

## COST COMPARISON SNAKE TRAY vs. GENERIC BASKET TRAY, LADDER TRAY, WISHBONE TRAY & CONDUIT

With today's financial environment, price considerations are of paramount importance in every estimator's mind. While product quality and performance are still the most important features for any product, cost will play a very important role of every sale. CMS/Snake Tray® products fulfill all categories by displaying exceptional quality and performance along with lower overall costs in both material and installation than traditional generic cable management infrastructures. With their unique structural design, engineering flexibility and unrivaled installation speed, Snake Tray® products provide unmatched site condition adaptability and affordability.

Table (1) originated from a Cablofil® Technical Series publication outlining a cost analysis between EZ Tray™, ladder tray, Wishbone tray and standard conduit.

**Table(1)**

Study based on 10,000 ft.									
Description	EZ Tray		Ladder Tray		Wishbone Tray		Conduit		Description
	Materials	Labor	Materials	Labor	Materials	Labor	Materials	Labor	
10' sections of tray (12")	\$63,810.00	\$14,350.00	\$55,820.00	\$33,950.00	\$175,500.00	\$23,975.00	\$7,700.00	\$35,000.00	10' section of EMT (4")
45d & 90d bends (12")	\$143.01	\$1,457.05	\$3,739.40	\$1,064.00	\$2,808.16	\$646.80	\$215.00	\$4,665.50	45d & 90d factory bends (4")
Butt splices	\$3,938.40	\$6,300.00	\$5,610.00	\$3,850.00	\$8,335.00	\$5,600.00	\$20,200.00	\$26,250.00	Couplers (4")
Junction splices (Tee)	\$12.44	\$126.70	\$23.48	\$44.80	\$233.32	\$25.20	\$592.00	\$1,003.24	24"x24"x8" j-box w/conn. (4")
End wall supports	\$6.88	\$33.60	\$57.64	\$43.40	\$80.00	\$22.40			N/A
Angle arm wall supports	\$1,943.75	\$5,250.00	\$22,456.25	\$6,781.25	\$5,835.00	\$5,600.00	\$5,225.00	\$7,507.50	2' unistrut with 4" hangers
Trapeze ceiling kits	\$1,935.50	\$6,562.50	\$8,093.75	\$17,500.00	\$8,335.00	\$5,600.00	\$5,225.00	\$7,507.50	2' unistrut with 4" hangers
Threaded rod (3/8, 1/4, 1/2-6")	\$3,162.50	\$9,187.50	\$10,475.00	\$10,500.00	\$720.00	\$5,950.00	\$2,880.00	\$23,940.00	Threaded rod (1/2"-6")
Grounding kits	\$9,990.00	\$3,850.00	\$13,780.00	\$7,700.00	\$41,670.00	\$3,500.00	\$1,750.00	\$4,305.00	Grounding bushing (2")
Waterfalls (cable exit)	\$88.60	\$154.00	\$455.20	\$182.00	\$383.40	\$147.00	\$566.50	\$2,590.00	EMT (2") w/box conn. (2")
<b>Totals</b>	<b>\$85,031.08</b>	<b>\$47,271.35</b>	<b>\$120,510.72</b>	<b>\$81,615.45</b>	<b>\$243,899.88</b>	<b>\$51,066.40</b>	<b>\$44,353.50</b>	<b>\$112,768.74</b>	
<b>Difference</b>	BASE	BASE	142%	173%	287%	109%	-53%	239%	
<b>Total Materials+Labor</b>	\$132,302.43		\$202,126.17		\$294,966.28		\$157,122.24		
<b>Overall increase in cost</b>	BASE		153%		223%		119%		

The above study was comprised of ten thousand feet of cable tray, with four 90 degree corners, ten objects to pass around, four "Tee" intersections, four end wall connections and twenty drop locations. Five thousand feet of tray was wall mounted and five thousand feet of tray was trapeze hung with two six foot threaded rods or center hung with one six foot threaded rod (wishbone tray only). All pieces of the tray were grounded using the manufacturers' ground straps and kits. (1)

(1) Cablofil Technical Series publication, EZ.321.12.00, 2000

Table (1) shows overall cost savings by utilizing a lightweight cable management system over heavy cumbersome ladder and wishbone trays. Taking a look at conduit as an option, we see that materials are less but installation costs are more than double that of the basket trays.



Snake Tray® products are covered by one or more of the following patents: #6637704, #6637165, #6463704, #6460812, #6449912, #6361000, #6347493, #6019323, #6347493, #6449912, #6460812, #5953870, #5839702, #6926236, #7168212, #7959019. Foreign Patents: Australia #737813, #748160, #749488, #776643, #776644. Canada #2251732, #2319624, #2303081, #2396792. Japan #3723224. Mexico #204995, #229386, #220889. Europe #1012938, 1012937. Other Patents Pending.

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Now, lets add CMS/Snake Tray® products into the table. Using the same labor calculations as EZ Tray™ for splices, supports and accessories as well as taking the same labor rate to install straight sections we develop Table (2).

**Table (2)**

Description	Snake Tray		EZ Tray		Ladder Tray		Wishbone Tray		Conduit		Description
	Materials	Labor	Materials	Labor	Materials	Labor	Materials	Labor	Materials	Labor	
10' sections of tray (12")	\$58,575.00	\$14,350.00	\$63,810.00	\$14,350.00	\$55,820.00	\$33,950.00	\$175,500.00	\$23,975.00	\$7,700.00	\$35,000.00	10' section of EMT (4")
45d & 90d bends (12")	\$0.00	\$21.99	\$143.01	\$1,457.05	\$3,739.40	\$1,064.00	\$2,808.16	\$646.80	\$215.00	\$4,665.50	45d & 90d factory bends (4")
Butt splices	\$4,000.00	\$1,875.00	\$3,938.40	\$6,300.00	\$5,610.00	\$3,850.00	\$8,335.00	\$5,600.00	\$20,200.00	\$26,250.00	Couplers (4")
Junction splices (Tee)	\$39.00	\$6.00	\$12.44	\$126.70	\$23.48	\$44.80	\$233.32	\$25.20	\$592.00	\$1,003.24	24"x24"x8" j-box w/conn. (4")
End wall supports	\$0.00	\$0.00	\$6.88	\$33.60	\$57.64	\$43.40	\$80.00	\$22.40			N/A
Angle arm wall supports	\$937.50	\$2,437.50	\$1,943.75	\$5,250.00	\$22,456.25	\$6,781.25	\$5,835.00	\$5,600.00	\$5,225.00	\$7,507.50	2' unistrut with 4" hangers
Trapeze ceiling kits	\$1,389.39	\$3,375.00	\$1,935.50	\$6,562.50	\$8,093.75	\$17,500.00	\$8,335.00	\$5,600.00	\$5,225.00	\$7,507.50	2' unistrut with 4" hangers
Threaded rod (3/8, 1/4, 1/2-6")	\$3,425.00	\$2,062.50	\$3,162.50	\$9,187.50	\$10,475.00	\$10,500.00	\$720.00	\$5,950.00	\$2,880.00	\$23,940.00	Threaded rod (1/2"-6")
Grounding kits	\$0.00	\$0.00	\$9,990.00	\$3,850.00	\$13,780.00	\$7,700.00	\$41,670.00	\$3,500.00	\$1,750.00	\$4,305.00	Grounding bushing (2")
Waterfalls (cable exit)	\$347.00	\$154.00	\$88.60	\$154.00	\$455.20	\$182.00	\$383.40	\$147.00	\$566.50	\$2,590.00	EMT (2") w/box conn. (2")
<b>Totals</b>	<b>\$68,712.89</b>	<b>\$24,281.99</b>	<b>\$85,031.08</b>	<b>\$47,271.35</b>	<b>\$120,510.72</b>	<b>\$81,615.45</b>	<b>\$243,899.88</b>	<b>\$51,066.40</b>	<b>\$44,353.50</b>	<b>\$112,768.74</b>	
Difference	BASE	BASE	124%	195%	176%	337%	355%	211%	-65%	465%	
Total Materials+Labor	\$92,994.88		\$132,302.43		\$202,126.17		\$294,966.28		\$157,122.24		
Overall increase in cost	BASE		143%		218%		318%		169%		

The above table reflects the same study as in figure (1) but with the addition of Snake Tray® as the base product. Ten thousand feet of cable tray, four 90 degree corners, ten objects to pass around, four tee intersections, four end wall connectors and twenty drop locations. Five thousand feet of tray was wall mounted and five thousand feet of tray was trapeze hung from six foot threaded rod.

Breaking each line item into separate components we see that the 12" EZ Tray™ affords 24 square inches of cable path which equals that of the 4" x 6" pathway of the CM201-6-8 Snake Tray®. The initial portion of the installation calls for five thousand linear feet to be installed overhead from threaded rod. The Snake Tray® system eliminates the need for additional hanging brackets via its unique structural design of built-in mounting rings located above the cable pathway. This design of locating the rod attachment point above the cable pathway allows for easy loading/unloading of cables, eliminates the required rod sleeves necessary to protect cables from the sharp edges of the threaded rod and also reduces the number of rods by 50%. A trapeze system requires two rods per support where Snake Tray® requires only one. Attachment of the threaded rod to the "Snake Eyes™" requires a single flat washer and two hex nuts, thus eliminating any hanger brackets or trapeze components. Refer to figure (1).

The remaining five thousand linear feet of tray will be wall mounted using the Snake Tray® 501 series products. Wall Snake™ is mounted using built-in mounting rings, Snake Eyes™, that lay flat against the wall eliminating the need for additional mounting brackets or hardware. Locate the area where the Wall Snake™ will be installed and place the tray flat against the wall and secure with a single fastener every four feet. Refer to Figure (2).



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Line item two refers to 45 degree and 90 degree bends. The Snake Tray® patented design allows the tray to be shaped by hand without the need to cut or clip the tray in any way. For this reason Snake Tray® eliminates all accessory parts required to complete the bends along with reducing the labor required by as much as 95%. As an example: A standard 90 degree sweep can be completed within ten seconds using Snake Tray® products whereas the same bend using a generic basket tray can take as long as twenty minutes per occurrence. Why? Snake Tray® products bend completely by hand without cutting or clipping. Generic cable basket requires the installer to cut as many as 60 wires per sweep, assuming a 12” wide basket, then reassembling the sections using multiple splice plates and connector clip assemblies. This process can take as long as 15 minutes per sweep. Ten seconds for a Snake Tray® bend versus 15 minutes for a basket tray... You be the judge!

Line item 3, Butt Splices: Again, the unique design of the Snake Tray® system allows for tremendous savings on installation. The method of attaching one tray to another is completed by the installation of a single universal connector bolt, CB-10. This method of connection serves two functions. The first being the actual mechanical connection of two trays. The second being the continuation of an electrical ground between two sections of Snake Tray® (NEC-645-15). The “Tails” or ends of the tray are considered jumpers, and when two jumpers are connected with a listed pressure connection the result is a continuation of the electrical ground. For this reason, The Snake Tray® connection component, CB-10, eliminates the need for accessory grounding kits.

Line item 4: Junction splices are afforded by the installation of a single crossing component attached to the Snake Tray® spine via a CB-10 universal connector. The method completes both the mechanical connection as well as continuing the electrical ground in one operation as required by (NEC 645-15).

Line item 5: An end bracket component is presently under development, and will offer the same quality of design, workmanship and simplicity of installation that current Snake Tray products offer.

Line item 6: Angle wall supports have been completely eliminated. The Wall Snake™ product attaches directly to the wall without brackets. The built-in mounting rings “Snake Eyes™” lay flat against the wall, and the tray is secured using appropriate fasteners every 4 to 5 feet. This method of installation affords a savings of 53% over the EZ Tray™ method of using wall brackets and approximately an 88% savings over generic ladder tray. (See Figure 2).

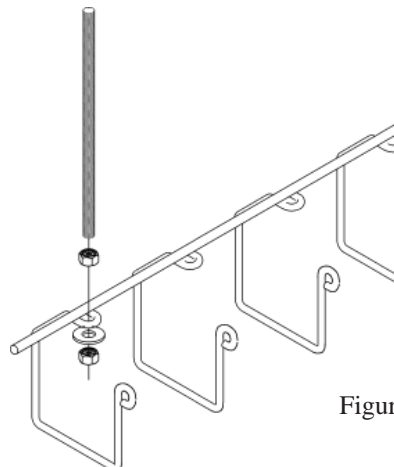


Figure (1)



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Figure (1)

Line item 7: As with item 6, trapeze hanger brackets have also been eliminated. The 201 series Snake Tray® like its cousin the Wall Snake™ has built in mounting rings (Snake Eyes™). The only additional items required to complete an installation would be a single flat washer and two hex nuts. The threaded rod is inserted through the mounting ring and secured with the washer and nuts. This method also requires only one rod per mounting location as opposed to the required two per each trapeze assembly. This line item also includes beam clamps, which are required for all aerial mounted trays. (See Figure 1).

Line item 8: CMS/Snake Tray® provides pre-cut and pre-chased threaded rod eliminating the labor required to cut and re-thread each section of rod, and the single point hanging method of Snake Tray® has reduced the number of rods by 50%. Only one rod per location versus two for each of the other cable tray methods. A 55% savings over EZ Tray™

Line item 9: Once again, the unique design of the Snake Tray® products has eliminated the need for accessory grounding kits. The UL listed CB-10 universal connector bolt not only mechanically joins two sections of Snake Tray® together it acts as an equipment-grounding component (NEC-250-8).

Line item 10: The installations of 20 cable dropout components. Assuming the same labor rate to install, this is the only Snake Tray® component to be higher in material cost than that of EZ Tray™ in the entire study adding less than three hundred dollars to the overall budget.

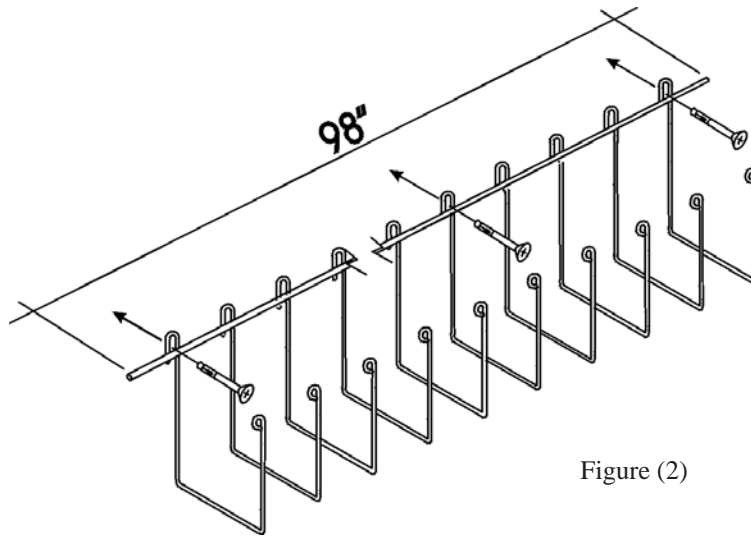


Figure (2)

Conclusion: Snake Tray® has revolutionized the way cable management infrastructures are installed with innovative product designs offering a complete solution for managing the cabling backbone, with fewer parts and less labor than generic ladder or basket tray systems. Price awareness is always major contributing factor in determining what products are specified and ultimately installed; CMS/Snake Tray® products, be it overhead, wall mounted, or used under raised floors, continue to prove their superior cost effectiveness in both material and installation.



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