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HELIAX® FXL: Ease of Installation Around the Globe

Andrew Field Services Group was asked by Globe Telecom to provide on-site assistance for a rooftop/ in-building installation of HELIAX® FXL cable at the One E-Com building near the Mall of Asia in Manila, Philippines. Despite the difference in construction from corrugated products, HELIAX FXL cable allowed for a high-quality yet easy and efficient installation.

Highlights:

- FXL-1873 site exceeded all electrical specifications for a typical Globe Telecom site
- HELIAX FXL's high crush strength provided heavy-duty protection for an unusually high number of tight bends
- EZfit connectors and FXL cable allowed for a high-quality yet easy and efficient installation with excellent VSWR measurements

Products Used:

- HELIAX FXL-1873 1-5/8" Aluminum cable 305 ft (93 m)
- FXL/CR 1873 PT Prep Tool
- EZfit® EZDF connectors (4)
- F4-PDMDM-3M jumpers (2)
- F4-PDMDMR-3M jumpers (2)

A long-time contractor for Globe Telecom began the installation work on this 11-story building on April 18, 2009. The project required two runs of HELIAX® FXL-1873 aluminum transmission line cable, each averaging 305 ft (93 m) in length; four 158 EZDF EZfit® connectors; two F4-PDMDM-3M jumpers; and two F4-PDMDMR-3M jumpers. The site operated in UMTS frequency range (1920-2170 MHz).

A Change in Scope and Time Constraints

The specs called for a rooftop installation with the cable installed on the outside of the equipment room located on the roof. However, the building owner directed the cable to be routed through the equipment room for aesthetic reasons. This change in scope required additional time and work, as the initial civil work in the equipment room included cable ladders that had been re-routed in unusual positions and did not take the minimum bend radius for any cable into consideration.

Additionally, access to the roof was limited, so the crew had to work quickly and efficiently. For all connector terminations, the crew used the FXL/CR 1873 PT tool to core the cable. The team reported that the connector instructions were easy to follow and that the termination process was easier and faster than other connectors.

HELIAX® FXL Installation Results: Lighter, Stronger, Lower Loss

The project was completed and tested on April 21, 2009 with a total installation time, including antenna installation, of 16 hours. The installation and connector preparation quality was proven by the excellent VSWR measurements on the cable: 1.09 VSWR (27.3 dB return loss), despite the fact that there were at minimum 17 bends of various radii in each transmission line and an average of 1.02 VSWR connector DTF (40.1 dB return loss) on the connectors.

Testing revealed that the FXL-1873 site exceeded all electrical specifications for a typical Globe Telecom site. Mechanically, the FXL-1873 is 12% lighter (.68kg/m) and has a 300% higher crush strength value (3.94 kg/mm) than the Andrew AL7 cable, which is currently being used by Globe Telecom (weight of .77 kg/m and crush strength of 1.30 kg/mm). The higher crush strength of the cable provided the heavy-duty protection necessary for this complex installation, which required an unusually high number of bends and additional handling.

The average cable loss for this transmission line system is 3.73 dB. The average measured value is 9.1% better than Andrew's calculated specification of 4.10 dB and 20.1% better than Andrew AL7 calculated transmission line system specification of 4.67 dB.

Andrew delivers the most complete telecommunication cabling solutions for today and the future.

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