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LACQUER AND CHEMICAL CORP., ALAKA RESEARCH LABS., BROOKLYN, N.Y. (3RD QUARTERLY REPORT)

THIRD QUARTERLY REPORT ON FUNGUS RESISTANCE OF PLASTICS - AND APPENDIXES 1 AND 2 - AUG 10 TO NOV 16, 1951

RUGGERI, S.; ATLAS, R. WAITZE 23 NOV'51 156PP TABLES

USN CONTR. NO. NORD 11215

PLASTICS - EFFECT OF
FUNGI
PLASTICS, LAMINATED

MATERIALS, NON-METALLIC (8)
PLASTICS (2)

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CODED LIST OF MANUFACTURERS OF MATERIALS TESTED

RESTRICTED APPEXDIX # 1

to

Quarterly Reports on Fungus Resistance of Plastics

under CONTRACT NOrd 11215

for

BUREAU OF ORDNANCE
DEPARTMENT OF THE NAVY
MOISTURE AND FUNGUS PROOFING SECTION
MATERIALS AND PRESERVATION BRANCH
RESEARCH AND DEVELOPMENT DIVISION

by

S. Ruggeri and R.W. Atlas

ALAKA RESEARCH LABORATORIES
division of
LACQUER AND CHEMICAL CORPORATION
214 - 40th Street
Brooklyn 32, N.Y.

November 23, 1951

RESTRICTED APPEXDIX #1

to Quarterly Reports on Fungus Resistance of Plastics,
by Alaka Research Laboratories
Division of Lacquer and Chemical Corporation.

CODED LIST OF MANUFACTURERS OF MATERIALS TESTED

1. General Electric Co.
Coshocton, Ohio

2. Panelyte Division
St. Regis Paper Co.
Enterprise Ave.
Trenton, N.J.

3. The Richardson Company
Melrose Park, Ill.

4. Synthane Corp.
Oaks, Pa.

5. Spaulding Fibre Co., Inc.
310 Wheeler Street
Tonawanda, N.Y.

6. Westinghouse Electric Corp.
Micarta Division
Trafford, Pa.

7. National Vulcanized Fibre Co.
Maryland Ave. & Beech Street
Wilmington 99, Del.

8. The Formica Co.
4614 Spring Grove Ave.
Cincinnati 32, Ohio

9. Mica Insulator Company
Post Office Box 1076
Schenectady 1, N.Y.

10. Farley & Loetscher Mfg. Co.
916 Commercial Trust Bldg.
Philadelphia 2, Pa.

11. Rogers Corporation
Goodyear, Conn.

12. Continental-Diamond Fibre Co.
Newark, Delaware

13. Continental-Diamond Fibre Co.
Bridgeport, Pa.

14. Continental-Diamond Fibre Co.
Valparaiso, Ind.

15. Taylor Fibre Co.
Norristown, Pa.

16. Taylor Fibre Co.
LaVerne, Calif.

17. Plastic Products Division
The J.P. Lewis Co.
Beaver Falls, N.Y.

18. American Phenolic Corp.
1830 S. 54th Street
Chicago, Ill.

19. Bakelite Division
Union Carbon & Carbide Corp.
30 East 42nd Street
New York 17, N.Y.

20. American Cyanamid Co.
30 Rockefeller Plaza
New York 20, N.Y.

21. The Borden Co.
Chemical Division
350 Madison Ave.
New York 17, N.Y.

22. Durez Plastics & Chemicals, Inc.
North Tonawanda, N.Y.

23. General Electric Co.
1 Plastics Ave.
Pittsfield, Mass.

24. Monsanto Chemical Co.
Plastics Division
Springfield 2, Mass.

25. Plastic Engineering Co.
1607 Geele Ave.
Sheboygen, Wisc.

26. Reilly Tar & Chemical Corp.
1615 Merchants Bank Bldg.
Indianapolis 4, Ind.

27. Watertown Mfg. Co.
Echo Lake Road
Watertown, Conn.

28. Plaskon Division
Libbey-Owens-Ford Glass Co.
2112 Sylvan Ave.
Toledo 6, Ohio

29. Thomas & Betts Company, Inc.
Elizabeth 1, New Jersey

30. Aircraft-Marine Products Inc.
1523 North 4th Street
Harrisburg, Pa.

31. Burndy Engineering Co., Inc.
107 Bruckner Blvd.
New York 54, N.Y.

32. Stewart Stamping Co.
632 Central Park Ave.
Yonkers 4, New York

33. Duralith Corp.
136 N. 7th Street
Philadelphia 6, Pa.

34. Pioneer Plastics Corp.
28 Goodhue Street
Salem, Mass.

35. Northern Plastics Corp.
1220 W. Clybourn Street
Milwaukee 3, Wisc.

36. Molding Corporation of America
Providence, R.I.

37. E.I. DuPont de Nemours & Co.
Polychemicals Dept.
Arlington, N.J.

38. U.S. Gasket Co.
Post Office Box 93
Camden, N.J.

39. Houghton Laboratories, Inc.
322 Bush Street
Olean, N.Y.

40. Marbon Corp.
1926 W. 10th Avenue
Gary, Indiana

RESTRICTED APPENDIX #2

to Quarterly Reports on Fungus Resistance of Plastics,
by Alaka Research Laboratories
Division of Lacquer and Chemical Corporation.

CUMULATIVE CATALOG OF FUNGINERTNESS
(INHERENT FUNGUS RESISTANCE)
OF PLASTIC LAMINATES AND MOLDING COMPOUNDS

(assembled from work under Contract NOrd 11215)

Foreword

The listings below are provided to summarize information obtained on the relative fungus resistance of plastic materials, in the tests reported in more detail in Quarterly Reports under Contract NOrd 11215, through Report No. 3, November 23, 1951. The ratings assigned herein have no official connection with the various specifications, which generally do not contain fungus-resistance requirements; and the limits considered in assigning these ratings may be changed later as additional information is accumulated.

The tests upon which these ratings are based were designed to furnish information as to inherent fungus resistance (funginertness) of the plastics. This is resistance due to the lack of nutritive substances that will support the growth of fungi. A "funginert" plastic is one that doesn't contain nutrients necessary for fungus growth. (This kind of resistance is to be distinguished from "fungistatic" or "fungicidal" resistance which results from the presence of substances that actively prevent growth or that kill fungi. The presence of fungistatic or fungicidal chemicals interferes with proper funginertness tests and such materials are therefore not qualified under these particular tests, or the ratings below.)

Plastics that have been tested are listed below, under the specifications appropriate to their other characteristics. Some of the materials may be given provisional ratings, based upon incomplete data, and will be designated by the notation "**" preceding the manufacturer's designation in the listing. Materials for which no tests on fungus resistance have yet been completed under the present program, and some others with indecisive results, are omitted from these listings.

It is obvious that fungus resistance cannot be the sole property to be considered in selection of materials for electrical and electronic equipment. The ratings presented below are for use as further criteria (in addition to electrical, mechanical, etc. properties) in such selection. It may at times be necessary to select a plastic with only intermediate or poorer funginertness rating when successful performance of the equipment requires such a material because of its other special characteristics.

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFG (Phenolic resin; cellulose filler, general-purpose)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	Bakelite Div, UCC	**BM 120 Black
	Plastic Engineering Co.	**307 Black
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Bakelite Div, UCC	**BM 7129 Tan
	Bakelite Div, UCC	**BM 7156 Black
	Bakelite Div, UCC	**BM 8052 Red
	Bakelite Div, UCC	**BM 10196 Black
	Borden Company	**Durite GP-130 Black
	Durez Plastics & Chem.	**Durez 1544 Black
	Durez Plastics & Chem.	**Durez 11540 Black
	General Electric Co.	**GE-12840
	Monsanto Chemical Co.	**Resinox 6570 Black
	Plastic Engineering Co.	**307 Natural
	Reilly Tar & Chem Corp.	**Indur 602 Black
	Reilly Tar & Chem Corp.	**Indur 603 Brown
	Reilly Tar & Chem Corp.	**Indur 902 Black
	Watertown Mfg. Co.	**Neillite 6017 Black
	Westinghouse Corp.	**Moldarta 107-B Blac
	Westinghouse Corp.	**Moldarta 165-A Blac
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFI-5 (penolic resin; cellulose filler, impact-resistant; nominal impact strength, 0.60 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Durez Plastics & Chem. General Electric Co. Rogers Corp. Westinghouse Corp	**Durez 1905 B1 **GE-12843 **Rogers - RM 15000B **Moldarta - 7498-1A Black
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under

MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFI-10 (Phenolic resin; cellulose filler, impact-resistant; nominal impact strength, 1.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	Durez Plastics & Chem. General Electric Co.	**Durez 13537 Nat. ** GE 12824
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Bakelite Corp, UCC Borden Company	**BM 1132 Black **Durite IM-520 Black
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under

MILITARY SPECIFICATION MIL-P-14a Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFI-20 (Phenolic resin; cellulose filler, impact-resistant; nominal impact strength, 2.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	General Electric Co Westinghouse Corp.	**GE 12845 **Moldarta 199 Bl.
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Borden Company Westinghouse Corp.	**Durite IM-530 Bl. **Moldarta 7346 Bl.
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Bakelite Div, UCC Synthane Corp.	**BM 3510 Black **Grade C Molded Macerated Synthane Brown

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under

MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFI-30 (Phenolic resin; cellulose filler, impact-resistant; nominal impact strength, 3.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (Second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CFI-40 (Phenolic resin; cellulose filler, impact-resistant; nominal impact strength, 4.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Bakelite Div, UCC	**BM 16468 Black

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-parts, Molded; Thermosetting

Type MFE (Phenolic resin; mineral filler, best electrical properties)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	Bakelite Div, UCC	**BM 16981 Nat.
	Bakelite Div, UCC	**BM 17748 Nat.
	Durez Plastics & Chem.	**Durez 12810 Nat.
	General Electric Co.	**GE 12437
	Monsanto Chemical Co.	**Resinox 7934 Nat.
	Monsanto Chemical Co.	**Resinox 10900 Natural
	Westinghouse Corp	**Moldarta 192-D Natural
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type MFG (Phenolic resin; mineral filler, general-purpose, heat-resistant)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	Bakelite Div, UCC General Electric Co. Westinghouse Corp. Westinghouse Corp.	**BM 250 **GE 12846 **Moldarta 102 Brown **Moldarta 102-H Brown
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Borden Company	**Durite HR-350 Black
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type MFH (Phenolic resin; mineral filler, heat-resistant)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Bakelite Div, UCC Durez Plastics & Chem. General Electric Co. Reilly Tar & Chem Corp.	**BM 261 Black **Durez 11864 Black **GE 12847 **Indur RM-904 Black
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-parts, molded; Thermosetting

Type MFI-10 (Phenolic resin; mineral filler, impact-resistant; nominal impact strength, 1.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Westinghouse Corp.	**Moldarta 8780-3 Natural
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	General Electric Co.	**GE 12420

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding and Plastic-Parts, Molded; Thermosetting

Type MFI-20 (Phenolic resin; mineral filler, impact-resistant; nominal impact strength, 2.0 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Bakelite Div, UCC Westinghouse Corp	**BM 17610 **Moldarta 8780-1 Natural
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	General Electric Co.	**GE 12410

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CMG (Melamine resin; cellulose filler, general-purpose)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	American Cyanamid Co.	**Melmac 1500 Brown
	Monsanto Chemical Co.	** Resimene 803-A Tan
	Plaskon Div, Libbey	**Plaskon Melamine Type TWG Blue M-10935
	Plaskon Div, Libbey	**Plaskon Type AM Ivory
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type CMI-5 (Melamine resin; cellulose filler, impact-resistant; nominal impact strength, 0.60 foot-pounds per inch notch)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	American Cyanamid Co.	**Melmac P-3020 Natural
	American Cyanamid Co.	**Melmac P-3020 Black
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Molded Plastics
described under
MILITARY SPECIFICATION MIL-P-14A Plastic-Materials, Molding, and Plastic-Parts, Molded; Thermosetting

Type MME (Melamine resin; mineral filler, arc-and flame-resistant)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	American Cyanamid Co.	**Melmac 592 Natural
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Plastic Laminates described under

MILITARY SPECIFICATION MIL-P-997A Plastic-Material, Laminated, Thermosetting, Electrical-Insulating: Sheets, Glass Cloth, Silicone Resin

Type GSG (All material under this specification is of this type)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Continental-Diamond (Newark)	**Dilecto GB-112S
	Formica Co.	Formica G-7
	General Electric Co.	GE 11514
	Mica Insulator Co.	Lamicoid 6090
	Nat. Vulcanized Fibre	G-7-834 (G-7-830)
	Panelyte Div, St Regis	Panelyte Grade 130
	Taylor Fibre Co. (Norristown)	**Taylor GSG
	Westinghouse Corp.	Micarta T-35210
	Westinghouse Corp.	Micarta 20202
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	None	None
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-3115A Plastic-Material
Laminated, Thermosetting, Sheets, Paper-Base, Phenolic-Resin

Type PBG (General-purpose grade)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Continental-Diamond (Newark)	**Dilecto XX-13
	Nat. Vulcanized Fibre	Phenolite Grade XX-322
	Mica Insulator Co.	Lamicoid 6920
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Continental-Diamond (Bridgeport)	**Dilecto XX-13
	Formica Co.	**Formica XXN-23
	General Electric Co.	GE 114
	General Electric Co.	GE 2008
	Panelyte Div, St Regis	**Panelyte 550
	Plastic Prods Div. J.P. Lewis Co.	**Tensilite 300
	Richardson Co.	**Insurok T-643 Natural
	Rogers Corp	**Lamarok #210
	Spaulding Fibre Co.	**Spauldite XX
	Synthane Corp.	Synthane XX
	Taylor Fibre Co. (Norristown)	**Taylor XX
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Taylor Fibre Co. (LaVerne)	**Taylor XX Nat. (LaVerne)

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-3115A Plastic-Material, Laminated, Thermosetting, Sheets, Paper-Base, Phenolic-Resin

Type PBE (Electrical Grade)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Richardson Co. Rogers Corp.	Insurok T-640 **Lamarok #215
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	General Electric Co. Nat. Vulcanized Fibre Panelyte Div., St Regis Spaulding Fibre Co. Synthane Corp. Taylor Fibre Co. (Norristown)	**GE 2029 **Phenolite Grade No. XXX-401 **Panelyte 520 **Spauldite Sheet XXX Nat. Synthane XXX Nat. **Taylor XXX Nat.
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Formica Co.	**Formica XXXN

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-3115A Plastic-Material, Laminated, Thermosetting, Sheets, Paper-Base, Phenolic-Resin

Type PBE-P (Electrical Grade; Punching Stock)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Continental-Diamond (Newark)	**Dilecto XXXP-26
	Mica Insulator Co.	Lamicoid 6028
	Nat. Vulcanized Fibre	Phenolite XXXP-455
	Richardson Co.	Insurok T-725
	Richardson Co.	Insurok T-812
	Panelyte Div, St. Regis	Panelyte 780
	Taylor Fibre Co. (Norristown)	**Taylor XXXP
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Continental-Diamond (Valparaiso)	**Dilecto XXXP-26
	Formica Co.	**Formica XXXPN
	General Electric Co.	GE 2051
	Richardson Co.	**Insurok T-800
	Spaulding Fibre Co.	**Spauldite XXXP
	Spaulding Fibre Co.	Spauldite Sheet XXX-618 Natural (XXX-648)
	Synthane Corp.	**Synthane XXXP
	Synthane Corp.	**Synthane XXXP-IR
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginertness of Plastic Laminates described under MILITARY SPECIFICATION MIL-P-15035A Plastic-Material, Laminated, Thermosetting: Sheets, Cotton-Fabric-Base, Phenolic Resin

Type FBM (Mechanical Grade)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Westinghouse Corp.	Micarta 262
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Continental-Diamond (Newark)	**Dilecto C-1513
	Farley & Loetscher	**Farlite C-30
	Formica Co.	Formica CN-16
	General Electric Co.	Textolite 113
	Mica Insulator Co.	Lamicoid 6030
	Nat. Vulcanized Fibre	Phenolite C-501
	Panelyte Div, St Regis	Panelyte 900
	Panelyte Div, St Regis	Panelyte 920
	Richardson Co.	Insurok T-601
	Spaulding Fibre Co.	Spauldite Sheet Natural CG
	Synthane Corp.	Synthane C
	Taylor Fibre Co. (Norristown)	**Taylor C
	Taylor Fibre Co. (LaVerne)	**Taylor C Nat. (LaVerne)

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-15035A Plastic-Material, Laminated, Thermosetting: Sheets, Cotton-Fabric-Base, Phenolic Resin

Type FBG (General Purpose Grade)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Continental-Diamond (Bridgeport) Nat. Vulcanized Fibre Westinghouse Corp.	**Dilecto 6-813 (C-813) Phenolite Grade CE-558 **Micarta 286
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Continental-Diamond (Newark) Farley & Loetscher Formica Co. General Electric Co Mica Insulator Co. Panelyte Div, St Regis Richardson Co. Spaulding Fibre Co. Synthane Corp. Taylor Fibre Co. (Norristown)	**Dilecto C-813 **Farlite Ind. CE-34 **Formica CEN **Textolite 2013 **Lamicoid 6031 Panelyte 910 ** Insurok I-606 Spauldite Sheet Natural CE **Synthane CE **Taylor CE

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-15035A Plastic-Material Laminated, Thermosetting: Sheets, Cotton-Fabric-Base, Phenolic Resin

Type FBE (Electrical Grade)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Formica Co. Taylor Fibre Co. (Norristown)	Formica LEN-15 **Taylor LE
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	General Electric Co Mica Insulator Co. Nat. Vulcanized Fibre Panelyte Div, St. Regis Richardson Co. Spaulding Fibre Co. Synthane Corp Taylor Fibre Co. (LaVerne)	**GE 1841 Lamicoid 6045 **Phenolite LE-675 **Panelyte 950 Insurok T-827 Spauldite Sheet Natural LE **Synthane LE **Taylor LE Nat. (LaVerne)

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-15035A Plastic-Material, Laminated, Thermosetting: Sheets, Cotton-Fabric-Base, Phenolic Resin

Type FBI (For Fine Machining Applications)

Rating	Manufacturer	Manufacturer's Designation
1. FUNGINERT (preferred as to fungus resistance)	None	None
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Continental-Diamond (Bridgeport)	**Dilecto L-400
	Farley & Loetscher	**Farlite Ind. L-40
	General Electric Co.	**GE 2080
	Taylor Fibre Co. (Norristown)	**Taylor L
	Westinghouse Corp.	**Micarta 238
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Formica Co.	Formica LN
	Mica Insulator Co.	**Lamicoid 6040
	Nat. Vulcanized Fibre	**Phenolite Grade L-610
	Panelyte Div, St. Regis	Panelyte 940
	Richarson Co.	Insurok T-733
	Spaulding Fibre Co.	Spauldite LE-594
	Synthane Corp.	**Synthane L

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-15037A Plastic-Material, Laminated, Thermosetting, Sheets, Glass-Cloth, Melamine-Resin

Type GMG (all material under this specification is of this type)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Taylor Fibre Co. (Norristown)	**Taylor G-5
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Continental-Diamond (Newark)	**Dilecto GB128M
	General Electric Co.	GE 11508
	Mica Insulator Co.	Lamicoid 6038
	Nat. Vulcanized Fibre	**Phenolite MGB-811
	Panelyte Div, St. Regis	**Panelyte 140
	Richardson Co.	Insurok T-712
	Westinghouse Corp.	Micarta 259-2
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	Formica Co	**Formica FF-55
	Synthane Corp.	**Synthane GLCC-M

** Provisional rating only

Catalog of Funginertness of Plastic Laminates
described under
MILITARY SPECIFICATION MIL-P-15047A Plastic-Material, Laminated, Thermosetting, Sheets, Nylon Fabric Base, Phenolic-Resin

Type NPG (all material under this specification is of this type)

Rating	Manufacturer	Manufacturer's designation
1. FUNGINERT (preferred as to fungus resistance)	Continental-Diamond (Newark)	**Dilecto MEC-5
	Formica Co.	Formica YN-25
	Mica Insulator Co.	Lamicoid 6051
	Nat. Vulcanized Fibre	Phenolite N-850
	Richardson Co.	Insurok T-819
2. INTERMEDIATE (second choice as to fungus resistance; will support slight fungus growth)	Panelyte Div. St Regis	**Panelyte 190
	Synthane Corp.	Synthane NNP (NN)
	Taylor Fibre Co. (Norristown)	**Nylon Base Phenol Fibre (NS)
3. SUSCEPTIBLE (supporting moderate to abundant fungus growth)	None	None

** Provisional rating only

Catalog of Funginert Laminates and Molding Compounds

These are the preferred materials, from the viewpoint of fungus resistance, of the plastics that have been tested. (Other less desirable materials are listed also on the preceding sheets, under the respective specifications.)

Type	Manufacturer	Manufacturer's designation
MIL-P-14A		
CFG	Bakelite Div, UCC	**BM 120 Black
	Plastic Engineering Co.	**307 Black
CFI-10	Durez Plastics & Chem.	**Durez 13537 Natural
	General Electric Co.	**GE 12824
CFI-20	General Electric Co.	**GE 12845
	Westinghouse Corp.	**Moldarta 199 Black
MFE	Bakelite Div, UCC	**BM 16981 Natural
	Bakelite Div, UCC	**BM 17748 Natural
	Durez Plastics & Chem.	**Durez 12810 Natural
	General Electric Co.	**GE 12437
	Monsanto Chemical Co.	**Resinox 7934 Natural
	Monsanto Chemical Co.	**Resinox 10900 Natural
	Westinghouse Corp.	**Moldarta 192-D Nat.
MFG	Bakelite Div, UCC	**BM 250
	General Electric Co.	**GE 12846
	Westinghouse Corp.	**Moldarta 102 Brown
	Westinghouse Corp.	**Moldarta 102-H Brown
MFH	Bakelite Div, UCC	**BM 261 Black
	Durez Plastics & Chem.	**Durez 11864 Black
	General Electric Co.	**GE 12847
	Reilly Tar & Chem Corp.	**Indur RM-904 Black
MFI-10	Westinghouse Corp.	**Moldarta 8780-3 Nat.
CMG	American Cyanamid Co.	**Melmac 1500 Brown
	Monsanto Chemical Co.	**Resimene 803-A Tan
	Plaskon Div, Libbey Owens	**Plaskon Melamine Type TWG Blue M-10935
	Plaskon Div, Libbey Owens	**Plaskon Type AM Ivory

(Continued on Next Page)

** Provisional rating only

Catalog of Fungicert Laminates and Molding Compounds

(Continued)

Type	Manufacturer	Manufacturer's designation
CMI-5	American Cyanamid Co.	**Melmac P-3020 Natural
	American Cyanamid Co.	**Melmac P-3020 Black
MME	American Cyanamid Co.	**Melmac 592 Natural
MIL-P-997A		
GSG	Continental-Diamond (Newark)	**Dilecto GB-112S
	Formica Co.	Formica G-7
	General Electric Co.	GE 11514
	Mica Insulator Co.	Lamicoid 6090
	Nat. Vulcanized Fibre	G-7-834 (G-7-830)
	Panelyte Div, St Regis	Panelyte Grade 130
	Taylor Fibre Co. (Norristown)	**Taylor GSC
	Westinghouse Corp.	Micarta T-35210
	Westinghouse Corp	Micarta 20202
MIL-P-3115A		
PBG	Continental-Diamond (Newark)	**Dilecto XA-13
	Nat. Vulcanized Fibre	Phenolite Grade XX-322
	Mica Insulator Co.	Lamicoid 6020
PBE	Richardson Co.	Insurok T-640
	Rogers Corp.	**Lamarok #215
PBE-P	Continental-Diamond (Newark)	**Dilecto XXAP-26
	Mica Insulator Co.	Lamicoid 6028
	Nat. Vulcanized Fibre	Phenolite XXAP-455
	Richardson Co.	Insurok T-725
	Richardson Co.	Insurok T-812
	Panelyte Div, St Regis	Panelyte 780
	Taylor Fibre Co. (Norristown)	**Taylor XXAP

(Continued on Next Page)

** Provisional rating only

Catalog of Funginert Laminates and Molding Compounds

(Concluded)

Type	Manufacturer	Manufacturer's designation
MIL-P-15037A		
GMG	Taylor Fibre Co.	**Taylor G-5
MIL-P-15047A		
NPG	Continental-Diamond (Newark)	**Dilecto MEC-5
	Formica Co.	Formica YN-25
	Mica Insulator Co.	Lamicoid 6051
	Nat. Vulcanized Fibre	Phenolite N-850
	Richardson Co.	Insurok T-819

** Provisional rating only

THIRD QUARTERLY REPORT

on

FUNGUS RESISTANCE OF PLASTICS

to

BUREAU OF ORDNANCE
DEPARTMENT OF THE NAVY
MOISTURE AND FUNGUS PROOFING SECTION
MATERIALS AND PRESERVATION BRANCH
RESEARCH AND DEVELOPMENT DIVISION

CONTRACT NOrd 11215

by

S. Ruggeri and R. Waitze Atlas

Period covered: August 10 To November 16, 1951

ALAKA RESEARCH LABORATORIES
division of
LACQUER AND CHEMICAL CORPORATION
214 - 40th Street
Brooklyn 32, N.Y.

November 23, 1951

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ALAKA RESEARCH LABORATORIES

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S. Ruggeri and R. Waitze Atlas

NOVEMBER 23, 1951

FOREWORD

During the third quarter of the period covered by Research Contract NOrd 11215 additional plastic laminates, included in this program, were tested for funginertness using the Petri-Dish Method; one of the two test methods designated by the Bureau of Ordnance for inclusion in this program. Testing of these laminates using the second of the two test methods, the Humidity-Exposure Method, which was initiated during the second quarter was continued. Testing of thermosetting molded plastics, included in this program, using the Petri-Dish Method was initiated.

A partial comparison of results obtained by the two test methods has been included in this report.

FUNGINERTNESS OF PLASTIC LAMINATES

(PETRI-DISH METHOD)

Introduction

Further work completed under this study has been a continuation of tests of fungus resistance of available plastic laminated materials following the Petri-Dish culture test procedure as outlined in the "Funginertness Requirement and Test, for use in MIL-I-631A (as completed 29 January 1951)", furnished by the Bureau of Ordnance with letter dated 16 February 1951. Earlier work covering this phase of the study was reported in the First Quarterly Report (pages 4 - 25) and in the Second Quarterly Report (pages 28 - 77).

Materials

The materials evaluated in this study include the following laminated, thermosetting, plastic materials as approved under the following specifications:

Specification	Type	Filler	Resin	Grade
MIL-P-997A	GSG	Glass Cloth	Silicone	General
MIL-P-15037A	GMG	Glass Cloth	Melamine	General
MIL-P-15047A	NPG	Nylon Cloth	Phenolic	General
MIL-P-3115A	PBG	Paper	Phenolic	General
MIL-P-3115A	PBE	Paper	Phenolic	Electrical
MIL-P-3115A	PBE-P	Paper	Phenolic	Electrical: Punching
MIL-P-15035A	FBM	Cotton Fab.	Phenolic	Mechanical
MIL-P-15035A	FBG	Cotton Fab.	Phenolic	General
MIL-P-15035A	FBE	Cotton Fab.	Phenolic	Electrical
MIL-P-15035A	FBI	Cotton Fab.	Phenolic	Fine Machining

Experimental Procedure

The experimental procedure has been explained in detail in the First Quarterly Report, pages 5,6, and 7.

Evaluation of Results

At the end of the 21 day incubation period, each specimen was examined separately for growth on the surface and for growth on the cut edges and rated as follows:

Observed Fungus growth on the specimen	Rating
No growth	0
Traces of growth (*)	1
Slight to moderate growth: partial coverage	2
Moderate growth: considerable coverage	3
Abundant growth: complete coverage	4

(*) Traces of growth are defined as scattered, sparse fungus growth such as might develop from an unusual mass of spores in the original inoculum, or upon an occasional extraneous bit of debris. (Continous cobwebby growth extending over the entire surface or edge of the specimen, even though not necessarily obscuring the specimen, was rated as 2.)

Table 10 pages 127 through 129, lists the observations on the individual replicates of the unconditioned specimens and the numeric rating of each replicate both for surface and edge growth. Table 11 pages 130 through 132, lists the observations on the individual replicates of the conditioned specimens and the numeric rating of each replicate both for surface and edge growth.

Interpretation of Results for Determination of Funginertness

For a material to be considered funginert it shall not support fungus growth; this shall be due to absence of nutritive substances in the material and not to presence of a fungistatic agent. The absence of a fugitive fungistatic agent was determined from the results on the specimens which received the conditioning of 6 hours at 85° C.

On the basis of the numeric rating of the fungus growth on the six specimens for each sample of plastic laminate being evaluated, the following criteria were used for the various degrees of fungus resistance:

1) Funginert - where at least 2 of 3 specimens were rated 0 or 1 when tested as received and at least 2 of 3 specimens were rated 0 or 1 when tested after being conditioned.

2) Fugitive Fungistatic - where at least 2 of 3 specimens were rated 0 or 1 when tested as received and at least 2 of 3 specimens were not rated 0 or 1 when tested after being conditioned.

3) Fungus Susceptible - where at least 2 of 3 specimens were not rated 0 or 1 when tested as received and at least 2 of 3 specimens were not rated 0 or 1 when tested after being conditioned.

Since it has not been determined whether these criteria will be applied to surface growth alone or to surface growth together with edge growth, separate ratings have been assigned to the specimens based on surface growth alone and on surface and edge growth considered together.

Table 12 pages 133 and 134, lists the classification, of the plastic laminates tested, based on the ratings considering surface growth alone and on the ratings considering surface growth together with edge growth.

TABLE 10

GROWTH OF FUNGUS ON PLASTIC LAMINATES
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
GSG	#2 130	377A 377B 377C	No Growth (*) Traces (*) Traces (*)	No Growth No Growth Traces	0 1 1	0 1 1
GSG	#7 G7 - 830	353A 353B 353C	Traces (*) Traces (*) Traces (*)	Traces (1 edge) Traces Traces	1 1 1	1 1 1
GMG	#7 MGB- 811	354A 354B 354C	Slight Slight Slight	Slight Slight (3 edges) Slight	2 2 2	2 2 2
NPG	#7 N-850	355A 355B 355C	Slight Traces (*) Slight	Slight Traces Slight	2 1 2	2 1 2
PBG	#7 XX-322	356A 356B 356C	Traces (*) Traces Traces (*)	Slight (1 edge) Slight (2 edges) Slight (2 edges)	1 1 1	2 2 2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note - For explanation of numeric rating code see page 125.

TABLE 10 (Continued)

GROWTH OF FUNGUS ON PLASTIC LAMINATES
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
PBE	#7 XXX-401	357A	Slight (*)	Slight	2	2
		357B	Slight (*)	Slight	2	2
		357C	Slight (*)	Slight	2	2
PBE-P	#7 XXX-P-455	358A	Traces	Traces	1	1
		358B	Traces	Slight (2 edges)	1	2
		358C	Traces (*)	Slight (1 edge)	1	2
FBM	#7 C 501	359A	Mod: Part Cov	Moderate	2	2
		359B	Mod: Part Cov	Moderate	2	2
		359C	Mod: Consid Cov	Moderate	3	3
FBG	#7 CE 558	360A	Slight	Moderate	2	2
		360B	Slight	Moderate	2	2
		360C	Slight	Moderate	2	2
FBE	#7 LE 675	361A	Slight	Slight (2 edges)	2	2
		361B	Slight	Slight	2	2
		361C	Traces (*)	Traces	1	1

*- Specimen surface was waterlogged. **- Same for 4 edges unless otherwise noted.
Note For explanation of numeric rating code see page 125.

TABLE 10 (CONCLUDED) 3 of 3

GROWTH OF FUNGUS ON PLASTIC LAMINATES
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
FBI	#7 L - 610	362A	Mod: Part Cov	Slight	2	2
		362B	Mod: Part Cov	Moderate	2	2
		362C	Slight	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note - For explanation of numeric rating code see page 125.

TABLE 11 (CONTINUED)

GROWTH OF FUNGUS ON PLASTIC LAMINATES
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
PBE	#7 XXX- 401	369A	Slight (*)	Slight	2	2
		369B	Slight (*)	Slight	2	2
		369C	Slight	Slight	2	2
PBE-P	#7 XXXP-455	370A	Traces	Slight (2 edges)	1	2
		370B	Slight	Slight (2 edges)	2	2
		370C	Traces	Slight (1 edge)	1	2
FBM	#7 C-501	371A	Mod: Consid Cov.	Moderate	3	3
		371B	Mod: Part Cov.	Moderate	2	2
		371C	Mod: Consid Cov.	Abundant	3	3
FBG	#7 CE 558	372A	Slight	Abundant	2	3
		372B	Slight	Moderate	2	2
		372C	Slight	Abundant	2	3
FBE	#7 LE 675	373A	Slight	Traces	2	2
		373B	Slight	Slight (1 edge)	2	2
		373C	Slight	Slight (3 edges)	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 125.

TABLE II (CONCLUDED)

GROWTH OF FUNGUS ON PLASTIC LAMINATES

(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec Grade	Manufacturer and Designation	Petri-dish Repli-cates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
FBI	#7 L-610	374A	Slight	Slight	2	2
		374B	Mod: Part Cov.	Slight	2	2
		374C	Mod: Part Cov.	Slight	2	2

*- Specimen surface was waterlogged **-Same for 4 edges unless otherwise noted

Note- For explanation of numeric rating code see page 125.

TABLE 12

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 10 and 11

Spec Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
GSG	#2 130	0 1 1	1 1 1	Funginert	0 1 1	1 1 1	Funginert
GSG	#7 G-7-830	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
GMG	#7 MGB-811	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
NPG	#7 N-850	2 1 2	1 2 2	Susceptible	2 1 2	2 2 2	Susceptible
PBG	#7 XX-322	1 1 1	1 1 1	Funginert	2 2 2	1 2 2	Susceptible
PBE	#7 XXX-401	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
PBE-P	#7 XXXP-455	1 1 1	1 2 1	Funginert	1 2 2	2 2 2	Susceptible
FBM	#7 C501	2 2 3	3 2 3	Susceptible	2 2 3	3 2 3	Susceptible

(*) See page 126 for detailed explanation

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 10 and 11

Spec Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
FBG	#7 CE 558	2 2 2	2 2 2	Susceptible	2 2 2	3 2 3	Susceptible
FBE	#7 LE675	2 2 1	2 2 2	Susceptible	2 2 1	2 2 2	Susceptible
FBI	#7 L-610	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible

(*) See page 128 for detailed explanation

Summary of Observations

(Surface Growth Alone)

	Manuf.	Designation	Grade
The following sample showed no growth on any of the six replicates:	#2	130	GSG
The following samples showed traces of growth on all six replicates:	#7	G7-830	GSG
	#7	XX-322	PBG
The following samples showed traces or slight growth on all six replicates:	#7	XXXP-455	PBE-P
	#7	N-850	NPG
	#7	LE-675	FBE
The following samples showed slight growth on all six replicates:	#7	MGB-811	GMG
	#7	XXX-401	PBE
	#7	CE-558	FBG
The following sample showed slight or moderate growth on all six replicates:	#7	L-610	FBI
The following sample showed moderate growth on all six replicates:	#7	C-501	FBM

(Surface and Edge Growth)

	Manuf.	Designation	Grade
The following sample showed no growth or only traces of growth on all six replicates:	#2	130	GSG
The following sample showed traces of growth on all six replicates:	#7	G7-830	GSG

	Manuf.	Designation	Grade
The following samples showed traces or slight growth on all six replicates:	#7	N-850	NPG
	#7	XX-322	FBG
	#7	XXXP-455	PBE-P
	#7	LE-575	FBE
The following samples showed slight growth on all six replicates:	#7	MGB-811	GMG
	#7	XXX-401	PBE
The following sample showed slight or moderate growth on all six replicates:	#7	L-610	FBI
The following sample showed slight, moderate, or abundant growth on all six Replicates:	#7	CE-558	FBG
The following sample showed moderate or abundant growth on all six replicates:	#7	C-501	FBM

FUNGINERTNESS OF PLASTIC LAMINATES

(HUMIDITY-EXPOSURE METHOD)

Introduction

Additional work during this period has been the testing of 55 additional plastic laminated materials for fungus resistance, following the Humidity-Exposure Method as outlined in paragraph 4.2 of "Draft of BuOrd Specification 52T15 (Ord), rev. draft, Rele, of 15 August 1950", furnished by the Bureau of Ordnance with letter dated 17 January 1951. Earlier work covering this phase of the study was reported in the Second Quarterly Report, pages 78 through 120.

Materials

The materials evaluated in this study include the following laminated, thermosetting, plastic materials as approved under the following specifications:

Specification	Type	Filler	Resin	Grade
MIL-P-997A	GSG	Glass Cloth	Silicone	General
MIL-P-15037A	GMG	Glass Cloth	Melamine	General
MIL-P-15047A	NPG	Nylon Cloth	Pheonlic	General
MIL-P-3115A	PBG	Paper	Phenolic	General
MIL-P-3115A	PBE	Paper	Phenolic	Electrical
MIL-P-3115A	PBE-P	Paper	Phenolic	Electrical; Punching
MIL-P-15035A	FBM	Cotton Fab.	Phenolic	Mechanical
MIL-P-15035A	FBG	Cotton Fab.	Phenolic	General
MIL-P-15035A	FBE	Cotton Fab.	Phenolic	Electrical
MIL-P-15035A	FBI	Cotton Fab.	Phenolic	Fine Machining.

Experimental Procedure

The experimental procedure has been explained in detail in the Second Quarterly Report, pages 78 through 81.

Evaluation of Results

At the end of the incubation period the watch glass was removed and the rack taken out of the jar. The separate pieces of string (controls) were examined for fungus growth (visible to the naked eye). All of the controls included in this set of tests developed profuse fungus growth.

Each of the 4 specimens, exposed without attached cotton string, was examined (with the aid of a 7X "Flash-O-Lens" magnifier) for fungus growth. The percentage of area covered by fungus growth was noted for each of the two surfaces, two side edges, top edge, and bottom edge.

Each of the 4 specimens, exposed with attached cotton string was examined for fungus growth (visible to the naked eye) extending from the cotton string. The maximum extent of the fungus growth from point of contact with the string was noted for each of two surfaces and each of the two side edges, of each specimen.

Table 13, pages 141 through 195, lists the observations on the individual replicates.

Interpretation of Results for Determination of Funginertness

For a material to be considered funginert it shall not support fungus growth; this shall be due to absence of nutritive substances in the material and not to presence of a fungistatic agent. The absence of a fungistatic agent was determined by the fungus growth extending from the cotton string on those replicates exposed with string attached.

On the basis of the percentage of area covered by fungus growth on four of the eight specimens and the extent of fungus growth from a known nutrient source on the remaining four of the eight specimens for each sample of plastic laminate being evaluated; the following criteria were used for the various degrees of fungus resistance:

1) FUNGINERT - where none of the replicates, exposed without attached cotton string, shows more than 2% fungus growth and where fungus growth extends at least 1 mm from the string on at least 2 of the 4 replicates exposed with cotton string attached.

2) FUNGISTATIC - where none of the replicates, exposed without attached cotton string, shows more that 2% fungus growth and where fungus growth does not extend at least 1 mm from the string on at least 2 of the 4 replicates exposed with cotton string attached.

3) FUNGUS SUSCEPTIBLE - where at least one of the four replicates, exposed without attached cotton string, shows more than 2% fungus growth.

In table 13, pages 141 through 195 are listed the ratings for the 55 plastic laminated materials reported in this section. A separate page has been set aside for each

sample and each page presents both the original data and the fungus resistance rating both for surface growth and for edge growth. The Humidity-exposure Method permits a separate evaluation based on the edge growth alone, hence the separate ratings. In this method the edge growth is true edge growth in contrast to the Petri-dish Method where edge growth could in reality be deriving its nourishment from the agar and merely extending over the edges of the specimen.

TABLE 13

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GSG Manufacturer and Designation: #2 130

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
633	Traces	< 2%	None	None	None	0%
634	None	0%	Traces	None	None	< 2%
635	None	0%	None	None	None	0%
636	None	0%	None	None	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
637	2 mm	2 mm
638	3 mm	4 mm
639	2 mm	1 mm
640	4 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GMG Manufacturer and Designation: #3 T-712

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
345	Moderate	5%	Moderate	Moderate	Moderate	15%
346	Moderate	10%	Moderate	Moderate	Moderate	15%
347	Slight	2%	Moderate	Moderate	Moderate	5%
348	Moderate	5%	Slight	Trace	Moderate	2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with string	
	Surfaces	Side Edges
349	2 mm	2 mm
350	1 mm	1 mm
351	3 mm	1 mm
352	2 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone; Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES

(HUMIDITY EXPOSURE METHOD)

Grade: NPG Manufacturer and Designation: #3 T-819

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
353	Traces	< 2%	Traces	None	Traces	< 2%
354	Traces	< 2%	Traces	Traces	Traces	< 2%
355	Traces	< 2%	Traces	None	Traces	< 2%
356	Traces	< 2%	Traces	None	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
357	1 mm	1 mm
358	3 mm	1 mm
359	3 mm	2 mm
360	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBG Manufacturer and Designation: #3 T-643

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
361	Moderate	5%	Moderate	Moderate	Moderate	5%
362	Moderate	5%	Slight	Traces	Traces	2%
363	Moderate	10%	Traces	Traces	Traces	< 2%
364	Moderate	15%	Moderate	Slight	Moderate	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
365	9 mm	2 mm
366	2 mm	1 mm
367	2 mm	1 mm
368	4 mm	1 mm

Rating (See pages 138 through 140 for explanation:

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE Manufacturer and Designation: #3 T-640

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
369	Slight	2%	Slight	Slight	Slight	2%
370	Slight	2%	Slight	Traces	Slight	< 2%
371	Traces	< 2%	Traces	Traces	Slight	< 2%
372	Traces	< 2%	Traces	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
373	4 mm	4 mm
374	2 mm	1 mm
375	3 mm	2 mm
376	1 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on Surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #3 T-725

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
393	Traces	< 2%	None	None	None	0%
394	Traces	< 2%	None	None	None	0%
395	Traces	< 2%	Traces	None	None	< 2%
396	Traces	< 2%	None	None	None	0%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
397	3 mm	1 mm
398	5 mm	1 mm
399	4 mm	1 mm
400	4 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #3 T-800

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth:			% of area covered
			2 sides	Top	Bottom	
217	Moderate	10%	Moderate	Moderate	Moderate	5%
218	Moderate	20%	Moderate	Moderate	Moderate	5%
219	Moderate	20%	Moderate	Moderate	Moderate	5%
220	Moderate	15%	Moderate	Moderate	Moderate	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
221	10 mm	2 mm
222	2 mm	1 mm
223	15 mm	1 mm
224	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #3 T-812

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
329	Traces	< 2%	None	None	Slight	< 2%
330	Traces	< 2%	Traces	None	Traces	< 2%
331	Traces	< 2%	None	None	Traces	< 2%
332	Traces	< 2%	None	None	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
333	1 mm	1 mm
334	1 mm	0 mm
335	2 mm	1 mm
336	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #3 T-601

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
377	Abundant	95%	Abundant	Abundant	Abundant	95%
378	Abundant	90%	Abundant	Abundant	Abundant	90%
379	Abundant	90%	Abundant	Abundant	Abundant	90%
380	Abundant	85%	Abundant	Abundant	Abundant	85%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
381	9 mm	4 mm
382	9 mm	2 mm
383	9 mm	3 mm
384	5 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBG Manufacturer and Designation: #3 T-606

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
385	Moderate	50%	Moderate	Moderate	Moderate	65%
386	Abundant	75%	Abundant	Abundant	Moderate	70%
387	Moderate	60%	Moderate	Moderate	Moderate	65%
388	Moderate	60%	Moderate	Moderate	Moderate	65%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
389	2 mm	1 mm
390	2 mm	2 mm
391	4 mm	2 mm
392	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBE Manufacturer and Designation: #3 T-827

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
401	Moderate	60%	Moderate	Moderate	Moderate	45%
402	Moderate	40%	Moderate	Moderate	Moderate	30%
403	Moderate	70%	Moderate	Moderate	Moderate	50%
404	Moderate	55%	Moderate	Moderate	Moderate	55%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
405	7 mm	4 mm
406	9 mm	5 mm
407	9 mm	2 mm
408	6 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBI Manufacturer and Designation: #3 T-733

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
337	Moderate	40%	Moderate	Moderate	Moderate	30%
338	Moderate	55%	Moderate	Moderate	Moderate	25%
339	Moderate	40%	Moderate	Moderate	Moderate	25%
340	Moderate	70%	Moderate	Moderate	Moderate	35%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
341	4 mm	2 mm
342	9 mm	2 mm
343	7 mm	2 mm
344	4 mm	1 mm

Rating (See pages 138 through 149 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GMG Manufacturer and Designation: #4 GLCC-M

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
409	Moderate	15%	Moderate	Moderate	Moderate	30%
410	Moderate	10%	Moderate	Moderate	Moderate	25%
411	Moderate	10%	Moderate	Moderate	Moderate	30%
412	Moderate	15%	Moderate	Moderate	Moderate	50%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
413	3 mm	5 mm
414	4 mm	2 mm
415	6 mm	2 mm
416	8 mm	5 mm

Rating (See pages 138 through 140 for expalantion):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: NPG **Manufacturer and Designation:** #4 NNP (NN)

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
417	Moderate	15%	Moderate	Moderate	Moderate	10%
418	Moderate	5%	Slight	Moderate	Moderate	2%
419	Moderate	20%	Moderate	Moderate	Moderate	10%
420	Moderate	10%	Moderate	Slight	Moderate	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
421	3 mm	2 mm
422	2 mm	4 mm
423	2 mm	2 mm
424	7 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBG Manufacturer and Designation: #4 XX

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
425	Moderate	5%	Moderate	Moderate	Moderate	10%
426	Slight	2%	Moderate	Slight	Moderate	5%
427	Moderate	5%	Moderate	Slight	Moderate	5%
428	Slight	2%	Moderate	Moderate	Moderate	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
429	4 mm	2 mm
430	4 mm	3 mm
431	3 mm	2 mm
432	4 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces along: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE Manufacturer and Designation: #4 XXX

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
441	Moderate	5%	Moderate	Moderate	Moderate	5%
442	Slight	2%	Slight	Moderate	Moderate	2%
443	Slight	2%	Slight	Slight	Moderate	2%
444	Slight	2%	Slight	Traces	Moderate	2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
445	3 mm	3 mm
446	3 mm	4 mm
447	4 mm	3 mm
448	2 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade PBE-P Manufacturer and Designation: #4 XXXP

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
449	None	0%	None	None	Traces	< 2%
450	None	0%	Traces	None	Traces	< 2%
451	None	0%	Slight	None	Moderate	2%
452	Traces	< 2%	Traces	None	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
453	2 mm	3 mm
454	1 mm	2 mm
455	2 mm	2 mm
456	2 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #4 XXXP-IR

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
457	Traces	< 2%	Traces	Traces	Moderate	2%
458	Traces	< 2%	Slight	Traces	Moderate	2%
459	Traces	< 2%	Slight	Traces	Moderate	2%
460	Traces	< 2%	Slight	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
461	1 mm	2 mm
462	3 mm	3 mm
463	9 mm	4 mm
464	3 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #4 C

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth:			% of area covered
			2 sides	Top	Bottom	
433	Moderate	30%	Moderate	Moderate	Moderate	30%
434	Moderate	40%	Moderate	Moderate	Moderate	50%
435	Moderate	25%	Moderate	Moderate	Moderate	40%
436	Moderate	35%	Moderate	Moderate	Moderate	30%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
437	5 mm	2 mm
438	3 mm	3 mm
439	4 mm	2 mm
440	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on Surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBG Manufacturer and Designation: #4 CE

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
465	Moderate	10%	Moderate	Slight	Moderate	25%
466	Moderate	20%	Moderate	Moderate	Moderate	25%
467	Moderate	15%	Moderate	Moderate	Moderate	35%
468	Moderate	10%	Moderate	Moderate	Moderate	10%

Specimens with string attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
469	10 mm	7 mm
470	4 mm	9 mm
471	6 mm	6 mm
472	3 mm	5 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBE Manufacturer and Designation: #4 LE

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
473	Moderate	5%	Moderate	Moderate	Moderate	20%
474	Moderate	10%	Slight	Slight	Moderate	2%
475	Slight	2%	Slight	Slight	Moderate	5%
476	Moderate	5%	Moderate	Slight	Moderate	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
477	5 mm	2 mm
478	1 mm	2 mm
479	2 mm	1 mm
480	3 mm	1 mm

Rating (See pages 138 through 140 for expalantion):

Based on surfaces alone: Susceptible

Based on Edges Alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade FBI Manufacturer and Designation: #4 L

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
481	Moderate	5%	Slight	Traces	Traces	2%
482	Moderate	5%	Moderate	Slight	Slight	10%
483	Slight	2%	Slight	Slight	Traces	2%
484	Moderate	5%	Moderate	Moderate	Slight	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
485	3 mm	1 mm
486	2 mm	2 mm
487	1 mm	1 mm
488	3 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBG **Manufacturer and Designation:** #5 XX

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area Covered
489	Slight	2%	Traces	Slight	Moderate	< 2%
490	Slight	2%	Slight	Traces	Moderate	2%
491	Traces	< 2%	Traces	Traces	Traces	< 2%
492	Slight	2%	Traces	Traces	Moderate	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
493	4 mm	2 mm
494	3 mm	4 mm
495	6 mm	4 mm
496	3 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade PBE Manufacturer and Designation: #5 XXX

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
497	Traces	< 2%	Traces	Slight	Slight	< 2%
498	Slight	2%	Slight	Slight	Slight	2%
499	Traces	< 2%	Slight	Traces	Moderate	2%
500	Slight	2%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
501	3 mm	2 mm
502	3 mm	2 mm
503	2 mm	1 mm
504	6 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #5 XXXP

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
505	Slight	2%	Slight	Traces	Moderate	2%
506	Slight	2%	Traces	Traces	Slight	< 2%
507	Slight	2%	Slight	Traces	Moderate	2%
508	Slight	2%	Traces	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
509	3 mm	2 mm
510	3 mm	4 mm
511	3 mm	2 mm
512	4 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #5 XXX-648 (XXX -618)

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
537	Slight	2%	Traces	Traces	Slight	< 2%
538	Slight	2%	Traces	Traces	Moderate	2%
539	Slight	2%	Traces	Traces	Traces	< 2%
540	Moderate	5%	Slight	Traces	Moderate	2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
541	2 mm	1 mm
542	2 mm	1 mm
543	4 mm	4 mm
544	5 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #5 CG

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
513	Moderate	30%	Abundant	Moderate	Moderate	75%
514	Moderate	70%	Abundant	Abundant	Moderate	75%
515	Moderate	35%	Moderate	Moderate	Moderate	50%
516	Moderate	50%	Moderate	Abundant	Moderate	70%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
517	9 mm	7 mm
518	7 mm	3 mm
519	5 mm	5 mm
520	2 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBG Manufacturer and Designation: #5 CE

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
521	Abundant	85%	Abundant	Abundant	Abundant	90%
522	Abundant	90%	Abundant	Abundant	Abundant	80%
523	Abundant	75%	Abundant	Abundant	Moderate	80%
524	Abundant	80%	Abundant	Abundant	Abundant	80%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
525	15 mm	4 mm
526	6 mm	4 mm
527	7 mm	6 mm
528	2 mm	4 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBE Man. Facturer and Designation: #5 LE

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
529	Moderate	60%	Abundant	Moderate	Moderate	75%
530	Moderate	70%	Moderate	Moderate	Moderate	65%
531	Moderate	65%	Moderate	Moderate	Abundant	50%
532	Moderate	60%	Moderate	Moderate	Moderate	40%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
533	12 mm	3 mm
534	4 mm	4 mm
535	4 mm	4 mm
536	5 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBI **Manufacturer and Designation:** #5 LE 594

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
545	Moderate	30%	Moderate	Slight	Moderate	20%
546	Moderate	30%	Moderate	Moderate	Moderate	25%
547	Moderate	25%	Moderate	Slight	Slight	5%
548	Moderate	30%	Moderate	Moderate	Slight	20%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
549	3 mm	2 mm
550	6 mm	1 mm
551	5 mm	1 mm
552	1 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on Surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GSG Manufacturer and Designation: #6 T-35210 (20201)

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
553	Traces	< 2%	Traces	Traces	Traces	< 2%
554	Traces	< 2%	Traces	Traces	Traces	< 2%
555	Traces	< 2%	Traces	Traces	Traces	< 2%
556	Traces	< 2%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
557	4 mm	1 mm
558	1 mm	3 mm
559	4 mm	4 mm
560	2 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GSG Manufacturer and Designation: #6 20202

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
585	Traces	< 2%	Traces	Traces	Slight	< 2%
586	Traces	< 2%	Traces	Traces	Slight	< 2%
587	Traces	< 2%	Traces	Traces	Traces	< 2%
588	Traces	< 2%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
589	2 mm	1 mm
590	4 mm	1 mm
591	3 mm	3 mm
592	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GMG Manufacturer and Designation: #6 259-2

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
561	Moderate	5%	Moderate	Traces	Moderate	5%
562	Moderate	10%	Moderate	Moderate	Moderate	20%
563	Moderate	10%	Moderate	Slight	Slight	10%
564	Moderate	10%	Moderate	Moderate	Moderate	10%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
565	6 mm	3 mm
566	4 mm	5 mm
567	2 mm	2 mm
568	5 mm	4 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #6 262

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
569	Moderate	15%	Moderate	Moderate	Moderate	10%
570	Moderate	5%	Moderate	Moderate	Moderate	15%
571	Moderate	10%	Moderate	Moderate	Moderate	10%
572	Moderate	10%	Moderate	Moderate	Moderate	10%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
573	2 mm	1 mm
574	8 mm	3 mm
575	2 mm	1 mm
576	4 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Base on Edges alone: Susceptible

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade : FBG Manufacturer and Designation: #6 286

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
577	Traces	< 2%	Traces	Traces	Traces	< 2%
578	Traces	< 2%	Traces	Traces	Traces	< 2%
579	Traces	< 2%	Traces	Traces	Traces	< 2%
580	Traces	< 2%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
581	1 mm	2 mm
582	4 mm	2 mm
583	2 mm	4 mm
584	5 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade FBI Manufacturer and Designation: #6 238

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
593	Moderate	10%	Slight	Slight	Moderate	2%
594	Slight	2%	Traces	Traces	Traces	< 2%
595	Slight	2%	Slight	Slight	Slight	2%
596	Moderate	5%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
597	5 mm	4 mm
598	4 mm	3 mm
599	3 mm	4 mm
600	5 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GSG Manufacturer and Designation: #7 G7-830

Specimens without strings attached:

Replicate	Growth on Surface		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth:			% of area covered
			2 sides	Top	Bottom	
689	None	0%	Traces	None	None	< 2%
690	None	0%	None	None	None	0%
691	None	0%	None	None	Traces	< 2%
692	None	0%	None	None	None	0%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
693	2 mm	3 mm
694	2 mm	2 mm
695	3 mm	2mm
696	2 mm	3 mm

Rating (See pages 138 through 140 for explanation:

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GMG Manufacturer and Designation: #7 MGB-811

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
601	Slight	2%	Slight	Traces	Traces	2%
602	Traces	< 2%	Traces	Traces	Traces	< 2%
603	Traces	< 2%	Traces	Traces	Slight	< 2%
604	Slight	2%	Traces	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
605	4 mm	3 mm
606	1 mm	1 mm
607	2 mm	1 mm
608	1 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: NPG Manufacturer and Designation: #7 N-850

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
609	Slight	2%	Traces	Traces	Traces	< 2%
610	Slight	2%	Traces	Traces	Traces	< 2%
611	Slight	2%	Traces	Traces	Traces	< 2%
612	Traces	< 2%	Traces	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
613	2 mm	1 mm
614	2 mm	1 mm
615	1 mm	1 mm
616	2 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBG **Manufacturer and Designation:** #7 XX322

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
641	Slight	2%	Traces	Traces	Slight	< 2%
642	Traces	< 2%	Traces	Traces	Slight	< 2%
643	Traces	< 2%	Traces	Traces	Moderate	< 2%
644	Slight	2%	Slight	Traces	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
645	1 mm	1 mm
646	2 mm	1 mm
647	2 mm	1 mm
648	1 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE Manufacturer and Designation: #7 XXX 401

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
697	Slight	2%	Slight	Moderate	Moderate	5%
698	Slight	2%	Moderate	Moderate	Moderate	10%
699	Slight	2%	Moderate	Slight	Moderate	5%
700	Slight	2%	Moderate	Moderate	Moderate	10%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
701	3 mm	4 mm
702	6 mm	3 mm
703	2 mm	3 mm
704	8 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #7 XXXP-455

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
737	Slight	2%	Traces	Traces	Slight	< 2%
738	Slight	2%	Traces	Traces	Slight	< 2%
739	Traces	< 2%	Traces	Traces	Slight	< 2%
740	Slight	2%	Traces	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
741	1 mm	1 mm
742	4 mm	1 mm
743	2 mm	1 mm
744	3 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #7 C 501

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
617	Abundant	90%	Abundant	Abundant	Abundant	85%
618	Abundant	80%	Abundant	Abundant	Abundant	90%
619	Abundant	90%	Abundant	Abundant	Abundant	90%
620	Abundant	75%	Abundant	Abundant	Abundant	85%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
621	15 mm	6 mm
622	9 mm	4 mm
623	13 mm	5 mm
624	7 mm	4 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBG Manufacturer and Designation: #7 CE 558

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
649	Moderate	5%	Moderate	Moderate	Moderate	40%
650	Moderate	10%	Moderate	Moderate	Moderate	35%
651	Moderate	10%	Moderate	Moderate	Moderate	10%
652	Moderate	20%	Moderate	Moderate	Moderate	35%

Specimens with Strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
653	2 mm	3 mm
654	4 mm	7 mm
655	3 mm	2 mm
656	4 mm	6 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBE Manufacturer and Designation: #7 LE 675

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
625	Moderate	35%	Moderate	Moderate	Moderate	15%
626	Moderate	20%	Moderate	Moderate	Moderate	10%
627	Moderate	25%	Moderate	Moderate	Moderate	15%
628	Moderate	25%	Moderate	Moderate	Moderate	10%

Specimens with strings attached:

Replicate	Maximum extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
629	3 mm	2 mm
630	4 mm	2 mm
631	2 mm	2 mm
632	3 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBI **Manufacturer and Designation:** #7 L-610

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
705	Moderate	35%	Moderate	Moderate	Moderate	30%
706	Moderate	40%	Moderate	Moderate	Moderate	40%
707	Moderate	40%	Moderate	Moderate	Moderate	35%
708	Moderate	65%	Moderate	Moderate	Moderate	25%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
709	11 mm	3 mm
710	9 mm	2 mm
711	2 mm	2 mm
712	7 mm	4 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GSG Manufacturer and Designation: #9 6090

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth			% of area covered
			2 sides	Top	Bottom	
745	None	0%	None	None	Traces	< 2%
746	Traces	< 2%	None	None	Traces	< 2%
747	None	0%	None	None	Traces	< 2%
748	None	0%	None	None	None	0%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
749	2 mm	1 mm
750	3 mm	1 mm
751	2 mm	1 mm
752	1 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: GMG Manufacturer and Designation: #9 6038

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
657	Slight	2%	Slight	Traces	Moderate	2%
658	Slight	2%	Traces	Traces	Traces	< 2%
659	Moderate	5%	Slight	Slight	Slight	2%
660	Moderate	5%	Moderate	Traces	Slight	5%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
661	5 mm	6 mm
662	2 mm	4 mm
663	2 mm	2 mm
664	2 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: NPG **Manufacturer and Designation:** #9 6051

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
713	Traces	< 2%	Traces	None	Slight	< 2%
714	Slight	2%	Slight	None	None	< 2%
715	Slight	2%	Traces	None	Slight	< 2%
716	Traces	< 2%	Traces	None	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
717	2 mm	3 mm
718	7 mm	3 mm
719	4 mm	2 mm
720	3 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBG Manufacturer and Designation: #9 6020

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
753	Slight	2%	Traces	None	Slight	< 2%
754	Slight	2%	None	None	Traces	< 2%
755	Traces	< 2%	None	None	Traces	< 2%
756	Traces	< 2%	None	None	Traces	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
757	3 mm	1 mm
758	6 mm	3 mm
759	2 mm	2 mm
760	3 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: PBE-P Manufacturer and Designation: #9 6028

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth:			% of area covered
			2 sides	Top	Bottom	
665	Traces	< 2%	Traces	Traces	Slight	< 2%
666	Traces	< 2%	Traces	None	Traces	< 2%
667	Traces	< 2%	Traces	Traces	Slight	< 2%
668	Traces	< 2%	Traces	Traces	Slight	< 2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
669	3 mm	1 mm
670	1 mm	3 mm
671	3 mm	2 mm
672	5 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Funginert

Based on Edges alone: Funginert

TABLE 13 (CONTINUED)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBM Manufacturer and Designation: #9 6030

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
673	Moderate	40%	Moderate	Moderate	Moderate	50%
674	Moderate	55%	Abundant	Moderate	Moderate	65%
675	Moderate	35%	Moderate	Moderate	Moderate	55%
676	Moderate	40%	Moderate	Moderate	Moderate	55%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
677	8 mm	4 mm
678	4 mm	3 mm
679	7 mm	2 mm
680	7 mm	3 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBG Manufacturer and Designation: #9 6031

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
761	Moderate	15%	Moderate	Moderate	Moderate	45%
762	Moderate	15%	Moderate	Moderate	Moderate	50%
763	Moderate	20%	Abundant	Moderate	Moderate	75%
764	Moderate	10%	Moderate	Moderate	Moderate	65%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
765	4 mm	3 mm
766	4 mm	8 mm
767	5 mm	2 mm
768	3 mm	4 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBE Manufacturer and Designation: #9 6045

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth:			% of area covered
			2 sides	Top	Bottom	
721	Moderate	45%	Moderate	Moderate	Moderate	5%
722	Moderate	50%	Moderate	Moderate	Moderate	15%
723	Moderate	25%	Moderate	Moderate	Moderate	10%
724	Moderate	50%	Moderate	Moderate	Moderate	15%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
725	4 mm	2 mm
726	6 mm	6 mm
727	3 mm	2 mm
728	8 mm	2 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

Grade: FBI Manufacturer and Designation: #9 6040

Specimens without strings attached:

Replicate	Growth on Surfaces		Growth on Edges			
	Relative Profusion	% of area covered	Relative Profusion of Growth: 2 sides	Top	Bottom	% of area covered
769	Slight	2%	Slight	Traces	Traces	2%
770	Moderate	5%	Slight	Slight	Slight	2%
771	Moderate	5%	Moderate	Slight	Moderate	5%
772	Moderate	10%	Slight	Slight	Slight	2%

Specimens with strings attached:

Replicate	Maximum Extent of Fungus Growth from Point of Contact with String	
	Surfaces	Side Edges
773	2 mm	2 mm
774	1 mm	1 mm
775	2 mm	3 mm
776	1 mm	1 mm

Rating (See pages 138 through 140 for explanation):

Based on surfaces alone: Susceptible

Based on Edges alone: Susceptible

TABLE 14 (Sheet 1 of 2)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

(Summary of ratings listed in table 13)

Spec. Grade	Manufacturer and Designation		Surface Rating	Edge Rating
GSG	#2	130	Funginert	Funginert
GMG	#3	T-712	Susceptible	Susceptible
NPG	#3	T-819	Funginert	Funginert
PBG	#3	T-643	Susceptible	Susceptible
PBE	#3	T-640	Funginert	Funginert
PBE-P	#3	T-725	Funginert	Funginert
PBE-P	#3	T-800	Susceptible	Susceptible
PBE-P	#3	T-812	Funginert	Funginert
FBM	#3	T-601	Susceptible	Susceptible
FBG	#3	T-696	Susceptible	Susceptible
FBE	#3	T-827	Susceptible	Susceptible
FBI	#3	T-733	Susceptible	Susceptible
GMG	#4	GLCC-M	Susceptible	Susceptible
NPG	#4	NNP (NN)	Susceptible	Susceptible
PBG	#4	XX	Susceptible	Susceptible
PBE	#4	XXX	Susceptible	Susceptible
PBE-P	#4	XXXP	Funginert	Funginert
PBE-P	#4	XXXP-IR	Funginert	Funginert
FBM	#4	C	Susceptible	Susceptible
FBG	#4	CE	Susceptible	Susceptible
FBE	#4	LE	Susceptible	Susceptible
FBI	#4	L	Susceptible	Susceptible
PBG	#5	XX	Funginert	Funginert
PBE	#5	XXX	Funginert	Funginert
PBE-P	#5	XXXP	Funginert	Funginert
PBE-P	#5	XXX-648 (XXX-618)	Susceptible	Funginert
FBM	#5	CG	Susceptible	Susceptible
FBG	#5	CE	Susceptible	Susceptible
FBE	#5	LE	Susceptible	Susceptible
FBI	#5	LE-594	Susceptible	Susceptible
GSG	#6	T-35210 (20201)	Funginert	Funginert
GSG	#6	20202	Funginert	Funginert
GMG	#6	259-2	Susceptible	Susceptible
FBM	#6	262	Susceptible	Susceptible
FBG	#6	286	Funginert	Funginert
FBI	#6	238	Susceptible	Funginert
GSG	#7	G7-830	Funginert	Funginert
GMG	#7	MGB-811	Funginert	Funginert
NPG	#7	N-850	Funginert	Funginert
PBG	#7	XX-322	Funginert	Funginert
PBE	#7	XXX-401	Funginert	Susceptible

TABLE 14 (Sheet 2 of 2)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
(HUMIDITY EXPOSURE METHOD)

(Summary of ratings listed in table 13)

Spec. Grade	Manufacturer and Designation		Surface Rating	Edge Rating
PBE-P	#7	XXXP-455	Funginert	Funginert
FBM	#7	C-501	Susceptible	Susceptible
FBG	#7	CE-558	Susceptible	Susceptible
FBE	#7	LE-675	Susceptible	Susceptible
FBI	#7	L-610	Susceptible	Susceptible
GSG	#9	6090	Funginert	Funginert
GMG	#9	6038	Susceptible	Susceptible
NPG	#9	6051	Funginert	Funginert
PBG	#9	6020	Funginert	Funginert
PBE-P	#9	6028	Funginert	Funginert
FBM	#9	6030	Susceptible	Susceptible
FBG	#9	6031	Susceptible	Susceptible
FBE	#9	6045	Susceptible	Susceptible
FBI	#9	6040	Susceptible	Susceptible

Summary of Observations

(SURFACE GROWTH)

The following samples showed growth covering 2% or less of the area on all 4 replicates:

(these samples also showed a minimum of 1 mm growth from string on replicates exposed with string attached)

Manuf.	Designation	Grade
#2	130	GSG
#3	T-819	NPG
#3	T-640	PBE
#3	T-725	PBE-P
#3	T-812	PBE-P
#4	XXXP	PBE-P
#4	XXXP-IR	PBE-P
#5	XX	PBG
#5	XXX	PBE
#5	XXXP	PBE-P
#6	T-35210 (20201)	GSG
#6	20202	GSG
#6	286	FBG
#7	G7-830	GSG
#7	MGB-811	GMG
#7	N-850	NPG
#7	XX-322	PBG
#7	XXX-401	PBE
#7	XXXP-455	PBE-P
#9	6090	GSG
#9	6051	NPG
#9	6020	PBG
#9	6028	PBE-P

The following samples showed growth covering 2 - 10% of the area on all 4 replicates:

Manuf.	Designation	Grade
#3	T-712	GMG
#3	T-643	PBG
#4	XX	PBG
#4	XXX	PBE
#4	LE	FBI
#4	L	FBI
#5	XXX-648 (XXX-618)	PBE-P
#6	259-2	GMG
#6	262	FBM
#6	238	FBI
#9	6038	GMG
#9	6040	FBI

	Manuf.	Designation	Grade
The following samples showed growth covering 10-40% of the area on all 4 replicates:	#3	T-800	PBE-P
	#4	GLCC-M	GMG
	#4	NNP (NN)	NPG
	#4	C	FBM
	#4	CE	FBG
	#5	LE-594	FBI
	#7	CE-558	FBG
	#7	LE-675	FBE
	#9	6031	FBG
The following samples showed growth covering 30 - 80% of the area on all 4 replicates:	#3	T-606	FBG
	#3	T-827	FBE
	#3	T-733	FBI
	#5	CG	FBM
	#5	LE	FBE
	#7	L-610	FBI
	#9	6030	FBM
	#9	6045	FBE
The following samples showed growth covering 65% or over of the area on all 4 replicates:	#3	T-601	FBM
	#5	CE	FBG
	#7	C-501	FBM

Summary of Observations

(Edge Growth)

The following samples showed growth covering 2% or less of the area on all 4 replicates:

(These samples also showed a minimum of 1 mm growth from string on replicates exposed with string attached)

Manuf.	Designation	Grade
#2	130	GSG
#3	T-819	NPG
#3	T-640	PBE
#3	T-725	PBE-P
#3	T-812	PBE-P
#4	XXXP	PBE-P
#4	XXXP-IR	PBE-P
#5	XX	PBG
#5	XXX	PBE
#5	XXXP	PBE-P
#5	XXX-648 (XXX-618)	PBE-P
#6	T-35210 (20201)	GSG
#6	20202	GSG
#6	286	FBG
#6	238	FBI
#7	G7-830	GSG
#7	MGB-811	GMG
#7	N-850	NPG
#7	XX-322	PBG
#7	XXXP-455	PBE-P
#9	6090	GSG
#9	6051	NPG
#9	6020	PBG
#9	6028	PBE-P

The following samples showed growth covering 2 - 10% of the area on all 4 replicates:

#3	T-712	GMG
#3	T-643	PBG
#3	T-800	PBE-P
#4	NNP (NN)	NPG
#4	XX	PBG
#4	XXX	PBE
#4	LE	FBE
#4	L	FBI
#7	XXX-401	PBE
#9	6038	GMG
#9	6040	FBI

	Manuf.	Designation	Grade
The following samples showed growth covering 10-40% of the area on all 4 replicates:	#3	T-733	FBI
	#4	GLCC-M	GMG
	#4	CE	FBG
	#5	LE-594	FBI
	#6	259-2	GMG
	#6	262	FBM
	#7	CE-558	FBG
	#7	LE-675	FBE
	#7	L-610	FBI
	#9	6045	FBE
The following samples showed growth covering 30-80% of the area on all 4 replicates:	#3	T-827	FBE
	#4	C	FBM
	#5	CG	FBM
	#5	LE	FBE
	#9	6030	FBM
	#9	6031	FBG
The following samples showed growth covering 65% or over of the area on all 4 replicates:	#3	T-601	FBM
	#3	T-606	FBG
	#5	CE	FBG
	#7	C-501	FBM

FUNGINERTNESS OF THE THERMOSETTING MOLDED PLASTICS

(PETRI-DISH METHOD)

Introduction

During the period covered by this Third Report, a number of the available thermosetting molded plastics were tested for funginertness following the Petri-dish culture test procedure as outlined in the "Funginertness Requirement and Test, for use in MIL-I-631A" (as completed 29 January 1951), furnished by the Bureau of Ordnance with letter dated 16, February 1951.

Materials

The plastics evaluated in this study include the following thermosetting molded plastics as approved under MILITARY SPECIFICATION MIL-P-14A:

Phenolic Resin:

Type CFG - Cellulose filler, general-purpose.

Type CFI-5 - Cellulose filler, impact-resistant; nominal impact strength, 0.60 foot-pounds per inch notch.

Type CFI-10 - Cellulose filler, impact-resistant; nominal impact strength, 1.0 foot-pounds per inch notch.

Type CFI-20 - Cellulose filler, impact-resistant; nominal impact strength, 2.0 foot-pounds per inch notch.

Type CFI-40 - Cellulose filler, impact-resistant; nominal impact strength, 4.0 foot-pounds per inch notch.

Type MFE - Mineral filler, best electrical properties.

Type MFG - Mineral filler, general-purpose, heat-resistant.

Type MFH - Mineral filler, heat-resistant.

Type MFI-10- Mineral filler, impact resistant; nominal impact strength, 1.0 foot-pounds per inch notch.

Type MFI-20- Mineral filler, impact resistant; nominal impact strength, 2.0 foot-pounds per inch notch.

Melamine Resin:

Type CMG - Cellulose filler, general-purpose.

Type CMI-5 - Cellulose filler, impact-resistant; nominal impact strength, 0.60 foot-pounds per inch notch.

Type MME - Mineral filler, arc- and flame-resistant.

Experimental Procedure

The experimental procedure used was the same as that used in the Petri-dish funginertness tests of plastic laminates except for the test specimens used. The details of this procedure are found in the First Quarterly Report of this series. (See pages 5, 6, and 7.)

The specimens used in these tests were prepared as follows. The thermosetting molding plastic, being tested, was molded into discs of 1/8" thickness (see list of exceptions below), in such diameters as to allow subsequent cutting of squares 1 inch by 1 inch from the discs. This cutting was done using an 8" arbor tilt saw equipped witha suitable cutting blade.

The resulting specimens (1/8" x 1" x 1") were then

handled in the same manner as the plastic laminate specimens.

In some cases where the nature of the filler did not allow the molding of 1/8" thick discs, the minimum practical thickness was used. The following list tabulates these exceptions:

Grade, Manufacturer and Designation			Thickness
CFI-20	#4	Grade C	1/4"
CFI-10	#23	12824	5/32"
CFI-20	#23	12845	3/16"
MFI-10	#23	12420	5/32"
MFI-20	#23	12410	5/32"

Evaluation of results

At the end of the 21 day incubation period, each specimen was examined separately for growth on the surface and for growth on the cut edges and rated as follows:

Observed Fungus growth on the specimen	Rating
No growth	0
Traces of growth (*)	1
Slight to moderate growth: partial coverage	2
Moderate growth: considerable coverage	3
Abundant growth: complete coverage	4

(*) Traces of growth are defined as scattered, sparse fungus growth such as might develop from an unusual mass of spores in the original inoculm, or upon an occasional extraneous bit of debris. (Continous cobwebby growth extending over the entire surface or edge of the specimen, even though not necessarily obscuring the specimen, was rated as 2.)

Table 15, pages 207 through 219, lists the observations on the individual replicates of the unconditioned speciemns

and numeric rating of each replicate both for surface and edge growth. Table 16, pages 220 through 232, lists the observations on the individual replicates of the conditioned specimens and the numeric rating of each replicate both for surface and edge growth.

Interpretation of Results for Determination of Funginertness

For a material to be considered funginert it shall not support fungus growth; this shall be due to absence of nutritive substances in the material and not to presence of a fungistatic agent. The absence of a fugitive fungistatic agent was determined from the results on the specimens which received the conditioning of 6 hours at 85° C.

On the basis of the numeric rating of the fungus growth on the six specimens for each sample of plastic being evaluated, the following criteria were used for the various degrees of fungus resistance:

1) Funginert - where at least 2 of 3 specimens were rated 0 or 1 when tested as received and at least 2 of 3 specimens were rated 0 or 1 when tested after being conditioned.

2) Fugitive Fungistatic - where at least 2 of 3 specimens were rated 0 or 1 when tested as received and at least 2 of 3 specimens were not rated 0 or 1 when tested after being conditioned.

3) Fungus Susceptible - where at least 2 of 3 specimens were not rated 0 or 1 when tested as received and at least 2 of 3 specimens were not rated 0 or 1 when tested after being conditioned.

Since it has not been determined whether these criteria

will be applied to surface growth alone or to surface growth together with edge growth, separate ratings have been assigned to the specimens based on surface growth alone and on surface and edge growth considered together.

Table 17, pages 233 through 240, lists the classification, of the molded plastics tested, based on the ratings considering surface growth alone and on the ratings considering surface growth together with edge growth.

TABLE 15

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth: Surface	Description of Fungus Growth: Edges (**)	Numeric Rating: Surface	Numeric Rating: Surface and Edges
CFI 20	#4 C	248A 248B 248C	Mod: Part Cov (*) Mod: Part Cov (*) Mod: Part Cov (*)	Moderate Moderate Moderate	2 2 2	2 2 2
CFG	#6 107-B B1	285A 285B 285C	Slight (*) Slight (*) Slight (*)	Slight Slight Slight	2 2 2	2 2 2
CFG	#6 165-A B1	286A 286B 286C	Slight Slight (*) Slight	Slight Slight Slight	2 2 2	2 2 2
CFI 5	#6 7498-1-A	287A 287B 287C	Slight (*) Slight Slight	Slight (3 edges) Slight Slight	2 2 2	2 2 2
CFI 20	#6 199 B1	288A 288B 288C	Traces Traces Traces	Slight (2 edges) Slight (3 edges) Traces	1 1 1	2 2 1

*-Specimen surface was waterlogged **-Same for 4 edges unless otherwise noted
Note-for explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 20	#6 7346 Bl	289A	Slight (*)	Slight	2	2
		289B	Slight (*)	Slight	2	2
		289C	Slight	Slight	2	2
MFE	#6 192-D Natural	290A	Traces	Traces	1	1
		290B	Traces	Slight (2 edges)	1	2
		290C	Traces	Slight (1 edge)	1	2
MFG	#6 102 Brown	291A	Traces	Traces	1	1
		291B	Traces	Traces	1	1
		291C	Traces	Traces	1	1
MFG	#6 102-H Brown	292A	Traces	Slight	1	2
		292B	Traces	Slight (1 edge)	1	2
		292C	Traces	Traces	1	1
MFI 10	#6 8780-3Natural	293A	Traces	Slight	1	2
		293B	Traces	Slight	1	2
		293C	Traces	Slight	1	2

*-Specimen surface was waterlogged. **- Same for 4 edges unless otherwise noted
Note- For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFI 20	#6 8780-1 Natural	294A 294B 294C	Mod: Part Cov Mod: Part Cov Slight (*)	Moderate Moderate Moderate	2 2 2	2 2 2
CFI 5	#11 (RX 428) RM 15000B Bl	249A 249B 249C	Slight (*) Slight (*) Slight (*)	Slight Slight Slight	2 2 2	2 2 2
CFG	#19 BM 120 Black	307A 307B 307C	Slight Traces (*) Slight	Slight Traces Slight	2 1 2	2 1 2
CFG	#19 BM 7129 Tan	308A 308B 308C	Slight Slight (*) Slight (*)	Moderate Slight Slight	2 2 2	2 2 2
CFG	#19 BM 7156 Bl.	309A 309B 309C	Mod: Part Cov Slight Slight (*)	Slight Slight Slight	2 2 2	2 2 2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFG	#19 BM 8052 Red	310A	Slight	Slight	2	2
		310B	Slight	Slight	2	2
		310C	Slight (*)	Slight	2	2
CFG	#19 BM 10196 Bl.	311A	Slight	Slight	2	2
		311B	Slight	Slight	2	2
		311C	Mod: Part Cov	Slight	2	2
CFI 10	#19 BM 1132 Bl.	312A	Slight	Moderate	2	2
		312B	Mod: Part Cov	Moderate	2	2
		312C	Slight	Moderate	2	2
CFI 20	#19 BM 3510 Bl.	313A	Mod: Part Cov	Moderate	2	2
		313B	Mod: Part Cov	Moderate	2	2
		313C	Mod: Part Cov	Moderate	2	2
CFI 40	#19 BM 16468 Bl.	314A	Abundant	Abundant	4	4
		314B	Abundant	Abundant	4	4
		314C	Abundant	Abundant	4	4

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Repli-cates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFE	#19 BM 16981 Natural	269A	Traces	Traces	1	1
		269B	Traces (*)	Traces	1	1
		269C	Traces	Traces	1	1
MFE	#19 BM 17748 Natural	270A	Traces (*)	Traces	1	1
		270B	Traces (*)	Traces	1	1
		270C	Traces	Traces	1	1
MFG	#19 BM 250	271A	Traces	Slight	1	2
		271B	Traces (*)	Traces	1	1
		271C	Traces (*)	Traces	1	1
MFH	#19 BM 261 Black	272A	Traces	Traces	1	1
		272B	Traces (*)	Traces	1	1
		272C	Traces (*)	Traces	1	1
MFI 20	#19 BM 17610	295A	Mod: Part Cov	Moderate	2	2
		295B	Slight	Slight	2	2
		295C	Slight	Moderate	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otheriwse noted.
Note- For explanation for numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CMG	#20 1500 Brown	261A	Traces	Traces	1	1
		261B	Traces (*)	Traces	1	1
		261C	Traces (*)	Traces	1	1
CMI 5	#20 3020 Black	262A	Traces	Traces	1	1
		262B	Traces	Traces	1	1
		262C	Traces	Traces	1	1
CMI 5	#20 3020 Natural	263A	Traces (*)	Traces	1	1
		263B	Traces (*)	Traces	1	1
		263C	Traces	Traces	1	1
MME	#20 592	264A	Traces	Traces	1	1
		264B	Traces	Traces	1	1
		264C	Traces	Traces	1	1
CFG	#21 GP-130 Black	331A	Slight (*)	Slight	2	2
		331B	Slight (*)	Slight	2	2
		331C	Slight (*)	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note- For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 10	#21 IM-520 Black	332A 332B 332C	Mod: Part Cov Slight Slight	Slight Slight Slight	2 2 2	2 2 2
CFI 20	#21 IM-530 Black	333A 333B 333C	Slight (*) Slight (*) Slight (*)	Slight Slight Slight	2 2 2	2 2 2
MFG	#21 HR-350 Black	334A 334B 334C	Slight (*) Mod: Part Cov Slight (*)	Slight Moderate Slight	2 2 2	2 2 2
CFG	#22 1544 Black	424A 424B 424C	Slight (*) Slight (*) Complete Waterlog	Slight Slight (3 edges) Slight	2 2 0	2 2 2
CFG	#22 11540 Black	408A 408B 408C	Slight (*) Mod: Part Cov Slight (*)	Slight Moderate Slight	2 2 2	2 2 2

*-Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 5	#22 1905 Black	425A 425B 425C	Slight (*) Slight (*) Slight (*)	Slight Slight Slight	2 2 2	2 2 2
CFI 10	#22 13537 Natural	426A 426B 426C	Slight Slight Slight (*)	Slight Slight (2 edges) Slight	2 2 2	2 2 2
MFE	#22 12810 Natural	409A 409B 409C	Traces (*) Traces (*) Traces (*)	Traces Traces Traces	1 1 1	1 1 1
MFH	#22 11864 Black	410A 410B 410C	Traces Traces Traces (*)	Traces Traces Traces	1 1 1	1 1 1
CFG	#23 12840	427A 427B 427C	Slight (*) Slight (*) Slight (*)	Slight Moderate Slight	2 2 2	2 2 2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI	#23	428A	Slight (*)	Slight	2	2
		428B	Slight (*)	Slight (3 edges)	2	2
5	12843	428C	Complete Waterlog	Slight	0	2
CFI	#23	429A	Slight	Slight (1 edge)	2	2
		429B	Slight	Traces	2	2
10	12824	429C	Slight (*)	Traces	2	2
CFI	#23	430A	Slight	Traces	2	2
		430B	Slight (*)	Traces	2	2
20	12845	430C	Traces	Traces	1	1
MFE	#23	431A	Traces	Traces	1	1
		431B	Traces (*)	Traces	1	1
	12437	431C	Traces	Traces	1	1
MFG	#23	432A	Traces	Traces	1	1
		432B	Traces (*)	Traces	1	1
	12846	432C	Traces (*)	Traces	1	1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFH	#23 12847	433A	Slight	Slight	2	2
		433B	Slight (*)	Slight	2	2
		433C	Complete Waterlog	Slight	0	2
MFI 10	#23 12420	445A	Abundant (*)	Abundant	4	4
		445B	Abundant (*)	Abundant	4	4
		445C	Abundant (*)	Abundant	4	4
MFI 20	#23 12410	446A	Abundant (*)	Abundant	4	4
		446B	Abundant (*)	Abundant	4	4
		446C	Abundant (*)	Abundant	4	4
CFG	#24 6570 Black	265A	Slight	Slight	2	2
		265B	Slight (*)	Slight	2	2
		265C	Slight (*)	Slight	2	2
MFE	#24 7934 Natural	266A	Traces (*)	Traces	1	1
		266B	Traces	Traces	1	1
		266C	Traces	Traces	1	1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFE	#24 10900 Natural	267A	Traces	Traces	1	1
		267B	Traces (*)	Traces	1	1
		267C	Traces	Traces	1	1
CMG	#24 803A Tan	268A	Traces	Traces	1	1
		268B	Traces	Traces	1	1
		268C	Traces	Traces	1	1
CFG	#25 307 Black	447A	Traces	Traces	1	1
		447B	Traces (*)	Traces	1	1
		447C	Complete Waterlog	Traces	0	1
CFG	#25 307 Natural	448A	Slight (*)	Slight (1 edge)	2	2
		448B	Slight (*)	Traces	2	2
		448C	Slight (*)	Slight (1 edge)	2	2
CFG	#26 602 Black	449A	Mod: Part Cov	Moderate	2	2
		449B	Mod: Part Cov (*)	Moderate	2	2
		449C	Mod: Part Cov (*)	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 15 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth: Surface	Description of Fungus Growth: Edges (**)	Numeric Rating: Surface	Numeric Rating: Surface and Edges
CFG	#26 603 Brown	450A 450B 450C	Slight (*) Slight (*) Mod: Part Cov (*)	Slight Moderate Slight	2 2 2	2 2 2
CFG	#26 902 Black	451A 451B 451C	Slight Slight (*) Mod: Part Cov (*)	Slight Slight Moderate	2 2 2	2 2 2
MFH	#26 904 Black	452A 452B 452C	Traces (*) Traces (*) Traces (*)	Traces Traces Traces	1 1 1	1 1 1
CFG	#27 60-17	318A 318B 318C	Slight (*) Slight (*) Slight (*)	Moderate Moderate Moderate	2 2 2	2 2 2
CMG	#28 AM Melamine Ivory	240A 240B 240C	Traces (*) Traces (*) Traces	Traces Traces Traces	1 1 1	1 1 1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted

Note- For explanation of numeric rating code see page 204.

TABLE 15 (CONCLUDED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: None

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CMG	#28 Melamine Blue M10935-Type TWG	241A 241B 241C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manifacturer and Designation	Petri-dish Replicates	Description of Fungus Growth: Surface	Description of Fungus Growth: Edges (**)	Numeric Rating: Surface	Numeric Rating: Surface and Edges
CFI 20	#4 Grade C	259A	Mod: Part Cov	Moderate-Abundant	2	2
		259B	Mod: Part Cov (*)	Moderate	2	2
		259C	Mod: Part Cov (*)	Moderate	2	2
CFG	#6 107-B Black	296A	Slight	Slight	2	2
		296B	Slight	Traces	2	2
		296C	Slight (*)	Traces	2	2
CFG	#6 165-A Black	297A	Slight	Moderate	2	2
		297B	Slight	Slight	2	2
		297C	Slight	Moderate	2	2
CFI 5	#6 7498-1-A	298A	Slight	Slight	2	2
		298B	Slight (*)	Slight (3 edges)	2	2
		298C	Slight (*)	Slight	2	2
CFI 20	#6 199 Black	299A	Traces	Slight (1 edge)	1	2
		299B	Traces	Slight (3 edges)	1	2
		299C	Slight	Slight	2	2

*-Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note- For explanation for numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 20	#6 7346 Black	300A	Slight (*)	Slight	2	2
		300B	Slight	Moderate	2	2
		300C	Slight (*)	Slight	2	2
MFE	#6 192-D Natural	301A	Traces	Traces	1	1
		301B	Traces	Traces	1	1
		301C	Traces	Slight (1 edge)	1	2
MFG	#6 102 Brown	302A	Traces	Slight	1	2
		302B	Traces (*)	Slight (3 edges)	1	2
		302C	Traces (*)	Slight (2 edges)	1	2
MFG	#6 102-H Brown	303A	Traces	Slight	1	2
		303B	Traces	Slight	1	2
		303C	Traces	Traces	1	1
MFI 10	#6 8780-3 Natural	304A	Traces (*)	Slight	1	2
		304B	Traces (*)	Traces	1	1
		304C	Traces (*)	Traces	1	1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- for explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth: Surface	Description of Fungus Growth: Edges (**)	Numeric Rating: Surface	Numeric Rating: Surface and Edges
MFI 20	#6 8780-1 Natural	305A	Mod: Part Cov	Moderate	2	2
		305B	Mod: Part Cov	Moderate	2	2
		305C	Slight	Slight	2	2
CFI 5	#11 (RX 428) RM 15000B Black	260A	Slight	Slight	2	2
		260B	Slight	Slight (3 edges)	2	2
		260C	Slight	Slight	2	2
CFG	#19 BM 120 Black	319A	Slight	Slight	2	2
		319B	Slight	Slight	2	2
		319C	Slight	Slight	2	2
CFG	#19 BM 7129 Tan	320A	Slight (*)	Slight	2	2
		320B	Slight (*)	Slight	2	2
		320C	Slight (*)	Slight	2	2
CFG	#19 BM 7156 Black	321A	Slight	Slight	2	2
		321B	Slight	Slight	2	2
		321C	Slight (*)	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating see code page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFG	#19 BM 8052 Red	322A	Slight	Slight	2	2
		322B	Slight (*)	Slight	2	2
		322C	Slight	Slight	2	2
CFG	#19 BM 10196 Black	323A	Mod: Part Cov	Moderate	2	2
		323B	Slight (*)	Moderate	2	2
		323C	Slight	Slight	2	2
CFI 10	#19 BM 1132 Black	324A	Mod: Part Cov	Moderate	2	2
		324B	Mod: Part Cov (*)	Moderate	2	2
		324C	Mod: Part Cov.	Moderate	2	2
CFI 20	#19 BM 3510 Black	325A	Mod: Part Cov	Moderate	2	2
		325B	Mod: Consid Cov	Moderate	3	3
		325C	Mod: Part Cov	Moderate	2	2
CFI 40	#19 BM 16468 Black	326A	Abundant	Abundant	4	4
		326B	Abundant	Abundant	4	4
		326C	Abundant	Abundant	4	4

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFE	#19 BM 16981 Nat.	281A 281B 281C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1
MFE	#19 BM 17748 Natural	282A 282B 282C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1
MFG	#19 BM 250	283A 283B 283C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1
MFH	#19 BM 261 Black	284A 284B 284C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1
MFI 20	#19 BM 17610	306A 306B 306C	Slight Slight Slight	Slight Slight Traces	2 2 2	2 2 2

*- Specimen surface was waterlogged. **-Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED) 6 of 13

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CMG	#20 1500 Brown	273A	Traces	Traces	1	1
		273B	Traces	Traces	1	1
		273C	Traces	Traces	1	1
CMI 5	#20 3020 Black	274A	Traces	Traces	1	1
		274B	Traces	Traces	1	1
		274C	Traces	Traces	1	1
CMI 5	#20 3020 Natural	275A	Traces	Traces	1	1
		275B	Traces	Traces	1	1
		275C	Traces (*)	Traces	1	1
MME	#20 592	276A	Traces (*)	Traces	1	1
		276B	Traces	Traces	1	1
		276C	Traces (*)	Traces	1	1
CFG	#21 GP-130 Black	342A	Slight	Moderate	2	2
		342B	Slight (*)	Moderate	2	2
		342C	Slight (*)	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 10	#21 IM-520 Black	343A	Mod: Part Cov	Moderate	2	2
		343B	Slight	Moderate	2	2
		343C	Slight (*)	Moderate	2	2
CFI 20	#21 IM-530 Black	344A	Slight	Slight	2	2
		344B	Slight	Slight	2	2
		344C	Slight	Slight	2	2
MFG	#21 HR-350 Black	345A	Slight (*)	Slight	2	2
		345B	Slight (*)	Slight	2	2
		345C	Slight (*)	Slight	2	2
CFG	#22 1544 Black	435A	Slight (*)	Slight (3 edges)	2	2
		435B	Slight (*)	Slight (2 edges)	2	2
		435C	Complete Waterlog	Slight	0	2
CFG	#22 11540 Black	420A	Slight (*)	Slight	2	2
		420B	Slight	Moderate	2	2
		420C	Slight	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted
Note - For explanation of numeric rating code see page 204.

TABLE 16 CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 5	#22 1905 Black	436A 436B 436C	Slight Mod: Part Cov Complete Waterlog	Slight (2 edges) Moderate (3 edges) Traces	2 2 0	2 2 1
CFI 10	#22 13537 Natural	437A 437B 437C	Slight Slight (*) Traces	Slight Traces Traces	2 2 1	2 2 1
MFE	#22 12810 Natural	421A 421B 421C	Slight Slight Slight	light (2 edges) Traces Slight	2 2 2	2 2 2
MFH	#22 11864 Black	422A 422B 422C	Traces Traces (*) Traces	Traces Traces Traces	1 1 1	1 1 1
CFG	#23 12840	438A 438B 438C	Traces (*) Mod: Part Cov Complete Waterlog	Slight (3 edges) Moderate Slight (3 edges)	1 2 0	2 2 2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFI 5	#23 12843	439A 439B 439C	Mod: Part Cov (*) Mod: Part Cov (*) Slight (*)	Slight Slight Slight	2 2 2	2 2 2
CFI 10	#23 12824	440A 440B 440C	Traces Traces (*) Traces	Traces Traces Traces	1 1 1	1 1 1
CFI 20	#23 12845	441A 441B 441C	Traces Traces Traces (*)	Traces Traces Traces	1 1 1	1 1 1
MFR	#23 12437	442A 442B 442C	Traces Complete Waterlog Traces (*)	Traces Traces Traces	1 0 1	1 1 1
MFG	#23 12846	443A 443B 443C	Traces (*) Complete Waterlog Traces (*)	Traces Traces Traces	1 0 1	1 1 1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFH	#23 12847	444A	Traces	Traces	1	1
		444B	Traces (*)	Traces	1	1
		444C	Complete Waterlog	Traces	0	1
MFI 10	#23 12420	457A	Abundant (*)	Abundant	4	4
		457B	Abundant (*)	Abundant	4	4
		457C	Abundant (*)	Abundant	4	4
MFI 20	#23 12410	458A	Abundant (*)	Abundant	4	4
		458B	Abundant (*)	Abundant	4	4
		458C	Abundant (*)	Abundant	4	4
CFG	#24 6570 Black	277A	Slight	Slight	2	2
		277B	Slight	Slight	2	2
		277C	Slight	Slight	2	2
MFE	#24 7934 Natural	278A	Traces (*)	Traces	1	1
		278B	Traces	Traces	1	1
		278C	Traces	Traces	1	1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
MFE	#24 10900 Natural	279A	Traces (*)	Traces	1	1
		279B	Traces	Traces	1	1
		279C	Traces (*)	Traces	1	1
CMG	#24 803A Tan	280A	Traces	Traces	1	1
		280B	Traces	Traces	1	1
		280C	Traces (*)	Traces	1	1
CFG	#25 307 Black	459A	Traces (*)	Traces	1	1
		459B	Traces (*)	Traces	1	1
		459C	Traces (*)	Traces	1	1
CFG	#25 307 Natural	460A	Slight (*)	Traces	2	2
		460B	Slight (*)	Traces	2	2
		460C	Slight (*)	Traces	2	2
CFG	#26 602 Black	461A	Slight (*)	Slight	2	2
		461B	Slight (*)	Traces	2	2
		461C	Mod: Part Cov (*)	Slight	2	2

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted.
Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONTINUED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CFG	#26 603 Brown	462A 462B 462C	Mod: Part Cov Slight Mod: Part Cov	Slight Slight Slight	2 2 2	2 2 2
CFG	#26 902 Black	463A 463B 463C	Slight (*) Slight Slight (*)	Slight Slight Traces	2 2 2	2 2 2
MFH	#26 904 Black	464A 464B 464C	Traces Traces (*) Traces (*)	Traces Traces Traces	1 1 1	1 1 1
CFG	#27 60-17	330A 330B 330C	Mod: Part Cov Mod: Part Cov (*) Slight (*)	Moderate Moderate Moderate	2 2 2	2 2 2
CMG	#28 Melamine Ivory Type AM	251A 251B 251C	Traces Traces Traces	Traces Traces Traces	1 1 1	1 1 1

*- Specimen surface was waterlogged **- Same for 4 edges unless otherwise noted

Note- For explanation of numeric rating code see page 204.

TABLE 16 (CONCLUDED)

GROWTH OF FUNGUS ON MOLDED PLASTICS
(PETRI-DISH METHOD)

Conditioning of Specimen: 6 hrs at 85° C

Spec. Grade	Manufacturer and Designation	Petri-dish Replicates	Description of Fungus Growth		Numeric Rating	
			Surface	Edges (**)	Surface	Surface and Edges
CHG	#28 Melamine Blue M10935- Type TWG	252A	Traces	Slight (2 edges)	1	2
		252B	Traces	Slight (2 edges)	1	2
		252C	Traces	Slight (3 edges)	1	2

*- Specimen surface was waterlogged. **- Same for 4 edges unless otherwise noted.
Note- for explanation of numeric rating code see page 204.

TABLE 17

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 and 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
CFI 20	#4 Grade C	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#6 107-B Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#6 165-A Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 5	#6 7498-1-A	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 20	#6 199 Black	1 1 1	1 1 2	Funginert	2 2 1	2 2 2	Susceptible
CFI 20	#6 7346 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
MFE	#6 192-D Nat.	1 1 1	1 1 1	Funginert	1 2 2	1 1 2	Susceptible
MFG	#6 102 Brown	1 1 1	1 1 1	Funginert	1 1 1	2 2 2	Fungistatic

* See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
MFG	#6 102H Brown	1 1 1	1 1 1	Funginert	2 2 1	2 2 1	Susceptible
MFI 10	#6 8780-3 Nat.	1 1 1	1 1 1	Funginert	2 2 2	2 1 1	Susceptible
MFI 20	#6 8780-1 Nat.	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 5	#11 RM 15000B Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#19 120 Black	2 1 2	2 2 2	Susceptible	2 1 2	2 2 2	Susceptible
CFG	#19 7129 Tan	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#19 7156 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#19 8052 Red	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible

*- See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
CFG	#19 10196 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 10	#19 1132 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 20	#19 3510 Black	2 2 2	2 3 2	Susceptible	2 2 2	2 3 2	Susceptible
CFI 40	#19 16468 Black	4 4 4	4 4 4	Susceptible	4 4 4	4 4 4	Susceptible
MFE	#19 16981 Nat.	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
MFE	#19 17748 Nat.	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
MFG	#19 250	1 1 1	1 1 1	Funginert	2 1 1	1 1 1	Funginert
MFH	#19 261 Black	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert

*- See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
MFI 20	#19 17610	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CMG	#20 1500 Brown	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CMI 5	#20 3020 Black	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CMI 5	#20 3020 Nat	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
MME	#20 592	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CFG	#21 GP-130 Bl.	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 10	#21 IM-520 Bl.	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI 20	#21 IM-530 Bl.	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible

*- See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)
FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
MFG	#21 HR-350 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#22 1544 Black	2 2 0	2 2 0	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#22 11540 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI-5	#22 1905 Black	2 2 2	2 2 0	Susceptible	2 2 2	2 2 1	Susceptible
CFI-10	#22 13537 Nat.	2 2 2	2 2 1	Susceptible	2 2 2	2 2 1	Susceptible
MFE	#22 12810 Nat.	1 1 1	2 2 2	Fungistatic	1 1 1	2 2 2	Fungistatic
MFH	#22 11864 Black	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CFG	#23 12840	2 2 2	1 2 0	Susceptible	2 2 2	2 2 2	Susceptible

*- See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
CFI-5	#23 12843	2 2 0	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFI-10	#23 12824	2 2 2	1 1 1	Susceptible	2 2 2	1 1 1	Susceptible
CFI-20	#23 12845	2 2 1	1 1 1	Susceptible	2 2 1	1 1 1	Susceptible
MFE	#23 12437	1 1 1	1 0 1	Funginert	1 1 1	1 1 1	Funginert
MFG	#23 12846	1 1 1	1 0 1	Funginert	1 1 1	1 1 1	Funginert
MFH	#23 12847	2 2 0	1 1 0	Susceptible	2 2 2	1 1 1	Susceptible
MFI-10	#23 12420	4 4 4	4 4 4	Susceptible	4 4 4	4 4 4	Susceptible
MFI-20	#23 12410	4 4 4	4 4 4	Susceptible	4 4 4	4 4 4	Susceptible

*- See page 205 for more detailed explanation.

TABLE 17 (CONTINUED)

FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistance (*)
		Uncond	Cond		Uncond	Cond	
CFG	#24 6570 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
MFE	#24 7934 Natural	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
MFE	#24 10900 Nat.	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CMG	#24 803A Tan	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CFG	#25 307 Black	1 1 0	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CFG	#25 307 Natural	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#26 602 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CFG	#26 603 Brown	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible

*- See page 205 for more detailed explanation.

TABLE 17 (CONCLUDED)
FUNGUS RESISTANCE OF MOLDED PLASTICS
(PETRI-DISH METHOD)

Summary of more detailed data shown in tables 15 & 16

Spec. Grade	Manufacturer and Designation	Surface Growth Only			Surface and Edge Growth		
		Numeric Rating		Fungus Resistance (*)	Numeric Rating		Fungus Resistnace (*)
		Uncond	Cond		Uncond	Cond	
CFG	#26 902 Black	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
MFH	#26 904 Black	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CFG	#27 60-17	2 2 2	2 2 2	Susceptible	2 2 2	2 2 2	Susceptible
CMG	#28 Type AM Ivory	1 1 1	1 1 1	Funginert	1 1 1	1 1 1	Funginert
CMG	#28 Type TWG BlueM10935	1 1 1	1 1 1	Funginert	1 1 1	2 2 2	Fungistatic

*- See page 205 for more detailed explanation.

Summary of Observations

(Surface Growth Alone)

	Manuf.	Designation	Grade
The following samples showed traces of growth on all six replicates:	#6	192-D Nat.	MFE
	#6	102 Brown	MFG
	#6	102-H Brown	MFG
	#6	8780-3 Nat.	MFI-10
	#19	BM 16981 Nat.	MFE
	#19	BM 17748 Nat.	MFE
	#19	BM 250	MFG
	#19	BM 261 Black	MFH
	#20	1500 Brown	CMG
	#20	3020 Black	CMI-5
	#20	3020 Natural	CMI-5
	#20	592	MME
	#22	11864 Black	MFH
	#23	12437	MFE
	#23	12846	MFG
	#24	7934 Natural	MFE
	#24	10900 Natural	MFE
	#24	803 A Tan	CMG
	#25	307 Black	CFG
	#26	904 Black	MFH
	#28	Melamine AM Ivory	CMG
	#28	Melamine TWG Blue M10935	CMG
The following samples showed traces or slight growth on all six replicates:	#6	199 Black	CFI-20
	#19	BM 120 Black	CFG
	#22	13537 Nat.	CFI-10
	#22	12810 Nat.	MFE
	#23	12824	CFI-10
	#23	12845	CFI-20
	#23	12847	MFH
The following samples showed slight growth on all six replicates:	#6	107-B Black	CFG
	#6	165-A Black	CFG
	#6	7498-1-A	CFI-5
	#6	7346 Black	CFI-20
	#11	RM 15000B Bl. (RX 428)	CFI-5
	#19	BM 7129 Tan	CFG
	#19	BM 8052 Red	CFG
	#21	GP-130 Black	CFG
	#21	IM-530 Black	CFI-20
	#22	1544 Black	CFG
	#24	6570 Black	CFG
	#25	307 Natural	CFG

	Manuf.	Designation	Grade
The following sample showed traces, slight or moderate growth on all six replicates:	#23	12840	CFG
The following samples showed slight or moderate growth on all six replicates:	#6	8780-1 Nat.	MFI-20
	#19	BM 7156 Bl.	CFG
	#19	BM 10196 Bl.	CFG
	#19	BM 1132 Bl.	CFI-10
	#19	BM 17610	MFI-20
	#21	IM-520 Black	CFI-10
	#21	HR-350 Black	MFG
	#22	11546 Black	CFG
	#22	1905 Black	CFI-5
	#23	12843	CFI-5
	#26	602 Black	CFG
	#26	603 Brown	CFG
	#26	902 Black	CFG
	#27	60-17	CFG
The following samples showed moderate growth on all six replicates:	#4	Grade C	CFI-20
	#19	BM 3510 Bl.	CFI-20
The following samples showed abundant growth on all six replicates:	#19	BM 16468 Bl.	CFI-40
	#23	12420	MFI-10
	#23	12410	MFI-20

Summary of Observations

(Surface and Edge Growth)

	Manuf.	Designation	Grade
The following samples showed traces of growth on all six replicates:	#19	BM 16981 Nat.	MFE
	#19	BM 17748 Nat.	MFE
	#19	BM 261 Black	MFH
	#20	1500 Brown	CMG
	#20	3020 Black	CMI-5
	#20	3020 Natural	CMI-5
	#20	592	MME
	#22	11864 Black	MFH
	#23	12437	MFE
	#23	12846	MFG
	#24	7934 Natural	MFE
	#24	10900 Nat.	MFE
	#24	803A Tan	CMG
	#25	307 Black	CFG
	#26	904 Black	MFH
	#23	Melamine AM Ivory	CMG

	Manuf	Designation	Grade
The following samples showed traces or slight growth on all six replicates:	#6	107-B Bl.	CFG
	#6	199 Black	CFI-20
	#6	102-D Nat.	MFE
	#6	102 Brown	MFG
	#6	102-H Brown	MFG
	#6	8780-3 Nat.	MFI-10
	#19	BM 120 Bl.	CFG
	#19	BM 250	MFG
	#22	113537 Nat.	CFI-10
	#22	12810 Nat.	MFE
	#23	12824	CFI-10
	#23	12845	CFI-20
	#23	12847	MFH
	#25	307 Natural	CFG
	#28	Melamine TWG Blue M10935	CMG
The following samples showed slight growth on all six replicates:	#6	7498-1-A	CFI-5
	#11	RM15000B Bl. (RX 428)	CFI-5
	#19	BM 8052 Red	CFG
	#21	IM-530 Black	CFI-20
	#22	1544 Black	CFG
	#24	6570 Black	CFG
The following samples showed traces, slight or moderate growth on all six replicates:	#19	BM-17610	MFI-20
	#23	12840	CFG
	#26	602 Black	CFG
	#26	902 Black	CFG
The following samples showed slight or moderate growth on all six replicates:	#6	165-A Black	CFG
	#6	7346 Black	CFI-20
	#6	8780 -1 Nat.	MFI-20
	#19	BM 7129 Tan	CFG
	#19	BM 7156 Bl.	CFG
	#19	BM 10196 Bl.	CFG
	#19	BM 1132 Bl.	CFI-10
	#21	GP-130 Bl.	CFG
	#21	IM-530 Bl.	CFI-10
	#21	HR-350 Bl.	MFG
	#22	11540 Black	CFG
	#22	1905 Black	CFI-5
	#23	12843	CFI-5
	#26	603 Brown	CFG
	#27	60-17	CFG

	Manuf.	Designation	Grade
The following samples showed moderate growth on all six replicates:	#4	Grade C	CFI-20
	#19	BM 3510 Bl.	CFI-20
The following samples showed abundant growth on all six replicates:	#19	BM 16468 Bl.	CFI-40
	#23	12420	MFI-10
	#23	12410	MFI-20

PARTIAL COMPARISON OF RESULTS OBTAINED BY THE TWO TEST METHODS

A total of 85 plastic laminated materials have been tested for resistance to fungus growth using both the Petri-Dish Method and the Humidity-Exposure Method as supplied by the Bureau of Ordnance. Observations and ratings of the individual replicates of these 85 laminates have been reported on previous pages of this report and in the First and Second Quarterly Reports.

A preliminary comparison of 30 of these 85 laminates has been reported in the First Quarterly Report, pages 121 and 122. The additional 55 laminates are included in this report. Table 18, pages 246 and 247 lists these additional 55 laminates arranged in decreasing order of fungus resistance, as determined by the Petri-Dish Method, considering surface growth alone. Also listed in table 18, are the corresponding results as obtained using the Humidity-Exposure Method.

This listing has been compiled using results of surface growth alone (on unconditioned specimens) since it is not felt that the edge growth obtained in the Petri-Dish Method is comparable to that obtained in the Humidity-Exposure Method.

No conclusions are being drawn from this listing until all the laminates under test have been reported.

TABLE 18. (Sheet 1 of 2)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
AS DETERMINED BY TWO TEST METHODS

Spec. Grade	Manufacturer and Designation	Surface Growth by: Petri-Dish Method: Relative Profusion	Petri-Dish Method: Rating (*)	Humidity-Exposure Method: Relative Profusion	Humidity-Exposure Method: % of Area Covered
GSG	#7 G7-830	Traces	1	None	0%
GSG	#2 130	Traces	1	None - Tr.	0%
GSG	#9 6090	Traces	1	None - Tr.	0%
PBE-P	#3 T-725	Traces	1	Traces	1%
PBE-P	#3 T-812	Traces	1	Traces	1%
GSG	#6 T-35210	Traces	1	Traces	1%
GSG	#6 20202	Traces	1	Traces	1%
PBE-P	#9 6028	Traces	1	Traces	1%
PBG	#7 XX-322	Traces	1	Tr. - Sl.	1.5%
PBG	#9 6020	Traces	1	Tr. - Sl.	1.5%
PBE-P	#7 XXXP-455	Traces	1	Tr. - Sl.	1.75%
PBE	#3 T-640	Traces	1	Tr. - Sl.	2%
PBE-P	#3 T-800	Traces	1	Moderate	15%
PBE-P	#4 XXXP	Slight	2	None - Tr.	0%
NPG	#3 T-819	Slight	2	Traces	1%
PBE-P	#4 XXXP-IR	Slight	2	Traces	1%
FBG	#6 286	Slight	2	Traces	1%
PBE	#5 XXX	Mod: Part Cov	2	Tr. - Sl.	1.5%
GMG	#7 MGB-811	Slight	2	Tr. - Sl.	1.5%
NPG	#9 6051	Slight	2	Tr. - Sl.	1.5%
NPG	#7 N-850	Slight	2	Tr. - Sl.	1.75%
PBG	#5 XX	Mod: Part Cov	2	Tr. - Sl.	2%
PBE-P	#5 XXX-P	Mod: Part Cov	2	Slight	2%
PBE	#7 XXX-401	Slight	2	Slight	2%
PBE	#4 XXX	Mod: Part Cov	2	Sl. - Mod.	2.75%
PBE-P	#5 XXX-648	Slight	2	Sl. - Mod.	2.75%
PBG	#4 XX	Slight	2	Sl. - Mod.	3.5%
GMG	#9 6038	Slight	2	Sl. - Mod.	3.5%
FBI	#4 L	Mod: Part Cov	2	Sl. - Mod.	4.25%
FBI	#6 238	Slight	2	Sl. - Mod.	4.75%
GMG	#3 T-712	Slight	2	Sl. - Mod.	5%
GMG	#6 259-2	Slight	2	Moderate	8.75%
PBG	#3 T-643	Slight	2	Moderate	9%
FBM	#6 262	Slight	2	Moderate	10%
FBG	#7 CE-558	Slight	2	Moderate	11%
GMG	#4 GLCC-M	Mod: Part Cov	2	Moderate	12.5%
NPG	#4 NNP	Mod: Part Cov	2	Moderate	12.5%

*- See page 125 for explanation

TABLE 18 (Sheet 2 of 2)

FUNGUS RESISTANCE OF PLASTIC LAMINATES
AS DETERMINED BY TWO TEST METHODS

Spec. Grade	Manufacturer and Designation	Surface Growth by:			
		Petri-Dish Method		Humidity-Exposure Method	
		Relative Profusion	Rating (*)	Relative Profusion	% of Area Covered
FBG	#4 CE	Mod: Part Cov	2	Moderate	13.75%
FBE	#7 LE-675	Slight	2	Moderate	26%
FBI	#7 L-610	Mod: Part Cov	2	Moderate	45%
FBG	#3 T-606	Slight	2	Mod. - Abund	61%
FBM	#7 C501	Mod: Part Cov	2	Abundant	84%
FBE	#4 LE	Mod: Cons Cov	3	Sl. - Mod	5.5%
FBI	#9 6040	Mod: Cons Cov	3	Sl. - Mod	5.5%
FBG	#9 6031	Mod: Cons Cov	3	Moderate	15%
FBI	#5 LE-594	Mod: Cons Cov	3	Moderate	29%
FBM	#4 C	Mod: Cons Cov	3	Moderate	32.5%
FBE	#9 6045	Mod: Cons Cov	3	Moderate	42.5%
FBM	#5 CG	Mod: Cons Cov	3	Moderate	46%
FBI	#3 T-733	Mod: Cons Cov	3	Moderate	51%
FBE	#3 T-827	Mod: Cons Cov	3	Moderate	56%
FBE	#5 LE	Mod: Cons Cov	3	Moderate	64%
FBG	#5 CE	Mod: Cons Cov	3	Abundant	82.5%
FBM	#9 6030	Abundant	4	Moderate	42.5%
FBM	#3 T-601	Abundant	4	Abundant	90%

*- See page 125 for explanation