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MON-2570

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"A" INDICATES APPROVAL OR ACCEPTANCE AT LOCATION. "A" AT "DIV" INDICATES DIVISION-WIDE APPROVAL OR ACCEPTANCE.

1. INSULATING MATERIAL

1.1 Description Insulating material is premolded reacted hydrous calcium silicate and asbestos fiber. The following shapes and sizes normally are used in Monsanto practice:

ITEM	APPLICATION	SIZE	SPEC.
Flat blocks without bevel.	All flat surfaces; Vessels over 24'0" in diameter.	24" wide x 36" long, 1" to 3" thick.	ASTM C-344
Flat blocks bevelled to suit specified diameter.	Vessels 6'0" in diameter to 24'0" in diameter.	12" wide x 36" long, 1" to 3" thick.	
Sidewall segments curved and bevelled to suit specified diameter.	Vessels 3'0" in diameter to 6'0" in diameter.	12" wide x 18" long, 1" to 3" thick.	
Head segments shaped to suit type and specified diameter.	Vessel heads.	1" to 3" thick.	
Sectional covers.	Copper tubing 3/8" to 3" diameter.	ID to suit specified diameter. 1" to 3" thick.	
Sectional covers to 24" diameter, segmental covers 30" and 36" diameter.	Pipe and vessels to 36" diameter.	ID to suit specified diameter. 1" to 3" thick.	
Premolded sectional covers to 6" IPS, preformed sectional covers 8" to 36" nominal pipe size.	Copper tubing and pipe fittings, valves, and flanges.	ID to suit specified diameter. 1" to 3" thick.	

1.2 Thickness Thickness stated on Drawings or in the Thermal Insulation Schedule shall be used. Thicknesses given in Table I shall be used only when directed by the Engineer and when operating temperatures are given.

2. AUXILIARY MATERIALS

2.1 Description The following materials are used with the insulating material to form a complete system. Apply them as directed in the Construction Specifications.

ITEM	GENERIC TYPE	APPLICATION
WELDING STUDS	Carbon steel studs and clips.	Used to secure insulation to vessel and piping surfaces.
HIGH TEMPERATURE CEMENT	Expanded vermiculite cement with heat resistant binder. ASTM C-196 Spec.	Used to point up broken or rounded corners and irregular surfaces; fill voids and slots; build-up insulation on small pipe fittings.
FILLER MATERIAL	Calcined diatomaceous earth and long asbestos fiber, without binder.	Used to pack expansion spaces and to build-up insulation where preformed fitting covers are not available.
CAULKING AND FINISHING CEMENT	Nodular mineral fibers combined with bonding materials.	Used to smooth depressions and to fill minor voids and irregularities in the finished insulation surface.
BANDS AND SEALS	¾" x 0.015" flat Stainless Steel bands and sealing devices.	Used to secure insulation to vessels and piping. C. 002908
TIE WIRE	16 gauge cold-drawn, bright-annealed Stainless Steel wire.	Used to secure insulation to vessels and piping.

REFERENCES

LATEST ADDITIONS OR REVISIONS ARE SHOWN BY | | OR OUTLINING. DELETIONS ARE SHOWN BY

November 1, 1958 Revised January 31, 1964 Revised August 18, 1964	MONSANTO CHEMICAL COMPANY HYDROCARBONS DIVISION ENGINEERING CONSTRUCTION & MAINTENANCE SPECIFICATION	GS-11.3.602 SYSTEM 603 PIPE COVERING FOR UNDERGROUND SERVICE

APPLICATION: Pipelines buried in earth, or on contact with earth or concrete at grade. Maximum service temperature 150°F. Mill applied coating and wrapping shall be equivalent to that below, and shall have an over-wrapping of Kraft paper.

STEP	MATERIAL OR PROCEDURE	METHOD (Note 1)	TOTAL D F T (Note 2)	REMARKS
	System 603 - Hot Enamel Coating and Wrapping for Underground Pipe Applied In The Field			
1	Clean outside of pipe with wire brush or traveling type motor driven cleaning machine. Remove grease and oil with suitable solvents. As an alternate, cleaning may be accomplished by sand-blasting to a commercial finish.			Remove all dirt, loose rust and millscale, and other foreign materials. Cutters, knives, brushes, etc., or machine shall be approved by Monsanto's engineer.
2	1 coat of pipeline primer	optional		Apply by spray, brush, mop or rotating carpet sling with revolving brushes. Finished coat shall be smooth and even. Allow to dry
3	1 coat of hot pipeline enamel		3/32"	Apply with a bucket and canvas sling, or with an approved coating machine. Heat enamel in accordance with manufacturer's recommendations.
4	1 spiral wrap of open mesh glass mat			Apply over enamel while it is soft and imbed in enamel.
5	1 coat of hot pipeline enamel		1/8"	Thoroughly saturate and cover glass mat.
6	1 spiral wrap 15 lb asphalt saturated asbestos felt			Lap preceeding spiral 1" minimum. Joints between succeeding strips shall lap at least 4", at the top of the pipe and be sealed with hot enamel or imbedded by heating the entire finish coat.
	Couplings, flanges, fittings and field welds in mill wrapped pipe shall be coated and wrapped in a manner equivalent to that above.			
	Repairs to defective or damaged coating shall be made by removing felt, daubing with hot enamel, and imbedding new felt, at the time the pipe is lowered into the ditch.			

C 002909

NOTES:
1. Coatings may be brushed, rolled, or sprayed, when the method is optional.
2. Total dry film thickness (DFT) in mils (thousandths of an inch) accumulated at the step indicated.
3. Pipe shall be left on skids behind the wrapping machine for electrical inspection and repairs before lowering into ditch.
4. Coating shall be checked for holidays with an approved machine at 10,000 volts. On hot enamel coating, if the felt lap joints only are to be sealed, apply the spark test before wrapping. If the felt is to be imbedded in the hot finish coat, apply the test after wrapping.
5. Coated pipe shall be handled carefully, using belt slings of proper dimensions. Ropes, cables, or chains will not be permitted in contact.
6. No coating operations shall be carried out during weather which is unfavorable in the [illegible] engineer. Pipe shall be clean and dry before application of

LAM023152

NOTES:

1. Pipe shall be left on skids behind the wrapping machine for electrical inspection and repairs before lowering into ditch.

2. Coating shall be checked for holidays with an approved instrument at 10,000 volts. On hot enamel coating, if the felt lap joints only are to be sealed, apply the spark test before wrapping. If the felt is to be imbedded in the hot finish coat, apply the test after wrapping.

3. Coated pipe shall be handled carefully, using belt slings of proper dimensions. Ropes, cables, or chains will not be permitted in contact.

4. No coating operations shall be carried out during weather which is unfavorable in the opinion of Monsanto's engineer. Pipe shall be clean and dry before application of primer or enamel.

C 003910

TABLE II. LENGTH OF CUT OR "STRETCH OUT" FOR STAINLESS STEEL JACKETING OVER PIPE COVERING

Pipe Size (In.)	Nominal Thickness of Pipe Covering										
	Length of Cut for Stainless Steel, in Inches (Calculated to Nearest 1/4")										
	1	1½	2	2½	3	3½	4	4½	5	5½	6
½	11	11	17¾	22¾	25¾	29	32	35½	38½		
¾	11	14½	17¾	22¼	26	29	32½	35½	39		
1	13	16	19½	22¾	26	29	32½	35½	39		
1½	14½	17½	22½	26	29	32½	35½	38¾	41¾		
2	16	19½	22½	26	29	32½	35½	38¾	42		
3	19½	22¾	26	29	32½	35½	38¾	42	46	48¾	52
4	22¾	26	29	32½	35½	38¾	42	46	48¾	52	55¼
6	29	32½	35½	38¾	42	46	48¾	52	55¼	58¼	61½
8		29	42	46	48¾	52	55¼	58¼	61½	65	68
10		46	48¾	52	55¼	58¼	61½	65	68	71	74
12		52	55¼	58½	61½	65	68	71	74	77¼	80½
14		55¼	58½	61½	65	68	71	74	77¼	80½	83¾
16		61½	65	68	71	74	77¼	80½	83¾	86¾	90
18		68	71	74¼	77¼	80½	83¾	86¾	90	93	96¼
20		74¼	77¼	80½	83¾	86¾	90	93	96¼	99½	102½
24		86¾	90	93	96¼	99½	102½	105¾	108¾	112	115
30		105¾	108¾	112	115	118¼	121½	124½	127¾	130¾	134

C 003911

STAINLESS STEEL JACKETING

Elevated and Low Temperatures

1. WEATHER BARRIER MATERIALS

1.1 Description Stainless Steel Jacketing is commercially available in forms of 36" × 96" sheets; rolls 36" wide at 300 sq ft per roll; and rolls 48" wide at 400 sq ft per roll. Material in both sheets and rolls in .010" thick, with $\frac{5}{16}$" corrugation. Moisture barrier backing on the inner surface is not required.

1.2 Fitting Covers Prefabricated sectional covers for insulated short and long radius elbows, tees, line flanges, and screwed and butt-welded ASA 150 lb and 300 lb valves shall be used when readily available.

1.3 Head Covers Prefabricated gore-type covers for insulated 2 to 1 elliptical heads shall be used through 13'-0" diameter when readily available.

1.4 Material Requirements and Coverage (for Insulation Piping) See Tables I and II.

2. AUXILIARY MATERIALS

2.1 Straps and Seals Straps and seals used to secure Stainless Steel jacketing in place shall be $\frac{1}{4}$" × .015" stainless steel or monel for vessel and equipment jacketing, $\frac{1}{2}$" × .015" stainless steel or monel for pipe jacketing.

2.2 Screws and Rivets Sheet metal screws used to secure Stainless Steel Jacketing in place (over insulation in elevated temperature service only) shall be Pan Head No. 7 × $\frac{1}{4}$" stainless steel. Pop rivets used in similar service shall be stainless steel.

TABLE I. STAINLESS STEEL WITH 2" LAP

Pipe Size (In.)	Quantities (Square Feet) Required for 100 Linear Feet of Pipe Covering[1] — Nominal Insulation Thickness (Inches)										
	1	1½	2	2½	3	3½	4	4½	5	5½	6
½	96	130	155	200	226	255	283	312	340		
¾	97	128	156	201	226	256	283	313	340		
1	114	142	172	201	229	256	284	313	341		
1½	127	155	198	227	255	283	312	340	367		
2	142	171	201	229	256	284	313	341	369		
3	171	201	229	256	284	313	341	369	405	416	450
4	201	229	256	284	313	341	369	423	429	450	480
6	256	284	313	341	369	403	430	457	486	506	533
8		341	369	405	429	457	488	515	543	562	590
10		403	431	458	486	514	541	569	597	603	642
12		458	486	516	541	569	598	626	654	675	692
14		488	516	543	571	598	626	654	681	707	727
16		543	571	599	626	654	681	709	737	754	781
18		598	629	654	682	709	737	764	792	808	834
20		654	682	709	737	764	792	820	847	875	889
24		764	729	820	847	875	903	930	958	972	1135
30		930	958	986	1013	1041	1069	1096	1124	1136	1163

[1]Quantities, in square feet, are those required to cover 100 linear feet of insulated straight piping. Longitudinal 2" laps are included; 2" butt laps, based on 48" long rolls of felt, also are included.

C 003912

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TABLE II. LENGTH OF CUT OR "STRETCH OUT" FOR ALUMINUM JACKETING OVER PIPE COVERING

Pipe Size (In.)	Nominal Thickness of Pipe Covering										
	Length of Cut for Aluminum, in Inches (Calculated to Nearest ¼")										
	1	1½	2	2½	3	3½	4	4½	5	5½	6
½	11	11	17¾	22¾	25¾	29	32	35½	38½		
¾	11	14½	17¾	22¾	26	29	32½	35½	39		
1	13	16	19½	22¾	26	29	32½	35½	39		
1½	14½	17½	22½	26	29	32½	35½	38¾	41¾		
2	16	19½	22½	26	29	32½	35½	38¾	42		
3	19½	22¾	26	29	32½	35½	38¾	42	46	48¾	52
4	22¾	26	29	32½	35½	38¾	42	46	48¾	52	55¼
6	29	32½	35½	38¾	42	46	48¾	52	55¼	58¼	61½
8		29	42	46	48¾	52	55¼	58¼	61½	65	68
10		46	48¾	52	55¼	58¼	61½	65	68	71	74
12		52	55¼	58½	61½	65	68	71	74	77¼	80½
14		55¼	58½	61½	65	68	71	74	77¼	80½	83¾
16		61½	65	68	71	74	77¼	80½	83¾	86¾	90
18		68	71	74¼	77¼	80½	83¾	86¾	90	93	96¼
20		74¼	77¼	80½	83¾	86¾	90	93	96¼	99½	102½
24		86¾	90	93	96¼	99½	102½	105¾	108¾	112	115
30		105¾	108¾	112	115	118¼	121½	124½	127¾	130¾	134

2. AUXILIARY MATERIALS

2.1 Straps and Seals Straps and seals used to secure Aluminum Jacketing in place shall be ¾" × .016" aluminum for vessel and equipment jacketing, ½" × .016" aluminum for piping jacketing.

2.2 Screws and Rivets Sheet metal screws used to secure Aluminum Jacketing in place (over insulation in elevated temperature service only) shall be Pan Head No. 7 × ½", aluminum. Pop rivets used in similar service shall be aluminum.

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1. WEATHER BARRIER MATERIALS

1.1 Description Aluminum jacketing is commercially available in standard forms of 36" × 96" sheets; rolls 36" wide at 300 square feet per roll; and rolls 48" wide at 400 square feet per roll. Material in both sheets and rolls is .016" thick, with 3/16" corrugation. A factory-attached moisture barrier covers the inner surface.

1.2 Fitting Covers Pre-fabricated sectional covers for insulated short and long-radius elbows, tees, line flanges, and screwed and butt-welded ASA 150 lb and 300 lb valves shall be used when readily available.

1.3 Head Covers Pre-fabricated gore-type covers for insulated 2 to 1 elliptical heads shall be used through 13'-0" diameter when readily available.

1.4 Material Requirements and Coverage (for insulated piping)

TABLE I. ALUMINUM WITH 2" LAP

Quantities (Square Feet) Required for 100 Linear Feet of Pipe Covering[1]											
Pipe Size (In.)	Nominal Insulation Thickness (Inches)										
	1	1½	2	2½	3	3½	4	4½	5	5½	6
½	96	130	155	200	226	255	283	312	340		
¾	97	128	156	201	226	256	283	313	340		
1	114	142	172	201	229	256	284	313	341		
1½	127	155	198	227	255	283	312	340	367		
2	142	171	201	229	256	284	313	341	369		
3	171	201	229	256	284	313	341	369	405	416	450
4	201	229	256	284	313	341	369	423	429	450	480
6	256	284	313	341	369	403	430	457	486	506	533
8		341	369	405	429	457	488	515	543	562	590
10		403	431	458	486	514	541	569	597	603	642
12		458	486	516	541	569	598	626	654	675	692
14		488	516	543	571	598	626	654	681	707	727
16		543	571	599	626	654	681	709	737	754	781
18		598	629	654	682	709	737	764	792	808	834
20		654	682	709	737	764	792	820	847	875	889
24		764	729	820	847	875	903	930	958	972	1135
30		930	958	986	1013	1041	1069	1096	1124	1136	1163

[1]Quantities, in square feet, are those required to cover 100 linear feet of insulated straight piping. Longitudinal 2" laps are included; 2" butt laps, based on 48" long rolls of felt, also are included.

C 003914

CUTBACK ASPHALT VAPOR SEAL

Low Temperature

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1. WEATHER BARRIER MATERIALS Weather barrier materials are vapor-sealing cutback asphalt mastic, fire-retardant spray grade for general weather barrier application, trowel grade for providing heavy fillets at inside corners in the insulation construction. Color of the cured film is black.

1.1 Description and Application Characteristics

Material Description	Film Thickness		Coverage[1] Sq Ft/Gal	Limitations
	Wet	Dry		
Fire-retardant cutback asphalt, spray grade.	1/8"	1/32"	13	Materials may remain soft for 90 days or more, depending on climatic conditions. Materials are not recommended for areas subject to solvent or alkali splash and spillage.
Fire-retardant cutback asphalt, trowel grade.	Determined by requirements of construction.			Trowel must be kept wet with mineral spirits.

[1] Coverage values are 75% of theoretical; for estimating purposes only.

2. MIXING INSTRUCTIONS Mix spray grade materials thoroughly with mechanical agitation.

3. THINNING INSTRUCTIONS No thinning required.

3.1 Clean-Up Thinner Mineral Spirits.

4. APPLICATION INSTRUCTIONS Apply spray grade materials by brushing or with spray apparatus described in Paragraph 4.1. Apply trowel grade materials with steel trowel, in heavy fillets at inside corners as specified.

4.1 Spray Equipment Use DeVilbiss P-MBC gun with MB-4339-⅛ inch nozzle combination. Use ¼ inch material hose.

4.2 Pot Life Indefinite

4.3 Recoat Time Two hours at 75 F.

5. AUXILIARY MATERIALS Auxiliary materials are glass fiber mesh, 10 × 10 mesh, asphalt impregnated, in sheets for vessels and equipment, and in rolls for piping.

C 003915

REFERENCES

TABLE I. MINIMUM COLD-SURFACE TEMPERATURE (DEGREES F)

IPS and Nominal Pipe Size	NOMINAL INSULATION THICKNESS[1]										
	Single Layer					Double Layer[2]					
	1"	1½"	2"	2½"	3"	3½"D	4"D	4½"D	5"D	5½"D	6"D
½"	25	15	-15	-40	-65						
¾"	35	15	-15	-35	-50						
1 "	45	20	-10	-25	-40						
1¼"	45	30	-10	-25	-40						
2 "	55	30	-5	-15	-30						
3 "	55	30	5	-5	-20	-35	-50	-85	-90	-120	-125
4 "	55	40	15	0	-20	-25	-45	-80	-85	-90	-100
6 "	55	40	20	5	-20	-25	-45	-75	-80	-85	-95
8 "	55	45	20	10	-20	-25	-45	-70	-75	-80	-95
10 "	55	45	25	10	-20	-25	-45	-65	-70	-75	-95
12 "	55	45	25	10	-20	-25	-40	-60	-65	-70	-90
14 "	55	45	25	15	-15	-25	-40	-55	-60	-65	-85
16 "	55	45	25	15	-15	-25	-35	-50	-55	-60	-80
18 "	55	45	30	20	-15	-25	-35	-45	-50	-55	-75
20 "	55	45	30	20	-10	-25	-30	-40	-45	-50	-70
24 "	55	45	30	20	-10	-20	-30	-35	-40	-45	-65
30 "	60	45	30	20	-10	-20	-25	-30	-35	-40	-60
36 "	60	45	35	25	-5	-10	-20	-25	-30	-35	-55
Flat	65	50	40	30	15	0	-10	-15	-20	-25	-30

[1]Table I is based on design conditions to prevent condensation of moisture on the insulation surface. Design conditions to the left of and below the heavy black line are 90 F still air at 80% relative humidity; heat gains average 7-9 Btu/hr, sq ft, based on the exterior insulation surface. Design conditions to the right of and above the heavy black line are 40 F air at 80% relative humidity and moving air at 2 miles per hour velocity; heat gains average 2-4 Btu/hr sq ft, based on the exterior insulation surface; these design conditions apply only to installations in unprotected areas; consult manufacturers' literature for recommended thickness when installations are indoors or in sheltered areas. When cold-surface temperature falls between two thickness columns, use the greater thickness.

[2]Insulation in thicknesses 3½" through 6" shall be applied in double layers according to the following schedule:

3½" : 1½" inner layer, 2" outer layer.
4" : 2" inner layer, 2" outer layer.
4½" : 2" inner layer, 2½" outer layer.
5" : 2½" inner layer, 2½" outer layer.
5½" : 2½" inner layer, 3" outer layer.
6" : 3" inner layer, 3" outer layer.

C 003916

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2. AUXILIARY MATERIALS

2.1 Description. The following materials are used with the insulating material to form a complete system. Apply them as directed in the Construction Specifications.

ITEM	GENERIC TYPE	APPLICATION
ADHESIVE CEMENT	Low temperature hydraulic cement.	Used to secure insulation support clips to vessel or piping surfaces at temperatures −20 F and above.
SUPPORT CLIPS	Carbon Steel, galvanized.	Used to secure insulation to vessel and piping surfaces where additional support is required, at temperatures −20 F and above.
BORE COATING	Vinyl-base mastic.	Used to provide an anti-abrasive cushion between the cellular glass insulation and the surface to be insulated.
JOINT COMPOUND	Low temperature cutback asphalt with wax additive.	Used to butter joints of insulation and as a low temperature cement for filling slots, crevices, and voids in insulation blocks, segments, and sections.
CAULKING MASTIC	Fire-retardant cutback asphalt	Used to smooth depressions and to fill minor voids and irregularities in the finished insulation surface.
FILLER MATERIAL	Asphalt-impregnated flexible polyurethane.	Used to pack expansion and contraction spaces, and voids caused by construction methods.
SUPPORT AND ISOLATION CRADLES	Soft wood inner layer, hard wood outer layer.	Used to support and isolate pipe when piping is supported from below.
BANDS AND SEALS	¾" x 0.015" flat Stainless Steel bands and sealing devices.	Used to secure insulation to vessels and piping, and to secure metal jacketing in place.
FLASHING STRIPS	Flexible plastic sheet.	Used for flashing expansion joints.

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1. INSULATING MATERIAL

1.1 *Description* Insulating material is foamed glass with hermetically sealed cells. The following shapes and sizes normally are used in Monsanto practice:

ITEM	APPLICATION	SIZE	SPEC.
Flat blocks without bevel.	All flat surfaces, vessels over 24'0" in diameter.	18" wide x 24" long, 1" to 3" thick.	ASTM C-343
Flat blocks bevelled to suit specified diameter.	Vessels 4'0" in diameter to 24'0" in diameter.	Cut to fit; 1" to 3" thick.	
Sidewall segments curved and bevelled to suit specified diameter.	Vessels 3'6" in diameter to 4'0" in diameter.	9" wide x 24" long, 1" to 3" thick.	
	Vessels 3'0" in diameter to 3'6".	6" wide x 18" long, 1" to 3" thick.	
Segments shaped to suit type and specified diameter.	Vessel heads.	1" to 3" thick.	
Sectional covers to 12" diameter, segmental covers 14" to 36" diameter.	Pipe and vessels to 36" diameter.	ID to suit specified diameters. 1" to 3" thick.	
Preformed covers.	Pipe fittings, line flanges, screwed or butt-welding valves to 12" IPS.	ID to suit specified diameters. 1" to 3" thick.	

1.2 Thickness Thicknesses stated on Drawings or the Insulation Schedule shall be used. Thicknesses given in Table 1 shall be used only when directed by the Engineer and when operating temperatures are given.

C 003918

TABLE I. MAXIMUM HOT-SURFACE TEMPERATURE (DEGREES F)

IPS and Nominal Pipe Size	NOMINAL INSULATION THICKNESS[1]										
	Single Layer					Double Layer[3]					
	1"	1½"	2"	2½"	3"	3½"	4"	4½"	5"	5½"	6"
½"	500	600	800	1100	1200						
¾"	500	600	800	1000	1100	1200					
1 "	500	600	800	900	1100	1200					
1¼"	500	600	800	900	1100	1200					
1½"	400	600	800	900	1100	1200					
2 "	400	600	700	800	900	1100	1200				
3 "	400	500	600	800	900	1000	1100	1200			
4 "	300	500	600	800	900	1000	1000	1100	1200		
6 "	300	500	600	800	900	900	1000	1100	1200		
8 "	300	400	600	700	800	800	900	1000	1100	1200	
10 "	250	350	500	700	800	800	900	1000	1100	1200	
12 "	250	350	500	600	700	800	800	900	1000	1100	1200
14 "	250	300	400	500	600	700	800	900	1000	1100	1200
16 "	250	300	400	500	550	700	800	900	1000	1100	1200
18 "	250	300	400	500	550	700	800	900	1000	1100	1200
20 "	250	300	400	500	550	700	800	900	1000	1100	1200
24 "	250	300	400	500	550	700	800	900	1000	1100	1200
30 "	250	300	400	500	550	700	800	900	1000	1100	1200
36 "	250	300	400	500	550	700	800	900	1000	1100	1200
Flat	250	300	400	500	550	700	800	900	1000	1100	1200

[1]Table I is based on design conditions to hold the temperature of the insulation surface to 120 F, maximum, in 80 F still air. When hot-surface temperature falls between two thickness columns, use the greater thickness.

[3]Insulation in thicknesses 3½" through 6" shall be applied in double layers according to the following schedule:

3½" : 1½" inner layer, 2" outer layer.
4" : 2" inner layer, 2" outer layer.
4½" : 2" inner layer, 2½" outer layer.
5" : 2½" inner layer, 2½" outer layer.
5½" : 2½" inner layer, 3" outer layer.
6" : 3" inner layer, 3" outer layer.

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MONSANTO/Chocolate Bayou Prod.
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