

BELDEN Cable™

Belden® Banana Peel® Composite cables offer these key labor-saving features: there's no overall jacket to strip off and the individual cables have color-coded and application printed jackets for easy identification and termination.



Belden® Expands Its Access Control Banana Peel® Composite Cable Line, Offering Cables With Larger Gauge Conductors

Belden Access Control Banana Peel Composite cables enable more cost-effective security installations, since they offer the installers of access control devices – including electronic identification equipment such as card readers, retina scanners and hand-scanning devices – a host of labor-saving and easy-identification features. Whether your installation takes place in a commercial building, a hospital, school, corporate site or government facility, Belden Access Control cables bring a whole new level of ease and convenience to the work site.

Features and Benefits

In general, the use of composite cables will decrease your labor costs since they are easier and quicker to install than the more labor-intensive procedure of bundling and pulling individual cables. Belden Access Control Banana Peel Composite cables go a step further by being both easier and faster to install than traditional composite cables. Unlike other composite cables, Belden Access Control cables offer the following:

- > No overall jacket – Banana Peel cables feature a patent-pending design that affixes

the individual cables to a center spline, eliminating the need for an overall jacket.

- > The absence of the overall jacket eliminates a whole step in the termination process: the stripping of the jacket.
- > Without the overall jacket, the individual cable components are all instantly identifiable and ready for termination. Just peel the individual cables off the center spline and they're ready.
- > The elimination of the outer jacket means that Banana Peel cables have a smaller OD than traditional composites. This improves the cable's overall bend radius for faster, easier installation. A smaller OD also means a smaller size conduit.
- > Breakout versatility is assured since the individual cables can be connected to the junction box or can be rerouted to the application site.
- > Short circuits, caused by contact with the center conductor while stripping off the outer jacket, can be prevented.
- > The individual cables are color-coded by application for easy identification so termination problems due to incorrect choice of cable are minimized.

> To ensure correct cable choice, Belden® Access Control cables have the application printed on the individual cable components: Lock Power, Card Reader, Door Contact and Request Exit (Rex/Spare). See *table on page 4*.

Labor and Cost Savings Using Banana Peel® Cables

In Chart 1 shown below, we see the labor/time savings of installing a single access control door across the four key installation processes: Set-up time, pulling time, termination and troubleshooting/testing/powering up – mostly using a 2-man crew for the individual cables and a 1-man crew for the installation of the Banana Peel cables, since less labor is needed when using Banana Peel (no special pulling

of individual cables, etc). Under this scenario, installers can typically expect a labor savings of 30 to 60%; in this instance, the contractor firm experienced a savings of 31%.

By applying the minimum labor savings expected (30%) to cost data regarding the installation of a single access control door (see Chart 2), we find the following: Use of Banana Peel Composite cables may offer end-users a \$420 reduction in overall costs.

To experience these tremendous cost savings, and the cables' exceptional electrical performance, call Belden today at 1-800-BELDEN-1. All Belden Access Control Banana Peel cables are available immediately in both Plenum-Rated and Riser-Rated versions.

Chart 1: Single Access Control Door Installation Cost Savings

(Based upon a typical cable run of less than 500 ft.)

Process Steps	4 Individual Cables	Banana Peel Cables	Installation Time Savings (min.)
Set-up Time	25 min. x 2 Techs 50 min.	25 min. x 1 Tech 25 min.	25
Pulling Cables for One Door	100 min. x 2 Techs 200 min.	150 min. x 1 Tech 150 min.	50
Termination	25 min. x 1 Tech 25 min.	20 min. x 1 Tech 20 min.	5
Troubleshooting/Testing/Power Up	15 min. x 2 Techs 30 min.	15 min. x 1 Tech 15 min.	15
Total Minutes	305	210	95
Total Hours	5.1	3.5	1.6
Installation Savings Per Door (minutes)			-95
Labor Savings Impact Per Door (hours)			-1.6
Percentage of Labor Savings Per Door			31%

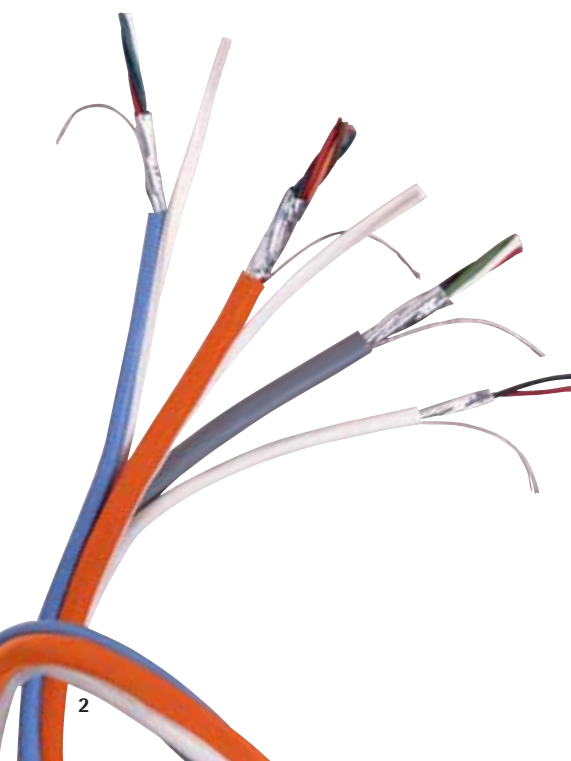
Chart 2: Single Access Control Door Installation End-User Cost Comparison

Cost Factors	Typical Industry Installation		Banana Peel Installation (Cost in \$)
	% of Cost	Cost in \$	
Equipment	45%	\$1350	\$1350
Cable	5%	\$150	\$180 *
Installation	50%	\$1500	\$1050 **
Total	100%	\$3000	\$2580
End-User's Overall Cost Savings Using Banana Peel			\$420
Cost Savings as a Percentage			-14% ***

* Plenum installation of 658AFS vs. individual cables.

** Installation cost is reduced to \$1050 by applying a 30% savings (savings of up to 60% could be realized, depending on installer's expertise).

*** Actual total cost savings may be higher than 14% depending on door distance, cable ratings and installer's expertise (savings of up to 29% could be realized).





Composite Access Control Cable

Banana Peel® Jacketless Cables

Riser-Rated

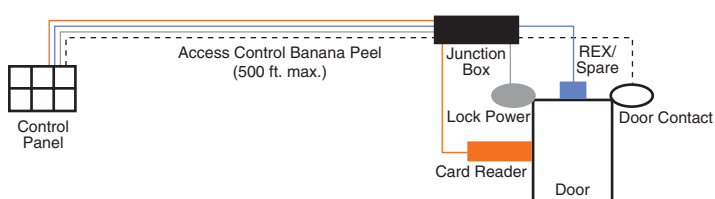
Description	Part No.	UL NEC/ C(UL) CEC Type	Standard Lengths		Standard Unit Weight		Overall Nom. OD		Component Descriptions	Shielding Materials	Insulation Material & Color Code	Insulation Thickness		Component Jacket Material & Color	Component Nom. OD	
			Ft.	m	Lbs.	kg	Inch	mm				Inch	mm		Inch	mm
Composite • (3) Shielded Multi-Conductors • (1) Shielded Multi-Pair																
PVC Insulation • PVC Jackets • No Overall Jacket																
NEC Article 800	538AFS	NEC: CMR CEC: CMG FT4	1000	305	170.0	77.1	.516	13.11	(1) 4-Cond. 16 AWG Stranded Bare Copper Shielded	Beldfoil®	PVC White, Black, Red, Green	.010	.254	PVC Gray	.230	5.84
									(1) 4-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	PVC White, Black, Red, Green	.010	.254	PVC Blue	.202	5.13
									(1) 3-Pair 18 AWG Stranded Bare Copper Shielded	Beldfoil	PVC White & Green, Orange & Brown, Red & Black	.010	.254	PVC Orange	.285	7.24
									(1) 2-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	PVC Red, Black	.010	.254	PVC White	.175	4.45
	558AFS	NEC: CMR CEC: CMG FT4	500 1000	152.4 305	58.5 101.2	26.56 46.0	.448	11.38	(1) 4-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	PVC White, Black, Red, Green	.010	.254	PVC Gray	.202	5.13
									(1) 3-Pair 22 AWG Stranded Bare Copper Shielded	Beldfoil	PVC White & Green, Orange & Brown, Red & Black	.010	.254	PVC Orange	.233	5.92
									(1) 2-Cond. 22 AWG Stranded Bare Copper Shielded	Beldfoil	PVC Red, Black	.010	.254	PVC White	.140	3.56
									(1) 4-Cond. 22 AWG Stranded Bare Copper Shielded	Beldfoil	PVC White, Black, Red, Green	.010	.254	PVC Blue	.161	4.09

Individual Gray jacket sequentially marked at 2 ft. intervals.

Individual Cable Jacket Color Coding System

Jacket Color	Print Legend	Cable Type	Product Nos.
Gray	Lock Power	4/C, 16 AWG, Shielded 4/C, 18 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
Orange	Card Reader	3/P, 18 AWG, Shielded 3/P, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
White	Door Contact	2/C, 18 AWG, Shielded 2/C, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
Blue	Rex/Spare	4/C, 18 AWG, Shielded 4/C, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS

How Does the Access Control Panel Look?



Composite Access Control Cable

Banana Peel® Jacketless Cables

Plenum-Rated

Description	Part No.	UL NEC/ C(UL) CEC Type	Standard Lengths		Standard Unit Weight		Overall Nom. OD		Component Descriptions	Shielding Materials	Insulation Material & Color Code	Insulation Thickness		Component Jacket Material & Color	Component Nom. OD	
			Ft.	m	Lbs.	kg	Inch	mm				Inch	mm		Inch	mm

Composite • (3) Shielded Multi-Conductors • (1) Shielded Multi-Pair

Plenum • Flamarrest® Insulation • Flamarrest Jackets • No Overall Jacket

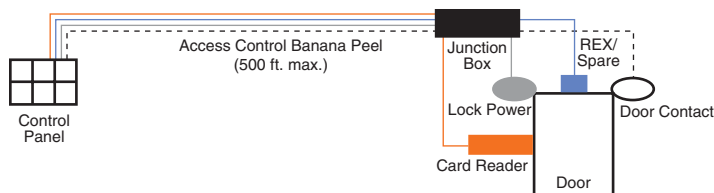
NEC Article 800	638AFS	NEC: CMP CEC: CMP FT6	1000	305	172.4	78.44	.542	13.72	(1) 4-Cond. 16 AWG Stranded Bare Copper Shielded	Beldfoil®	Flamarrest White, Black, Red, Green	.009	.229	Flamarrest Gray	.224	5.69
									(1) 3-Pair 18 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest White & Green, Orange & Brown, Red & Black	.009	.229	Flamarrest Orange	.291	7.39
									(1) 2-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest Red, Black	.009	.229	Flamarrest White	.168	4.27
									(1) 4-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest White, Black, Red, Green	.009	.229	Flamarrest Blue	.197	5.00
	658AFS	NEC: CMP CEC: CMP FT6	500 1000	152.4 305	59.5 97.8	27.01 45.4	.420	10.67	(1) 4-Cond. 18 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest White, Black, Red, Green	.009	.229	Flamarrest Gray	.191	4.85
									(1) 3-Pair 22 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest White & Green, Orange & Brown, Red & Black	.009	.229	Flamarrest Orange	.218	5.54
									(1) 2-Cond. 22 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest Red, Black	.009	.229	Flamarrest White	.131	3.33
									(1) 4-Cond. 22 AWG Stranded Bare Copper Shielded	Beldfoil	Flamarrest White, Black, Red, Green	.009	.229	Flamarrest Blue	.150	3.81

Individual Gray jacket sequentially marked at 2 ft. intervals.

Individual Cable Jacket Color Coding System

Jacket Color	Print Legend	Cable Type	Product Nos.
Gray	Lock Power	4/C, 16 AWG, Shielded 4/C, 18 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
Orange	Card Reader	3/P, 18 AWG, Shielded 3/P, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
White	Door Contact	2/C, 18 AWG, Shielded 2/C, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS
Blue	Rex/Spare	4/C, 18 AWG, Shielded 4/C, 22 AWG, Shielded	638AFS, 538AFS 658AFS, 558AFS

How Does the Access Control Panel Look?



For More Information:

www.belden.com

Belden CDT Electronics Division Technical Support 1-800-BELDEN-1 or 1-800-BELDEN-3