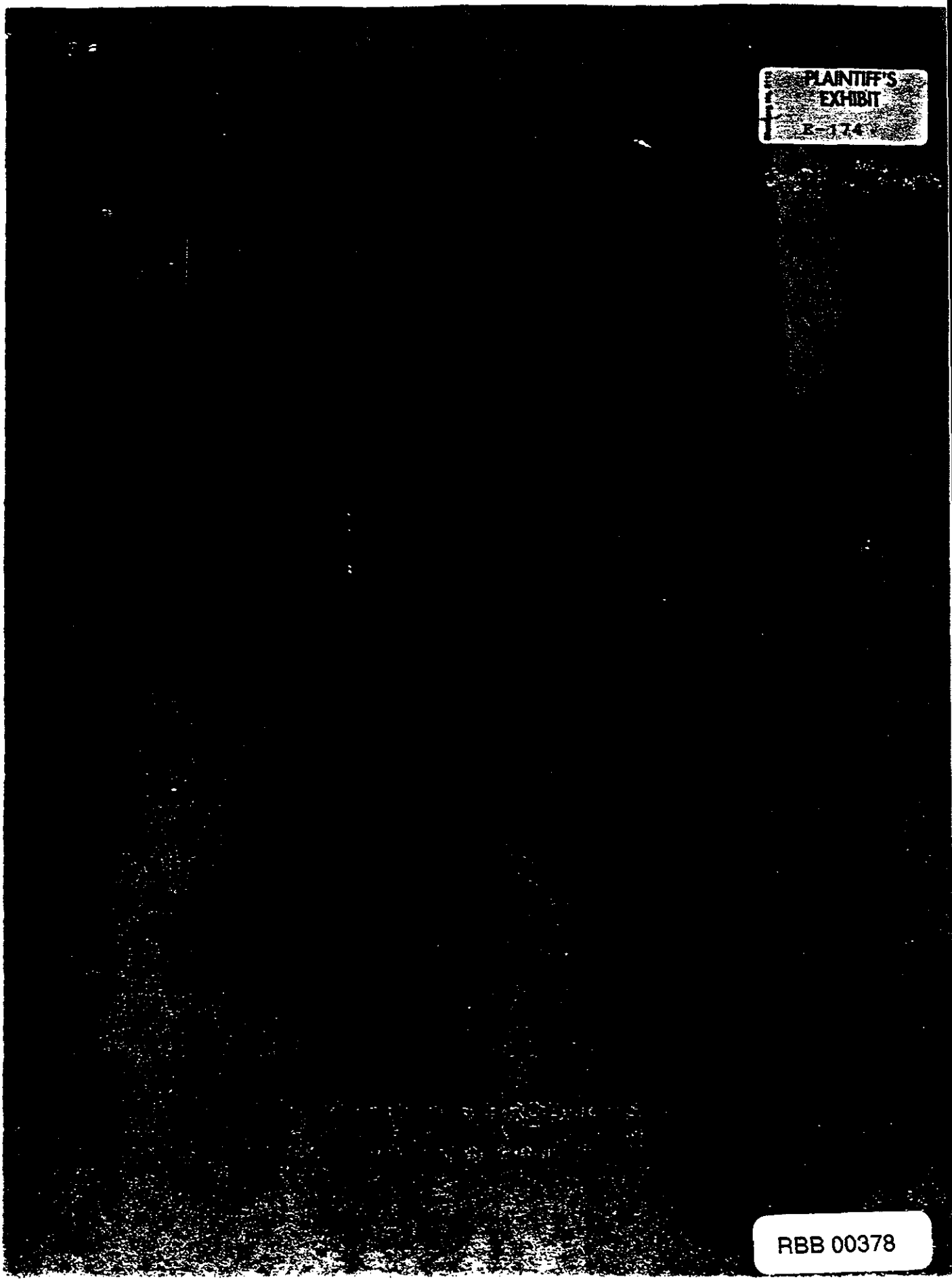


PLAINTIFF'S EXHIBIT
P-174

RBB 00378

CAB CORD

This is a specialty product, designed for drop light cords in steam engine cabs.

Rubber covered wire in this application had only a short life, the high temperatures vulcanizing it rapidly and the constant motion and vibration cracking it and causing mechanical and then electrical failure.

Cab Cord is made by twisting two conductors of plain fixture wire (see "Fixture Wire" bulletin) together and placing a heavy asbestos braid overall. The impregnation throughout is the black, flameproof and moistureproof compound.

Being permanently flexible even under high temperature conditions, ROCKBESTOS cab cord gives far longer service than any type of material that has been used and almost all railroads in the country are now buying it.

Iron and steel mills use it for extension cords in trouble lamps when the men go into furnaces to clean them sometimes before they are cooled.

For severe service the individual conductors are insulated with a combination of varnished cambric tapes and felted walls, then twisted and braided overall.

This V.C. type cab cord is used instead of plain cab cord for lighting circuits on locomotives if a train control system is installed. If single insulated wires are preferred, A.V.C. cable or Table E material (Switchboard Wires and Cables bulletin) should be recommended.

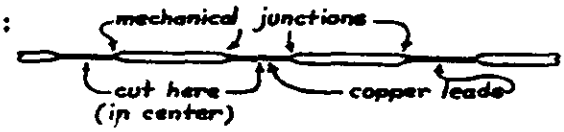
HEATING UNITS

These are sold to manufacturers of low wattage heating devices such as

Curling irons
Soldering irons
Hair wavers
Hot water bottle heaters
Immersion heaters
Necktie pressers
Incubators, etc.

The units are made to specification as to physical size, wattage, etc. They consist of a number of asbestos yarns bunched together to form a core with resistance wire wound helically over the core so that the turns do not touch. This is then cut into predetermined lengths. Plain copper lead wires are then attached to the ends of the short lengths of element by a mechanical connection, forming a continuous link arrangement from which the name "sausage element" is derived. This is then insulated in a continuous length and when cut in the middle of each lead wire a complete heating unit with leads, ready for connections, results.

It looks like this:



HEATING ELEMENT

This is made the same way except it is not made in units but is furnished in quantity and cut by the appliance manufacturer to his own requirements.

It's used in

incubators
heater pads, etc.
permanent wave ovens
waffle irons
percolators
Marcel wavers
toy flatirons
radio resistor devices

ROCKBESTOS CONTROL CABLE

USE: ROCKBESTOS control cable is designed for use in boiler rooms and other locations where high temperatures accelerate the normal deterioration of other types of insulation.

CONSTRUCTION: As you can see from the photograph on the opposite page, the cable is composed of a number of conductors cabled together. Each individual conductor is first insulated with a wall of "felted" asbestos of proper thickness. This is impregnated with a special insulating cement so that it is flameproof and moisture-proof.

Over this "felted" wall are applied varnished cambric tapes of the best quality obtainable. These tapes are specially lapped and laid in petrolatum, causing the layers of tape to slide on each other when the cable is flexed.

Over the varnished cambric tapes another insulating wall is applied like the first one. This is also impregnated with flameproof and moistureproof compound.

Then over this wall a cotton braid is placed, color coded according to your own system.

Then, as you see, these individually made up conductors are cabled together and a heavy braid, made from the highest quality asbestos yarn is placed over all.

This outer braid is impregnated with a pure white, chemically neutral, insulating cement, giving the utmost protection against fire.

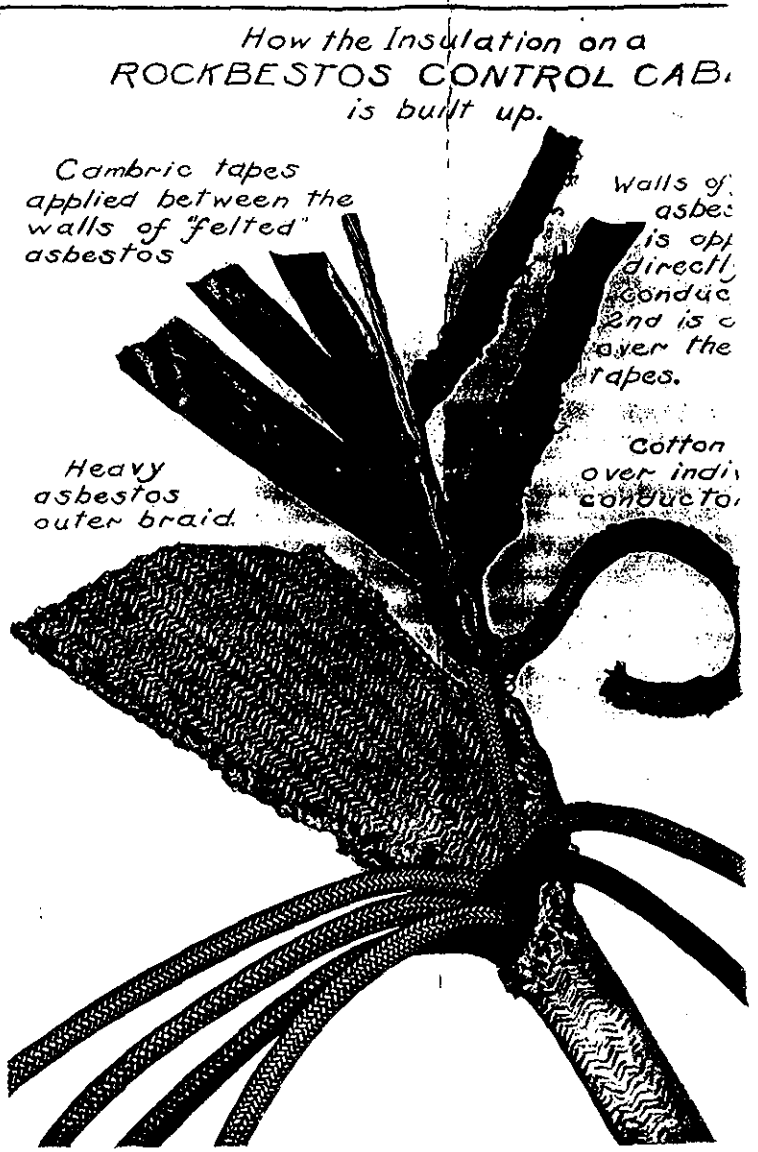
CONDUCTORS: **Number and Size** Individual conductors can be made up of any stranding and the completed cable can be made with any number of conductors up to and including 19. Standard strandings of 19/22 or 19/25 are usually specified for the individual conductors.

FIREPROOF: The cable is fully fireproof. It will not burn and therefore cannot communicate flame so that any fire started near the cable would remain a purely local affair so far as the cable is concerned. ROCKBESTOS control cable eliminates the necessity for using asbestos sleeving for fire protection.

MOISTURE PROOF: The same compound with which the insulation of the individual conductors is impregnated to make them fireproof also renders them proof against trouble due to moisture caused by condensation if installed in conduit.

CODING: Cotton braid over individual conductors may be any color or pattern according to specification.

RATING: This type control cable is rated at 600 V.



RB

NEW YORK CHICAGO

ROCKBESTOS PRODUCTS
CORPORATION

ASBESTOS COVERED WIRES AND CABLES

NICOLL AND CANNER STREETS
NEW HAVEN, CONN

MULTI-CONDUCTOR CONTROL CABLE

This is a new product with us in the form shown opposite; that is, new in the sense that we have not supplied the combination before.

But the insulation of the individual conductors is our Table E type with the exception of the cotton instead of the asbestos outer braid.

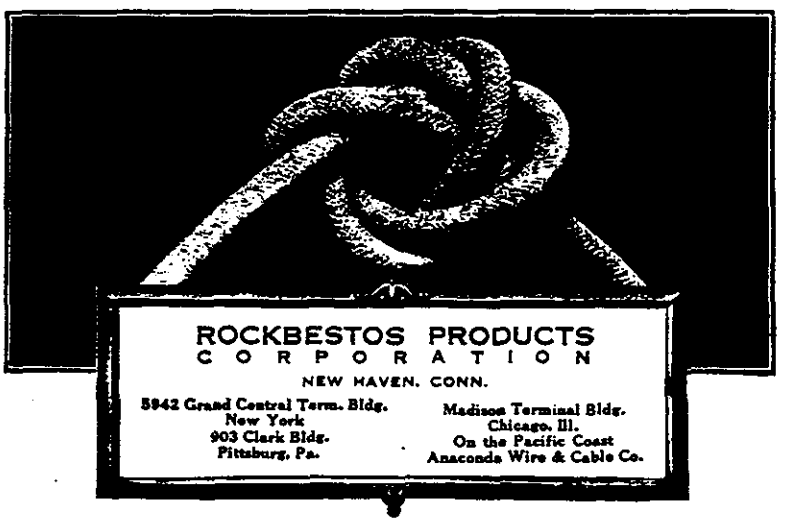
Central stations are the principal prospects for this type of material as they have been using rubber insulated control cables in boiler room circuits.

The illustration shows a white asbestos outer braid but the cable can be taped before application of the braid and the braid then finished with the standard black compound.

ROCKBESTOS

-the asbestos covered wire

MOTION PICTURE CABLE



ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN, CONN.

5942 Grand Central Term. Bldg.
New York
903 Clark Bldg.
Pittsburg, Pa.

Madison Terminal Bldg.
Chicago, Ill.
On the Pacific Coast
Anaconda Wire & Cable Co.

Sept. 10, 1929

RBB 00384

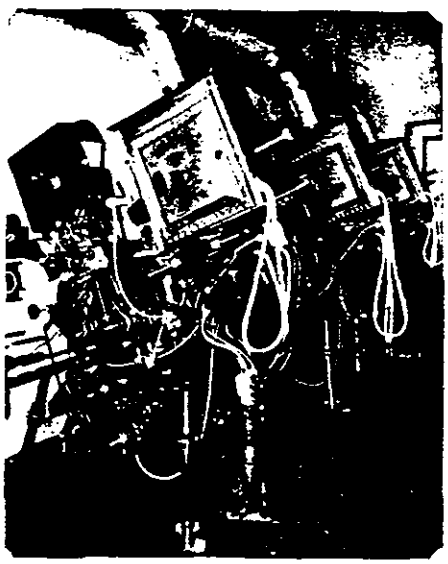
Rockbestos

Extra Flexible Motion Picture and Arc Light Cable

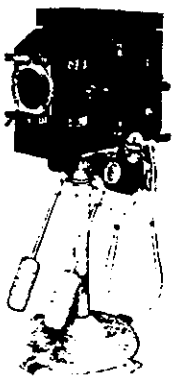
ROCKBESTOS motion picture cable combines all of the characteristics which are necessary for supplying power to projection machines, spot, flood and other arc lighting equipment. It will not deteriorate with age, burn or communicate fire even if it be subjected to contact with an electric arc. Extreme flexibility is of utmost importance so that no matter what position the apparatus is placed in, the cable will conform without any tendency to destroy the adjustment. The copper conductor is composed of a large number of fine copper wires, thoroughly annealed and of uniform and extreme softness stranded together into a rope like structure resulting in this necessary flexibility.

ROCKBESTOS insulation is applied to the conductor so as to produce a continuous felted wall of uniform thickness, saturated with a special chemically neutral compound, which has the necessary dielectric and mechanical strength and will remain permanently flexible. Over this insulation a closely woven braid of asbestos is applied, saturated with a white flameproof compound which provides a tough smooth outer surface which will resist abrasion, and will not flake off.

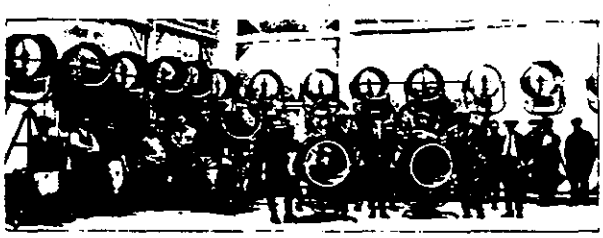
SPOT LIGHT



PROJECTION ROOM



SPOT LIGHT



SUN ARCS

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request.

MOTION PICTURE CABLE

As the name indicates, the principal use for this type of material is on projectors, spot lights, sun arcs and similar apparatus, where the fire hazard is high.

This type of apparatus requires an extremely flexible conductor and a correspondingly flexible, flameproof insulation.

A central station engineer who bought our Table I wire for his swinging switchboard panels was using a flexible lamp cord (rubber insulation with cotton braid) for the hinge connections between the terminal strip in the swinging panel and the one on the wall.

We suggested he use motion picture cable of the proper size as it was more than sufficiently flexible for his needs and also fully flameproof, the ideal material for the application.

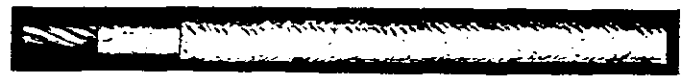
See photograph entitled "ROCKBESTOS Wired Board - Toronto Hydro-Electric System".

Practically all manufacturers of motion picture apparatus in this country equip their products with or recommend the use of ROCKBESTOS motion picture cable.

Other uses:

Connections on blueprint machines from the arc lamp to the terminal box.

Rockbestos Extra Flexible Motion Picture Cable

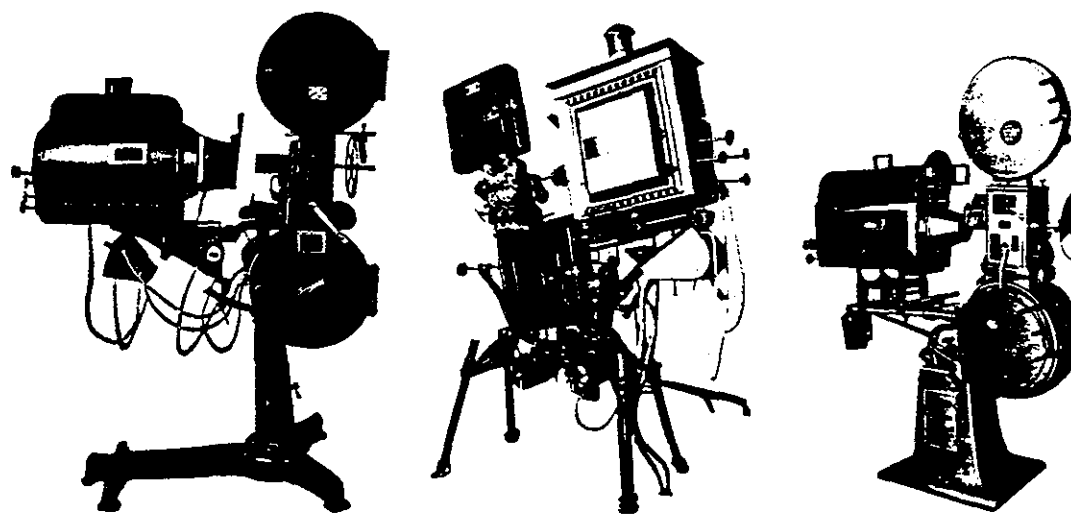


National Electric Code Standard Construction Specification

Size B & S Gauge	Carrying capacity amperes	Strandings	Thickness wall mils	Outer covering	O. D.	Weight in lbs. per M. ft.	Standard shipping lengths in feet coils
2	125	7 x 7 x 59/36	40	Heavy asbestos braid approx. .045 thick	.535	303	150
4	90	7 x 7 x 37/36	40		.440	195	250
6	70	1050/36	40		.385	130	500
8	50	665/36	35		.320	81	500
10	30	413/36	35		.275	58	500
12	25	65/30	30		.235	41	1000
14	20	41/30	30		.225	31	1000
16	10	26/30	25		.210	25	1000
18	5	16/30	25		.195	20	1000

Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

Rockbestos Motion Picture Cable is approved by Underwriters Laboratories, Inc.



MOTION PICTURE PROJECTORS

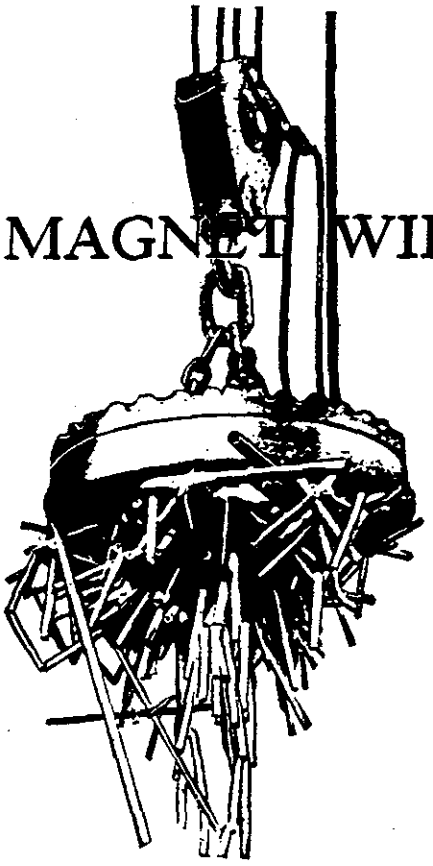
RBB 00387


the asbestos covered wire

ROCKBESTOS

-the asbestos covered wire

MAGNET WIRE



ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN, CONN.

5942 Grand Central Term. Bldg.
New York

903 Clark Bldg.
Pittsburg, Pa.

Madison Terminal Bldg.
Chicago, Ill.

On the Pacific Coast
C. Dent Slaughter

RBB 00389

Rockbestos Magnet Wire

ROCKBESTOS Magnet Wire is made in all standard sizes of round, square and rectangular cross section. The dielectric and mechanical strength of Rockbestos insulation will meet all requirements of service and coil winding and will not fail under extreme heat conditions even up to the fusing point of copper.

ROCKBESTOS insulation will withstand fumes of practically all acids and this makes its use essential in all coils operating under these conditions.

The conductor is thoroughly annealed copper of uniform and extreme softness and of 98.5% electrical conductivity, according to Matthiesen's Standard. It is carefully inspected for accuracy of dimensions.

The insulation is pure long fibred asbestos, commercially free from metallic oxides, thoroughly separated, carded and spun into roving which is wound uniformly upon the conductor and then saturated with a special chemically neutral compound, and compressed into a continuous wall of insulation of approximately the same thickness as double cotton covering.

Round Copper Magnet Wire is furnished in either white, black or P. N. (amber) finish. Rectangular and square are furnished in either white or black finish.

The finished wire may be elongated 10% without harm to the Rockbestos insulation, thus allowing for bends necessary in the manufacture of coils.

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request.

MAGNET WIRE

This is made in several finishes; black, white, P.N. and B.F.

In selling the material the best method is to attempt to prescribe a finish for the conditions under which the wire will be used.

The black finish is moistureproof and flameproof and if a motor is to be subjected to considerable moisture, spray, acid fumes, etc. this would be the type of finish to recommend.

The white finish will withstand high temperatures such as would be generated in the windings of a motor which was suddenly overloaded, an elevator motor, for instance.

If the wire will be subject to considerable abrasion during installation the inssulation should be tough enough to withstand this abuse and not tear and the P.N. finish, an air drying varnish finish, is the finish to prescribe.

The B.F. is similar to P.N. but even tougher, the asbestos being impregnated with a special heatproof, moistureproof and acidproof insulating cement which is later baked at a high temperature.

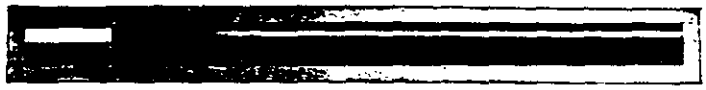
Asbestos insulated magnet wire is used in

brake coils
armatures
field coils
lifting magnets
relays, etc. etc.
solenoids of electrically operated track switches (tramway)
circuit breaker coils
small reactors

There is a process now in development which will enable us to produce asbestos insulated magnet wire in sizes #14 B&S gauge and smaller with outside diameters no larger than double cotton covered wire.

An entirely new field of applications to small motors and other devices will probably result especially if the cost of the asbestos insulated wire is the same as or only a little in excess of the cotton covered wire.

Round Copper Magnet Wire



Size B. & S. Gauge	BARE WIRE		ROCKBESTOS COVERED WIRE		
	Diameter Inches	Area Circular Mils	Insulation Thickness Mils	Approximate Diameter over Insulation in Inches	Approximate Pounds per 1000 ft.
0000	.460	211600	10.5	.481	647
000	.410	167800	10.5	.431	513
00	.365	133100	10.5	.386	409
0	.325	105500	10.5	.346	325
1	.289	83690	10.5	.310	258
2	.258	66370	10.5	.279	205
3	.229	52640	10.5	.250	163
4	.204	41740	10.5	.225	130
5	.182	33100	10.0	.202	103
6	.162	26250	9.0	.180	82
7	.144	20820	9.0	.162	65
8	.129	16510	8.0	.145	52
9	.114	13090	7.0	.128	41
10	.102	10380	6.5	.115	33
11	.091	8230	6.5	.104	26
12	.081	6530	6.5	.094	21
13	.072	5178	6.0	.084	16
14	.064	4107	6.0	.076	13
15	.057	3257	6.0	.069	10.4
16	.051	2583	6.0	.063	8.3
17	.045	2048	6.0	.057	6.6
18	.040	1624	6.0	.052	5.3
19	.036	1288	6.0	.048	4.2
20	.032	1022	6.0	.044	3.4
21	.029	810	6.5	.042	2.80
22	.025	642	6.5	.039	2.28
23	.023	509	7.0	.037	1.86
24	.020	404	7.0	.034	1.51
25	.018	320	8.0	.034	1.29
26	.016	254	8.5	.033	1.09
27	.014	202	9.5	.033	.95
28	.013	160	10.0	.033	.83

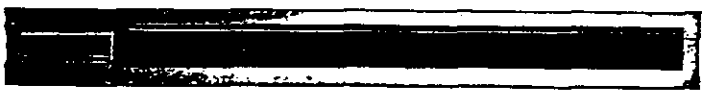
Rockbestos Round Magnet Wire is furnished on reels with standard full reel quantities as follows:

0000 — 13 B. & S. Gauge 200 lbs.
14 — 28 B. & S. Gauge 50 lbs.

Rockbestos Round Magnet Wire is furnished in jet-black, snow-white and P. N. finish. This latter finish is our more recent development and is recommended in sizes from 28 to 6 where an exceptionally tough outer finish is desired.

Rockbestos Magnet Wire is unequalled for use in manufacture of armature and series and shunt coils for railway, mining, mill, and general industrial motors, for coils in lifting magnets, for brake coils and all types of electro-magnetic windings, solenoid coils, welding transformers — wherever windings are subject to temperature conditions.

Rectangular and Square Magnet Wire



Since Rectangular and Square Magnet Wire can be made in so many different sizes and with so many different thicknesses of insulation, it becomes impractical to completely tabulate them all. The following table lists the nominal difference between the width or thickness of Rockbestos insulated conductor and corresponding dimensions of bare conductor.

Bare Copper Width in Inches	.0 To .095	.096 To .120	.121 To .145	.146 To .175	.176 To .240	.241 To .300	.301 To .350	.351 To .500
Bare Copper Thickness in Inches	**Nominal difference between width or thickness of insulated conductor, and corresponding dimension of bare conductor — Given in inches.**							
.0 to .020	.014	.016	.017	.017	.018	.019	.020	.021
.021 to .040	.013	.015	.016	.016	.017	.018	.019	.020
.041 to .050	.012	.014	.015	.015	.016	.017	.018	.019
.051 to .080	.011	.013	.014	.014	.015	.016	.016	.017
.081 to .095	.012	.013	.014	.014	.015	.016	.017	.018
.096 to .103		.013	.014	.015	.016	.017	.018	.019
.104 to .110		.014	.015	.016	.017	.018	.019	.020
.111 to .120		.015	.016	.017	.018	.019	.020	.021
.121 to .135			.016	.018	.019	.020	.021	.022
.136 to .145			.017	.018	.019	.021	.022	.023
.146 to .160				.018	.020	.021	.022	.023
.161 to .175				.019	.020	.022	.023	.024
.176 to .195					.020	.022	.023	.024
.196 to .215					.021	.023	.024	.025
.216 to .240					.022	.023	.024	.026
.241 to .270						.023	.025	.026

Rockbestos Square and Rectangular Magnet Wire is furnished in standard full reel quantities of 200 lbs.

Rockbestos Square and Rectangular Magnet Wire is furnished in either snow-white or jet-black finish.

Offering for coil winding purposes a greater effective cross section of copper than round wire, Rectangular Rockbestos Magnet Wire finds its principal use in large industrial, railway and mine motors, synchronous motors and rotary converters, electric furnace windings and similar heavy capacity work.

CURLING IRON CORD

Manufacturers of these appliances insist on an extremely flexible and lightweight, small diameter cord.

Heretofore two rubber insulated tinsel conductors have been twisted loosely together and a braid placed over all. This construction is not approved by the Underwriters.

We have developed a cord which is in reality a lightweight heater cord with a tinsel conductor which now gives the curling iron manufacturer everything he wants in the cord and also a means of gaining approval for his device.

ROCKBESTOS

-the asbestos covered wire

HEATER CORD

APRIL 1, 1929

RBB 00396

Rockbestos Heater Cord

ROCKBESTOS "3000" heater cord represents, what we believe to be, the finest heater cord that can be manufactured. Nothing but the choicest of materials are used and each manufacturing detail is subjected to continual inspection. It has an extra flexible conductor and its construction is such that it will not kink in ordinary service on any kind of heating appliances, even those which are in motion, when in use. It meets or exceeds the requirements of the National Electric Code in all respects and every coil bears the Underwriters' label of approval. Underwriters' Laboratories approval requires an average performance of not less than 1000 cycles on their standard heater cord endurance machine. Rockbestos "3000" will average over 3000 cycles.

The conductor is composed of the proper number of wires each No. 34 B & S gauge, cotton served and insulated with rubber over which is an application of Rockbestos roving which forms a continuous heat insulating layer of the most efficient type which protects the rubber from external heat and gives maximum durability and flexibility. Duplex cord is two such conductors twisted together with a short lay; then covered with a soft or glazed cotton, rayon, or combination of cotton and rayon braid. Twisted pair cord is two conductors individually braided and twisted together. Our standard braiding pattern is glazed cotton with rayon striper as illustrated on the opposite page, but can be furnished in any desired pattern and colors.

ROCKBESTOS "3000" heavy duty heater cord is regular "3000" with the exception of the outer covering which is a heavy cotton, increasing its resistance to abrasion. Commonly used on commercial appliances which are in constant use such as laundry irons, restaurant percolators, toasters, waffle irons, etc.

Rockbestos "X" heater cord is of the same general construction as Rockbestos "3000" except the conductor which is slightly less flexible; the individual wires being No. 30 B & S gauge instead of No. 34. It is designed especially for heating appliances that are not in motion when in use. It complies fully with the requirements of the National Electric Code and bears the Underwriters' label of approval.

Triplex heater cord is made with the asbestos on each conductor of a different color, the three conductors tripled together and covered with a cotton or rayon braid.

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request.

HEATER CORD

Heater Cord has of course the one general application to appliances which produce heat in their operation.

It's so easy to overlook some of these, however, that we're putting below a list of some of the appliances for which we have sold the cord.

Incidentally a point of interest is that in the United States we sell approximately 1/3 of the cord consumed and supply about 65% of appliance manufacturers part or all of their cord requirements.

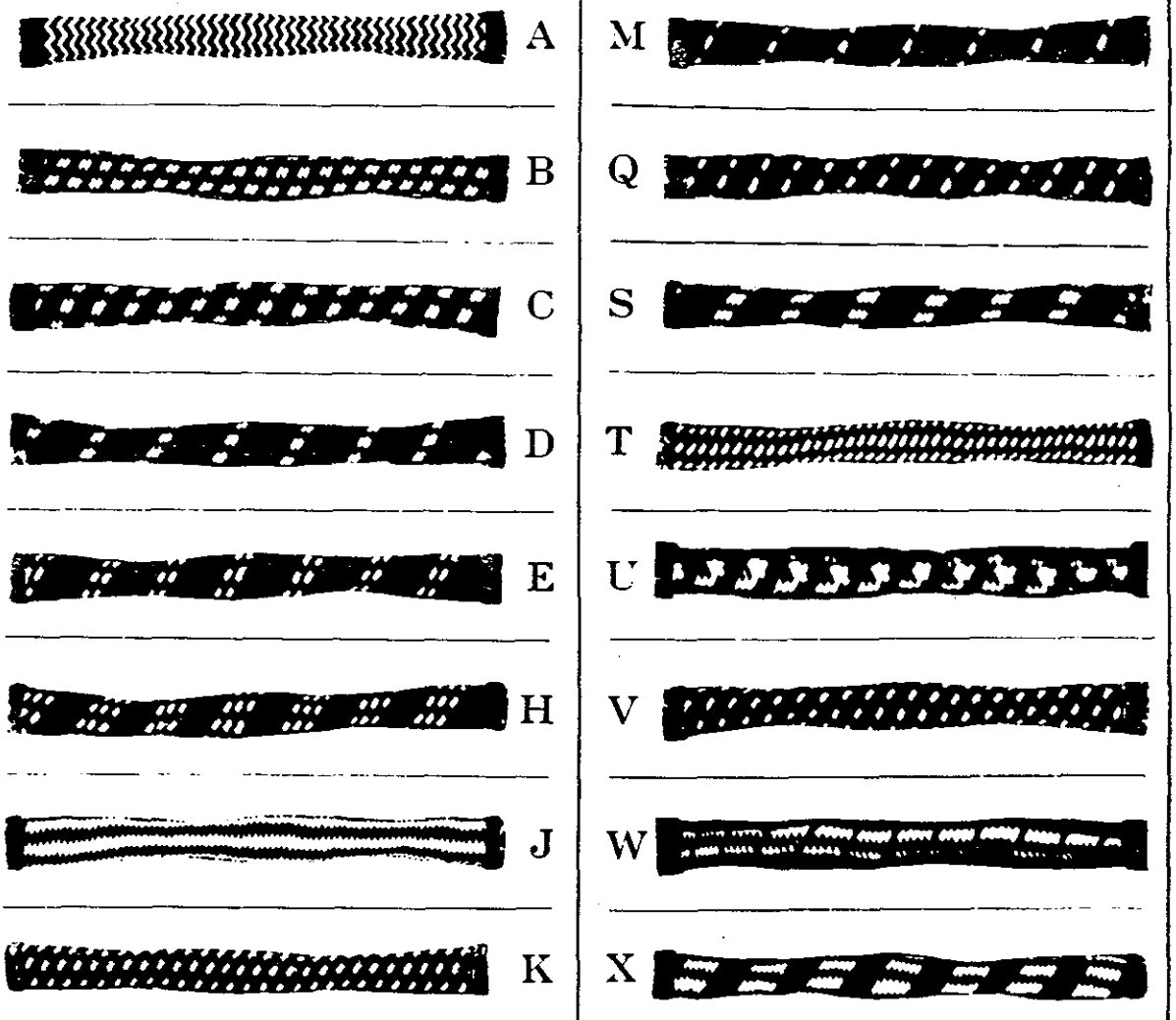
Toasters
Flat irons
Percolators
Table stoves
Grills
Sandwich toasters
Egg boilers
Heater pads
Hair wavers
Hot water bottle warmers
Milk bottle warmers
Waffle irons
Soldering irons
Wall outlet ranges and stoves
Electric fireless cookers
Room heaters
Immersion heaters
Bacon broilers

ROCKBESTOS

–the asbestos covered wire

BRAIDING PATTERNS OF HEATER CORDS

for all types of Electrical Heating Appliances



These illustrations show the most commonly used patterns.
Other combinations can be made on request.
Any color combination desired can be furnished.

Approved by Underwriters Laboratories, Inc.

ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN. - - CONN.

RBB 00399

Rockbestos Heater Cord

National Electric Code Type H

Approved by

Underwriters' Laboratories, Inc.

Size B & S Gauge No.	Rockbestos "3000" Conductor		Rockbestos "X" Conductor		Pounds per 1000 ft.		Allowable carrying Capacity(Amps.)
	No. Wires	B & S Gauge of each wire	No. Wires	B & S Gauge of each wire	Rayon	Cotton	
14	104	34	41	30	46	49	20
16	65	34	26	30	34	36	10
17	52	34	20	30	28	30	7½
18	41	34	16	30	23	25	5

Standard packing two 500 foot coils in one carton. Can be furnished on 12" or 24" wooden reels if desired or 250 and 500 feet on fibre spools.

Can also be furnished cut to any desired lengths, with or without ends stripped and tied.

RBB 00400


the asbestos covered wire

ROCKBESTOS

-the asbestos covered wire

FIXTURE WIRE

APRIL 1, 1929

Rockbestos Fixture Wire

ROCKBESTOS Fixture Wire is made for wiring all types of lighting fixtures and commercial units. It is manufactured of the best materials and the workmanship is of the highest quality. Rockbestos insulation provides maximum protection against failure from overheating, which is of common occurrence where other types of insulation are used. Rockbestos insulation will not burn and cannot communicate fire to adjacent combustible materials. It will retain its flexibility and has the necessary dielectric and mechanical strength to insure long life. It is approved by the Underwriters' Laboratories, Inc. and its use is insisted upon by Electrical Inspectors in a number of districts.

The stranded conductor is thoroughly annealed copper of uniform and extreme softness and of 98.5% electrical conductivity, according to Matthiesen's Standard. It is carefully inspected for accuracy of dimensions.

The insulation is pure long fibred asbestos thoroughly separated, carded and spun into roving which is wound uniformly upon the conductor in two coats, applied in opposite directions and then saturated with a special chemically neutral compound and compressed into a continuous wall of insulation of the proper thickness. It can be furnished both coats white or both coats black or with the inner coat black and the outer coat white or colored. When white or colored outer finish is desired we recommend that the inner coat be black to provide greater moisture resistance. Fixture wire having both coats white or colored is recommended for use under conditions of extreme heat and no moisture such as internal wiring of heating appliances, pyrometer leads, etc.

For decorative purposes the asbestos insulation may be covered with a rayon or cotton braid in any desired color or combination of colors and is made in one, two, or three conductors, individually braided or under one cover. Three conductor fixture wire with a braid overall is sometimes called kitchen unit cord.

To comply with the requirements of the National Electric Code for identification of grounded conductor, plain fixture wire with white outer coat is provided; for braided conductor one or more threads of contrasting colors are woven into the braid.

Rockbestos fixture wire can be furnished with solid conductor and with a heavier insulating wall to suit unusual requirements.

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request.

Fixture Wire

This article, while given a definite name has a variety of uses. As a fixture wire, however, it is being used in increasing quantities on fixtures where at first thought it would seem that a heat resisting insulation would not be needed.

Small fixtures particularly those equipped with gas filled lamps show surprisingly high socket temperatures which fully warrant the use of an asbestos insulated wire. See the report entitled "Lamps and their Heating Effects" at the rear of "test reports" section.

Efforts are being made in several cities in this country to require the use of a "heat resisting" wire for all lighting fixtures using lamps consuming 50 watts and over. In this respect the National Electric Code goes only to the extent of stating that wherever temperatures exceed 120° F. a "heat resisting insulation" is required. The Underwriters' Laboratories requirements for approval, however, are that when temperatures exceed 194° F. "an asbestos insulated wire" is required.

Considerable educational work is being done toward increasing the use of asbestos insulated fixture wire on all fixtures and its consumption for this purpose is definitely on the increase.

Other uses are:

Hair waving machines
Radio power units and sets (in proximity to power and rectifying tubes (valves) which generate considerable heat.)
Electric fan leads from base to motor
Hinge connections in household waffle irons, sandwich toasters, etc.

Rockbestos Fixture Wire

Construction Specifications

Fixture Wire — Plain

Fixture Wire — Rayon or Cotton braid

Size B. & S. Gauge	Stranding	Wall Thickness Mils	* O. D. Plain	* O. D. Cotton Covered	* O. D. Rayon Covered	Pounds per 1000 feet		
						Plain	Cotton	Rayon
10	104/30	35	.195	.215	.210	41	44	43
12	65/30	32	.160	.180	.175	27	29	28
14	41/30	32	.140	.160	.155	18	20	19
16	26/30	32	.125	.145	.140	12.2	14.2	13.2
18	16/30	32	.110	.130	.125	8.5	10.5	9.5

Rockbestos Fixture Wire conforms to the latest specifications of the Underwriters Laboratories, Inc. and bears their approval label.

Standard package 1000 foot coils. Can be furnished on fibre spools.

ROCKBESTOS FIXTURE WIRE is also used in wiring of devices where permanent flexibility and heat resisting insulation is required, such as permanent waving machines, heating appliances, show case lighting units, therapeutic devices, etc.

Kitchen Unit Cord

Kitchen Unit Cord meets the need for a safe and satisfactory three-conductor wire for kitchen units, having combination convenience outlet and switch, to which electric appliances may be attached.

* Finished O. D. given above in nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.


the asbestos covered wire

ROCKBESTOS

–the asbestos covered wire

RANGE WIRES

for wiring

Electric Ranges
Hot Plates
Table Stoves
Electric Ovens
Pyrometers

ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN, CONN.

5342 Grand Central Term. Bldg.
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Chicago, Ill.

On the Pacific Coast
C. Dent Slaughter

Rockbestos Range Wires

ELECTRIC RANGES are coming into general use more rapidly every day, which necessitates careful selection of materials on the part of the manufacturer. That ROCKBESTOS is used by most range manufacturers is an acknowledgment of its high quality.

MISCELLANEOUS other uses for ROCKBESTOS Range Wires and Cables are listed on the cover of this bulletin.

SPECIFICATIONS covering construction and testing of our All Asbestos Insulated Wires and Cables are published in our Rockbestos Wires and Cables Bulletin. The construction, briefly, is as follows:

CONDUCTOR. May be Copper, Monel metal, Nickel or other alloys, bare or tinned, solid or stranded.

INSULATION. Is all asbestos, applied by the Rockbestos felted process, providing ample dielectric and mechanical strength. Can be impregnated with white flameproof compound which can be used where no moisture is encountered, but we strongly recommend black impregnation which is flameproof and moisture resistant. The compound in the insulation does not affect the color of the outside braid.

COVERING. A heavy asbestos braid approximately 45 mils in thickness finished with white or colored flameproof or black flameproof and moisture resistant compound.

Stranded and flexible conductors can be furnished with the same insulation as specified for solid. Two or more conductors either solid or stranded can be cabled together with or without a braid over all.

Where additional dielectric strength or moisture resistant qualities are desired, we can furnish a varnished cambric and asbestos insulated combination, standard construction for solid conductor being two layers of varnished cambric applied next to the conductor and then a felted wall of asbestos and an asbestos braid. For wall thicknesses, diameters and other information see following tables.

For applications, requiring the smaller sizes, where there is danger of conducted heat from heating elements, etc. which might injure the varnished cambric, we can furnish the construction with the felted wall of asbestos next to the conductor so as to insulate the varnished cambric against overheating.

Allowable carrying capacities for Monel metal and nickel conductors are not defined in the National Electric Code but general practice in selecting sizes is to use a conductor two B & S gauge sizes heavier than the necessary copper conductor. This brings about conductor temperatures higher than would be allowable for copper, but the characteristics of Monel metal and nickel conductors enable them to operate without deterioration under these conditions.

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request.

RANGE WIRE

This bulletin gives the range manufacturer the information he needs about our material for his requirements.

The fly-leaf opposite Table I in "ROCKBESTOS Wires and Cables" bulletin gives other uses for this same product.

The combination asbestos and varnished cambric insulation shown is used principally by the range maker on products destined for export where high humidity is prevalent and certain insulation resistance tests are to be met.

USES:

All circuits of electric ranges, hot plates, and stationary room heaters.

Range Wire

All Asbestos Insulation

Solid Copper Conductor — Felted Asbestos — Asbestos Braid

SOLID CONDUCTOR — 600 VOLT SERVICE							
Size A. W. G. (B. & S.) BARE	Bare Dia.	Felted Wall Thickness Mils	Braid Thickness Mils	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in feet)	
						Coils	Reels
8	.128	35	45	.289	75	500	1000
10	.102	35	45	.262	55	500	1500
12	.081	30	45	.231	40	1000	2000
14	.064	30	45	.214	30	1000	2500
16	.051	25	45	.191	25	1000	3000
18	.040	25	45	.180	20	1000	3000

Varnished Cambric and Asbestos Insulation

Solid Copper Conductor — Varnished Cambric — Felted Asbestos — Asbestos Braid

SOLID CONDUCTOR								
Size A. W. G. (B. & S.) BARE	Bare Dia.	V. C.	Felted Wall Thick-ness Mils	Braid Thick-ness Mils	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in feet	
							Coils	Reels
8	.128	2–.005"	20	45	.283	75	500	1000
10	.102	2–.005"	20	45	.257	55	500	1500
12	.081	2–.005"	20	45	.236	40	1000	2000
14	.064	2–.005"	20	45	.219	30	1000	2500
16	.051	2–.005"	20	45	.206	25	1000	3000
18	.040	2–.005"	20	45	.195	20	1000	3000

*Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.


the asbestos covered wire

ROCKBESTOS

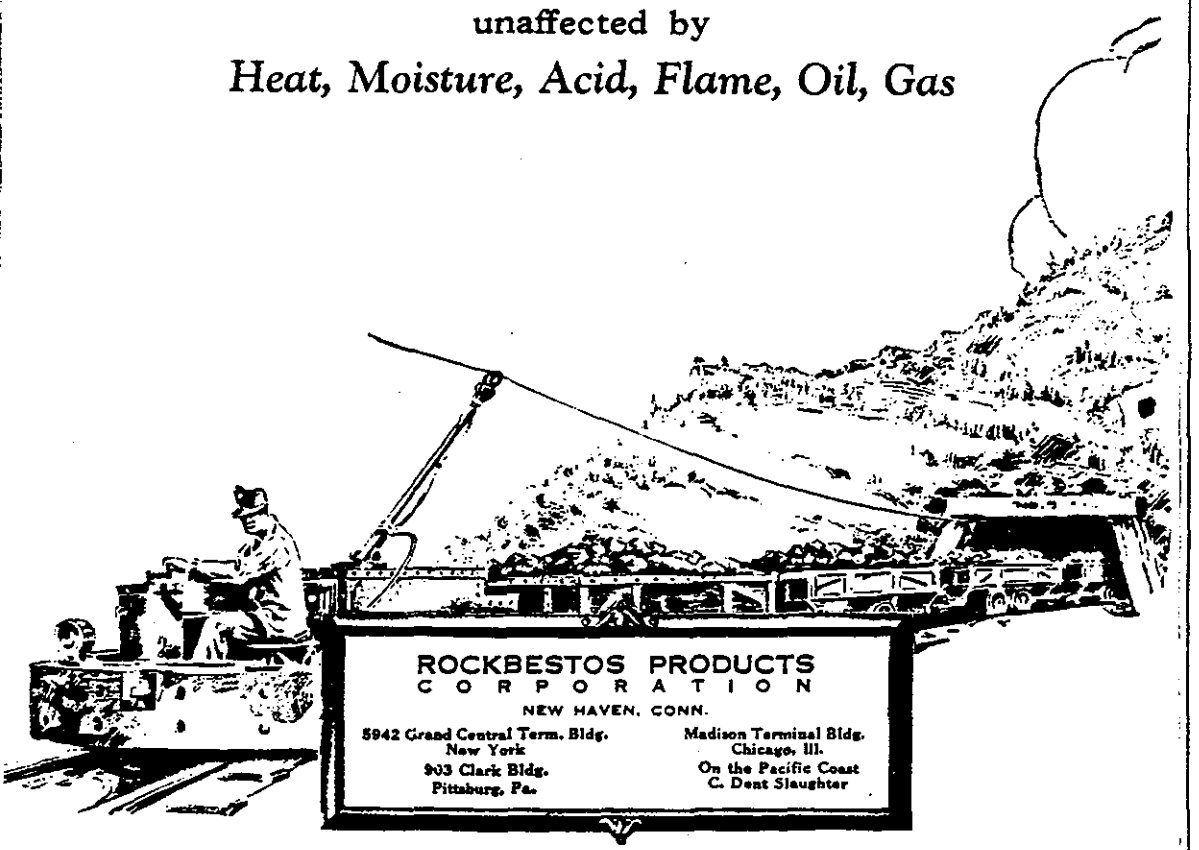
-the asbestos covered wire

ROCKBESTOS
A. V. C. CABLES

Permanently Flexible

unaffected by

Heat, Moisture, Acid, Flame, Oil, Gas



ROCKBESTOS PRODUCTS
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Madison Terminal Bldg.
Chicago, Ill.

On the Pacific Coast
C. Dent Slaughter

APRIL 1, 1929

RBB 00412

Rockbestos A. V. C. Cables

THE construction of these cables has been developed especially for wiring mine locomotives and mining machines, and for circuits in and about mines or other locations where heat and moisture are encountered.

The conductors are of flexible stranding made up of thoroughly annealed copper wires, tinned and laid up as shown in the table.

The insulation consists first of a layer of felted asbestos applied in the form of untwisted roving, thoroughly saturated with moisture proof compound and compressed to form a compact, uniform wall of thickness shown in the table. Over this felted wall three layers of .006" thick high grade varnished cambric tape are wrapped in such a way that each layer laps about one quarter the width of the tape and the joints in the successive layers are staggered to provide maximum insulation resistance. Petrolatum is applied between layers of cambric to provide lubrication and moisture resistance.

Over the varnished cambric another felted asbestos wall, of thickness shown, is applied in the manner described above.

An outer braid of heavy asbestos yarn is woven closely over the last felted layer and thoroughly impregnated with black moisture proof and flame proof compound to produce a smooth rugged finish.

This construction provides an insulation of ample dielectric strength, maximum insulation resistance and greatest flexibility that will retain its original characteristics *indefinitely*. It is not affected by temperatures met in mining service, nor will it deteriorate in the presence of moisture, coal dust and oil as encountered in the operation of most mining machinery.

Complete test data substantiating the above will be furnished on request.

Rockbestos Data Sheet #8 A.V.C. Cables

Jan. 10, 1930

Insert opposite A.V.C. Cables

Bulletin

The specially flexible stranded tinned copper cable with the A.V.C. insulation is the unique result of an interesting incident.

A large manufacturer of mining equipment - locomotives, coal cutters, etc. - had experienced considerable trouble with insulation failures in one type of locomotives after they had been in service for a short time.

They asked us if we made a cable that would perhaps do away with the difficulty. At the time we made only asbestos insulated cables.

One of our engineers went to the West Virginia coal fields where several of these locomotives in service in a mine had been giving trouble and inspected the service conditions first hand.

The cables in use at the time passed through the iron housing of the motor and thus were effectively grounded. Due to coal dust, oil, moisture and heat attacking the insulation of the wires, frequent breakdowns occurred at this point.

One experience with rubber insulated cables had been most eye opening. Even though the cables came out from the hermetically sealed motor compartment through stuffing boxes, they had caught fire on the inside and it had traveled along the cables through the stuffing boxes, to the outside, thus presenting a most serious hazard especially in a gaseous mine.

It was decided that our asbestos insulated cable would serve if varnished cambric could be combined with it in order to insure a continuously high insulation resistance under the service conditions involved.

The test is described in detail in the report entitled Report of Test on Mining Machine Cable" in the "test reports" section.

The final design was submitted to the company (Jeffrey Manufacturing Co. - Columbus, Ohio.) tested

by them and finally adopted as standard for motor lead work.

An experience with the A.V.C. Cable fully justifies the Jeffrey company's action in standardizing on it. A short circuit occurred in the motor compartment of a locomotive in service and a fire started. But contrary to the experience related above where the rubber insulated cables burned up, the A.V.C. Cable not only did not transmit the flame to the outside, but the flame did not even burn up to the stuffing boxes on the inside.

The Jeffrey Company has just recently standardized on A.V.C. Cable for motor leads on all equipment.

Table C and E insulations were, of course, adaptations of this original A.V.C. Cable design.

Other uses:

All electrically operated mine machinery.
Mine locomotives
Undercutters, etc.
Headlight wiring where train control system is used.

Construction Specifications

Rockbestos A. V. C. Cables

Size Cond.	Stranding	First Felted Wall Mils	V. C.	Second Felted Wall Mils	Finished O. D. **	Pounds per M feet	Standard shipping lengths (maximum in ft.) Coils	Reels
500.000 C. M.	427. 61 x 7 (.03387)	20	3 — .006"	45	1.184	1828		750
450.000 C. M.	427. 61 x 7 (.03195)	20	3 — .006"	45	1.133	1636		750
400.000 C. M.	427. 61 x 7 (.03016)	20	3 — .006"	45	1.084	1475		1000
350.000 C. M.	427. 61 x 7 (.02846)	20	3 — .006"	45	1.038	1330		1000
300.000 C. M.	427. 61 x 7 (.0269)	20	3 — .006"	45	.995	1194		1000
250.000 C. M.	259. 37 x 7 (.0320)	20	3 — .006"	45	.941	1049		1000
0000 B & S Ga.	259. 37 x 7 (.02846)	15	3 — .006"	25	.808	810		1000
000	259. 37 x 7 (.02535)	15	3 — .006"	25	.742	657		1500
00	259. 37 x 7 (.0226)	15	3 — .006"	25	.682	527		1500
0	259. 37 x 7 (.0201)	15	3 — .006"	25	.637	441		1500
1	133. 19 x 7 (.0253)	15	3 — .006"	25	.590	364		1000
2	133. 19 x 7 (.0226)	10	3 — .006"	15	.520	282		1000
3	133. 19 x 7 (.0201)	10	3 — .006"	15	.482	235		1000
4	133. 19 x 7 (.0179)	10	3 — .006"	15	.450	192		2000
5	49. 7 x 7 (.0253)	10	3 — .006"	15	.408	150		2500
6	49. 7 x 7 (.0226)	10	3 — .006"	15	.386	123	500	2500
8	49. 7 x 7 (.0179)	10	3 — .006"	15	.342	91	500	2500
10	37 /.01689	10	3 — .006"	15	.298	65	500	1000
*12	65 /.010	10	3 — .006"	15	.280	49	1000	1000
*14	41 /.010	10	3 — .006"	15	.260	39	1000	1000

*Not Tinned.

**Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

STOCK REEL LENGTHS:—Sizes No. 6 and larger, 500 Feet—Sizes No. 8 and smaller, 1000 Feet.

ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN, CONNECTICUT

ROCKBESTOS

-the asbestos covered wire

SWITCHBOARD WIRES and CABLES

for wiring

Switchboards
Elevator Control Panels
Car Heating Circuits
Power and Lighting Circuits
Resistance Grids
Rheostats
Traffic Signal Systems
Electric Furnaces

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NEW HAVEN, CONN.

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Chicago, Ill.

On the Pacific Coast
Anaconda Wire & Cable Co.

Sept. 10, 1929

Rockbestos Switchboard Wires and Cables

SWITCHBOARDS which are wired with rubber insulated or slow burning wires are, in the opinion of leading engineers, fire hazards that should be eliminated. The additional cost of ROCKBESTOS Switchboard Wire is the cheapest kind of fire insurance. It is guaranteed not to communicate fire even if it be subjected to contact with an electric arc.

MISCELLANEOUS other uses for ROCKBESTOS Switchboard Wires and Cables are listed on the cover of this bulletin.

SPECIFICATIONS covering construction and testing of our All Asbestos Insulated Wires and Cables are published in our Rockbestos Wires and Cables Bulletin. The construction, briefly, is as follows:

CONDUCTOR. Copper, bare or tinned, solid or stranded.

INSULATION. Is all asbestos, applied by the Rockbestos Felted process, providing ample dielectric and mechanical strength. Can be impregnated with white flameproof compound which can be used where no moisture is encountered, but we strongly recommend black impregnation which is flameproof and moisture resistant. The compound in the insulation does not affect the color of the outside braid.

COVERING. A heavy asbestos braid approximately 45 mils in thickness finished with white or colored flameproof or black flameproof and moisture resistant compound.

These cables can be furnished with two or more conductors, under one cover, if desired.

Where additional dielectric strength or moisture resistant qualities are desired we can insert varnished cambric in the felted wall. For wall thicknesses, diameters and other information see following tables. Standard construction on sizes larger than No. 8 is a felted wall of asbestos next to the conductor, three layers of varnished cambric and another felted wall of asbestos and covered with a heavy asbestos braid. Sizes No. 8 and smaller, two layers of varnished cambric are applied next to the conductor and then a felted wall of asbestos and an asbestos braid.

For applications, requiring the smaller sizes, where there is danger of conducted heat which might damage the varnished cambric, we can furnish the construction with the felted wall of asbestos next to the conductor so as to insulate the varnished cambric against overheating.

On Switchboards installed in locations which would subject the wiring to high temperatures we recommend the use of our ROCKBESTOS all asbestos switchboard wire. For construction specifications see Table A.

On Switchboards installed in power generating plants, substations and other locations where appearance is of importance or for re-wiring or additions to existing boards that have been wired with varnished cambric insulated switchboard wire having a gray or black flameproof cotton braid we recommend the use of ROCKBESTOS varnished cambric asbestos insulated flameproof cotton braided switchboard wire. The construction of this wire is a tinned copper conductor insulated with two layers of varnished cambric, 30 mils of felted asbestos, saturated with a flameproof and moisture resisting compound, and covered with a gray or black flameproof cotton braid. The braid is closely woven and will not break or open on sharp right angle bends. It meets all the requirements as to dielectric strength, insulation resistance, appearance, uniform diameter and in addition gives the advantage of ROCKBESTOS insulation which will positively prevent the varnished cambric from igniting regardless of the amount of flame applied to it. It will continue to operate under conditions that would destroy any other type of switchboard wire. For construction specifications see Table B.

TABLE A

See remarks applying to Table I "ROCKBESTOS Wires and Cables" bulletin. This is the same material.

TABLE B

This material was designed for the specific purpose of wiring switchboards and panel boards.

Before this wire was available the customary practice was to use a "switchboard wire" made up with several layers (5 or 6) of varnished cambric tape over which is placed a tight cotton braid finished with a gray flameproof paint. The product of each manufacturer is approximately the same shade of color.

The standard practice in wiring switchboards is to make sharp, square bends, the sharper the bend the better the appearance of the completed board. But when a sharp bend is attempted in a wire with this multi-layer cambric construction, the cracking of the braid on corners is a frequent occurrence. In making the bend the cotton braid has to stretch around the corner. Something just has to give and if the cambric layers beneath will not then the braid must stretch and sometimes cracks open entirely.

Now in ROCKBESTOS switchboard wire this trouble is done away with entirely by the use of a cushioning wall of asbestos placed just beneath the cotton braid.

When a sharp bend is made the cotton braid pulls down on this felted wall very tightly on the outside of the bend, the felted wall in turn compresses or "gives" slightly and a perfectly smooth bend is the result.

An important feature is that a switchboard manufacturer can save time in the wiring of his product

because the wiremen do not have to be especially careful in making bends not to crack them.

And to central stations a wire like this means always a fine appearance on the completed board - something they are very proud of.

Along the line of fine appearance central station engineers have been interested in learning that dust will not readily collect on ROCKBESTOS switchboard wire. This is accomplished by using a specially prepared (gassed) cotton yarn. This process burns off the "whiskers" which are what catch the dust.

Then of course there is the protection against fire hazard. A complete report entitled "Report of Tests covering the New Rockbestos Switchboard Wire" is contained in the "test reports" section of this book. A part of this report is the approval report of the laboratory of the Associated Factory Mutual Fire Insurance Companies of Boston, Massachusetts.

This is an independent laboratory maintained by a group of industrial fire insurance companies for the sole purpose of passing on materials entering into the construction of properties they insure.

Safety is the only reason for their interest in these materials.

Naturally they conduct some very severe tests. Note especially paragraph II on "Tests" in their report. Consider what would have been the result had the usual multi-layer cambric construction switchboard wire been subjected to the same test.

Other uses:

Flameproof connections for transformer vaults.

Rockbestos Switchboard Wire

All Asbestos Insulation — Asbestos Braid

Solid Copper Conductor | Felted Asbestos | Asbestos Braid

Table A

SOLID CONDUCTOR — 600 VOLT SERVICE							
Size A. W. G. (B. & S.) BARE	Bare Dia.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in feet)	
						Coils	Reels
0000	.460	60		.670	730		1500
000	.409	60		.620	590		1000
00	.365	60		.575	480		1000
0	.325	60		.535	390		1500
1	.289	35		.449	300		2000
2	.257	35		.418	245		2500
3	.229	35		.389	200		2500
4	.204	35		.364	165		1000
5	.182	35		.342	135		1000
6	.162	35		.322	110	500	1000
8	.128	35		.289	75	500	1000
10	.102	35		.262	55	500	1500
12	.081	30		.231	40	1000	2000
14	.064	30		.214	30	1000	2500
16	.051	25		.191	25	1000	3000
18	.040	25		.180	20	1000	3000

Varnished Cambric and Asbestos Insulation — Flameproof Cotton Braid

Solid Copper Conductor Tinned | Varnished Cambric | Felted Asbestos | Gray Flameproofed Cotton Braid

Table B

SOLID CONDUCTOR — 600 VOLT SERVICE								
Size A. W. G. (B. & S.) Tinned	Bare Dia.	V. C.	Felted Wall Mils	Thick-ness Braid Mils	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in feet)	
							Coils	Reels
8	.128	2-.005"	30	20	.258	72	500	1000
10	.102	2-.005"	30	20	.232	51	500	1500
12	.081	2-.005"	30	20	.211	36	1000	2000
14	.064	2-.005"	30	20	.194	27	1000	2500

*Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

Rockbestos Switchboard Wire

Asbestos Insulation
with Varnished Cambric Insert
Asbestos Braid

This is the construction of No. 0000 to 6 inclusive.

This is the construction of No. 8 to 18 inclusive.

Table C

SOLID CONDUCTOR									
Size A. W G. (B. & S.) Bare	Bare Dia.	First Felted Wall Mils	V. C.	Second Felted Wall Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in feet)	
								Coils	Reels
0000	.460	15	3–.005″	30		.680	740		1500
000	.409	15	3–.005″	30		.629	600		1000
00	.365	15	3–.005″	30		.585	485		1000
0	.325	15	3–.005″	30		.545	395		1500
1	.289	15	3–.005″	30		.509	322		1500
2	.257	15	3–.005″	15		.447	255		2000
3	.229	15	3–.005″	15		.419	210		2000
4	.204	15	3–.005″	15		.394	175		2500
5	.182	15	3–.005″	15		.372	145		1000
6	.162	15	3–.005″	15		.352	115	500	1000
8	.128		2–.005″	20		.283	75	500	1000
10	.102		2–.005″	20		.257	55	500	1500
12	.081		2–.005″	20		.236	40	1000	2000
14	.064		2–.005″	20		.219	30	1000	2500
16	.051		2–.005″	20		.206	25	1000	3000
18	.040		2–.005″	20		.195	20	1000	3000

*Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

TABLE C

The development of a moisture resisting asbestos insulated wire was a natural step. In applying asbestos insulated wires to high temperature applications moisture would occasionally be encountered.

For instance, asbestos insulated wire for motor secondary circuits in conduit in a hot boiler-room would be ideal but the conduit may pass through the boiler-room wall to a much cooler area. This may cause condensation and if the conduit is placed so that bends or loops exist at the bottoms of vertical runs there is even the chance of water pockets forming temporarily. The Table A material with the felted wall impregnated with black moistureproof and flameproof compound will resist casual moisture but lying half submerged in a water pocket is a different matter.

All conduits should be cleaned at the completion of installation and should be provided with drain plugs at low points. If, however, the placing of conduits is such that there is doubt as to their continued dryness we would recommend Table C wire or, in extreme conditions, Table E cable.

Table C wire is generally used on electric ranges destined for certain export markets in order that the range will meet certain insulation resistance requirements laid down by inspection rules in those markets.

CENTRAL STATIONS AND INDUSTRIAL PLANTS

Lighting circuits
Control *

MISCELLANEOUS

Electric ranges for export
Conduit wiring for industrial baking ovens
Lighting and control circuits in areas where gases or corrosive fumes are present, such as in chemical manufacturing plants.

Miscellaneous circuits in paper mills, around evaporators, etc.

TABLE D

Refer to remarks opposite Table II. This is same material.

Rockbestos Switchboard Cables

All Asbestos Insulation
Asbestos Braid

Table D

STRANDED CONDUCTOR — 600 VOLT SERVICE								
Size	Stranding Bare	Bare Dia.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in ft.)	
							Coils	Reels
500,000 C. M.	37/.1162	.815	120		1.145	1775		750
450,000 C. M.	37/.1103	.773	120		1.103	1610		1000
400,000 C. M.	37/.1039	.729	120		1.059	1450		1000
350,000 C. M.	37/.0973	.681	120		1.011	1280		1000
300,000 C. M.	37/.090	.630	120		.960	1115		1000
250,000 C. M.	37/.0822	.575	120		.905	950		1000
0000 B. & S.	19/.1055	530	90		.800	785		1000
000	19/.0940	.470	90		.740	640		1500
00	19/.0837	.420	90		.690	520		1500
0	19/.0745	.374	90		.644	430		1500
1	19/.0664	.332	90		.602	350		1000
2	7/.0974	.295	90		.565	290		1000
3	7/.0867	.260	60		.470	225		1500
4	7/.0772	.234	60		.444	185		2000
5	7/.0688	.209	60		.419	150		2500
6	7/.0612	.185	60		.395	125	500	2500
8	7/.0486	.145	35		.305	80	500	1000
10	7/.0385	.116	35		.276	55	500	1000
12	7/.0305	.092	30		.242	40	1000	2000
14	7/.0242	.073	30		.223	30	1000	2000

*Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

Rockbestos Switchboard Cables

Asbestos Insulation with Varnished Cambric Insert Asbestos Braid

Stranded Copper Conductor | Felted Asbestos | Varnished Cambric | Felted Asbestos | Asbestos Braid

Table E

STRANDED CONDUCTOR										
Size	Stranding Bare	Bare Dia.	First Felted Wall Mils	V. C.	Second Felted Wall Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	Approx. O. D. Finished *	Pounds per M ft.	Standard Shipping Length (Maximum in ft.)	
									Coils	Reels
500,000 C. M.	37/.1162	.815	30	3-.005"	45		1.095	1743		750
450,000 C. M.	37/.1103	.773	30	3-.005"	45		1.053	1580		750
400,000 C. M.	37/.1039	.729	30	3-.005"	45		1.009	1417		1000
350,000 C. M.	37/.0973	.681	30	3-.005"	45		.961	1253		1000
300,000 C. M.	37/.090	.630	30	3-.005"	45		.910	1088		1000
250,000 C. M.	37/.0822	.575	30	3-.005"	45		.855	922		1000
0000 B. & S.	19/.1055	.530	15	3-.005"	30		.750	761		1000
000	19/.0940	.470	15	3-.005"	30		.690	616		1500
00	19/.0837	.420	15	3-.005"	30		.640	500		1500
0	19/.0745	.374	15	3-.005"	30		.594	410		1500
1	19/.0664	.332	15	3-.005"	30		.552	335		1000
2	7/.0974	.295	15	3-.005"	15		.485	265		1000
3	7/.0867	.260	15	3-.005"	15		.450	216		1000
4	7/.0772	.234	15	3-.005"	15		.424	180		2000
5	7/.0688	.209	15	3-.005"	15		.399	149		2500
6	7/.0612	.185	15	3-.005"	15		.375	120	500	2500
8	7/.0486	.145	15	3-.005"	15		.335	85	500	2500
10	7/.0385	.116	15	3-.005"	15		.306	62	500	1000
12	7/.0305	.092	15	3-.005"	15		.282	47	1000	1000
14	7/.0242	.073	15	3-.005"	15		.263	37	1000	1000

*Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

TABLE E

This material is generally used where conditions prevail similar to those described in Table C.

A good many firms which would probably find Table C material satisfactory make doubly sure of obtaining continous service by standardizing on Table E cable. Ford Motor Company is one of these using it for motor leads.

It will be seen by a comparison of the two tables that the smaller sizes of Table C are insulated with two tapes and a felted wall, whereas the corresponding sizes in Table E construction have two walls and three tapes between.

The larger sizes (from #1 B&S up) have heavier top walls of felted asbestos and cable of this construction provides the utmost protection against conditions of heat, heat and moisture, abrasive dusts such as coal dust, mineral dusts, etc., oils, gases, and so on.

Where the basic condition of service is heat and any or all these other conditions are involved this is the material to recommend.

Ashpit wiring gives as severe a test to wire in conduit as any application we know of. Hot ashes drawn from furnaces are dumped in the pits and water sprayed on them for rapid cooling. This causes extreme condensation in conduits near the pit, therefore ashpit circuit failures are common and expected. To correct this condition Table E material has been used with success and should always be recommended for this application. Some companies go so far as to specify a lead sheath over this cable.

An interesting point in selling this expensive cable is that the first cost is of no particular importance if the cable will do away with expensive replacement labor. Users' experience has shown that this is exactly what it does and that it becomes practically a permanent installation.

This type of cable is made for service voltages up to 7500 by increasing the number of cambric tapes

between the felted walls.

The number of tapes for the various services is:

Service	No. of Tapes
600 volts	3
1500 "	6
2500 "	9
5000 "	12
7500 "	18

The applications for this type of cable are generally the same as those shown for Table C material, the construction being approximately the same except for the stranded conductor and different thickness of the insulated walls in the larger sizes.

Uses:

All conduit applications
Motor Leads
Lighting and control circuit
ashpit wiring.

CAUTION

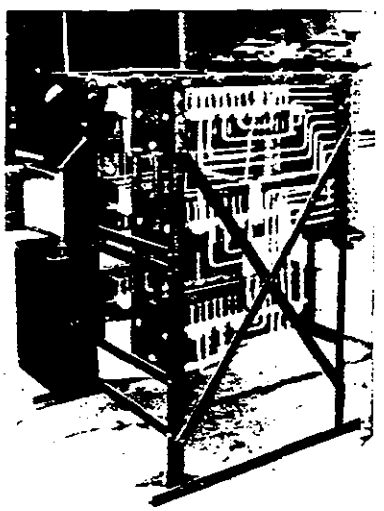
Customers using any asbestos and varnished cambric insulated cable in conduit should be cautioned about the kind of lubricating compound they use. A neutral lubricating grease should be used.

There are a number of brands of lubricating grease on the market in the country which are strongly alkaline. These greases are soluble in water and when condensation takes place in conduit it is possible for this grease to penetrate to the cambric and eat the varnish away.

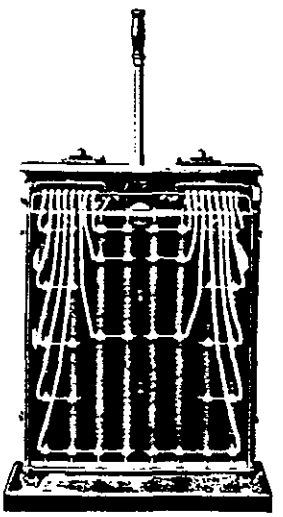
The grease, however, has no effect on rubber insulation.

Where and how Rockbestos

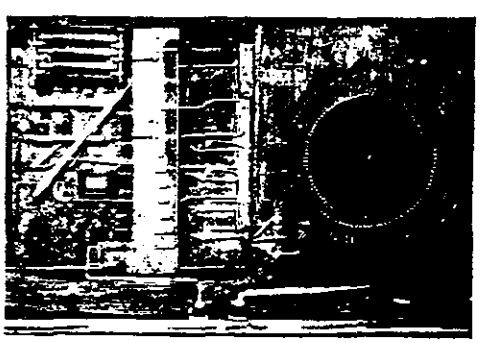
Switchboard wires and cables are being used



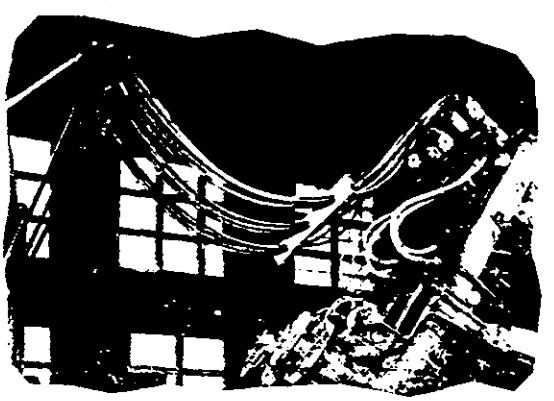
CONTROLLER FOR OIL WELL MOTOR



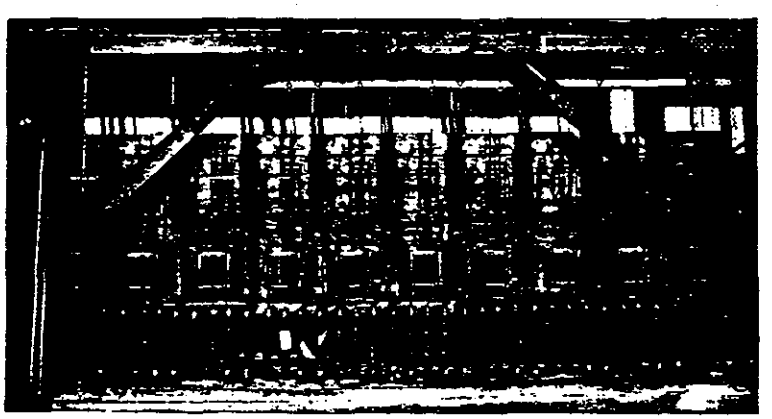
CONTROLLER



FIELD RHEOSTAT



ELECTRIC FURNACE



CENTRAL STATION SWITCHBOARD

RBB 00429

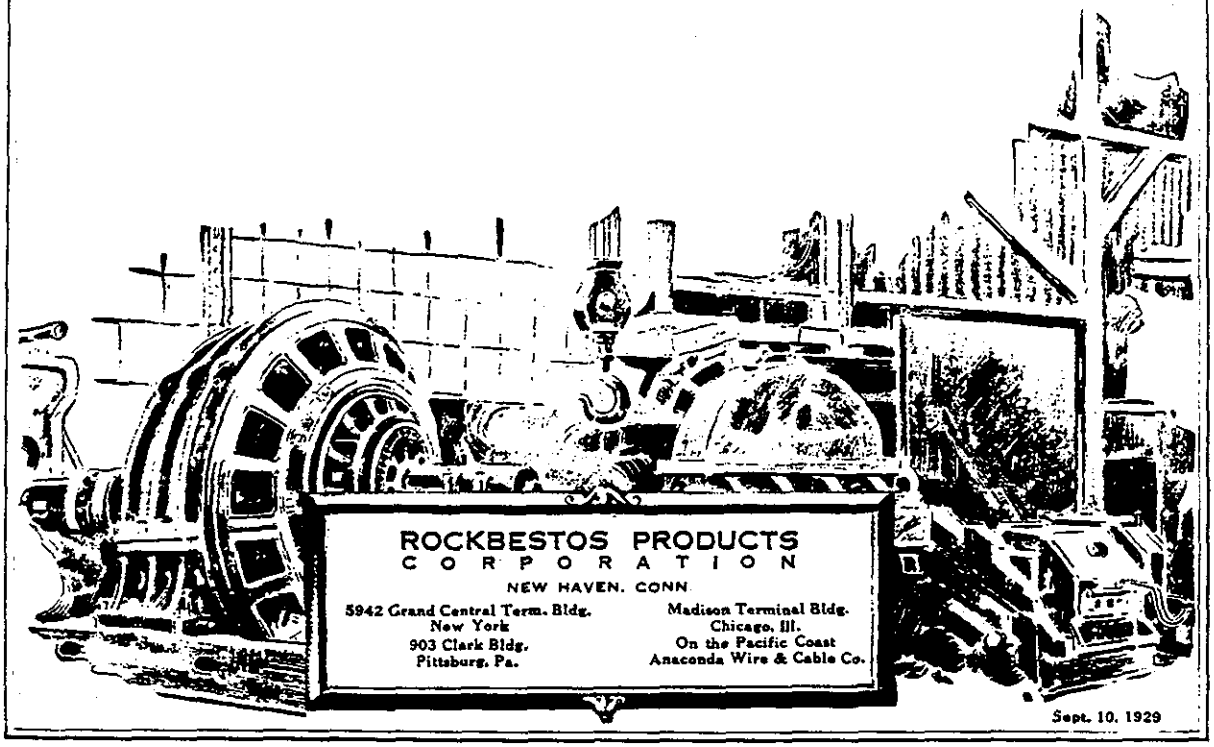

the asbestos covered wire

ROCKBESTOS

-the asbestos covered wire

ROCKBESTOS
Wires and Cables

Designed especially for wiring lighting circuits and all low voltage auxiliaries in Central Stations and Industrial Plants, Electric Railway motor, Transformer and Shoe leads.



ROCKBESTOS PRODUCTS
CORPORATION
NEW HAVEN, CONN.

5942 Grand Central Term. Bldg.
New York
903 Clark Bldg.
Pittsburg, Pa.

Madison Terminal Bldg.
Chicago, Ill.
On the Pacific Coast
Anaconda Wire & Cable Co.

Sept. 10, 1929

RBB 00431

Rockbestos Wires and Cables

CONTINUITY of service is of paramount importance in power plant operation, electric railway service and manufacturing establishments. Rockbestos cable is the result of many years of experimental and research work to develop cables that would insure this continuity of service under the most severe conditions, especially where heat is encountered or where communication of fire thru insulated conductors would prove disastrous.

Rockbestos cable is rapidly being accepted as the standard for all lighting and low voltage power and control circuits in power plants. Boiler room wiring has been a constant source of trouble that has been eliminated by the use of Rockbestos cables. Our type of cable has been operating successfully installed in conduit, in power plants, electric locomotives and steel mills for a number of years, where other types of insulated cables have failed within a comparatively short time.

This specification contains all of the necessary engineering information to enable you to choose the cable best adapted to your particular requirements. Where added dielectric strength and greater moisture resistant properties are wanted, we recommend our A. V. C. type cables which are described in a separate bulletin.

General Characteristics

Asbestos insulation applied by the "Rockbestos Process" will not deteriorate electrically or mechanically with age or under severe heat conditions. It will not carry flame even if it be subjected to contact with an electric arc. It will operate continuously without deterioration at any temperature up to 400° F. and will retain a large part of its electrical and mechanical strength up to the fusing point of the conductor.

Permanently flexible as consistent with the stranding of the conductor.

Rockbestos insulation will withstand casual moisture and will operate satisfactorily in conduit under proper conditions of installation. The outer finish will withstand abrasion incident to installing in iron conduit.

Rockbestos insulation is unaffected by the fumes of most acids.

A few typical applications and installations are shown in the photographs on the last page.

We manufacture asbestos insulated wires and cables for every purpose. Descriptive bulletins on request

Standard Specification
for ROCKBESTOS
Asbestos Insulated Wires and Cables

General:

This specification provides a standard for materials, workmanship, and testing of asbestos insulated wires and cables for applications where freedom from communication of fire or deterioration by severe heat conditions is of primary importance, such as lighting circuits, switchboard wiring, primary and secondary motor leads, control circuits, rheostat wiring, resistance grids, low voltage power feeders and similar installations.

1. Copper:

Bare or tinned copper shall conform to A.S.T.M. standards.

2. Insulation:

The asbestos shall be pure, long fibre material, commercially free from metallic oxides. It shall be applied in the form of untwisted rovings compressed and impregnated with a neutral heat and moisture resisting compound to produce a continuous, uniform felted layer of thickness specified. (See Tables I, II, III, IV, V.)

The insulation shall be applied so as to provide a circular cross-section in which the conductor is well centered in the insulating wall.

The impregnating compound shall be black except where extreme heat and no moisture conditions are present, in which case white compound should be used.

3. Braid:

600 *Volt Service.*

A closely woven braid approximately .045 thick of asbestos yarn shall be applied over the felted insulation.

1500 *Volt Service.*

An asbestos braid shall be incorporated approximately in the center of the felted wall, for the purpose of increasing the mechanical strength of the insulation.

Over the finished insulating wall a closely woven braid of 20/2 cotton shall be applied to form a tough outer covering that will resist wear and serve to protect the felted asbestos during installation.

4. Finish:

The outer braid shall be saturated with a flameproof and moisture resisting compound. The color shall be black except where extreme heat and no moisture are encountered or where white is desirable for appearance. Other colors can be furnished for purpose of identification.

The compound used shall consist of suitable high grade ingredients and shall retain its initial qualities during the life of the cable. The compound shall develop no injurious chemical action within itself or with any other of the component parts of the completed cable. It shall be of such a character that it will not drip from the completed cable at any temperature up to 500° C.

5. Tests:

(*a*) *Dielectric*:

Tests for dielectric strength of insulation shall be made between conductor and metal foil wrapped over insulation for a length of about 5 feet. The test voltage applied shall be two and one-half times the rated working potential of the wire under test and shall be held for one minute without failure.

A section of material having black impregnated insulation shall be immersed in water (except ends) for one hour and shall then withstand a test voltage of two times the rated working potential of the wire under test, applied between conductor and water, for one minute without breakdown. White impregnated insulation shall not be subjected to water test.

(*b*) *Bending Test*:

A new section of finished cable shall be bent 360° around a mandrel 8 times the diameter of the finished cable, then straightened and bent 360° in the opposite direction around the same mandrel, after which it shall be straightened and the section which was bent wrapped with metal foil. A test voltage equal to that shown in Paragraph 5 shall then be held for one minute between conductor and foil without failure.

(*c*) *Flame Test*:

The wire (after seasoning) must not convey fire nor support combustion for more than one minute after five fifteen-seconds application of a standard test flame — the period between applications of test flame being 15 seconds.

The flame used is a blue flame (about 5 inches in height) obtained with a ½ inch Bunsen burner fed with ordinary illuminating gas at normal pressure. Previous to the test the burner and the gas supply lines are adjusted to give a flame of the character described above.

The sample is about 18 inches long and is rigidly suspended vertically, by means of a clamp attached to a ring stand, in a room from which all drafts of air are excluded.

The hot part of the "tip" of the test flame (i. e. the part over the blue cone in the flame) is applied nearly parallel to the suspended sample at a point about 3 or 4 inches above its lower end. The flame is applied to the sample for 15 seconds and then removed and after a 15 second interval (whether the flaming on the sample has ceased or not) the test flame is again applied at the same portion of the sample for 15 seconds and removed and the above operations repeated until the test flame has been applied at the same portion of the sample for five times.

During the test, as well as after the fifth application of the test flame, observation is made to determine whether or not the area of the sample supporting the flaming extends outside the area exposed to the heat of the test flame (the effect of the heat of the test flame is considered as extending an inch or so beyond the "tip" of the test flame.) Behavior and duration of flaming on the sample after the fifth application of the test flame are also noted.

After the cable has cooled for five minutes the section to which the flame was applied shall be bent as in 5-b, straightened and wrapped with metal foil. The insulation shall then withstand for one minute the test voltages given in Paragraph 5 applied between conductor and foil.

6. Inspection:

Testing and inspection shall be made at the place of manufacture unless otherwise noted on purchaser's order. The manufacturer shall afford the inspector representing the purchaser all reasonable facilities to enable him to satisfy himself that the material conforms to the requirements of these specifications.

Construction Specifications

Rockbestos 600 Volt Solid Conductor

Solid Copper Conductor — Felted Asbestos — Asbestos Braid

Table I

SOLID CONDUCTOR — 600 VOLT INSULATION							
Size A. W. G. (B. & S.) BARE	Bare Diam.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	O. D. Finished	Pounds per M ft.	Standard Shipping Length (Maximum in feet.)	
						Coils	Reels
0000	.460	60		.670	730		1500
000	.409	60		.620	590		1000
00	.365	60		.575	480		1000
0	.325	60		.535	390		1500
1	.289	35		.449	300		2000
2	.257	35		.418	245		2500
3	.229	35		.389	200		2500
4	.204	35		.364	165		1000
5	.182	35		.342	135		1000
6	.162	35		.322	110	500	1000
8	.128	35		.289	75	500	1000
10	.102	35		.262	55	500	1500
12	.081	30		.231	40	1000	2000
14	.064	30		.214	30	1000	2500

Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

TABLE I

This wire has the greatest number of uses of any wire in the line. It has a large sale to industrial plants and central stations for maintenance and permanent installations, to manufacturers for inclusion in their products, and to many other classes of users for various applications involving high temperatures.

While this all asbestos insulated wire has been sold for many conduit installations, the general recommendation should be the combination varnished cambric and asbestos insulation shown in tables C and E.

If the service conditions surrounding an application are continuously applied high temperatures, an all asbestos insulated wire would be suitable. But if there is a possibility of slight moisture due to condensation or other causes the Table C type of material should be used. If considerable moisture is likely to be encountered, the Table E material should be invariably recommended.

CENTRAL STATIONS AND INDUSTRIAL PLANTS

Boiler Room Lighting Circuits

Ceiling or flood lights
Wall bracket lights
Water column lights

Boiler Room Control Circuits

Auxiliary equipment, such as
Oil circuit breakers to control panel
Indicating lamp leads to control panel
Current transformer leads to control panel
Boiler control to boiler control panel
Damper control drive to control panel
Limit switch connections for contractors to motors, etc.
Start and stop push button connections to contractors, etc.

TABLE I continued

Rheostat Wiring and Connections
Switchboard Wiring (back of panel) where fire hazard exists

IRON AND STEEL INDUSTRY

Rheostat Wiring
Lighting Circuits
Crane cab resistor wiring
Wiring around soaking pits
" " electric furnaces

MISCELLANEOUS

Electric Ranges and Hot Plates (see "Range Wire" bulletin)
Elevator control panels
etc.

Table II

This is generally used for much the same application as Table I material where large size or individual preference requires a stranded conductor.

The second and third paragraphs under Table I on the preceeding page explain when it is desirable to make the alternate recommendation of varnished cambric and asbestos insulated cable which also applies to this stranded construction.

BOILER ROOMS

Primary Motor Leads

Induced and forced draft fan motors
Motor operated steam valves
Electric hoist motors

Arc Welding Power Leads

IRON AND STEEL INDUSTRY

Motor Leads to Motors Operating Furnace Doors

Construction Specifications

Rockbestos 600 Volt Stranded Conductor

Stranded Copper Conductor — Felted Asbestos — Asbestos Braid

Table II

STRANDED CONDUCTOR — 600 VOLT SERVICE

Size	Stranding BARE	Bare Diam.	Wall Thickness Mils		O. D. Finished	Pounds per M ft.	Standard Shipping Lengths (Maximum in ft.)	
							Coils	Reels
1,000,000 C.M.	61/.1280	1.152	120	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	1.482	3400		500
900,000	61/.1215	1.093	120		1.423	3075		500
800,000	61/.1145	1.031	120		1.361	2750		600
750,000	61/.1109	.998	120		1.328	2590		600
700,000	61/.1071	.964	120		1.294	2425		750
600,000	61/.0992	.892	120		1.222	2105		750
500,000	37/.1162	.815	120		1.145	1775		750
450,000	37/.1103	.773	120		1.103	1610		1000
400,000	37/.1039	.729	120		1.059	1450		1000
350,000	37/.0973	.681	120		1.011	1280		1000
300,000	37/.090	.630	120		.960	1115		1000
250,000	37/.0822	.575	120		.905	950		1000
A.W.G.								
0000	19/.1055	.530	90		.800	785		1000
000	19/.0940	.470	90		.740	640		1500
00	19/.0837	.420	90		.690	520		1500
0	19/.0745	.374	90		.644	430		1500
1	19/.0664	.332	90		.602	350		1000
2	7/.0974	.295	90		.565	290		1000
3	7/.0867	.260	60		.470	225		1500
4	7/.0772	.234	60		.444	185		2000
5	7/.0688	.209	60		.419	150		2500
6	7/.0612	.185	60		.395	125	500	2500
8	7/.0486	.145	35		.305	80	500	1000
10	7/.0385	.116	35		.276	55	500	1000
12	7/.0305	.092	30		.242	40	1000	2000
14	7/.0242	.073	30		.223	30	1000	2000

Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

Construction Specifications

Rockbestos 1500 Volt Stranded Conductor

Table III

STRANDED CONDUCTOR — 1500 VOLT SERVICE								
Size	Stranding BARE	Bare Diam.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .030 FOR ALL SIZES	O. D. Finished	Pounds per M ft.	Standard Shipping Lengths (Maximum in ft.)	
							Coils	Reels
1,000,000 C.M.	61/.1280	1.152	.187		1.586	3500		400
900,000	61/.1215	1 093	.187		1.527	3175		400
800,000	61/.1145	1.031	.187		1.465	2840		500
750,000	61/.1109	.998	.187		1.432	2680		500
700,000	61/.1071	.964	.187		1.398	2515		500
600,000	61/.0992	.892	.187		1.326	2185		600
500,000	37/.1162	.815	.187		1.249	1850		750
450,000	37/.1103	.773	.187		1.207	1685		750
400,000	37/.1039	.729	.187		1.163	1515		750
350,000	37/.0973	.681	.187		1.115	1350		750
300,000	37/.090	.630	.187		1.064	1180		1000
250,000	37/.0822	.575	.187		1.009	1010		1000
A.W.G.								
0000	19/.1055	.530	.187		.964	875		1000
000	19/.0940	.470	.187		.904	725		1000
00	19/.0837	.420	.187		.854	600		1000
0	19/.0745	.374	.187		.808	505		1000
1	19/.0664	.332	.187		.766	425		1000
2	7/.0974	.295	.187		.729	360		1500
3	7/.0867	.260	.157		.634	280		1500
4	7/.0772	.234	.157		.608	240		1000
5	7/.0688	.209	.157		.583	205		1000
6	7/.0612	.185	.157		.559	180		1000
8	7/.0486	.145	.157		.519	135		1500
10	7/.0385	.116	.157		.490	110		1500
12	7/.0305	.092	.157		.466	90		1500
14	7/.0242	.073	.157		.447	80		2000

Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

TABLE III

See Table V for remarks which apply here as well. This is the same material with a coarse stranded conductor.

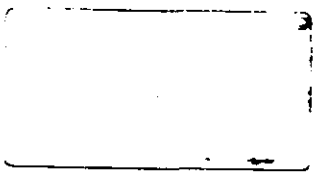


TABLE IV

Certain variations of the applications mentioned under Table I and II require a flexible stranded conductor. Motor leads on large motors are an example. By motor leads in this case is meant the leads extending from the coils inside the frame, out through bushings for a short distance ready for connections to line wires.

Asbestos insulated motor lead cables may be used on a motor for several reasons. They should be used if the location of the motor is in a high temperature area in order that there shall be no deterioration of the leads as would be the case if rubber insulated leads were used. Steel mill motors, motors on auxiliary equipment in boiler rooms, etc. come in under this classification.

The above treats on the desirability of using an asbestos insulated as against a rubber insulated motor lead. In general the recommendation for motor leads for all applications would be a lead insulated with a combination of varnished cambric and asbestos. This is shown in the "A.V.C. Cables" bulletin and in Table E of the "Switchboard Wires and Cables" bulletin.

A large motor may be engaged in such duty that it is heavily overloaded at intermittent periods. An elevator motor, for instance, or a mill motor on process work, draws a tremendous overload current at the start of its operation. This sometimes causes conductor heating. Continued recurrence of this heating vulcanizes rubber insulation so that it becomes brittle and cracks. To guard against this development an asbestos insulated cable should be used because this heating has no effect whatever on it and the insulation stays permanently flexible which is a distinct advantage.

Many central stations and industrial plants have used thousands of feet of similiar materal for motor lead application as they realize that it provides a permanent installation.

Insulated cable of this construction is used on subway cars. Where the cable attaches to a connection

point a lug is used, sweated to the cable and bolted to the connection.

The constant motion and vibration of cars frequently loosens the cable from the lugs. Sometimes a high resistance joint is set up, overheating takes place and arcing begins. An asbestos insulation will successfully confine fire to the point of origin so that adjacent inflammable material will not be set afire.

It is a common experience for a cable to break under load perhaps at the lug. An arc forms immediately and continues until the cable falls away or until the copper melts and increases the gap thus stopping the arc.

To be warranted in using asbestos insulated motor lead cables for these cars the traction companies must be assured that they will not transmit flame or fire and that they really will not burn themselves.

An interesting report entitled "Arc Flame Tests on Motor Lead Cables" is contained in the "test reports" section of this book and clearly shows the performance of asbestos insulated cable as compared with the rubber insulated type of cable.

Other uses:

Inside motor connections
Arc welding power leads
Headlight wiring where the train control system is not used. *

* Where the train control system is installed, it is customary to feed all circuits from one generator. For this reason every circuit on the locomotive should be wired with the same kind of insulated wire so that the dielectric strength of all parts of the wiring system will be the same. (See last paragraph under the page entitled Cab Cord.)

Our recommendation for train control system wiring is the varnished cambric and asbestos insulation shown in the "A.V.C. Cable" bulletin or Table E of the "Switchboard Wires and Cables" bulletin.

Construction Specifications

Rockbestos 600 Volt Flexible Conductor

Flexible Tinned Copper Conductor — Felted Asbestos — Asbestos Braid

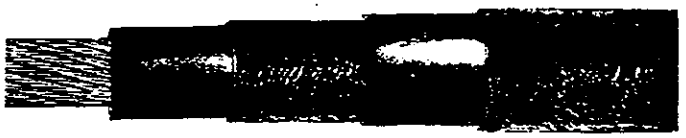
Table IV

FLEXIBLE STRANDING — 600 VOLT SERVICE								
Size	Stranding Tinned	Bare Diam.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .045 FOR ALL SIZES	O. D. Finished	Pounds per M ft.	Standard Shipping Length (Maximum in ft.)	
							Coils	Reels
500,000 C.M.	427–61x7(.0338)	.914	120		1.244	1850		750
450,000	427–61x7(.0319)	.863	120		1.193	1655		750
400,000	427–61x7(.0301)	.814	120		1.144	1500		750
350,000	427–61x7(.0284)	.768	120		1.098	1350		1000
300,000	427–61x7(.0269)	.725	120		1.055	1215		1000
250,000	259–37x7(.0320)	.671	120		1.001	1060		1000
A.W.G.								
0000	259–37x7(.0284)	.598	90		.868	830		1000
000	259–37x7(.0253)	.532	90		.802	675		1000
00	259–37x7(.0226)	.474	90		.744	550		1500
0	259–37x7(.0201)	.422	90		.692	460		1500
1	133–19x7(.0253)	.380	90		.650	380		1500
2	133–19x7(.0226)	.339	90		.609	310		1000
3	133–19x7(.0201)	.302	60		.512	240		1500
4	133–19x7(.0179)	.269	60		.479	200		1500
5	49– 7x7(.0253)	.228	60		.438	160		2000
6	49– 7x7(.0226)	.203	60		.413	130	500	2500
8	49– 7x7(.0179)	.161	35		.321	85	500	1000
10	37/.01689	.118	35		.278	60	500	1000
12	37/.01339	.094	30		.244	41	1000	2000
14	37/.0106	.074	30		.224	32	1000	2000

Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

Construction Specifications

Rockbestos 1500 Volt Flexible Conductor



Flexible Tinned Copper Conductor | Felted Asbestos | Asbestos Braid | Felted Asbestos | Flameproof Cotton Braid

Table V

FLEXIBLE STRANDING — 1500 VOLT SERVICE								
Size	Stranding Tinned	Bare Diam.	Wall Thickness Mils	THICKNESS OF OUTER BRAID .030 FOR ALL SIZES	O. D. Finished	Pounds per M ft.	Standard Shipping Length (Maximum in ft.)	
							Coils	Reels
500,000C.M.	427–61x7(.0338)	.914	187		1.348	1930		600
450,000	427–61x7(.0319)	.863	187		1.297	1735		750
400,000	427–61x7(.0301)	.814	187		1.248	1575		750
350,000	427–61x7(.0284)	.768	187		1.202	1425		750
300,000	427–61x7(.0269)	.725	187		1.159	1285		750
250,000	259–37x7(.0320)	.671	187		1.105	1125		1000
A.W.G.								
0000	259–37x7(.0284)	.598	187		1.032	925		1000
000	259–37x7(.0253)	.532	187		.966	765		1000
00	259–37x7(.0226)	.474	187		.908	630		1000
0	259–37x7(.0201)	.422	187		.856	540		1000
1	133–19x7(.0253)	.380	187		.814	455		1000
2	133–19x7(.0226)	.339	187		.773	390		1000
3	133–19x7(.0201)	.302	157		.676	300		1500
4	133–19x7(.0179)	.269	157		.643	255		1500
5	49– 7x7(.0253)	.228	157		.602	210		1000
6	49– 7x7(.0226)	.203	157		.577	185		1000
8	49– 7x7(.0179)	.161	157		.535	140		1500
10	37/.01689	.118	157		.492	110		1500
12	37/.01339	.094	157		.468	90		1500
14	37/.0106	.074	157		.448	80		2000

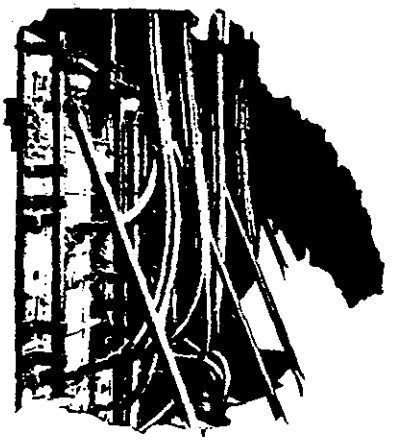
Finished O. D. given above is nominal. A tolerance of plus or minus 5% is necessary on account of variations in process of manufacture.

TABLE V

This is a special 1500 volt service asbestos insulated cable designed for electric locomotive application. In such an application it is constantly subject to abrasion so it is equipped with a tough cotton braid which is finished with flameproof compound.

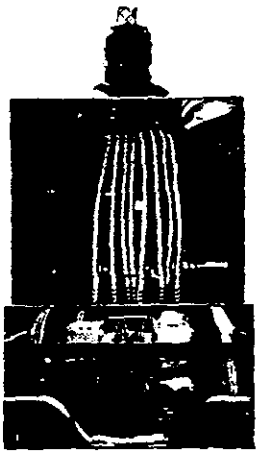
This construction of insulation, however, is being superseded by that shown in Table E, Switchboard Wires and Cables bulletin, which is now made for service up to 7500 volts by using from 3 to 18 layers of cambric tape, sandwiched between the walls of felted asbestos.

Where and how Rockbestos
wires and cables are being used



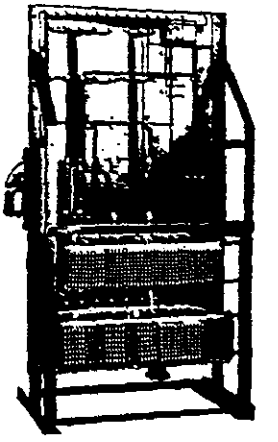
CONTROL BOARD CENTRAL STATION

STEEL MILL

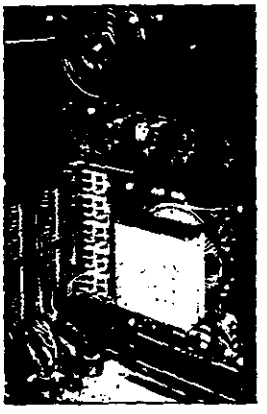


ELECTRIC LOCOMOTIVE

BOILER ROOM



ELEVATOR CONTROLLER



RESISTANCE GRID

FIELD RHEOSTAT

HEAVY DUTY RESISTOR

RBB 00447

NEW YORK PITTSBURGH CHICAGO

ROCKBESTOS PRODUCTS
CORPORATION

MANUFACTURERS OF
ASBESTOS COVERED WIRES AND CABLES

NICOLL AND CANNER STREETS
NEW HAVEN, CONN.

ROCKBESTOS

INDUSTRIAL WIRES AND CABLES

There are certain quite well established prejudices existing against any kind of a wire covered or insulated only with asbestos. Probably the major part of this prejudice was caused by the discouraging experiences of engineers with the earlier types of asbestos covered wire typified by "double braid asbestos covered" wire. This statement applies more particularly to wires and cables used for industrial and central station applications. Wires of this variety could be used in conduit but the slightest bit of moisture in the conduit caused grounds resulting in failure.

The insulation value of this type of asbestos covering is principally the space factor. There is no resistance to moisture because the braid is open and because the individual yarns cannot be impregnated.

For this reason we have stressed the fact in our advertising, sales literature, direct mail and sales letters that our material is "asbestos insulated" as opposed to "covered" although the word "covered" still remains a part of our original slogan.

[redacted] hygroscopic characteristic of asbestos fiber [redacted] generally known among engineers but the advances that have been made during the past few years in the production of wires and cables insulated with asbestos and so impregnated as to resist moisture are not generally known. ROCKBESTOS trade paper advertising, direct mail and general sales work aims to acquaint engineers the country over with these advances as they are represented in ROCKBESTOS wire products.

BULLETINS

Following this section is a complete set of bulletins. Our experience has taught us that individual bulletins are much more efficient and less confusing in furnishing information.

This is particularly true with our business because in many industries only one wire of our line can be used. Consequently when answering inquiries from such a field of prospects a single bulletin is sent which fully covers the case but which does not contain irrelevant information to detract attention from the main question.

It will be noticed that there are some duplications between bulletins. The previous paragraph explains this. An illustration is Table I in the "Switchboard Wires and Cables" bulletin and the first table in the "Range Wires" bulletin both of which show the same wire. The first named bulletin is generally sent to fuel burning central generating stations and the Table I wire has a large number of uses in such a place; boiler room lighting and control circuits, rheostat wiring, primary and secondary motor lead wiring and so on. A full range of sizes is shown in Table I.

The "Range Wire" bulletin shows the same thing but in the restricted range of sizes generally used by electric range manufacturers. All the information that is needed by these manufacturers is shown and none that is not.

USES OF ASBESTOS INSULATED WIRES AND CABLES

Opposite each table and illustration is a fly page listing a variety of uses for that particular type of material.