Architectural



Catalog File

PLAINTIFF'S EXHIBIT
USG 88

masonry

masonry treatment, waterproofing

thermal insulation

roofing, flashing

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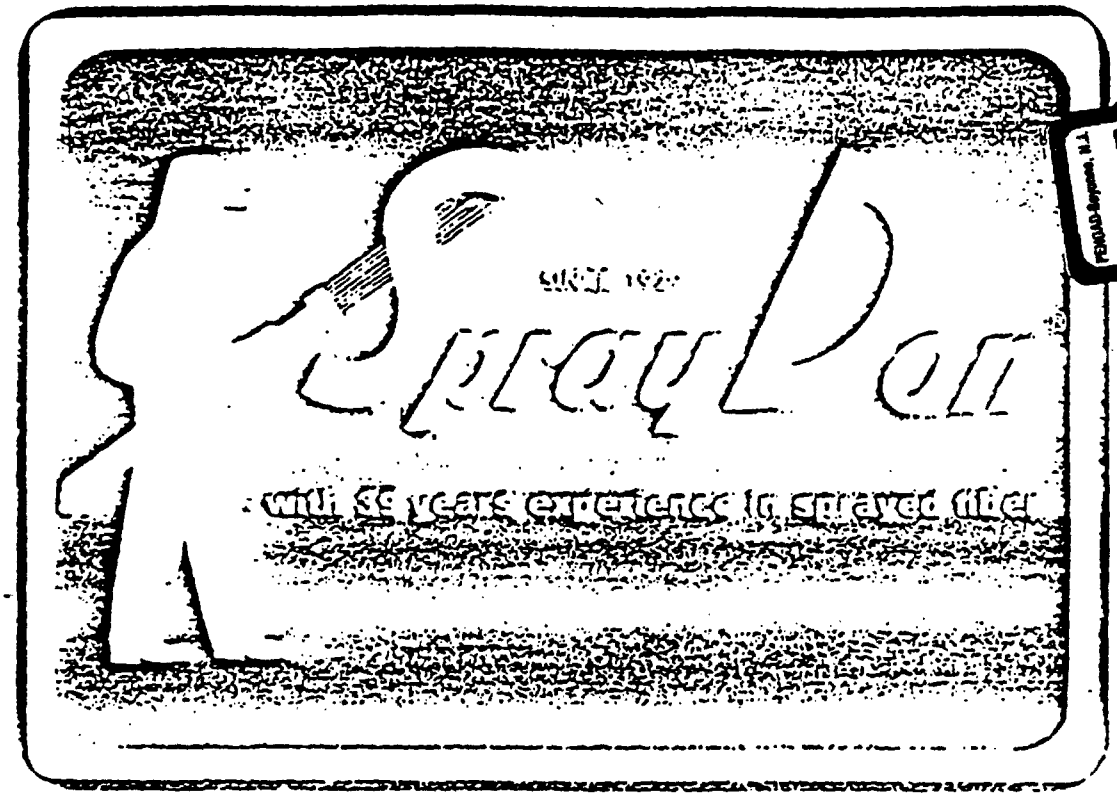


PLAINTIFF'S EXHIBIT
1564(a)

FIREPROOFING

THERMAL INSULATION

CONDENSATION CONTROL

ACOUSTICAL ABSORPTION

HIGH TEMPERATURE INSULATION

SPRAYON RESEARCH CORPORATION

and subsidiary

SPRAYON INSULATION AND ACOUSTICS, INC.

PLAINTIFF'S EXHIBIT 15643

SprayDon PRODUCTS

SPRAYDON products are designed to fill modern needs for .... economical .... light weight .... efficient .... fireproofing, acoustical treatments and thermal insulation requirements. SPRAYDON products are scientifically formulated blends of virgin asbestos fiber, mineral wool and proprietary binders. Research advances in material formulation, coupled with advances in design of application equipment, have created the new SprayDon finishes which produce .... harder .... firmer .... more abrasion resistant surfaces.

CHARACTERISTICS

HIGH FIRE RESISTANCE—Tests by Underwriters Laboratories prove SPRAYDON finest fiber as a fireproofing material of the highest efficiency.

HIGH PERCENTAGE OF BINDERS—SPRAYDON STANDARD fiber has been formulated with a high content of binders which produce a harder, firmer surface with a superior resistance to abrasion and damage.

DUST FREE APPLICATION—Improved SPRAYDON formulations eliminate application dustiness generally associated with conventional sprayed fiber products.

LIGHT WEIGHT — SPRAYDON standard fiber weighs an average of one pound per board foot and result in substantial savings in dead load.

RAPID APPLICATION—SPRAYDON is quickly applied by machine to many surfaces in one scaffold pass using one trade . . . no delays for multiple coats . . . speeds job schedules . . . reduces costs.

CORROSION PREVENTION — SPRAYDON standard has been tested in accordance with ASTM B117 and Military Specification E-5272C for 240 hours. Results show that the application of SPRAYDON fiber to shop coated steel, galvanized steel or plain steel prevents corrosion and thereby the need for field painting of steel is eliminated.

COMPLIES WITH G.S.A. STANDARDS —SPRAYDON standard has been tested in accordance with standards set up by the General Services Administration and has equalled or surpassed all requirements. Withstands high air erosion—SPRAYDON standard has been tested and proved to withstand high air erosion—details on request.

PRODUCT GUIDE

SPRAYDON "STANDARD"

: specify for fireproofing of steel beams, girders, columns and metal deck and roof assemblies .... tested by both Underwriter's Laboratories, Inc., and Underwriters of Canada .... manufacturing controls, procedures and formulations regularly inspected by Underwriter's representatives. (refer to pages 3, 4, & 5)

: specify for insulation requirements .... characteristics necessary for fireproofing make SPRAYDON STANDARD a superior, incombustible, insulating material. (refer to page 6)

: specify for acoustical installations .... used either alone or in combination with SPRAYDON TYPE #1 (refer to page 3)

: specify for condensation control in problem areas (refer to pages 6 & 7)

SPRAYDON TYPE #1"

: specify for harder finish .... light weight .... abrasion resistant .... acoustical installations .... may be used alone or in combination with SPRAYDON STANDARD. (refer to page 3)

SPRAYDON "POWER-KOTE"

: specify for high temperature insulation or thermal insulation of high temperature processing equipment in the fields of power generating, refineries, steel processing, paper, textiles and chemicals. (refer to page 7)

SPRAYDON "ADHESIVE"

: used where required, is an incombustible latex type emulsion, applied prior to the spraying of the fiber mat to insure improved adhesion and bond strength.

SPRAYDON "SEALER"

: used where required, is a clear latex type finish coat used to provide additional protection for the fiber mat.

SprayDon ACOUSTICAL TREATMENT

PLAINTIFF'S EXHIBIT 1564(4)

SPRAYDON fibers offer the architect complete design flexibility. SPRAYDON may be applied directly to poured concrete shapes, plaster, sheet rock or metal lath. SPRAYDON produces a monolithic surface following the contour of the base, thus eliminating design restrictions on ceiling configuration.

The desired level of acoustical control is easily achieved through varied material thicknesses, proper choice of type of SPRAYDON fiber, and selection of either a solid or metal lath backing.

The finished SPRAYDON surface may be textured to suit the objective of the designer. Textures may be varied from fine to coarse travertine.

The color specifications of the decorator are easily achieved because SPRAYDON may be treated with latex type paints without reduction in sound absorption efficiency.

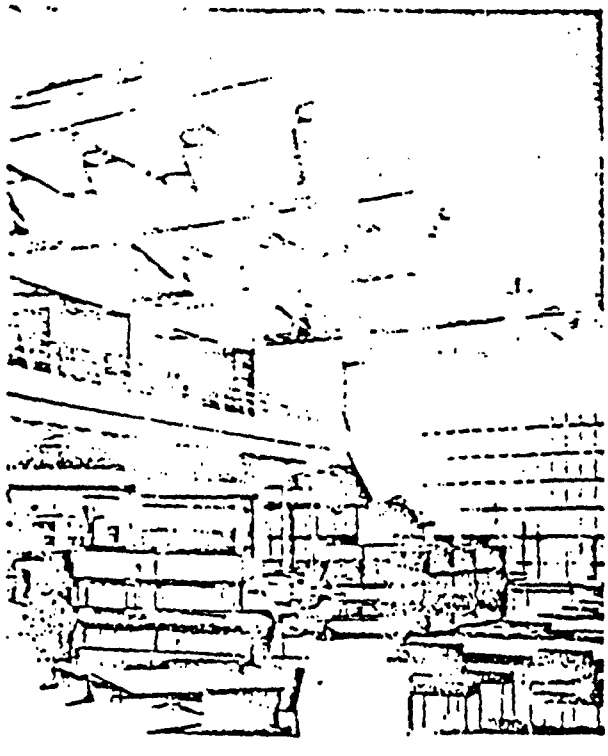
The use of SPRAYDON provides the installation with a fire retardant surface which has a flame spread rating of 15 or less as tested by Underwriter's Laboratories (refer to page 4)

suggested acoustical applications

SPRAYDON ... for finishing of formed concrete surfaces ... thicknesses varied to eliminate or minimize base irregularities.
.... for a skim coat over gypsum board or plaster base for a low cost ceiling finish with acoustical properties.
.... for a finish coat for desired texture in areas where a higher level of acoustical control is required.

SPRAYDON TYPE #1 ... for acoustical control or correction in easily accessible locations, where hardness, resistance to abrasion and damage are important considerations. (Ex. low ceiling areas and side wall applications.)
.... for a harder finish coat (1/4"-3/8") over STANDARD fiber in areas where the higher sound absorption values or insulation qualities of STANDARD fiber are desired.

SPRAYDON STANDARD ... for treatment of acoustical problems in areas requiring the utmost in noise control or reduction. (Ex. high ceiling areas, vaulted ceilings, auditoriums, theaters, etc.)
.... for treatment of condensation problems.
.... for fireproofing of steel.
.... in combination with TYPE #1 as outlined above.



Santa Monica Library
Architect: Mathew Leizer-Thomas J. Russell
General Contractor: Parr Contracting
Sprayon Contractor: Western Fireproofing, Los Angeles.

Sound Absorption Characteristics

	thickness inches	mounting	coefficient of sound absorption at cps						noise reduction coefficient
			125	250	500	1000	2000	4000	
SPRAYDON	1/8*	solid	.08	.19	.37	.61	.79	.78	50
	1/2**	solid	.38	.20	.57	.73	.75	.74	.60
	3/4*	metal lath	.46	.65	.75	.81	89	.87	.80
	3/4**	metal lath	.49	.65	.88	.93	.90	.87	.85
	1"**	solid	.59	.50	.71	.91	.91	.88	.75

**SprayDon Standard *SprayDon Type One

tests, by: Riverbank Laboratories, Armour Research Institute, U.S. Testing Co.

SprayDon FIREPROOFING

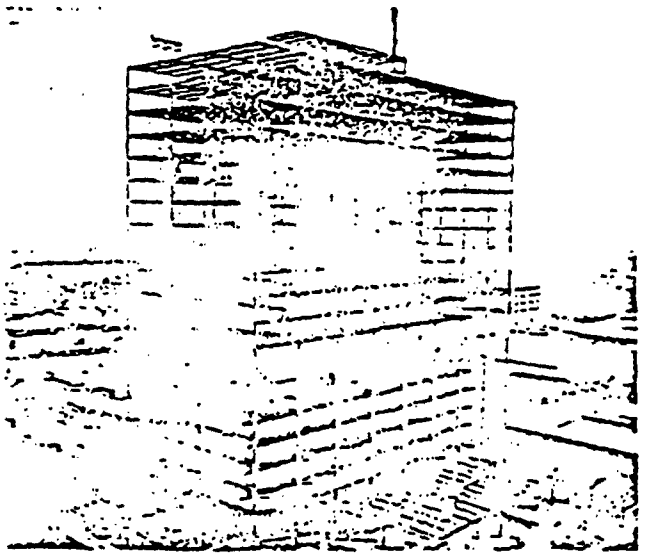
PLAINTIFF'S EXHIBIT 1564(5)

FIRE HAZARD CLASSIFICATION OF UNDERWRITERS' LABORATORIES

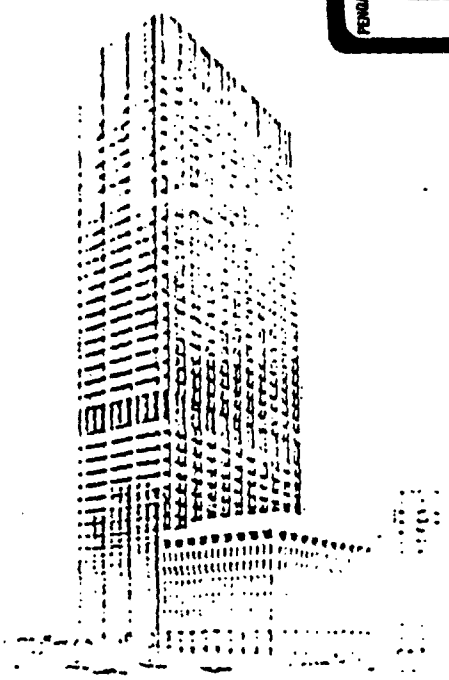
SprayDon has been tested by the Underwriters' Laboratories, Inc.—for application to both combustible and non-combustible surfaces. In all cases, SprayDon achieved a flame spread of 15 or less.

material	thickness in.	backing	flame spread	fuel contribution	smoke developed
SprayDon	¾	metal lath	10–15	10–15	0
	¾	cork	15	20	0
	⅜	cellulose board	15	10–15	0

ref: R3655, 53C3636, R3656, 53C3635



1901 Avenue of the Stars, Century City, California
Architects: Hellmuth, Obata and Kassabaum, Inc.
General Contractor: Tishman Realty Company
Sprayon Contractor: Western Fireproofing Company, Inc., Los Angeles, Calif.



First National Bank, Atlanta, Georgia
Architect: Emory Roth and Sons, New York City
Finch, Alexander, Barnes, Rothschild and Paschal, Atlanta
General Contractor: Henry C. Beck Co., Atlanta
Sprayon Contractor: E. L. Thornton Co., Atlanta

typical installations

Federal Office Building #7: United States Court of Claims & Patent Appeals—Washington D.C.

General Contractor: Blake Construction Co.
Architect: John Carl Warneke Associates

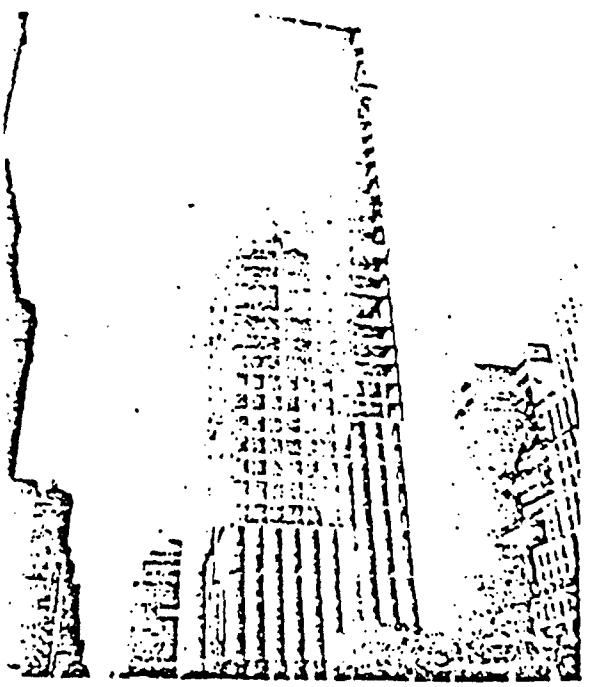
One Wilshire, Los Angeles, California
Architects: Skidmore, Owings, and Merrill, San Francisco
General Contractor: Del E. Webb, Construction Company

The Life of Georgia Building, Atlanta, Georgia
Architects: Bodin & Lamberson, Atlanta, Georgia
General Contractor: Daniel Construction Co., Atlanta, Georgia

American Tobacco Co.: 245 Park Ave., N. Y. C.
Owner Builder: Uris Construction Corp.
Architect: Shreve, Lamb & Harmon Associates

Federal Office Building, West Los Angeles, California
Architects: Charles Luckman and Associates, Los Angeles, California
Contractor: C. H. Leavell and Company, Los Angeles, California

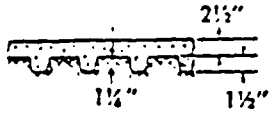
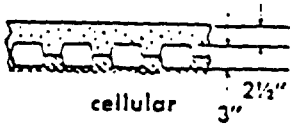
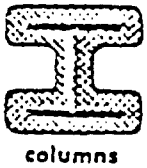
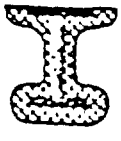
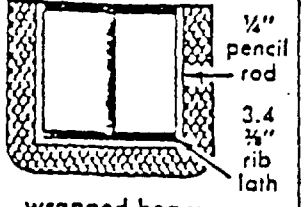
Atlanta Gas & Light Tower Building, Atlanta, Georgia
Architect: Edwards & Portman, Atlanta, Georgia
General Contractor: J. A. Jones, Atlanta, Georgia



General Motors: 769 Fifth Ave., N. Y. C.
General Contractor: George A. Fuller Co., Inc.
Architects: Emery Roth & Sons—Edward Durell Stone
Sprayon Contractor: Metropolitan Spray Division of Giamboi Brothers, New York City

PLAINTIFF'S EXHIBIT
1564(6)

FIRE RETARDANT RATINGS

		construction	SprayDon thickness	rating	authority
floors & roofs	1.	 fluted	½"	3 hr.	U.L.C. 265-2
			½"	2 hr.	U.L.C. 265-2
	2.	 flate plate	½"	3 hr.	U.L.C. 265-2
			½"	2 hr.	U.L.C. 265-2
	3.	 blended*	½" ⅞" in flute	3 hr.	U.L.I. R3655-3
			⅝" ½" in flute	2 hr.	U.L.I. R3655-3
	4.	 cellular	¾"	3 hr.	U.L.I. R3655-1
			¾"	2 hr.	U.L.I. R3655-1
columns	5.	 columns	2"	5 hr.	U.L.I. R3655-5 & 6
			1⅝"	4 hr.	
			1"	3 hr.	
			¾"	2 hr.	
beams		 beams & girders	⅞"	4 hr.	U.L.I. R3655-7
			⅝"	3 hr.	U.L.I. R3655-7
			⅜"	2 hr.	U.L.I. R3655-7
	7.	 wrapped beam	1¼"	4 hr.	U.L.C. 265-2

nch headers require ¼" additional for 3 hr. rating, ½" for 2 hr. rating
oth composite and non-composite construction.
All tests conducted in accordance with ASTM E-119

PLAINTIFF'S EXHIBIT 1564(7)

SprayDon INSULATION AND CONDENSATION CONTROL

SPRAYDON STANDARD fiber, with a k factor of 0.26 BTU/hr./sq. ft./inch of thickness, provides highly efficient thermal insulation as illustrated in the accompanying table.

SPRAYDON installations in areas such as boiler rooms and metal buildings perform three functions with a single application . . . thermal insulation . . . acoustical correction . . . and condensation control.

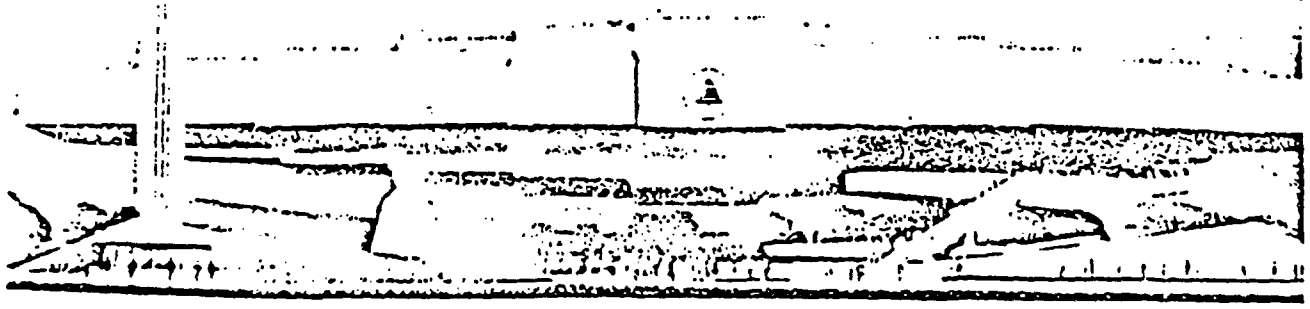
In ceiling applications for swimming pool areas SPRAYDON serves four functions . . . insulates an area which must be maintained at elevated temperatures . . . solves an extremely difficult acoustical problem . . . helps solve condensation problems . . . and minimizes corrosion caused by the presence of moisture and chlorine.

In any area where extreme temperature variations occur on the opposite sides of the same material, wall or ceiling, the application of the proper thickness of SPRAYDON will provide the required insulation and reduce heating or cooling costs. (Ex. metal building walls and roofs, metal roof systems, above and below grade concrete ceilings and walls)

Type #1 SPRAYDON with a k factor of .41 may be sprayed directly to masonry walls to receive direct plaster application, eliminating furring and lathing.

Heat Loss Characteristics

construction	concrete slab, in.	not insulated	SprayDon thickness, in. ½	1	1½	2
built-up roofing on concrete roof slab	4	.72	.30	.19	.14	.11
	6	.54	.28	.17	.13	.10
metal deck with ½ inch roof insulation and built-up roofing	None	.40	.23	.16	.12	.10
corrugated metal or transite wall	None	1.18	.36	.21	.15	.12



American Telephone and Telegraph, 1964-5 N. Y. Worlds Fair Exhibit
Architect Harrison and Abromowitz, New York City
General Contractor: George A. Fuller Co., New York City
Sprayon Contractor: Lunn Laminates, Inc., Wyandanch, L. I., N. Y.
Spray Don was applied to prefabricated plastic panels and installed in roof area as units.

SprayDon "POWER-KOTE"-HIGH TEMPERATURE THERMAL INSULATION

SPRAYDON POWER-KOTE is a spray applied formulation of inorganic asbestos and mineral fiber combined with special binders for high temperature processing equipment. Power-Kote may be applied directly to irregular sections and contours in a joint free blanket. Some typical sites are—Boilers, ovens, steam pipes, turbines, precipitators, heaters, flues, spray booths, heat exchangers, tanks, breechings, dryers, ducts, kilns, condensers, digesters, furnaces, pipes, and enclosures.

ADVANTAGES

ECONOMICAL APPLICATION—Applied by SprayDon-trained, licensed contractors employing special equipment, Power-Kote may be installed to "on line" equipment, eliminating expensive down time.

JOINT-FREE APPLICATION—Power-Kote's monolithic coating eliminates critical heat loss at the seams and between layers of laminated insulations. Cutting and fitting are eliminated, scrap costs are eliminated and what is left is a one piece contour fitting blanket.

DUST-FREE APPLICATION—**SPRAYDON** Power-Kote has been formulated for the utmost in clean, fast, dust free applications within critical areas; no respiratory hazards or dust contamination.

PERMANENCE—Power-Kote will not putrefy and is mildew and rot proof. The monolithic application moves with normal expansion and contraction of processing equipment without cracking or spalling.

PHYSICAL PROPERTIES*

GENERAL

Corrosion Resistance — good
Solvent Resistance — excellent
Base Resistance — good
Acid Resistance — poor
Creep Resistance — excellent
*Average values from accepted test methods

Specific Heat — .20
Heat Capacity — .2 BTU/sq.ft./°F
Loss on Ignition — 5.8%
Volumetric Shrinkage — 3.7%
Linear Shrinkage — 2.3%

COMPRESSIVE STRENGTH

% Deformation	11# Density	15# Density
5	200 psi	400 psi
10	325 psi	650 psi
25	500 psi	1000 psi

TEMPERATURE LIMITATIONS

Maximum Service Temperature	1600°F
Maximum Application Temperature	200°F
Softening Point	1700-1800°F
Melting Point	2000-2500°F
Fusion point	None

COVERAGE

40-120 board feet per CWT (avg. 100)
9-1.25# board feet (avg. 1.00)
Density — 11-15 pcf (avg. 12 pcf)
Specific Gravity — 2.28

STRENGTH

Bond — 120-300 psf (avg. 150 psf)
Shear — 150-275 psf (avg. 220 psf)

THERMAL CONDUCTIVITY

k Factor) BTU inch hr. sq ft. F°

Mean Temperature °F	k Factor	Mean Temperature °F	k Factor
50	.24	500	.53
75	.26	600	.59
100	.275	700	.65
200	.34	800	.72
300	.40	900	.78
400	.46	1000	.84

TYPICAL APPLICATION THICKNESSES STEAM TURBINES

Steam Temp. °F	Max Surface Temp. (80° ambient)	Insul. Cement	Thickness Calcium Silicate	Sprayon power-kote
Below 250	100	2	1½	1½
250-349	110	2½	2	2
350-449	115	3½	2½	2
450-549	120	4	3	2½
550-649	125	5	3½	3
650-749	125	6	3½	3½
750-849	130	6	4	4
850-949	135	6½	4½	4
950-1049	135	7	4½	4½
1050-1149	140	8	5	5
1150-1250	145	9	5½	5½

Additional ½" thickness is often used on areas exposed to weather on outdoor installations.

GENERAL TECHNIQUES OF APPLICATION

Surfaces of equipment to be treated must be clean and free of loose paint, rust, oil, grease, any other condition which would tend to prevent good adhesion and all pins and studs must be securely placed. The equipment surface is first dampened and POWER-KOTE is then applied. Each maximum 4" thick one-coat application of POWER-KOTE is tamped, reinforcing is secured, and subsequent layers are applied and tamped. Special additives permit the finish coat to be wetted slightly and troweled to a smooth, uniform texture.

Conventional asbestos finishing cements, industrial paints, weatherproof mastics, or metal lagging may be used as a finish. Application of highly moisture or vapor resistant coatings should not be made before POWER-KOTE has thoroughly dried. When immediate protection from the elements is required, select a weatherproof coating which will permit release of moisture from the insulation during an initial 30-60 day period. Coatings of this nature, are manufactured by Benjamin Foster Company, Ambler, Pennsylvania, and other coating products specialists, will allow initial drying of POWER-KOTE upon completion of the 60-90 day drying cycle, maximum moisture and vapor resistance is provided.

Flue Chimney Ducts: Weld steel pins at staggered centers to the outer surface of the stack. Apply POWER-KOTE and tamp to proper thickness. Wrap with 1" hexagonal 20 gauge wire mesh (galvanized or Monel) reinforcement and lace securely. Apply asbestos cement, or approved equal, to a thickness of approximately ¼". Provide expansion joints or score at 4'0" to 6' 0" centers.

Heat Exchangers Vertical Storage Tanks, & Outside Storage Tanks: Steel channel or angle, extending ½" - ¾" beyond the insulation thickness, shall be continuously welded around the perimeter at the eave of the tank, by others.

Apply POWER-KOTE and tamp to proper thickness. Wrap and lace 1" hexagonal 20 gauge wire mesh [illegible] and apply a finish similar to Benjamin Foster [illegible] or approved equal in two coats. [illegible] with the wire mesh and immediately [illegible] approximately ¼" thickness over the first.

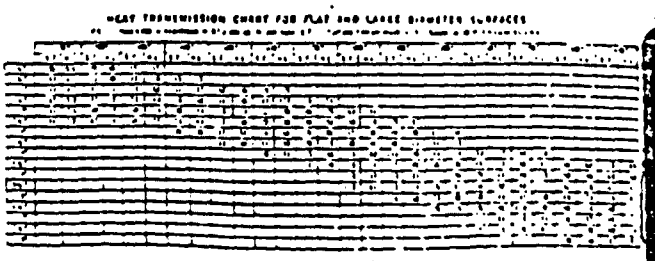
Ducts, Vessels, Fans, Boilers, Flash Tanks, Stage Heaters & Steam Drum Heads: Weld studs to surface being treated on [illegible] POWER-KOTE and tamp to proper thickness. 1" hexagonal 20 gauge wire mesh (galvanized or Monel) is stretched and [illegible] to the supporting studs. Over the mesh a ¼" coat of finishing cement shall be [illegible] troweled and scored 4' 0" on centers.

If a better appearing surface finish is desired a 5 or 8 oz. cloth is then laid over the cement finish and securely cemented. Lapping seams about 3". Apply sizing similar to Benjamin Foster Company Lagtex 31-42 W or approved equal.

Furnace Housing, Air Heater, Induced Draft Ducts & Fans, Hot Air Ducts, Gas Ducts, Precipitators: Weld #10 gauge KSM studs, as manufactured by KSM Products, Inc., Newark, New Jersey, or equal to the surface as follows: 24" o.c. on the top, 18" o.c. on the sides, and 12" o.c. on the bottom. Apply POWER-KOTE to ¾" beyond thickness desired and wrap with 1" hexagonal 20 gauge wire mesh (galvanized or Monel). Tamp and depress mesh into POWER-KOTE and secure with speed washers to studs. A ¼" finishing cement shall be troweled over the surface and scored in 4' 0" square panels. Prior to finish cement application, metal corner beads may be attached to all exterior corners to improve finished edges.

Steam Turbines: Weld rectangular split welding pins (KSM ⅛" x 3/8" or equal) of suited length, or drill and tap for ¼" studs on 18" centers to the lower half of casing only. Apply POWER-KOTE tamp, and attach 1" hexagonal 20 gauge wire mesh (Monel or stainless steel wire) to pins or studs. Stretch the mesh tightly and secure by bending welding pins or attaching speed washers to studs. A ¼" coat of finishing cement shall be troweled on and scored 4' 0" on centers.

If the turbine is to be covered with a metal cladding, POWER-KOTE shall be left in the tamped finish. Before cladding is applied, POWER-KOTE shall be allowed to dry out completely.



PLAINTIFF'S EXHIBIT 15402

PLAINTIFF'S EXHIBIT 1564(9)

SprayDon architectural specifications

FIREPROOFING ... ACOUSTICAL TREATMENT ... INSULATION

It is suggested that these specifications be made a separate section to eliminate a double mark-up.

general conditions: The General Conditions of the Specifications form a part of this section and the conditions contained therein shall apply to work performed under this section.

scope of work: A. Work Included: The work to be performed under this section shall include all materials, equipment, labor and services, required to install the sprayed asbestos mineral fiber in accordance with this specification and as indicated on the drawings. B. Work Not Included: Surfaces to which the sprayed fiber is to be applied, as well as all clips, hangers, clamps, supports, sleeves, stops and other attachments to the base surface, shall be installed by others prior to start of work covered by this section.

scheduling work with other trades: A. It shall be the responsibility of the General Contractor to coordinate all Sub-Contractors so that:
1. all items mentioned under "Scope of Work" paragraph "B." are installed prior to the installation of the sprayed fiber.

2. the installation of all ductwork, piping, fixtures, suspended ceilings, partitions, etc., shall follow the work covered by this section.

B. It shall be the responsibility of this Sub-Contractor to provide the General Contractor with accurate production schedules, so that the General Contractor may coordinate the work covered under this section with the work of other trades, in order not to delay the progress of the job.

material qualifications: A. All sprayed asbestos mineral fiber shall conform to the applicable requirements of the local building code and have the approval of the pertinent municipal building authorities, for the required fire rating. B. The fiber shall have a thermal conductivity (k) of not greater than 0.26 BTU/hr./sq. ft./inch of thickness.

contractor qualifications: The Sub-Contractor shall be franchised by the manufacturer of the materials approved for use and shall use materials and application equipment approved by this manufacturer. All work shall be performed in strict accordance with the manufacturer's printed specifications and instructions, under the supervision of a manufacturer trained and approved foreman.

materials: A. The Sprayed Asbestos Mineral Fiber shall be SPRAYDON as manufactured for Sprayon Research Corporation, Inc., by U.S. Gypsum Co., or approved equal, and consisting primarily of inorganic virgin asbestos fibers and mineral wool fibers blended with inorganic binders. The Sprayed Asbestos Mineral Fiber shall be delivered to the job site in sealed paper bags, properly identified, and labeled to show the approval of Underwriter's Laboratories. (This last sentence for fireproofing only)
B. Adhesive where required, shall be SPRAYDON ADHESIVE or approved equal, consisting of a latex type emulsion which after setting, is unaffected by moisture, freezing, or aging. (optional—Not required for fireproofing)
C. The sealer, where required, shall be SPRAYDON SEALER as supplied by Spraydon Research Corp., or an approved equal. (optional)

application: A. Inspection: This Sub-Contractor shall carefully examine all surfaces to receive sprayed fireproofing and report in writing to the General Contractor, all unsatisfactory conditions. Sprayed fireproofing shall not proceed until satisfactory conditions are corrected.
B. Surface Preparation: Surfaces to receive sprayed fireproofing shall be cleaned free of dirt, grease, oil, loose paint, scale, rust scale, or other foreign materials that would prevent adequate adhesion.
C. Procedure: The application of sprayed asbestos mineral fiber shall be in accordance with the manufacturer's printed specifications and instructions. Where required all surfaces to be treated shall be primed with SPRAYDON ADHESIVE. Sprayed fiber shall be applied while the adhesive remains tacky, tamped or left untamped to the required thickness and where required oversprayed with SPRAYDON SEALER, or water.

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note: The above specification is intended for sprayed fireproofing work. Where acoustical or thermal insulation specifications are to be written, select approopriate paragraphs.
Thermal Insulation or Acoustical Treatment: Add following paragraphs:
Under Materials: A. 1. specify type SPRAYDON desired, STANDARD, TYPE #1, Power-Kote or any combination. 2. specify thickness. 3. Insulation Treatment: Specify thickness required or insulation value desired.

SPRAYON RESEARCH CORPORATION
and subsidiary SPRAYON INSULATION AND ACOUSTICS, INC.
1101 N.E. 110th Street, Miami, Florida 33161
Telephone: Area Code 305-757-2312