MANUFACTURING SPECIFICATIONS

Manville PLANT

Rigid Shingles DEPT.

PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain

DIVISION DI

SPEC. NO. RS-F-2

PAGE NO. 1

PLAINTIFF'S EXHIBIT JM-2430

X PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; "Paint-Ready" Colorbestos Sidewall Shingles

RETURN TO J-M RESEARCH FILE ROOM

FORMULAS:

"B" Type

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
Portland Cement	501	501	501	501	501	501	501	501
Silica Flour	333	333	333	333	333	333	333	333
Shingle Scrap (Note 1 & 2)	550	525	500	475	450	425	[illegible]	375
Minimum Batch Wt.	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

Note 1: Shingle Scrap should be blended 1 part normal cured to 2 parts steam cured.

From 0 to 100 lbs. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation, an additional 100# of shingle scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe Scrap (Large size) may be added to the Formula above up to the amounts shown.

(b) Also up to 75 lbs. of material from the Dust Collectors and/or 75 lbs. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

X—INDICATES CHANGE—REASON: Show correct list of products

AUTHORITY FOR CHANGE: Bring Spec. up to date

MT-000243

FILE-HOLDERS: Ind. Eng. Wkg. | SUPR. QUAL. CONTROL | PROD. SUPT | PLANT FINANCE OFFICE | RESEARCH LAB. | MGR. QUAL. CONTROL | DI QUA CONT

SUPERSEDES: Page 1 of same Spec. issued 12/2/57

DATE ISSUED SEP 10

FORM 50132-10 PRINTED IN

Manville PLANT / Rigid Shingles DEPT.	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain 4-3	DIVISION	RS-F-1 PAGE NO. 1

X **PRODUCTS:** DISCONTINUED 1/19/59

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; "Paint-Ready" Colorbestos Sidewall Shingles

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470	470
Silica Flour	300	300	300	300	300	300
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Wt.	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470
Silica Flour	300	300	300	300	300
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Wt.	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

Note 1: Shingle Scrap should be blended 1 part normal cured to 2 parts steam cured.

From 0 to 100 lbs. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe (Large size) Scrap may be added to the formulas above up to the amounts shown.

MT-000229

RETURN TO J-M RESEARCH FILE ROOM

X—INDICATES CHANGE—REASON: Show correct list of products

AUTHORITY FOR CHANGE: Bring Spec. up to date

FILE-HOLDERS	Ind. Eng. Mfg.		SUPR. QUAL. CONTROL	PROD. SUPT	PLANT FINANCE OFFICE	RESEARCH LAB.	MGR. QUAL. CONTROL	DIR. QUAL. CONTROL
SUPERSEDES: Page 1 of same Spec. Issued 12/2/57						10/21/59		DATE ISSUED

FORM 50138-10 PRINTED IN U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT & DIV.	Manville Br
		SPEC NO.	RS-F-1
		PAGE NO.	1

CANCELLED

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; "Paint-Ready" Colorbestos Sidewall Shingles

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470	470
X Silica Flour (Note A)	300	300	300	300	300	300
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470
X Silica Flour (Note A)	300	300	300	300	300
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

RETURN TO J-M RESEARCH FILE ROOM

X Note A: Use "I" Bldg. Silica Flour when available.

Note 1: Shingle Scrap should be blended 1 part normal cured to 2 parts steam-cured.

From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

X— INDICATES CHANGE —REASON:	Add note on Silica Flour	MT-000228
AUTHORITY FOR CHANGE	A. K. Highee to W. F. Fischer	
SUPERSEDES:	Page 1 of same Spec. Issued 9/11/58, Devn. 1697, 8/5/58	

DIR.	DIV.	SUPT.	PROD.	PLNT.	QC	Ind.	DATE FEB 16 1959

Form 333-2 PM. In U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT & DIV.	Manville DP
		SPEC NO.	RS-F-2
		PAGE NO.	1

CANCELLED

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White, #309, #329 and #339 NCP Sidewall Shingles, all colors; "Paint-Ready" Colorbestos Sidewall Shingles

FORMULAS:

"B" Type

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
Portland Cement	501	501	501	501	501	501	501	501
Silica Flour (Note A)	333	333	333	333	333	333	333	333
Shingle Scrap (Notes 1 & 2)	550	525	500	475	450	425	400	375
Minimum Batch Weight	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

X Note A: Use "I" Bldg. Silica Flour when available.

Note 1: Shingle Scrap should be blended 1 part normal cured to 2 parts steam-cured.

From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation, an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe Scrap (large size) may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

X— INDICATES CHANGE —REASON: Add note on Silica Flour

AUTHORITY FOR CHANGE: A. K. Higbee to W. F. Fischer

SUPERSEDES: Page 1 of same Spec. issued 9/10/58, Devn. 1698, 8/5/58

DIR. | MGR. | SUPR. | PROD. | PLNT. | RES. | Inc. | DATE FEB 19 1959

Form 333-2 Ptd. In U.S.A.

MT-000242

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT & DIV.	Manville BP
		SPEC NO.	RS-F-1 ✓
		PAGE NO.	1

PRODUCTS:

CANCELLED

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; #339 Rock Shake Sidewall Shingles, all colors.

X

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470	470
Silica Flour (Note A)	300	300	300	300	300	300
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
Portland Cement	470	470	470	470	470
Silica Flour (Note A)	300	300	300	300	300
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

RETURN TO J-M RESEARC FILE ROOM

Note A: Use "X" Bldg. Silica Flour when available.

X Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

MT-000227

X— INDICATES CHANGE —REASON:	Cancel Paint Ready Colorbestos Sidewall Shingles Add #339 Rock Shake Shingles, all colors
AUTHORITY FOR CHANGE	L. L. Liggett's letter dated 12/30/59
SUPERSEDES:	Page 1 of same Spec. issued 2/19/59

Form 333-2 Ptd. in U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT & DIV.	Manville BP
		SPEC NO.	RS-F-2
		PAGE NO.	1

CANCELLED

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles,
X all colors; #339 Rock Shake Sidewall Shingles, all colors.

FORMULAS:

"B" Type

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
Portland Cement	501	501	501	501	501	501	501	501
Silica Flour (Note A)	333	333	333	333	333	333	333	333
Shingle Scrap (Notes 1 & 2)	550	525	500	475	450	425	400	375
Minimum Batch Weight	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

Note A: Use "I" Bldg. Silica Flour when available.

X Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe Scrap (large size) may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

MT-000241

X— INDICATES CHANGE —REASON:	Cancel Paint Ready Colorbestos Sidewall Shingles Add #339 Rock Shake Shingles, all colors
AUTHORITY FOR CHANGE	L. L. Liggett's letter dated 12/30/59
SUPERSEDES:	Page 1 of same Spec. issued 2/19/59

RETURN TO J-M RESEARCH FILE ROOM

DIR. O.C.	MGR. O.C.	SUPR. O.C.	PROD. SUPR.	PLNT.	RES.	Ind.		DATE

Form 333-2 Ptd. In U.S.A.

Johns Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain and Ranchgrain	PLANT (OR DIV.)	Manville BP
		SPEC NO.	RS-F-2
		PAGE NO.	1

PRODUCTS: Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

FORMULAS: "B" Type

Formula No.	1	2	3	4	5	6	7	8	9
7R06 Fibre	--	--	--	--	--	--	--	--	300#
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#	200
Portland Cement	452	452	452	452	452	452	452	452	464
Silica Flour (Note A)	382	382	382	382	382	382	382	382	396
Shingle Scrap Notes 1 & 2)	550	525	500	475	450	425	400	375	640
Min. Batch Wt.	1684#	1659#	1634#	1609#	1584#	1559#	534#	1509#	2000#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275	

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large Size) Scrap may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

RETURN TO J-M RESEARCH FILE ROOM

X— INDICATES CHANGE —REASON: Show formula with 7R06 Fibre substitution.

AUTHORITY FOR CHANGE L. L. Liggett's letter to W. F. Fischer 5/16/61. also Bulletin #139

SUPERSEDES: Page 1 of same Spec. issued 11/25/60

DIR.	MGR.	SUPR.	PROD.	PLNT.	RES.	Ind.			DATE

MT-000237

Form 3332 Ptd. in U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT	Manville NJ
		SPEC NO.	RS-F-1
		PAGE NO.	1

PRODUCTS:

CANCELLED

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; #339 Rock Shake Sidewall Shingles, all colors.

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
X Portland Cement	415	415	415	415	415	415
X Silica Fl[illegible]r (Note A)	355	355	355	355	355	355
Shingle S[illegible]ap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
X Portland Cement	415	415	415	415	415
X Silica Flour (Note A)	355	355	355	355	355
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

MT-000226

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

X— INDICATES CHANGE —REASON:	Increase Silica-Cement Ratio to .85	RETURN TO
AUTHORITY FOR CHANGE	Product Proposal Research 423-86	J-M RESEARCH
SUPERSEDES:	Page 1 of same Spec. issued 1/5/60	FILE ROOM

DIR.	MGR.	SUPT.	PROD. SUPT.	PLNT.	RES.	Ind.	DATE ISSUED

Form 333-2 Pd. in U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series, Smoothgrain	PLANT & DIV.	Manville 22
		SPEC NO.	RS-F-2
		PAGE NO.	1

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; #339 Rock Shake Sidewall Shingles, all colors.

CANCELLED

FORMULAS:

"B" Type

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
X Portland Cement	452	452	452	452	452	452	452	452
X Silica Flour (Note A)	382	382	382	382	382	382	[illegible]	382
Shingle Scrap (Notes 1 & 2)	550	525	500	475	450	425	[illegible]	375
Minimum Batch Weight	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap, or Transite Pipe Scrap (large size) may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

X— INDICATES CHANGE —REASON:	Increase Silica-Cement Ratio to .85
AUTHORITY FOR CHANGE	Product Proposal Research 423-86
SUPERSEDES:	Page 1 of same Spec. issued 1/5/60

MT-000240
RETURN TO
J-M RESEARCH
FILE ROOM

DIV.	MGR.	SUPT.	PROD.	PLNT.	[illegible]	DATE

Pfd. in U.S.A.
Form 333-2

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain, Shakegrain, Ranchgrain	PLANT & DIV.	Manville BP
		SPEC NO.	RS-F-1
		PAGE NO.	1

X

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; #339 Rock Shake Shakegrain Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

X
X

CANCELLED

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	415	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355	355
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
Portland Cement	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

MT-000225

Note A: Use "I" Bldg. Silica Flour When available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

X— INDICATES CHANGE —REASON:	Add Shakegrain and Ranchgrain to line	RETURN TO
AUTHORITY FOR CHANGE	Bring Mfg. Spec. up to date	J-M RESEARCH
SUPERSEDES:	Page 1 of same Spec. issued 10/27/60	FILE ROOM

DIR. Q.C.	MGR. Q.C.	SUPR. Q.C.	PROD. SUPT.	PLNT. ENG.	RES. LAB.	J.M.S. Rep.			DATE ISSUED

Form 333-2 Pld. in U.S.A.

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain, Shakegrain, Ranchgrain	PLNT.	Manville EP
		SPEC NO.	RS-F-2
		PAGE NO.	1

X

PRODUCTS:

X Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; #339 Rock Shake Shakegrain Sidewall Shingles, all
X colors; and #109 Ranchgrain, all colors.

FORMULAS: CANCELLED

"B" Type

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
Portland Cement	452	452	452	452	452	452	452	452
Silica Flour (Note A)	382	382	382	382	382	382	382	382
Shingle Scrap (Notes 1 & 2)	550	525	500	475	450	425	400	375
Minimum Batch Weight	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

MT-000239

Pd. in U.S.A.

X— INDICATES CHANGE	—REASON: Add Shakegrain and Ranchgrain to line	RETURN TO
AUTHORITY FOR CHANGE	Bring Mfg. Spec. up to date	J-M RESEARCH
SUPERSEDES:	Page 1 of same Spec. issued 10/27/60	FILE ROOM

Form 333-2

DIR. Q.C.	MGR. Q.C.	SUPR. Q.C.	PROD. SUPT.	PLNT. ENG.	RES. LAB.	Ind. Eng.			DATE ISSUED	11/21/60

Johns-Manville MANUFACTURING SPECIFICATION	Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain and Ranchgrain	PLANT & DIV.	Manville BP
		SPEC NO.	RS-F-1
		PAGE NO.	1

X

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

X

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	415	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355	355
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11
6D20 Fibre	300#	300#	300#	300#	300#
Portland Cement	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355
Shingle Scrap (Note 1)	450	425	400	375	350
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#
Other Scraps (Note 2)	250	275	300	325	350

RETURN TO J-M RESEARCH FILE ROOM

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

X— INDICATES CHANGE —REASON: Remove Shakegrain

AUTHORITY FOR CHANGE: L. L. Liggett's letter to H. C. Ellison 11/22/60

SUPERSEDES: Page 1 of same Spec. issued 11/21/60

MT-000224

DIR. C.C.	MGR. C.C.	SUPR. C.C.	PROD. SUPT.	PLNT. FIN.	RES.	Ind.			DATE ISSUED

Form 333-2 Ptd. in U.S.A.

MANUFACTURING SPECIFICATION	Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain and Ranchgrain	Manville BP	
		SPEC NO.	RS-F-2
		PAGE NO.	1

X

PRODUCTS:

X Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

RETURN TO J-M RESEARCH FILE ROOM

FORMULAS:

"B" Type

CANCELLED

Formula No.	1	2	3	4	5	6	7	8
6D20 Fibre	300#	300#	300#	300#	300#	300#	300#	300#
Portland Cement	452	452	452	452	452	452	452	452
Silica Flour (Note A)	382	382	382	382	382	382	382	382
Shingle Scrap (Notes 1 & 2)	550	525	500	475	450	425	400	375
Min. Batch Weight	1684#	1659#	1634#	1609#	1584#	1559#	1534#	1509#
Other Scraps (Note 3)	100	125	150	175	200	225	250	275

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulasby any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: When the Fiberizer is in operation an additional 100 lb. of Shingle Scrap may be added to the formulas above.

Note 3: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

(b) Also, up to 75 lb. of material from the Dust Collectors and/or 75 lb. of Machine Drop from the same or other machines producing similar stock may be added to the above formulas.

Caution: The use of scrap should be planned so that it will not be necessary to shift more than two successive formulas at any time. Violent shifts should not be made.

X— INDICATES CHANGE	—REASON:	Remove Shakegrain
AUTHORITY FOR CHANGE		L. L. Liggett's letter to H. C. Ellison 11/22/60
SUPERSEDES:		Page 1 of same Spec. issued 11/21/60

DIR.	MGR.	SUPR.	PROD. SUPT.	PLNT.	RES.	Ind.			DATE ISSUED
									11/25/60

Pld. in U.S.A.

Form 333-2

MT-000238

Johns Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain and Ranchgrain	PLANT & DIV.	Manville BP
		SPEC NO.	RS-F-1
		PAGE NO.	1

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors except Dover White; #309, #329 and #339 NCP Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

RETURN TO J-M RESEARCH FILE ROOM

FORMULAS:

"D" Type

Formula No.	1	2	3	4	5	6
6D20 Fibre	300#	300#	300#	300#	300#	300#
Portland Cement	415	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355	355
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11	12
X 7R06 Fibre	--	--	--	--	--	300#
6D20 Fibre	300#	300#	300#	300#	300#	200
Portland Cement	415	415	415	415	415	464
Silica Flour (Note A)	355	355	355	355	355	396
Shingle Scrap (Note 1)	450	425	400	375	350	640
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#	2000#
Other Scraps (Note 2)	250	275	300	325	350	

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

X— INDICATES CHANGE — Show Formula with 7R06 Fibre substitution

AUTHORITY FOR CHANGE L. L. Liggett's letter to W. F. Fischer 5/16/61 also bulletin #139

SUPERSEDES: Page 1 of same Spec. issued 11/25/60

DIR.	MGR.	SUPR.	PROD.	PLNT.	RES.	Ind.			DATE

Form 333 Ptd. in U.S.A.

MT-000223

Johns-Manville MANUFACTURING SPECIFICATION	PRODUCT: Colorbestos Sidewall Shingles #100 and #300 Series Smoothgrain and Ranchgrain	PLANT & DIV.	Mtls. Bldg. & Flooring Mtls.
		SPEC NO.	RS-F-1
		PAGE NO.	1

PRODUCTS:

Smoothgrain #105 and #109 NCP Sidewall Shingles, all colors; #309, #329 and #339 NCP Sidewall Shingles, all colors; and #109 Ranchgrain, all colors.

FORMULAS:

"D" Types

Formula No.	1	2	3	4	5	6
6D20 Fibre	300	300	300	300	300	300
Portland Cement	415	415	415	415	415	415
Silica Flour (Note A)	355	355	355	355	355	355
Shingle Scrap (Note 1)	600	575	550	525	500	475
Minimum Batch Weight	1670#	1645#	1620#	1595#	1570#	1545#
Other Scraps (Note 2)	100	125	150	175	200	225

Formula No.	7	8	9	10	11	12
7R06 or 7R103 Fibre	-	-	-	-	-	300
6D20 Fibre	300	300	300	300	300	200
Portland Cement	415	415	415	415	415	464
Silica Flour (Note A)	355	355	355	355	355	396
Shingle Scrap (Note 1)	450	425	400	375	350	640
Minimum Batch Weight	1520#	1495#	1470#	1445#	1420#	2000#
Other Scraps (Note 2)	250	275	300	325	350	

Note A: Use "I" Bldg. Silica Flour when available.

Note 1: From 0 to 100 lb. of the Shingle Scrap may be replaced within the scope of basic formulas by any one of the following approved Mineral Fillers: Mastic Sand, Limestone Dust, Limestone Aggregate, Ground Trap Rock or Mill Fines, Graystone, Reclaimed Granules, Rock Wool Shot or Transite Pipe Scrap ground to small size.

Note 2: (a) Wet Machine Scrap, Corrugated Transite Scrap or Transite Pipe (large size) Scrap may be added to the formulas above up to the amounts shown.

MT-000222

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X- INDICATES CHANGE	-REASON: To add 7R103 Fibre as an alternate.
AUTHORITY FOR CHANGE	G. W. Thompson's letter dated 12-28-67.
SUPERSEDES:	Page 1 of same spec. issued 6-8-61.

DIR.	MGR.	SUPR.	PROD.	PLNT.	RES.	ENG.	DATE

Form 333-2 ... U.S.A.

COPY FORM	INITIALS	DATE
		12/3/2000

BOX NUMBER	SEGMENT NO.	REQUESTING PARTY
P-459		Baron & Budd

NOTES

MT-000214