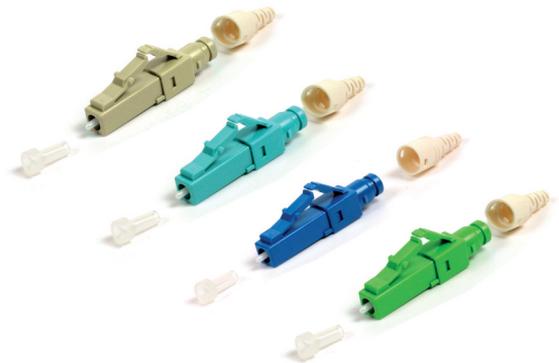


## Cabling Contractor Best Practice: Selecting the Best Fiber Termination for Bottom Line Profitability

While there are quite a few methods out there for terminating optical fiber connectivity in the field, selecting the best, most profitable option eventually comes down to two seemingly simple considerations:

- ▶▶ **Product Cost**
- ▶▶ **Labor Efficiency**



## (Hidden) Product Cost Considerations

To most cabling contractors, product cost is probably the easiest to evaluate. You get a quote for 100 connectors of one variety, 100 of another, and compare - and in many situations, that might be enough to get the job done. But thanks to any number of potential hidden costs, you might be leaving profits on the table. If you've been in this business for any length of time, you could probably write volumes on avoiding upfront bargains that end up costing you way more than you thought, but even the most grizzled veteran can benefit from asking themselves a few simple questions before cutting that fiber connector PO.

### 1. Can all of my techs terminate these fiber connectors properly?

- Does it make more financial sense to use a termination method that only one or two of your most experienced (and highest paid) techs can use reliably, or go with something that is user-friendly for all of your technicians?
- *For example: Epoxy polish connectors provide excellent performance, but the process is craft intensive and requires an experienced technician. Mechanical splice connectors may not quite meet the performance levels of epoxy polish, but they get can get very close, and there are specific solutions designed by fiber optic manufacturers with which even the most inexperienced technician can achieve consistently high-performance terminations.*

### 2. How reliable are the connectors and termination method?

- What is the typical failure rate on these connectors?
- *For example: When you factor in the additional labor and potential return trips to the jobsite to re-terminate bad connections, connectors that costs \$10 each and have a 10% failure rate will cost you much more than a \$12 connector with a 2% failure rate.*

### 3. What if some of the connectors do fail due to user error?

- Can you re-terminate them or do you have to throw away the connector and start all over?
- *For example: For most mechanical splice and all epoxy polish options, you can't re-terminate a failed connector. Even if it was installer error and not a product issue, you've got to throw the connector out and start over with a new one. Factoring some level of scrap/replacement cost into a bid is common practice, but selecting a connector system that supports re-termination (such as Siemon's LightBow™) will allow you to reduce your bid's scrap allowance.*

### 4. Do I have all the tools I need to terminate these connectors?

- Do I have enough tools to cover my techs?
- *For example: Having 2 sets of tools for 6 techs might cost you more in labor inefficiency than it saves in tool costs*

### 5. Do I need to factor new tools into my cost?

- What do they cost and how long will they last?
- *For example: A \$100 tool that you need to replace after 1000 connections will cost you way more than \$1000 tool that gives you 50,000 terminations before replacement*

## Labor Efficiency and Your Bottom Line

Once you've got a handle on the basic product costs and considered potential hidden costs, you face the more challenging piece of bid development – labor estimates. As you know, most major regional markets are at the saturation point in terms of installation companies vying for projects, and that makes every bid competitive. More than any other factor, labor represents an opportunity for you to tighten your bid and win the job. But, it also represents the easiest way to underestimate your costs and cut deeply into your profits – especially as projects grow beyond their original scope of work. The key to balancing your costs with a winning bid is driving labor efficiencies that give you the breathing room to profitably bid lower on labor.

In the simplest terms: If you can do the job faster than your competitor, you have a labor/time cushion that you can use to lower your labor bid and win the job – and do it without losing money.

When applied to fiber terminations in the field, getting it done faster is all about termination speed. In the example below, let's look at a sample 1000-drop OM4 Multimode LC fiber connector job. To simplify things, we're just looking at the terminations, not pulling cable or testing – just field terminating the LC connectors. Clearly, this is a very simplified look at just one aspect of a project but for the most part, prepping pathways, pulling cable, testing, etc. will be similar regardless of the field termination method you use. Focusing on terminations helps highlight how the termination time saved per connector can add up to significantly better profitability for you. Let's start with actual termination times.

Connector A can be terminated in 30 seconds, connector B in 1 minute, connector C in 2 minutes, and connector D in 4 minutes (This roughly represents the typical termination times for some of the most popular field termination methods for fiber: Mechanical splice, fusion splice, and epoxy polish.)

	Connector A	Connector B	Connector C	Connector D
Actual termination time per connector	30 sec.	60 sec.	120 sec.	240 sec.

Now when it comes time to calculate a bid, you're not going to base your labor estimate on the exact termination time – that would leave no margin for error and would be totally impractical in the real world.

So let's say you add 2 minutes to the actual termination time for each connector to calculate your bid estimate (as you can see in the table below). While you're estimating a lower labor cost on the bid for connector A than for B, C, or D, you are in fact giving yourself more room between your actual termination time and your bid estimate. For connector A, your bid estimate is 5X higher than your actual time. Connector B cuts it to 3X, and connector C comes in at just 2X. And at the tail end, connector D only leaves you a 33% cushion. That extra wiggle room can have a real impact on your profitability.

	Connector A	Connector B	Connector C	Connector D
Actual termination time per connector	<b>30 sec.</b>	60 sec.	120 sec.	240 sec.
Estimated termination time for bid (2 min. cushion per connector)	<b>150 sec.</b>	180 sec.	240 sec.	360 sec.

The potential benefits to your bottom line become clearer when you start putting it to hours and dollars (as in the table below which continues the previous scenario). For connector A, you calculated your bid on a 42-hour labor estimate, based on 1000 connectors at 2.5 minutes each. At let's say, \$70 an hour, that's \$2940 That's a good deal lower than B, C, and D – so you're already putting yourself in a strong position to win.

But if you look at your actual termination time, the job may only take a little over 8 hours with connector A. It could take you as much 2X longer or more with the other connectors. Even though you bid your labor significantly lower with connector A, you are actually way more profitable - making around \$354 an hour vs. \$210, \$116, or \$105 for B, C, and D, respectively. By the time you add up all your costs (paying your technicians, travel cost for extra days on the job, etc.), you were much more profitable with connector A vs. the others, but bid lower and won the job.

	Connector A	Connector B	Connector C	Connector D
Actual termination time per connector	30 sec.	60 sec.	180 sec.	240 sec.
Estimated termination time for bid (2 min. cushion per connector)	150 sec.	180 sec.	300 sec.	360 sec.
Total Hours, Bid Estimate	<b>42 hours</b>	50 hours	83 hours	100 hours
Bid at \$70/hour	<b>\$2,940</b>	\$3,500	\$5,810	\$7,000
Total Hours, Actual Term Time	<b>8.3 hours</b>	16.7 hours	50 hours	66.7 hours
Actual Hourly Rate	<b>\$354</b>	\$210	\$116	\$105

While the previous example might get you thinking about the benefit of faster terminations, what if you could terminate that LC connector in just 15 seconds? Under the same exact scenario as before, the ability to terminate connector A in just 15 seconds doubles your profitability. You're making about \$700 an hour and absolutely killing your competitors. You're doing the job in a little over 4 hours compared to 67 hours for the poor guy who chose connector D.

Obviously, a 15 second fiber termination in the field is going to be tough to achieve. But there are technologies that make it within the realm of possibility. In fact, in a recent fiber termination contest, an installer field terminated an LC connector in just 15.92 seconds using Siemon's LightBow™ Mechanical Splice Fiber Termination System – and that time covered all the steps, including marking, stripping, and cleaning the fiber. You can see the real time video here:

<http://www.siemon.com/us/contractors/march-madness/standings.asp>

But let's be practical. It may be easy to show how cranking out 15-second fiber terminations can make your next job much more profitable, but actually doing it out on the jobsite it is another matter. You're doing these terminations while stuffed into a closet, under a desk, maybe even up on a ladder – not exactly the optimal conditions for world-record termination times.

But the point remains that the faster you can terminate connectors, the more profitable and competitive you can be on the project. And, relatively speaking, a termination method that is twice as fast on a nice, clean workbench will be twice as fast on the jobsite. When you combine smart, efficient labor with a smart consideration of both the obvious and hidden elements of product cost, you're well on your way to maximizing your wins and profitability.

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