TYPES 001 AND 012 LEAD GLASS TUBING

GENERAL ELECTRIC COMPANY
LAMP COMPONENTS DIVISION
PRODUCT DATA SHEET 7610-b
OCTOBER, 1980
NEW

DESCRIPTION

Types 001 and 012 are glasses with significant additions of lead oxide. As the lead oxide content is increased, electrical resistivity, density, refractive index and x-ray absorption are also increased.

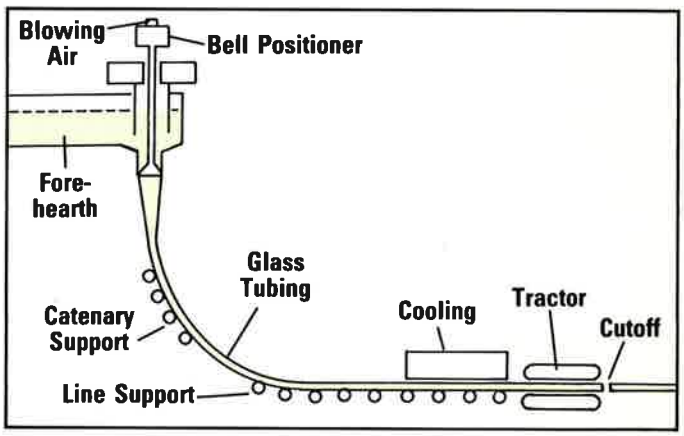
The fluxing action of the lead oxide also tends to lower the softening point of the glass below that of the soda lime glasses, making these glasses very workable.

Lead glasses are moderately priced, have good resistance to weathering, and low resistance to thermal shock.

METHODS OF MANUFACTURE

General Electric Company produces tubing by both of the recognized processes of manufacture, the Modified Down Draw Process (MDD) and the Danner Process. Having both of these methods at our disposal provides a number of potential benefits for GE glass tubing users. Orders will be filled using the process that best suits the requirements for tube diameter, wall thickness tolerances, end quality, quantity and cost.

MDD Process (Modified Down Draw)



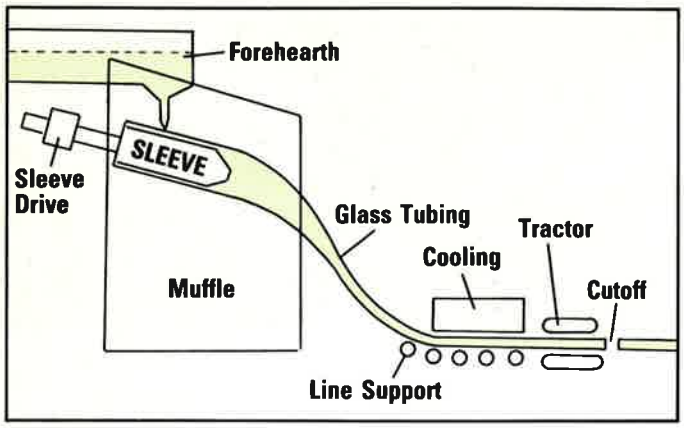
The MDD process involves "flowing" molten glass through an annular orifice in the bottom of a bowl and blowing air through the interior of the resulting tubing. Glass temperature, drawing speed and the force of the air are all tightly controlled to produce a continuous length of tubing to precise diameters and wall sections.

This process is most suited for smaller diameter tubing made to meet close tolerance requirements, which includes several sizes of lamp and exhaust tubing.

The MDD method provides superior dimensional quality resulting in higher customer production efficiencies.

9BCD, 10E (00-90) 100/2M

Danner Process



In the Danner Process, glass tubing is made by "flowing" a continuous stream of molten glass of a precise viscosity onto the surface of a downwardly sloping, rotating hollow mandrel (sleeve) where it levels or "marvels" to form a thick cylinder of molten glass. Air is blown through the center of the sleeve to maintain the hollow interior of the tubing. The combination of glass quantity, glass temperature, speed and air determine the size of the tubing.

AVAILABLE SIZES

Tubing diameters are available in a wide range of standard sizes, from .085" to 3.50". Wall thicknesses are held to tolerances between ± .002" and ± .010" depending on size, glass type and forming method used.

TECHNICAL ASSISTANCE

For application engineering assistance on these two products, contact:

General Electric Company
Lamp Glass and Components Dept.
Marketing Section
24400 Highland Road
Cleveland, Ohio 44143
Phone: (216) 266-3468

Caution: Fabrication of Lead-Containing Glasses

On March 1, 1979, an OSHA standard regulation, "Occupational Exposure to Lead", went into effect. This rule, and appendices to it published in October of 1979 contain stringent requirements for compliance with very low exposure levels, specified air sampling, blood-analysis, and medical programs, respiratory protection, engineering and work practice controls, employee notification of exposures and employee education.

There is evidence that the heating of sufficient quantities of any lead glass to working temperatures (regardless of manufacturer) may result in the release of some lead fumes into the working environment in concentrations subject to one or more of the requirements briefly outlined above. You should avail yourself of the final rule and appendices available from your local OSHA office to determine if any of these requirements would be applicable to your process.

ORDERING

Domestic

Types 001 and 012 Long Lengths

General Electric Company
Bridgeville Glass Plant
Mayer Street
Bridgeville, Penna. 15017
Phone: (412) 221-9100

Type 012 Cut Lengths

General Electric Company
Logan Glass Plant
P.O. Box 699
Logan, Ohio 43138
Phone: (614) 385-2114

International

Headquarters

General Electric Company
International Sales
21800 Tungsten Road
Cleveland, OH 44117
Phone: (216) 266-3295
Telex: 985569 (GECOLCS EUCD)

Canada

Canadian General Electric Co., Ltd.
Components Sales
165 Dufferin Street
Toronto M6K1Y9, Canada
Phone: (416) 537-4481 Loc. 208

England

International General Electric Co.
of New York
Lamp Components Sales Operation
The Old Hall, Langham, Oakham
Leicestershire LE15 7JE, England
Phone: 0572-3960
Telex: 34362 (GELCOS)

Japan

Soei Tsusho Company, Ltd.
Kagoshima Bank Bldg.
7, Azuchi-machi 3-chome, Higashi-ku
Osaka, Japan
Phone: 262-3358

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