

Fiber Reel-in-a-Box Cost Savings Analysis

The Superior Essex Tight Buffer Fiber Cable Reel-in-a-Box product line with QuickCount[®] is designed to provide the installer with an improved package and significant installation cost savings. This actual customer case study was commissioned to quantify the savings that this product can provide over fiber cable which is packaged on wooden reels.



Fiber Reel-in-a-Box: A Better Solution

Premises tight buffer fiber optic cable typically is packaged on wooden reels and is often cut to a length that matches the distance requirements of a particular project. While this approach is very efficient for high fiber count distribution cables where excess cable would likely end up as waste to the contractor, the “cut-to-length” wooden reel package is much less practical for small fiber count cable designs. These lesser count cable designs are commonly:

- Used frequently across many projects
- Used often within a single project
- Used for fiber-to-the-work area applications

For frequently-used fiber optic cable designs (i.e. 2, 4, 6, and 12 fiber cables), a Reel-in-a-Box package is a superior alternative to the wooden or plastic reel package. The Reel-in-a-Box design not only stacks and travels better, it also protects the fiber better than an open reel design. For projects that require multiple fiber cable runs, the Reel-in-a-Box design eliminates the recurring set-up time of reel trees, carts, and stands. It eliminates the need to store such equipment in vans/trucks, and allows for set-up to take place at the station, thereby avoiding hallway obstruction that often occurs with reel trees.

Only Superior Essex offers this Reel-in-a-Box package that includes the QuickCount feature as part of the product offering. QuickCount is a cable jacket marking system that shows the exact amount of cable footage remaining in the box. It provides the installer an immediate view of what is left in the package and helps eliminate waste on the project.

The following case study provides an analysis of the cost savings attributed to the Superior Essex Fiber Reel-in-a-Box product line from the experience of a technology installation company on an actual project.



Background

The data for this cost analysis/comparison was provided by Datatec Systems Inc., a system integration and installation firm who has performed thousands of structured cabling installations for its client base, including many Fortune 500 companies. Datatec's technicians are experienced in fiber optic cable installation and have used a variety of packages and brands of tight buffer cable over the past several years.

For this analysis, Datatec compared the total installation costs of using the Superior Essex Fiber Reel-in-a-Box product versus similar fiber optic cable on wood/plastic reels. The setting for the comparison was a largescale warehouse site that utilized tight buffer fiber cable for the majority of work area drops.

Datatec's client (for this case study) is a large corporation who has built several of these retail-warehouses over the past year and Datatec has been the cabling contractor on each. The installation site consisted of 22 stations spread throughout the facility and one central telecommunications closet. A 4-strand fiber optic cable runs to each of the 22 stations. Because each warehouse has a similar layout and size, Datatec was able to accurately estimate the total cost savings attributed to the Reel-in-a-Box package with QuickCount.

Cost and Time Comparison

Setup

Setup, for the purpose of this case study, includes all activities associated with preparing for cable pulls. For this part of the project, the advantage of the fiber Reel-in-a-Box was in time savings. Each box of cable is a self contained fiber dispensing device. Therefore no reel stands needed to be carried on site, setup, taken down, or carried off site.

The cardboard box also provides a convenient surface for labeling the station number in plain view of the installer. With standard reels, the station number must be written on the side of the reel, which requires the installer to move reels apart in order to identify each one. Each instance the installer needs to move reels to view the markings of a particular reel more time is lost.

Step	Time Savings Attributed to Reel-in-a-Box Package
Unloading/Loading Truck, Site setup	15 minutes savings (per site)
Labeling cable box with "station number"	2 minutes savings (per reel)
Setup of each reel	3 minutes savings (per reel)

Installation

Installation, for the purpose of this case study, includes all activities required to pull the fiber cable to the point of termination. The termination process itself was not part of this comparison.

The installation of the fiber Reel-in-a-Box proved to be easier and less wasteful than the standard fiber reel package. One advantage of the Reel-in-a-Box design is that the cardboard box prevents the fiber cable from traversing over the reel flange as it is pulled, which can result in cable tangling, "loops," or tightening on the pole. As a consequence of the tangle-free payout system, the Reel-in-a-Box design allows the fiber package to be left unattended while the technician pulls the fiber to the station. This benefit eliminates the need for an extra person to guard against cable tangling during the cable pulling process.



The freedom from requiring a person to guard against fiber tangles allows the cable to be pulled from the station side (instead of from the central telecommunications room). By pulling cable from the station side the length of cable pulled from the reel exactly matches each run length. In contrast, when cable is pulled from the central telecommunications room, all cables are normally pulled out to the length required for the longest run. The cables for the shorter runs then need to be pulled back and rewound onto the reel — a time consuming event.

The QuickCount feature provided other measurable savings during the installation phase. As a result of QuickCount, the technicians were able to quickly determine if a partial reel could be used for a particular cable run. Without QuickCount, the technicians were reliant

on accurate recording of cable footage already used. Even when footage markings were recorded on the reel, the technician would be required to subtract one or two numbers from a third number to estimate how much cable is remaining on the reel. In many instances, the uncertainty over how much cable truly remains will result in unnecessary scrap or wasted time in pulling a short cable.

Fiber Reel-in-a-Box Feature/Benefit	Time/Material Savings Attributed to Reel-in-a-Box Package
Reduced tangling/ability to leave reels unattended and pull from station side	15 minutes savings (per site)
QuickCount/Material Savings	50-65' of cable savings per reel (5% of total)



Cost Savings Summary

In calculating the cost of time savings, we have used a loaded labor cost of \$75 per hour. In this particular customer installation, 4-fiber, multimode OFNP cable was used and we have used a market price of \$300 per thousand feet for the cost calculations.

Using these cost equivalents for time savings and materials, we arrive at the following cost savings summary table:

Time/Material Savings	Savings
Per Station	
Labeling Cable – 2 min.	\$2.50
Setup of each reel – 3 min.	\$3.75
Reduced Tangling, Unattended box – 15 min.	\$18.75
QuickCount Feature – 25' cable (average savings per 500' run)	\$7.50
Total Savings per Station	\$32.50
Per Site	
Unloading/Loading Truck and Setup – 15 min.	\$18.75
Total Savings per Site (22 Stations)	\$733.75

As previously mentioned, the site used for this case study was a warehouse-type building. This building required approximately 11,000 feet (500' per drop) of 4-strand multimode fiber cable in total, which equates to \$3,300 in fiber cable material cost for the site (using the \$300/kft market price). For this real-world example, the total savings attributed to Superior Essex Reel-in-a-Box with QuickCount equated to 22% of the total fiber cable cost of the project.