



WELCOME TO

ROCKBESTOS FAMILY DAY

SATURDAY, OCTOBER 9, 1982

TROUTMAN, NORTH CAROLINA

RBB 00718

**SC-ELEC-08140**



## THE ROCKBESTOS COMPANY

P.O. BOX 808, TROUTMAN, NORTH CAROLINA 28166

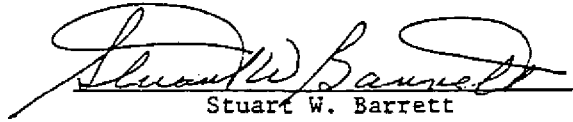
TELEPHONE (704) 528-9871

October 9, 1982

Welcome to the Troutman, North Carolina Plant of The Rockbestos Company. We are the newest addition to The Rockbestos Company and are very proud of our new facility.

This Family Day is a fine opportunity for the Rockbestos employees, their families, and invited guests to become better acquainted.

We are very pleased to host this Family Day. Ask any questions you may have, and have a safe and enjoyable afternoon.



Stuart W. Barrett  
Operations Manager

cah

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## INTRODUCTION

### ROCKBESTOS

The Rockbestos Company, a member of The Marmon Group, is a leading manufacturer of specialized electrical cables. Our plants produce instrumentation, control and power cables which are resistant to heat, fire, corrosion, radiation, or other adverse conditions.

Founded in New Haven, Connecticut in 1918, the Company has expanded from a two-story factory building of 15,000 square feet to its present multi-plant operation totaling over 590,000 square feet. Manufacturing facilities are located in New Haven and East Granby, Connecticut, as well as our newest plant in Troutman, North Carolina. Rockbestos has distribution facilities located in Avenel, New Jersey; Houston, Texas; and Petaluma, California; as well as branch sales offices throughout the country.

The 28 acre site in Troutman, North Carolina was purchased in 1980 when Rockbestos decided to expand their product line to include medium and high voltage power cable. Ground breaking for the 134,000 square foot facility was held in August, 1980, with the plant shipping its first order in May, 1982.

From its beginning, the Company has placed great emphasis on research and new product development. Many Rockbestos innovations in electrical insulation and jacketing materials have been used by industry and utilities to solve difficult operating problems. It has always been our objective to lead the wire and cable industry in the development and manufacture of superior products.

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## POWER CABLE DESIGN & PRODUCTION

The following is a brief overview of the operations necessary to manufacture Troutman's two basic product lines; 600 volt power cable and medium voltage power cable (5-35 KV):

### Coating and Stranding: Bare Conductors

The first necessary component in the production of a power cable is the conductor. At Troutman, we will normally use conductors made of stranded copper coated with a lead-tin alloy. We purchase various sizes of copper wire from outside vendors. The wire is then coated with the alloy, which gives it anti-corrosive properties and improved solderability.

After coating, the wire is concentrically stranded in the next operation. Stranded constructions will be 7, 19, 37, or 61 wires, in sizes ranging from #8 AWG to 1000 MCM (.143 - 1.12" O.D.). We prefer stranded copper conductors because they seem to have the ideal combination of flexibility, flex-life, and conductivity.

### Extrusion: Insulating the Conductor

The next step in the manufacturing process is to insulate the conductor. Up to three layers of various compounds will be extruded in this operation, producing an insulated single conductor.

For 600 volt cables, one or two layers of insulating compounds will be extruded over the conductor. These layers act to contain the current and transmit power efficiently. A separator tape over the conductor may be called for. This keeps the compound from falling down between the strands, making the insulation free stripping.

Due to the higher stresses involved, insulating medium voltage cables is a much more complicated process. The first two extruded layers of compound will be tightly bonded. The third layer, which must be free stripping, may be a paint/tape combination or an extruded compound.

The first layer will be a thin semi-conducting layer called the conductor shield. This semi-conductor acts to eliminate stress points on the outer strand layer, resulting in a uniform conductor. The next layer of compound, the insulation, is a non-conducting layer which contains current. The insulation will be a relatively thick layer of cross-linkable polyethylene or EPR, a rubber compound. The actual insulation thickness will depend on the voltage rating of the cable. A third semi-conducting layer of compound called the insulation shield is necessary for most medium voltage cables. This layer, when combined with a voltage stresses throughout the insulation, while eliminating the possibility of surface discharge. The metallic shield will be copper wires or tape, to be added in the following operation.

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It is desirable for the various layers of compound to be chemically bonded or cross-linked. This is done by a curing process called Continuous Vulcanization. During this C.V. process, a non-reversible chemical reaction takes place under intense heat and pressure. This bonding makes the cable very durable under adverse conditions.

#### Cabling and Protective Outer Coverings

After extrusion, the insulated singles will go to any one or several of the following operations:

1. The single conductor could go to final testing in preparation for shipment. Final testing is required prior to shipment for 100% of our finished cable.
2. Often, the singles will be cabled into a multiconductor construction, usually consisting of three conductors with the same number of ground wires. If the cable is to go on to receive a protective outer covering; fillers and a concentric tape are added to make the cable circular.
3. A protective outer sheath called interlock armor may be added to some cables. These interlocking strips of steel or aluminum provide physical protection that eliminates the need for conduit in end use.
4. An overall jacket will be added to many constructions. This extruded rubber or PVC jacket is resistant to flames, chemical, oil, moisture, and abrasive wear.

#### Quality Control and Testing

Quality Control is a vital part of our operation at Troutman. The cable we manufacture must meet various industry specifications, as well as customer and Rockbestos specifications. Quality Control at Troutman is divided into three areas:

1. Q. C. Inspection
2. Electrical Testing
3. Laboratory Testing

Each of these areas provide in-process and final testing to assure that we are producing cable that meets or exceeds industry requirements.

Q. C. Inspectors monitor wire and cable, dimensions and appearance from the time raw material is received, until the finished cable is shipped. A close check is kept on diameter, lay length, wall thickness, cosmetic appearance, and other physical attributes at each operation. It is the job of the Inspectors to assure that cable is within set tolerances, and to reject non-conforming products as early as possible in the manufacturing process.

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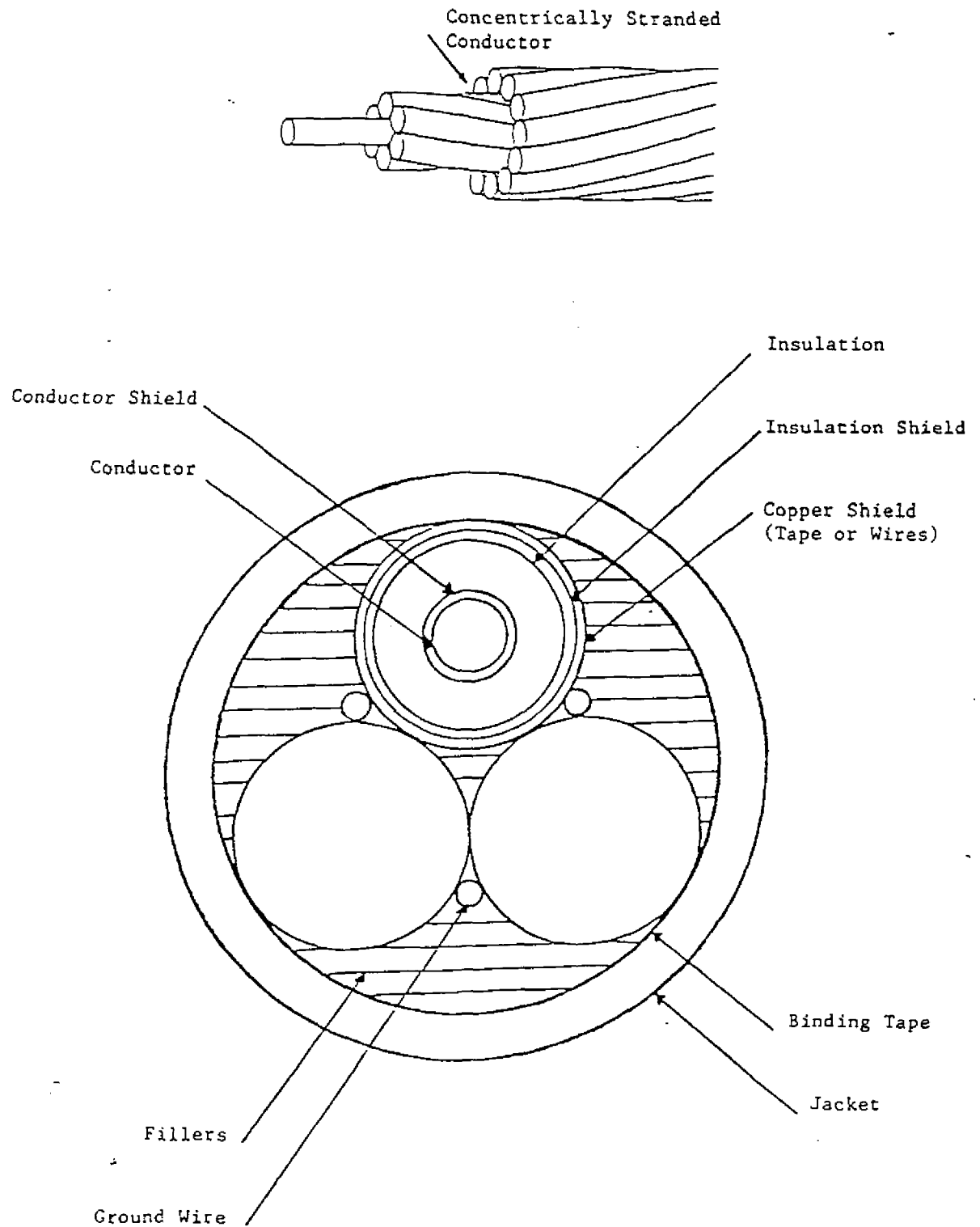
Electrical Test is responsible for full reel testing to assure that the cable will function in end use. Each reel of cable produced at this plant is electrically tested just before shipping, and often in process tests will be made on cable components. Common tests performed include A.C. and D.C. dielectric, insulation and conductor resistance, and partial discharge (corona) tests. The electrical test area consists of A.C. and D.C. dry test cages, two test tanks for submersion testing, and a shielded room used for partial discharge tests.

The major activity of the lab is to perform physical tests on samples of in-process or completed wire and cable. To get representative data on production runs, the lab tests samples of specified length at pre-determined intervals on each run. The lab also tests raw material according to Rockbestos purchasing specifications, as well as conducting experimental projects and analyzing competitive samples.

With the combination of our lab testing in-process and finished cable samples, electrical test conducting full reel tests, and Q. C. Inspectors monitoring production, we have a system that maintains a close check on cable quality and performance throughout the manufacturing cycle.

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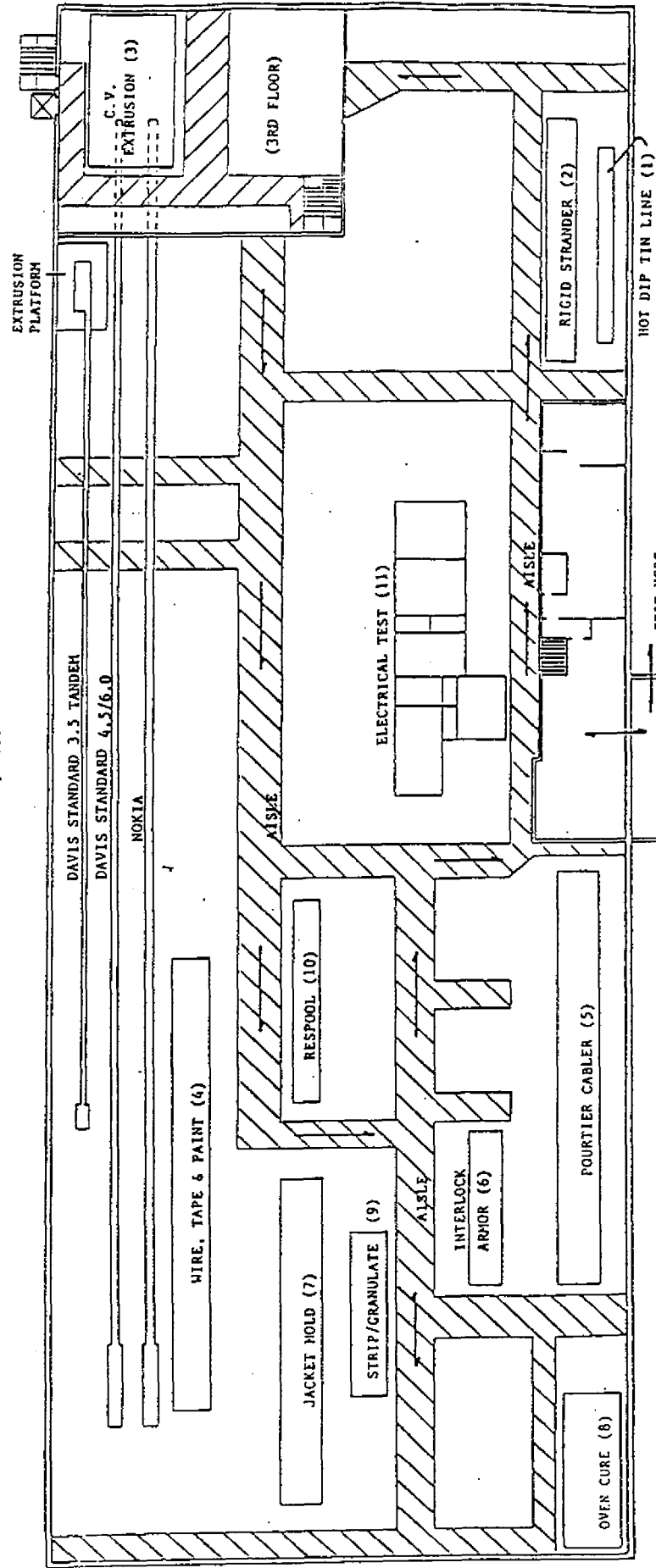
Typical Three Conductor Power Cable (Medium Voltage)



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THE ROCKBESTOS CO.

TROUTHMAN, N. C.



PLEASE FOLLOW ARROWS AND STAY  
IN MARKED AISLES

GENERAL OFFICES

ENTER HERE

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