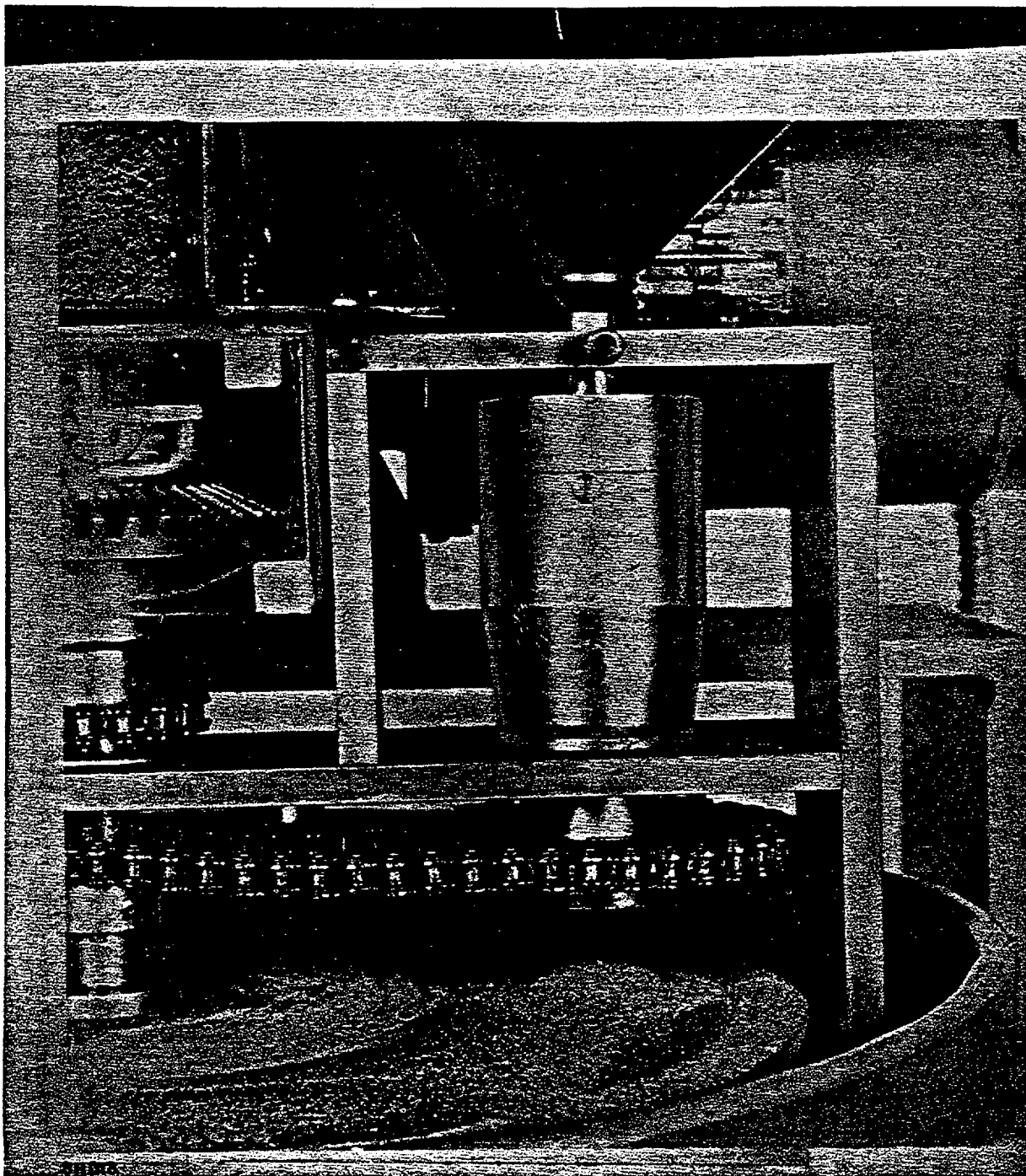


Figure 3 - Detail of distributor of abrasive grits.

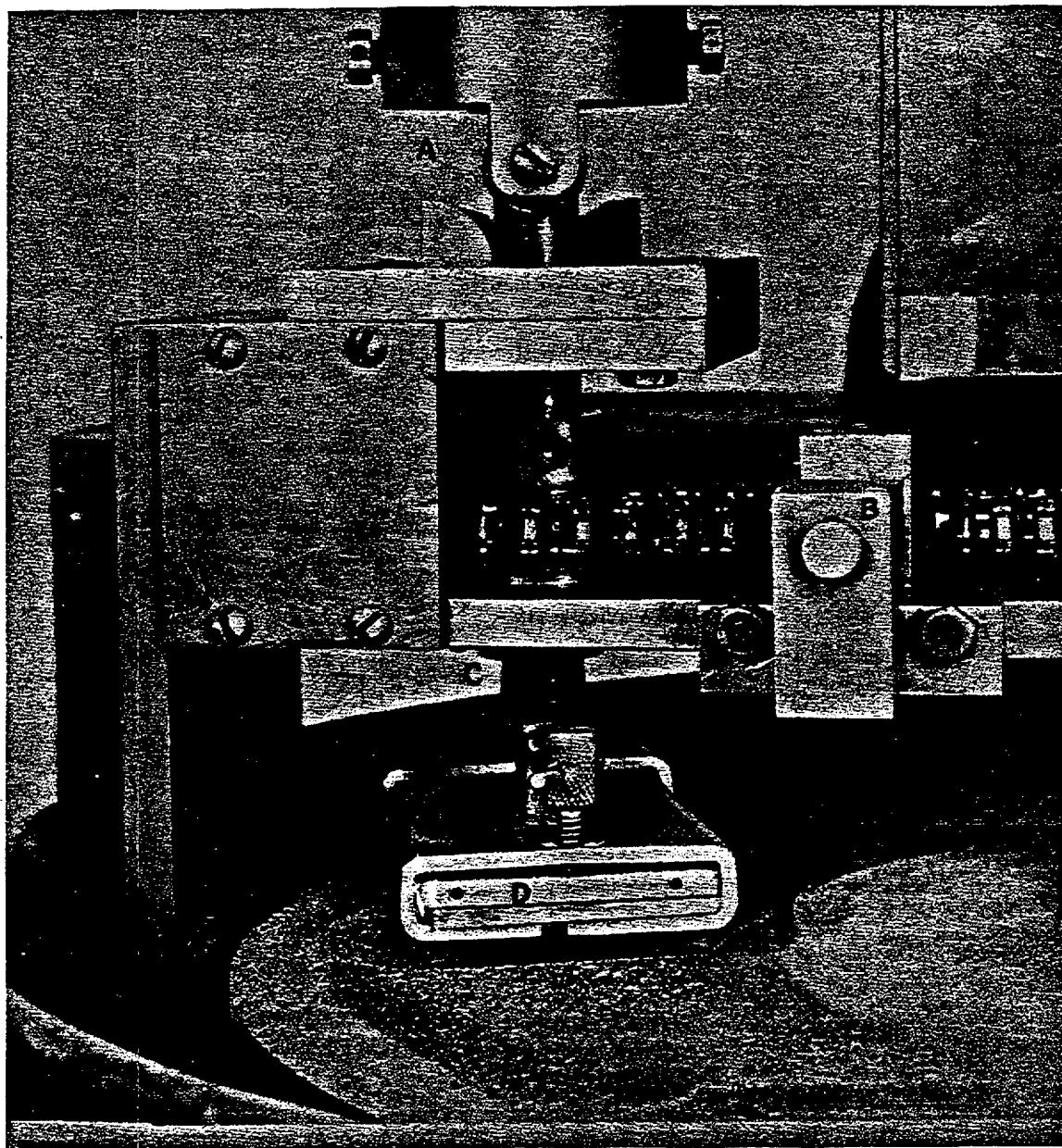


Figure 4 - Detail of cam and specimen holder.

- | | |
|-----------------|---------------------|
| A - Cam | C - Universal joint |
| B - Chain idler | D - Specimen holder |

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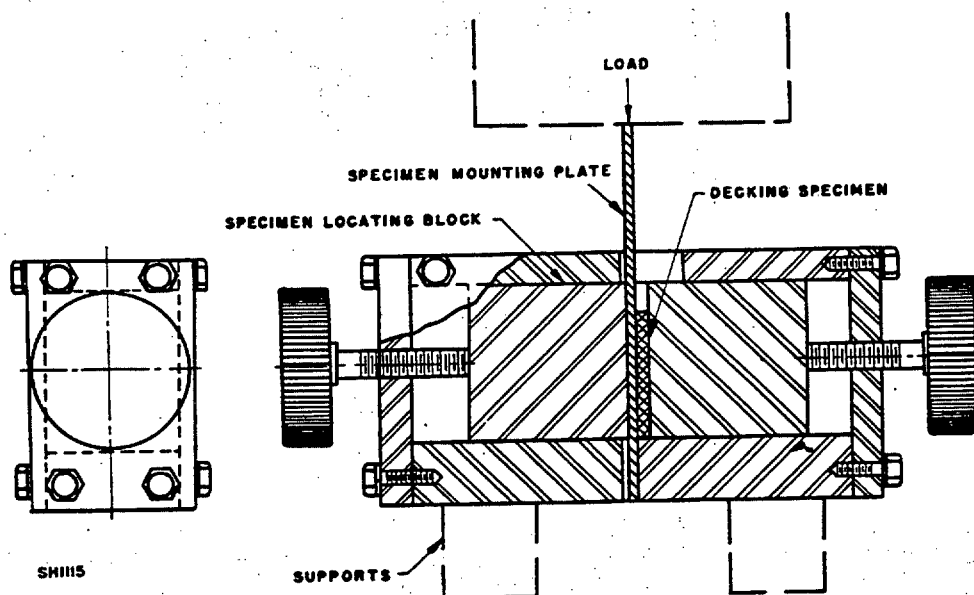


Figure 5 - Shear test jig for hard-setting deck covering materials.

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL		OMB Approval No. 22-R255
<p>INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.</p>		
DOCUMENT IDENTIFIER AND TITLE		
NAME OF ORGANIZATION AND ADDRESS	CONTRACT NUMBER	
	MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT	
<p>1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.</p> <p>B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES</p>		
2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID		
<p>3. IS THE DOCUMENT RESTRICTIVE? <input type="checkbox"/> YES <input type="checkbox"/> NO (If "Yes", in what way?)</p>		
4. REMARKS		
SUBMITTED BY (Printed or typed name and address - Optional)	TELEPHONE NO.	
	DATE	

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