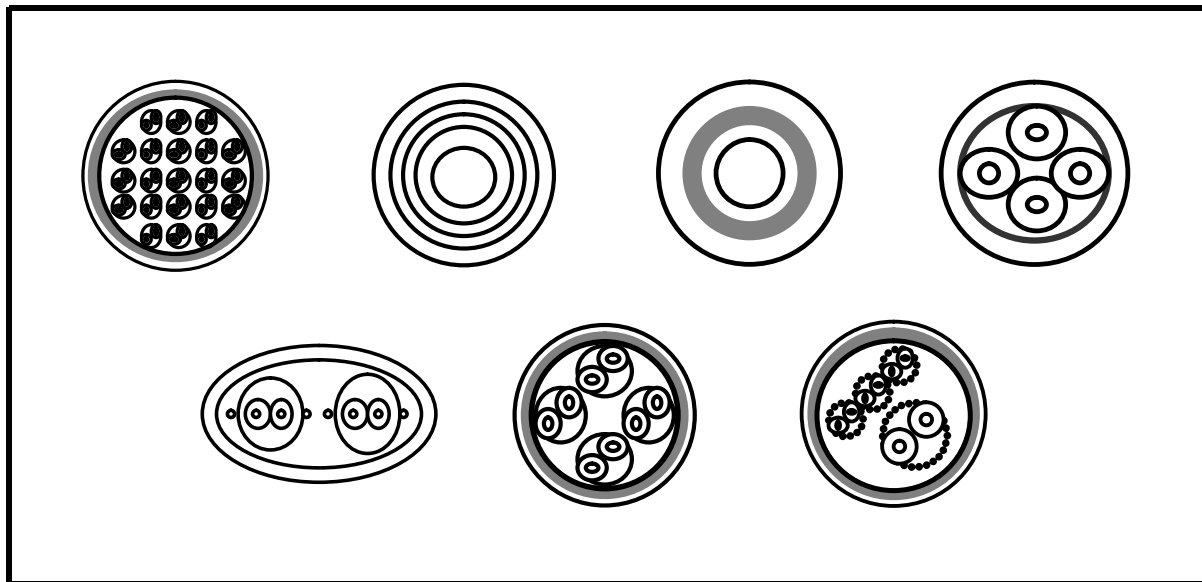


Low Voltage Wires and Cables: New Applications for Thermoplastics

Chapter 1 of 3: A Global Mini Database of Constructions



December 2009

Robert Eller Associates LLC
CONSULTANTS TO THE PLASTICS AND RUBBER INDUSTRIES

696 Trecrest Drive, Akron, Ohio 44333 USA
Phone: 330-670-9566 // Fax: 330-670-9844
Web Site: <http://www.robertellerassoc.com>
E-mail: bobeller@robertellerassoc.com

USA • EUROPE • JAPAN • CHINA • INDIA

ANALYSIS OUTLINE: Chapter 1

Chapter Title




- | | | |
|---|--|------------------------------|
| 1 | Introduction | |
| 2 | Overview | |
| 3 | Wire and Cable Market Sector Review | |
| | A. Summary | H. Flat Cables |
| | B. Audio Cables | I. Hookup Wires |
| | C. AC Power Cords | J. Industrial Network Cables |
| | D. Computer Cables | K. Multiconductor Cables |
| | E. Coaxial and Triaxial Cables | L. Patch Cables and Cords |
| | F. Coiled Cords and Cables | M. Fiber Optic Cable |
| | G. DC Power Cords | N. Automotive |
| 4 | Wire and Cable Database, and Database Sort by Temperature and Voltage Rating | |
| 5 | Industrial Standards and Certification Agencies | |

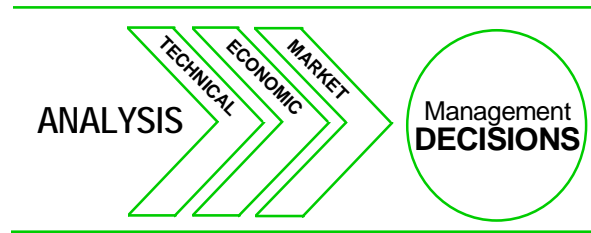
ANALYSIS OBJECTIVES

The Chapter 1 database of constructions . . .

- Identifies common cable constructions used in low voltage electrical/electronic applications
- Identifies low voltage cable sectors and applications using thermoplastics
- Provides a graphic depiction of the cross-section
- Identifies the typical materials of construction for the insulation, jacket, and sheathing
- Identifies specifications and regulatory requirements for each cable

DATABASE EXAMPLE

WIRE/CABLE COMMON NAME	APPLICATION	CROSS-SECTION	TYPICAL CONSTRUCTION			SPECIFICATION/ REGULATORY REQUIREMENTS
			INSULATION	JACKET	SHIELD	
UL 20855 Halogen-free Digital Video Interface (DVI) Cable	Digital video interface between a PC and VGA monitor	Multiple shielded twisted pairs cores (4-7) with a braid shield 	Foamed PE/FRPE	FRPE	-Tinned copper braid -Aluminum-Mylar	-UL 20855, DDWG Rev 1.0, IEC 60754-2 -Rated temp.: 80°C -Rated voltage: 30 V -Vertical flame test: UL VW-1 & CSA FT1
UL 21088 Halogen-free IEEE 1394 High Speed Serial Interface	-Plug-and-play technology -Windows operating system support -Standard feature in new chipsets -Connecting consumer electronic A/V device	2 shielded pairs with 2 cores (optional) with aluminum-Mylar shield with optional spiral or braid shield 			-Tinned copper spiral or braid shield -Aluminum-Mylar	-UL 21088, IEEE 1394-1995 & P1394a, IEC 60754-2 -Rated temp.: 80°C -Rated voltage: 30 V -Vertical flame test: UL VW-1 & CSA FT1
UL 21099 Halogen-free Serial ATA (SATA) High Speed Cable	PC storage device (hard disk, CD, CD-RW, DVD, DVD-RW drives, Storage Area Network (SAN)		Foamed PE/FRPE	FRPE	-Aluminum-Mylar	-UL 21099, UL 758, UL 1581, Serial ATA, IEC 60754-2 -Rated temp.: 80°C -Rated voltage: 30 V -Vertical flame test: UL VW-1 & CSA FT1



Low Voltage Wires and Cables: New Applications for Thermoplastics

Chapter 1: A Global Mini Database of Constructions

Robert Eller Associates LLC (REA) is pleased to present for your consideration this prospectus for a global mini database of constructions for low voltage wires and cables.

European regulations for RoHS and WEEE are impacting material choices for wire/cable in other global regions. Technologies for replacing PVC with halogen free, flame retardant (HFFR) compounds are moving beyond the first generation candidates. In addition, low smoke, halogen free (LSHF) compounds and cable constructions are also being commercialized, driven by fire safety pressures. The REA study is comprised of three chapters (each offered separately or in combination). Chapter 1 examines the constructions, applications, and regulatory/specification requirements used in the first generation of HFFR and LSHF compounds in the low voltage thermoplastic wire and cable market (including PVC). The Chapter 3 analysis profiles low voltage wire/cable manufacturers in each of the global regions and lists their product lines and material offerings (see profile contents on previous page). The producers' product lines, sectors served, as well as material offerings are summarized in databases for each region. The analysis will be helpful in establishing specific targets for those compounders, wire and cable producers, additive suppliers, and OEMs seeking to understand intermaterials competition and selecting amongst the wire and cable constructions.

REA QUALIFICATIONS

REA is a strategic, technology, and market consulting resource specializing in providing decision-quality analysis in support of management decision-making, investment, manufacturing technology, and acquisition support in the global plastics and rubber sectors.

REA associates have carried out pioneering technical, economic, and market multiclient and single-client studies in most major plastic and rubber sectors. We have completed multiclient analyses of automotive interior soft trim, new generation nonwovens in auto applications, and thermoplastic elastomers in N. America, Europe and China.

Recent strategy, market, technology, and acquisition analyses have included:

- Analysis of long-glass fiber reinforced PP compound markets and technologies
- Characterization of halogen free, flame retardant (HFFR) market structure in China
- Identifying technologies for HFFR wire and cable
- Several characterizations of the engineering thermoplastic compound market in China
- Analysis of TPE opportunities in building/construction glazing seals
- Growth prospects for TPEs in consumer and medical markets
- Numerous product positioning studies for new TPEs
- Analyses for several major acquisitions and mergers in the global plastics industry
- Automotive PP resins and compounds in the U.S., Europe and Asia
- Compounding strategy for TPE and resin suppliers
- Compounding, fabrication cost analyses, and supply chain management

WHO SHOULD SUBSCRIBE

This REA Chapter 1 mini database provides a visualization of the construction of the types of wire and cable competing in the low voltage sector and the materials used for the wire and cable types likely to be affected by HFFR legislation and mandates. It is intended to support management decisions and formulation of strategy for the participants listed below seeking or defending a position in the global low voltage wire and cable sectors:

- Incumbent polymer suppliers (resins, elastomers) targeting the low voltage wire and cable sectors
- Compounders
- Challenger resin and elastomer suppliers
- Additive suppliers
- Surface coating and adhesives suppliers
- OEM manufacturers using low voltage wire and cable

HOW TO SUBSCRIBE

An order form outlining costs, terms, and conditions for purchasing Chapter 1, Chapter 3, or a combination of both is enclosed with this prospectus. To subscribe, fill out the form, indicate your chapter selection, and return it to REA with the subscription payment and the email coordinates for the recipient.



Robert Eller Associates LLC

CONSULTANTS TO THE PLASTICS AND RUBBER INDUSTRIES

696 Treecrest Drive · Akron, OH 44333 USA

Phone: 330-670-9566

Fax: 330-670-9844

Website: <http://www.robertellerassoc.com>

E-mail: bobeller@robertellerassoc.com

USA · EUROPE · JAPAN · CHINA · INDIA

PURCHASE ORDER FORM AND SUBSCRIPTION AGREEMENT

Low Voltage Wires and Cables: New Applications for Thermoplastics

Chapter 1: A Global Mini Database of Constructions

Chapter 3: Profiles and Product Line Summary of Global Wire/Cable Manufacturers

Mail/Fax To: **Robert Eller Associates LLC**
696 Treecrest Dr., Akron, OH 44333
USA

Phone: 330-670-9566 · Fax:330-670-9844
Email: bobeller@robertellerassoc.com
Website: http://www.robertellerassoc.com

This signed order form constitutes an agreement to subscribe to Chapters 1, 3, or a combination of both, of this multiclient series. Pricing is as follows:

Chapter 1: A Global Mini Database of Constructions	\$1,500
Chapter 3: Profiles and Product Line Summary of Global Wire/Cable Manufacturers	\$2,000
Chapters 1 and 3:	\$3,000

To subscribe, please indicate purchase selection, payment option, and billing coordinates (if applicable) below and mail, fax, or e-mail the completed order form to our Akron office. Upon receipt of your order, you will receive a pdf version of your selection via email. This order form may also be downloaded from the REA website. Please contact REA for more information on database contents and scope.

Select One: **Chapter 1** **Chapter 3** **Chapters 1 and 3**

Invoice

Purchase Order # (if applicable)

Credit Card (will be processed on secure internet site):

Name as it appears on card

Credit card # and Type

Expiration

Security Code

Wire Transfer: Please call our Akron office for coordinates

Purchaser's Signature: _____ **Date:** _____

Shipping Coordinates:

Billing Coordinates:

Name/Title

Name/Title

Company/Division

Company/Division

Street Address

Street Address

City, State, Zip

City, State, Zip

Telephone

Telephone

E-mail

E-mail

TERMS AND CONDITIONS: The subscriber represents and agrees that it will hold in confidence the information and services furnished hereunder, and that it will use the information and services for its own proper use and will not make such information and services available to any other person, firm, or corporation. A subscriber may transmit information furnished under this agreement to a wholly-owned subsidiary.