COMMUNICATIONS CABLE & CONNECTIVITY ASSOCIATION

Findings from the Communications Cable & Connectivity Association (CCCA) Investigation into Suspected Non-compliant Data Cable Imported into the North American (NA) Market

IWCS Charlotte 2009

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CCCA Mission

To serve as the major resource for well-researched, fact-based information on the technologies and products of Structured Cabling media to support current and future needs of the Networking, IT, and communications industries. CCCA will also be proactive at codes and standards bodies and other trade, industry and governmental organizations in communicating and influencing policy and decisions affecting the quality, performance and societal needs of the structured cabling infrastructure.

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CCCA Membership

ADC
Accu-Tech
AlphaGary*
Anixter*
Belden
Berk-Tek
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CommScope*
Daikin America
DuPont
3M Dyneon
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OCC
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* ***Executive Committee***

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www.cccassoc.org

CCCA Program Objectives

- Independent quality assessment of lesser known brands of offshore UTP communications cables imported into the NA market
- Listed and verified as compliant to NA fire codes and industry standards for electrical performance.
- Share findings to improve QA procedures to prevent and/or uncover non - compliant cable in NA market.
- Provide education and create awareness on potential hazards of non compliant cable.

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Cable Samples - Round 1 – 1Q 2008

- 9 samples … 4pr. UTP … all manufactured in Asia. Purchased at random from NA distributors
- Brand names generally considered “unknown” in North America.
- All had mark of one or more independent testing organizations – listed to NFPA codes - verified to TIA standards.
- Mix of Category 5e and 6 - CMR (riser) and CMP (plenum)
- Tested by major independent testing organization

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Summary of Test Results – Round 1

- All 9 failed physical requirements (TIA 568-B and UL 444)
- 4 of the 9 failed to meet minimum electrical requirements (TIA 568-B)
- 4 out of 5 CMR (riser) cables failed the UL 1666 flame test. Many serious failures.
  - All 4 failing cables burned the entire length of the test chamber
  - The worst performing cable burned beyond the maximum length allowed in only 45 seconds and reached a temperature of 2000°F

Summary of Test Results – Round 1

- All 4 CMP (plenum) cables failed NFPA 262
  - All 4 samples showed peak smoke levels 3-4X higher than maximum allowable levels
  - Average smoke levels were >3X higher than maximum allowable levels
  - The worst performing cable had extreme failure. Flame spread travelled length of the chamber within 6 minutes

Conclusions – Round 1

- Some manufacturers may be evading QA controls by submitting properly designed cable to a listing agency. After approval, substitute lower cost materials to improve profit.
- CCCA materials testing confirms this.
- QA procedures circumvented at point of manufacture and need to be improved. Emphasis on field sampling of finished cable.
- Practice threatens cabling industry
- Extreme failures raise serious fire safety concerns.
- Failure to meet physical and electrical performance minimums can slow network speeds and may result in network failures, lost productivity.

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Cable Samples - Round 2 - 3Q 2009

- New set of 8 samples, all manufactured in Asia
- 5 of 8 cables from manufacturers who failed in 2008
- All samples from distribution (March-May ’09)
- All had quality mark of one or more independent testing organizations – listed to NFPA codes - verified to TIA electrical performance standards.
- Mix of Category 5e and 6, CMR (riser) and CMP (plenum)
- Cables analyzed for material composition
- Fire tests by major independent testing organization
- Electrical tests by UL audited test lab

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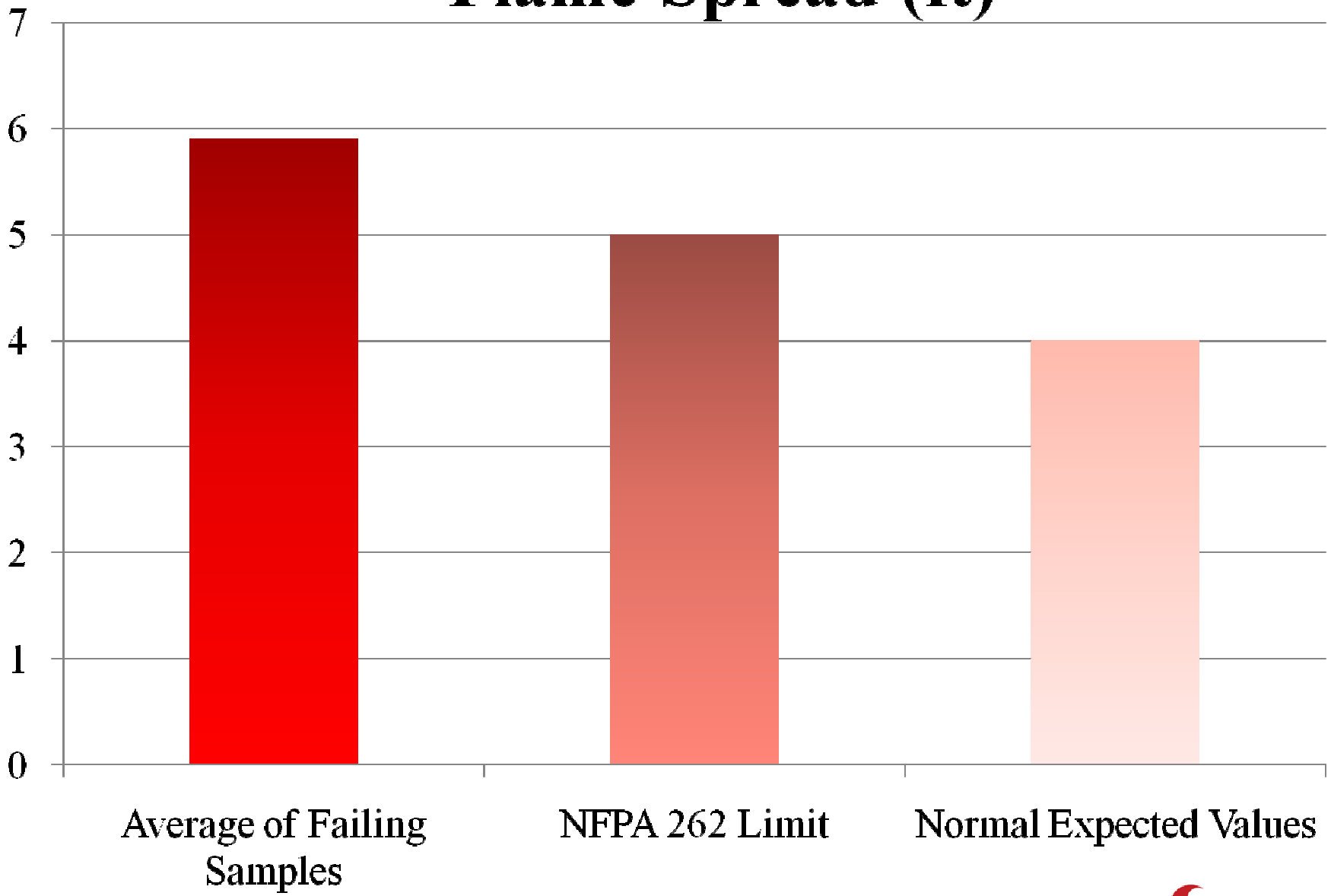
Summary of Test Results – Round 2

- 7 of 8 cable samples failed
- 4 of the 5 samples from manufacturers from 2008 failed fire safety.
  - 2 of the 4 CMR (riser) cables failed UL 1666 flame test. Failed cables burned entire length of test chamber, reaching temperatures of almost 1000°F.
  - All 4 plenum samples failed to meet maximum allowed smoke, up to 4X peak smoke.
- 2 of the 3 “new” manufacturers failed fire test

Flame Spread (ft)



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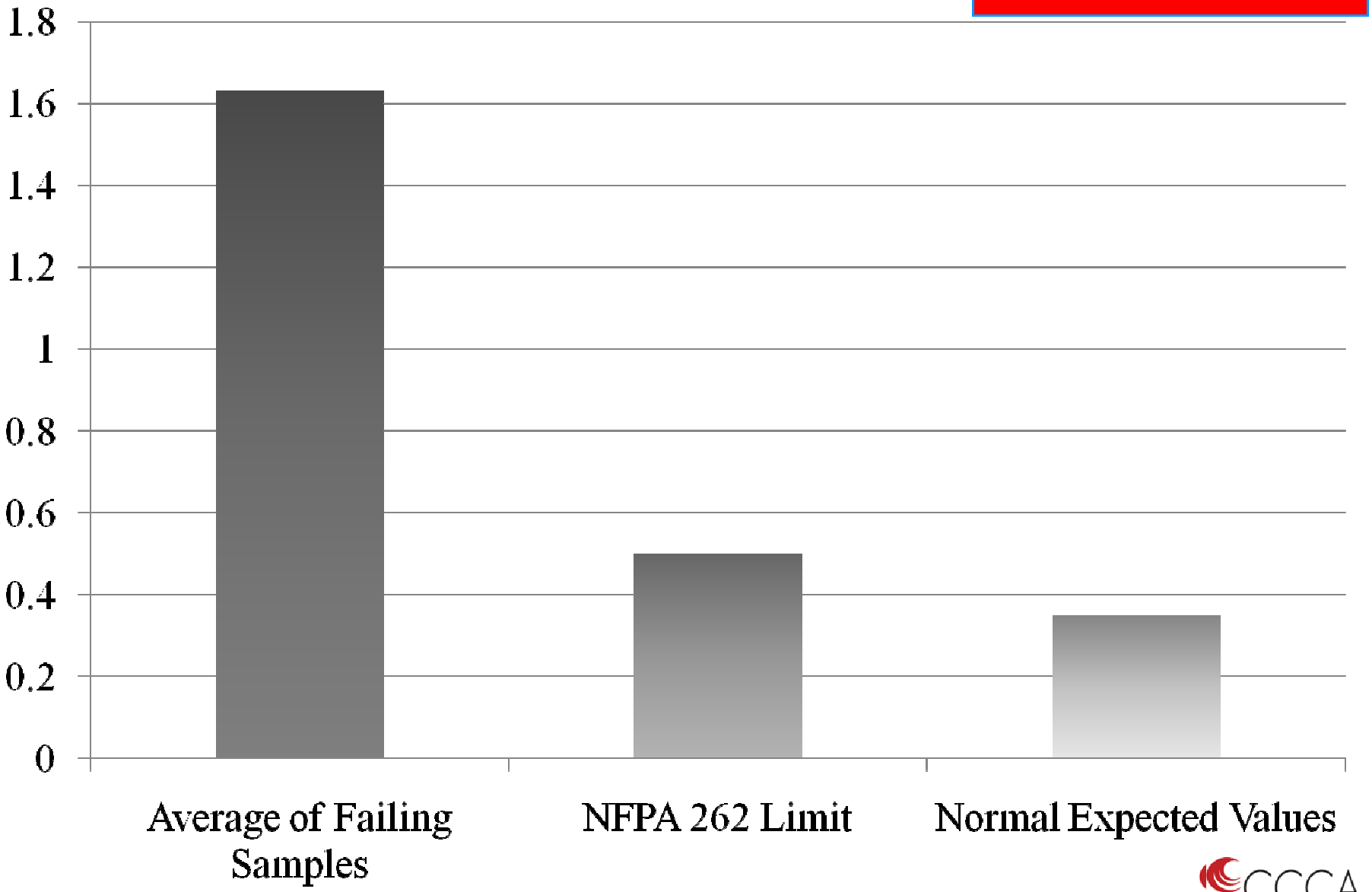
Peak Smoke

All Plenum Cables Failed Smoke



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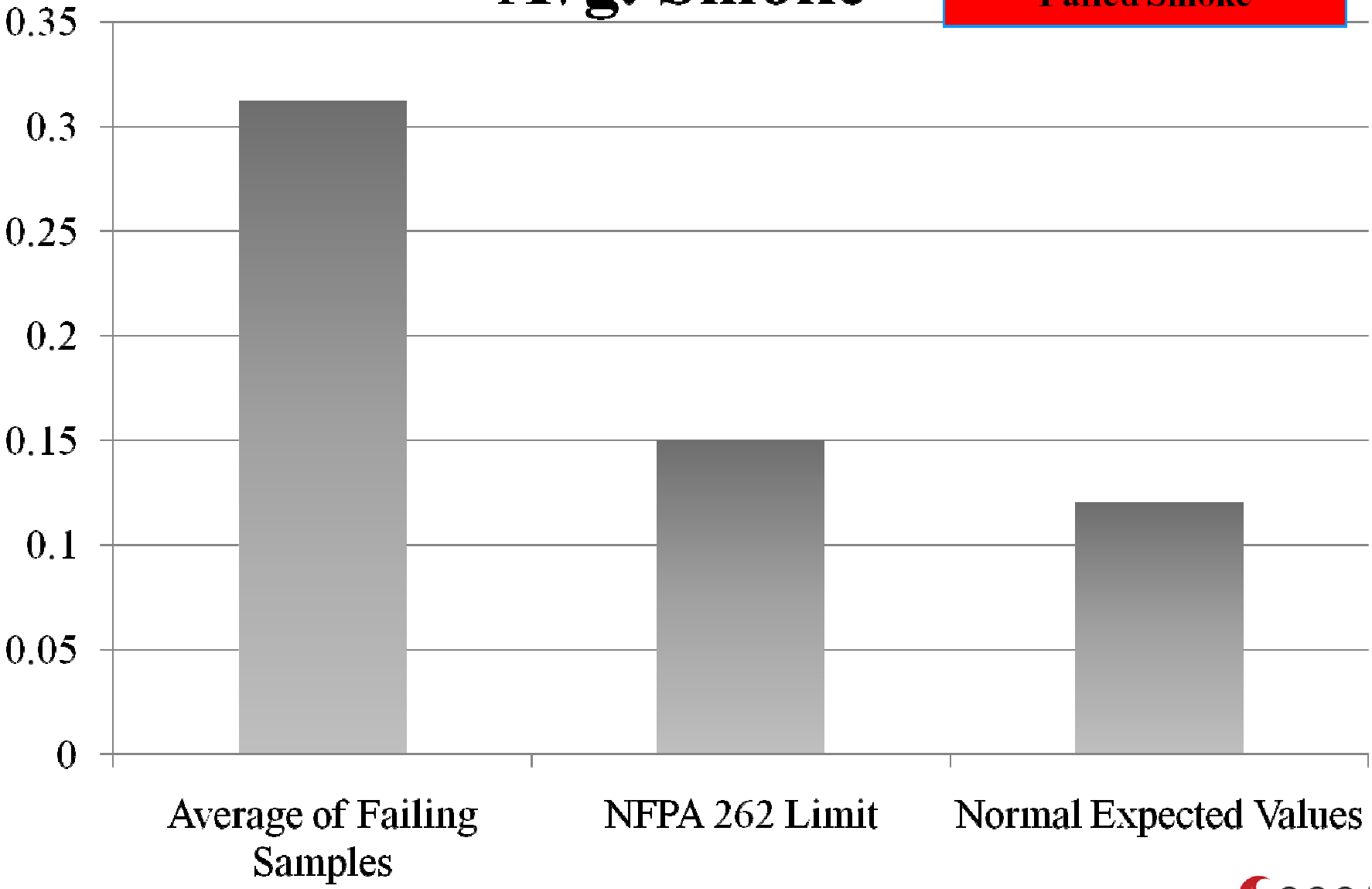
Avg. Smoke

All Plenum Cables Failed Smoke



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Conclusions

- Sub-standard, non-compliant cables still in inventory and being imported into the NA market.
- Some manufacturers still appear to be circumventing QA procedures at point of manufacture.
- Public safety remains a major unresolved concern.
- An effective QA process must include sampling of finished cable procured from field.

the standard in safety

UL Mark for Telecommunications Cable

Presented by: Steven Galan

Agenda

- Introduction
- Market Surveillance Program
- “Fingerprinting” of Extruded Product
- Holographic Labeling
- Next Steps

Introduction

- UL Reviews Follow-up Programs on a regular basis
  - FUS Data
  - Field Data
- Recently conducted reviews were very successful
  - Decorative Lighting
  - Flexible Cord
- Global Telecom Cable Program Review Conducted

Market Surveillance Program

- Permanent Part of FUS Program
- Elements will be put in place which will allow for a wider range of sample selection
- Screening of small lengths of cable prior to conducting LSFT

“Fingerprinting” of Extruded Products

- Covers Plenum, Riser and Vertical Tray
- Groupings of constructions to develop a test matrix

Holographic Labeling

- Introduced for all Telecom Cables Categories
- High Level of Security
- Replaces paper Labels

Next Steps

- Issue Bulletin to Industry
  - Detail Each Item
  - Time Line for Implementation
- Schedule and Hold Industry Forums
- Continue to Review Program

Thank You