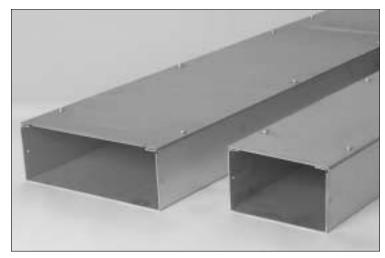


# 

# Steel & Aluminum Wallduct

# **Raceway Solutions for Healthcare Applications**

alker Wallduct is a high capacity raceway for use in walls or ceilings. It can be mounted to the wall surface or flush with the wall to meet equipment layout and room designs. The lay-in feature for enclosure of wire and cable is ideal for use in healthcare rooms, under raised floors, or as a large capacity feeder for perimeter raceway. The cover plates are easily removed for wire and cable access. Wallduct can be used with Trenchduct to carry wire and cables from cabinets to egress points anywhere on the floor or wall. Aluminum Wallduct for applications requiring nonferrous metal raceways such as X-ray and MRI scan rooms is also available. Walker Wallduct is UL Listed to U.S. and Canadian safety standards.



Wallduct is ideal for use in medical scan rooms.

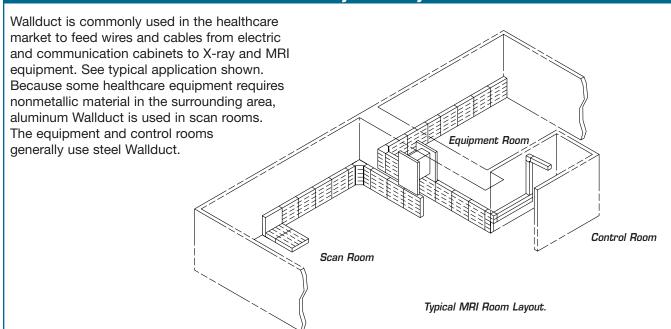
## Features & Benefits

- Constructed of galvanealed steel or aluminum. Provides extra corrosion resistance and is easily painted to match any room interior.
- Interior couplings. Offer improved aesthetics when surface mounted.
- Complete line of fittings. Reduces field modifications by minimizing installation time and costs.
- AutoCAD® capabilities for detailing project drawings. Provides high quality detailing information with the option of electronic communication for a quicker, more accurate exchange of information.
- Three standard widths. Provide cable and wire requirements for most applications.



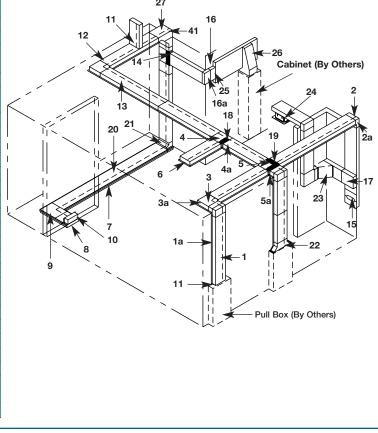
Walker Wallduct Steel or Aluminum Raceway with lay-in features for enclosure of wire and cable.

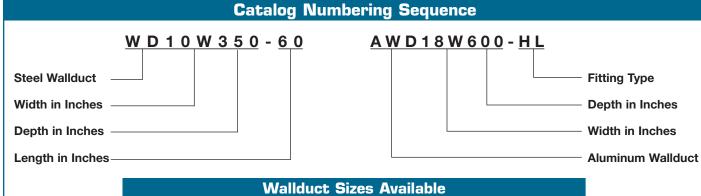
# Wallduct System Layouts



	Walldust and	Trenchduct Legend		
Item	Catalog No.	Description		
1	WD10W350-60	5'-0" [1524mm] Straight Length.		
1a	CP10-F30	30" [762mm] L Flush Cover Plate.		
2	WD10W350-IL	Internal Wallduct Elbow.		
2a	CP10-ILF	Internal Wallduct Elbow Cover Flush.		
3	WD10W350-HL	Horizontal Wallduct Elbow.		
3a	CP10-HLF	Horizontal Wallduct Elbow Cover Flush.		
4	WD10W350-T	Wallduct T-Unit.		
4a	CP10-TF	Wallduct T-Unit Cover Flush.		
5	WD10W350-X	Wallduct X-Unit.		
5a	CP10-XF	Wallduct X-Unit Cover Flush.		
6	WD10W350-ECF	Wallduct End Closure.		
7	VA12W250H-5	VA Style Trenchduct 12" Wide x 2 1/2" Deep [304mm x 63mm].		
8	VA12W250H-EC	VA Style Trenchduct End Closure.		
9	VA12W250H-LL	VA Style Trenchduct Horizontal Elbow (Left Hand).		
10	VA12W-VR10	VA Style Trenchduct Vertical Riser.		
11	WD10W350-CC/DO	Wallduct Cabinet Connector.		
12	WD350-CP	Corner Partition.		
13	WD350-P60	Straight Partition.		
14	WD10W350-TUN	T-Unit Straight Tunnel.		
15	WD10-ACPF	Access Cover Plate With Grommet.		
16	WD10W350-EL	Wallduct External Elbow.		
16a	CP10W350-ELF	Wallduct External Elbow Cover Flush.		
17	WD10W350-FST	Wallduct Flush to Surface Transition.		
18	WD10W350-LTUN	T-Unit Left Hand Tunnel.		
19	WD10W350-XTUN	X-Unit Tunnel.		
20	T250HZP-5	Trenchduct Partition.		
21	VA12W-VL10	Trenchduct Vertical Riser		
22	WD10W350-FCCF	Flanged Cabinet Connector Flush.		
23	WD10W350-SWTS	Sweep Surface Tee.		
24	WD-10CDO	Ceiling Drop Out.		
25	WD350-R04	Wallduct Reducer.		
26	WD18W350-SWCCS	Sweep Cabinet Connector Surface.		
27	WD10W350-SES	Sweep Elbow Surface.		

Wallduct can be installed in the wall exposing only the cover plate, or it can be wall mounted exposing the entire surface. Wallduct may also be installed overhead to connect cables/wires between rooms. Trenchduct can be used in combination with Wallduct as a feeder or for access points in the floor to feed equipment. Diagram below is for illustration only. It does not portray typical installation of products

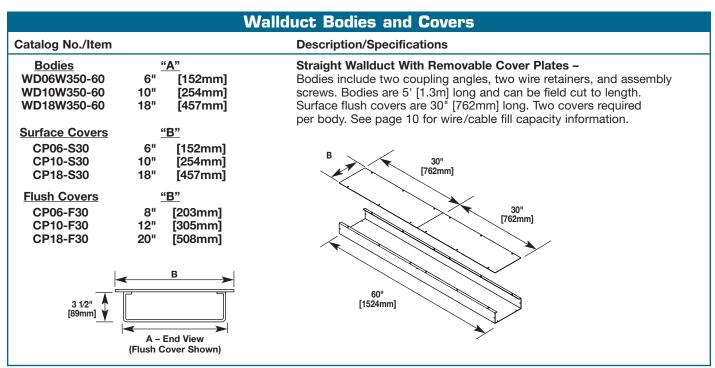




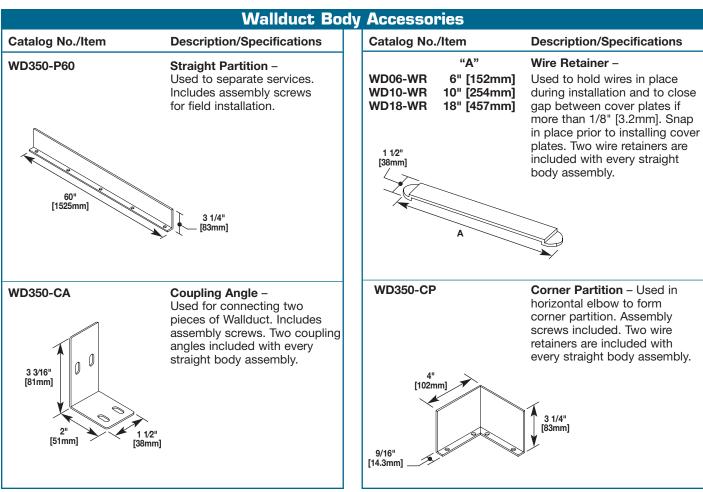
	Wallduct Sizes Available					
Depth	Width	6" [152mm]	10" [254mm]	18" [457mm]	24" [610mm]	30" [762mm]
3 1/2"	[89mm]	*	*	*	*	
6"	[152mm]	*	*	*	*	*
8"	[203mm]		*	*		
12"	[305mm]			*		

## **IMPORTANT**

Stock sizes are 10" x 3 1/2" [254mm x 89mm] and 18" x 3 1/2" [457mm x 89mm]. Only 5' [1.3m] lengths available. Only 3 1/2" [89mm] depth catalog numbers are included in this literature. Use catalog numbering sequence to create other available catalog numbers. Change width and depth according to sizes on chart above. For aluminum version, add the letter "A" to the beginning of the catalog number.



NOTE: To order aluminum products, add the letter "A" to the beginning of the catalog number.



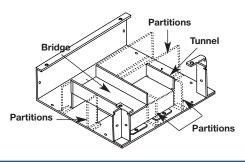
**NOTE:** To order aluminum products, add the letter "A" to the beginning of the catalog number.

		End Clos	ure
Catalog No./Item			Description/Specifications
Surface End Closures WD06W350-ECS WD10W350-ECS WD18W350-ECS Flush End Closures WD06W350-ECF WD10W350-ECF WD18W350-ECF WD18W350-ECF	"A" 6" [152mm] 10" [254mm] 18" [457mm]  "A" 6" [152mm] 10" [254mm] 18" [457mm]	"B" 6" [152mm] 10" [254mm] 18" [457mm]  "B" 8" [203mm] 12" [305mm] 20" [508mm]	End Closure – Used to close off end of Wallduct run. Includes assembly screws.  B  3 12" [89mm]

#### Wallduct Fittings **Description/Specifications** Catalog No./Item **Bodies** "A" 45° Elbow - Used to change direction 6" of Wallduct runs 45° on same plane. Includes one WD06W350-HL45 [152mm] WD10W350-HL45 10" [254mm] pair of coupling angles, one retainer, and assembly WD18W350-HL45 18" [457mm] screws. Complete unit requires one body and one cover plate. **Surface Covers** CP06-HLS 5 5/8" [143mm] CP10-HLS 7 1/4" [185mm] 3 1/2" CP18-HLS 10 1/2" [89mm] [270mm] "A" Flush Covers 6" [153mm] CP06-HLF [196mm] CP10-HLF 7 3/4" CP18-HLF 11" [280mm] **Bodies** Horizontal Elbow – Used to change direction 6" [152mm] of Wallduct runs 90° on same plane. Includes one WD06W350-HL 10" WD10W350-HL [254mm] pair of coupling angles, one retainer, and assembly WD18W350-HL 18" [457mm] screws. Complete unit requires one body and one cover plate. "B" **Surface Covers** 7" [178mm] CP06-HLS CP10-HLS 11" [279mm] CP18-HLS 19" [482mm] 3 1/2" [89mm] "B" Flush Covers 8" [203mm] CP06-HLF CP10-HLF 12" [305mm] CP18-HLF 20" [508mm] "A" Internal Elbow – Used to connect vertical and **Bodies** horizontal run at 90° when cover plates are on WD06W350-IL 6" [152mm] 10" WD10W350-IL [254mm] inside of run. Includes one pair of coupling 18" WD18W350-IL angles, wire retainer, and assembly screws. [457mm] Complete unit requires one elbow body and **Surface Covers** "B" one cover plate. 6" CP06-ILS [152mm] 10" CP10-ILS [254mm] CP18-ILS 18" [457mm] Flush Covers "B" 8" [203mm] CP06-ILF 12" CP10-ILF [305mm] CP18-ILF 20" [508mm] <u>"</u>A" External Elbow - Used to connect vertical and **Bodies** WD06W350-EL 6" [152mm] horizontal run at 90° angle when cover plates are on outside of run. Includes attached coupling angles, WD10W350-EL 10" [254mm] WD18W350-EL 18" [457mm] wire retainer, and assembly screws. Complete unit requires one elbow body and two cover plates. **Surface Covers** "B" Flush and surface cover catalog numbers include 6" CP06W350-ELS [152mm] two covers. CP10W350-ELS 10" [254mm] CP18W350-ELS 18" [457mm] **Flush Covers** "B" CP06W350-ELF 8" [203mm] CP10W350-ELF 12" [304mm] CP18W350-ELF 20" [508mm]

#### Wallduct Fittings (Continued) **Description/Specifications** Catalog No./Item **Bodies** "A" T-Unit - Used to connect a second run of Wallduct WD06W350-T 6" [152mm] at 90° angle to first run. Includes one pair of coupling WD10W350-T 10" [254mm] angles, one wire retainer, and assembly screws. WD18W350-T 18" [457mm] Complete unit requires one body and one cover plate. **Surface Covers** CP06-TS [178mm] CP10-TS 11" [279mm] CP18-TS 19" [482mm] Flush Covers 3 1/2" [89mm] CP06-TF 8" [203mm] CP10-TF 12" [304mm] CP18-TF 20" [508mm] WD10W350-TUN 11 7/8" [301mm] straight through compartment for one service WD18W350-TUN 19 7/8" [504mm] with crossover for a second service. Assembly screws included. NOTE: Not available for 6" [162mm] wide Wallduct. 3 1/4" [83mm] "A" Right Hand Tunnel – Used in conjunction 7 7/8" **WD10W350-RTUN** [200mm] with straight partition to form a 90° angle -**WD18W350-RTUN** 15 7/8" [403mm] 3" [76mm] compartment with crossover in T-Unit. Assembly screws included. 3 1/4" [83mm] NOTE: Not available for 6" [162mm] wide Wallduct. [76mm] **Left Hand Tunnel** – Used in conjunction with straight partition to form a 90° angle -WD10W350-LTUN 7 7/8" [200mm] **WD18W350-LTUN** 15 7/8" [403mm] 3" [76mm] compartment with crossover in T-Unit. Assembly screws included. 3 1/4" [83mm] NOTE: Not available for 6" [162mm] wide Wallduct. 3" [76mm]

WD10W350-3TUN WD18W350-3TUN



**T-Unit Tunnel** – Provides three equal compartments for separation of services in T-Unit. Assembly screws included.

Purchase partition Catalog No. WD350-P60 separately to complete installation.

NOTE: Not available for 6" [162mm] wide Wallduct.

#### Wallduct Fittings (Continued) **Description/Specifications** Catalog No./Item **Bodies** X-Unit – Used to connect two intersecting runs WD06W350-X 6" [152mm] of Wallduct at a 90° angle. Includes one pair of 10" WD10W350-X [254mm] coupling angles, one wire retainer, and assembly WD18W350-X 18" [457mm] screws. Complete unit requires one body and one cover plate. **Surface Covers** CP06-XS 8" [203mm] CP10-XS 12" [304mm] CP18-XS 20" [508mm] Flush Covers CP06-XF 8" [203mm] [305mm] CP10-XF 12" CP18-XF 20" [508mm] 3 1/2" [89mm] 6 7/8" [174mm] X-Unit Crossover - Used to provide a 90° **WD10W350-XTUN** angle - 3" [76mm] compartment with crossover 14 7/8" [377mm] **WD18W350-XTUN** in X-Unit. Assembly screws included. [25mm] NOTE: Not available for 6" [162mm] wide Wallduct. 3 1/4" [83mm] [76mm] WD10W350-3TUN X-Unit Tunnel - Provides three equal WD18W350-3TUN compartments for separation of services **Partition** in X-Unit. Assembly screws included. Tunnel **Bridge** Partition Purchase partition, Catalog No. WD350-P60 separately to complete installation. Complete X-Unit assembly requires two X-unit tunnel units. Partition **NOTE:** Not available for 6" [162mm] wide Wallduct. Partitions Two tunnels shown. Sweep Elbow – Used to connect vertical and WD06W350-SES 6" [152mm] horizontal runs of Wallduct at a 90° angle with 10" WD10W350-SES [254mm] a 45° internal sweep radius. Includes one pair WD18W350-SES 18" [457mm] of coupling angles and assembly screws. For partition use Catalog No. WD350-PSE Series. 14" [356mm] NOTE: Not available in flush cover version. 3 1/2" [89mm] 14"

NOTE: To order aluminum products, add the letter "A" to the beginning of the catalog number.

[356mm]

3 1/2" [89mm]

#### Wallduct Fittings (Continued) **Description/Specifications** Catalog No./Item **Bodies** "A" X-Unit – Used to connect two intersecting runs WD06W350-X 6" [152mm] of Wallduct at a 90° angle. Includes one pair of 10" WD10W350-X coupling angles, one wire retainer, and assembly [254mm] WD18W350-X 18" [457mm] screws. Complete unit requires one body and one cover plate. **Surface Covers** 8" CP06-XS [203mm] 12" CP10-XS [304mm] CP18-XS 20" [508mm] Flush Covers 8" [203mm] CP06-XF 12" CP10-XF [305mm] CP18-XF 20" [508mm] 3 1/2 [89mm] "A" X-Unit Crossover – Used to provide a 90° 6 7/8" [174mm] angle - 3" [76mm] compartment with crossover WD10W350-XTUN 14 7/8" [377mm] **WD18W350-XTUN** in X-Unit. Assembly screws included. [25mm] NOTE: Not available for 6" [162mm] wide Wallduct. 3 1/4" [83mm] 3" [76mm] WD10W350-3TUN X-Unit Tunnel - Provides three equal WD18W350-3TUN compartments for separation of services **Partition** in X-Unit. Assembly screws included. Tunnel Bridge Partition Purchase partition, Catalog No. WD350-P60 separately to complete installation. Complete X-Unit assembly requires two X-unit tunnel units. **Partition** NOTE: Not available for 6" [162mm] wide Wallduct. Partitions Two tunnels shown. "A" Sweep Elbow - Used to connect vertical and WD06W350-SES [152mm] horizontal runs of Wallduct at a 90° angle with 10" WD10W350-SES [254mm] a 45° internal sweep radius. Includes one pair WD18W350-SES 18" [457mm] of coupling angles and assembly screws. For partition use Catalog No. WD350-PSE Series. [356mm] NOTE: Not available in flush cover version. 3 1/2" [89mm] 14" [356mm]

NOTE: To order aluminum products, add the letter "A" to the beginning of the catalog number.

3 1/2" [89mm]

#### **Wallduct Accessories Description/Specifications** Catalog No./Item <u>"A"</u> Reducer Coupling - Used to reduce Wallduct WD350-RO2 2" width by 4" [102mm] or 8" [204mm]. Two piece [51mm] 4" [102mm] unit allows 18" [457mm] wide Wallduct to be WD350-RO4 reduced to 10" [254mm] wide, or 10" {254mm] wide to be reduced to 6" [152mm] wide. Can also be used on other sizes as needed. Assembly screws included. Cabinet Connector/Drop Out – Used to connect 5 3/4" [146mm] WD06W350-CC/DO ends of Wallduct run to panel/cabinet. Also used WD10W350-CC/DO 9 3/4" [247mm] to connect two runs of Wallduct at a 90° angle WD18W350-CC/DO 17 3/4" [450mm] when one run butts up to the bottom or top of the other. Assembly screws included. 25mm] 3 1/4" [82mm] Sweep Cabinet Connector - For use 6" **WD06W350-SWCCS** [152mm] with GE medical equipment. Attaches to 6" x **WD10W350-SWCCS** 10" 3 1/2" [152mm x 89mm], 10" x 3 1/2" [254mm x [254mm] **WD18W350-SWCCS** 18" [457mm] 89mm], or 18" x 3 1/2" [457mm x 89mm] horizontal surface Wallduct. 2 1/2" **NOTE:** Not available in aluminum. [64mm] 10 1/2" [266mm] [203mm] <u>"A"</u> "B" **Transition** – Used to form a junction between WD06W350-FST 6" [152mm] 8" [203mm] flush and surface Wallduct at a 90° angle. 10" WD10W350-FST [254mm] 12" [304mm] Includes assembly screws, clips, one wire 18" [457mm] 20" WD18W350-FST [508mm] retainer and two coupling angles. [25mm] **Duct Body Surface Cover Plate Duct Body Flush**

NOTE: To order aluminum products, add the letter "A" to the beginning of the catalog number.

#### Wallduct Accessories (Continued) **Description/Specifications** Catalog No./Item **Surface Covers** Access Cover Plate - Two-piece cover with 6" WD06-ACPS [152mm] grommeted hole in center. Can be installed at any 10" WD10-ACPS [254mm] location by match drilling eight holes in duct body WD18-ACPS 18" [457mm] flanges and attaching speed nuts. Includes assembly screws and grommet. Flush Covers 7" WD06-ACPF [178mm] WD10-ACPF 11" [279mm] WD18-ACPF 19" [482mm] 12" [305mm] [152mm] 3"x 8" [76mm x 203mm] Hole "A" Sweep Tee - Used to connect horizontal and **Sweep Tee WD06W350-SWTS** 6" [152mm] vertical runs of Wallduct at a 90° angle with **WD10W350-SWTS** 10" [254mm] sweep radius. Includes one pair of coupling **WD18W350-SWTS** 18" angles and assembly screws. [457mm] NOTE: Not available in flush cover version. 10" [254mm] 10" [254mm] Flanged Connector "A" Flanged Cabinet Connector - Used to connect 16" [406mm] WD06W350-FCCS end of Wallduct run to panel cabinet. Assembly 22" WD10W350-FCCS [559mm] screws included. Use .166" [4.2mm] diameter **WD18W350-FCCS** 24" [610mm] (#19 drill) for assembly. WD06W350-FCCF 18" [4570mm] 24" NOTE: Not available in aluminum. WD10W350-FCCF [610mm] 26" WD18W350-FCCF [660mm] [152mm] Ceiling Drop Out Ceiling Drop Out - Used to drop cables and 4" [102mm] to 5 3/4" [146mm] WD-10CDO wires from Wallduct in ceiling to imaging 5 1/2" [140mm] to 7 1/4" [184mm] equipment. Available in 10" [254mm] width only. WD-10CDOD Units have adjustable depth. [254mm]

# Wire Fill Capacity

Use these steps to determine wire fill capacity in Wallduct.

Step 1: Determine the internal raceway area by multiplying the overall width by the overall depth (subtract material thickness).

Example: Assume a raceway 10" wide by 4" deep. Subtract the material thickness from each dimension (see below). This results in internal raceway dimensions of 9.844" (10" - 0.156") wide by 3.922" (4" - 0.078"). The internal area for this raceway size would be 38.6 sq. in. (9.844" x 3.922").

Maximum Raceway Width (In.)	Deduct for Material Thickness Left & Right	Deduct for Material Thickness (Bottom)
6" - 18" Steel	0.156"	0.078"
20" - 30" Steel	0.216"	0.108"
6" – 18" Aluminum	0.200"	0.100"
20" – 30" Aluminum	0.250"	0.125"

Step 2: Determine the number of conductors allowed inside the raceway for a given type and size (types THHN and THWN are shown in Table 1) of the conductor by multiplying the internal area (calculated in Step 1) by the number of conductors allowed per square inch (see table 1)..

**Example:** Calculate how many No. 6 AWG (THHN) conductors you are allowed to place in the 10" x 4" raceway in Step 1 at 40% wire fill capacity. Multiply the internal area of the raceway by the maximum number of wires allowed per square inch, from table 1. This results in 304 allowable cables (38.6 sq. in. x 7.89).

A 20% fill should be used for systems utilizing fittings that have sharp 90° turns. The derating factors of NEC article 310.15(B)(2)(a) shall apply to conductors installed if the amount of current-carrying conductors exceeds 30 in number, or the sum of the cross-sectional area of all conductors exceeds 20% of the interior cross-sectional area of the raceway. When tunnels are utilized, the internal cross-sectional area must be further reduced by 50%. When partitions are utilized, the internal cross-sectional area must be calculated for each individual compartment.

Table 1 – Steel Wallduct Wire Fill Capacities for Power							
WIRE SIZE AWG	DIAMETER In. [mm]		AREA (In²) Sq. In. [Sq. mm]		40% FILL (Per Sq. In.)	20% FILL (Per Sq. In.)	
14	0.111	[2.8]	0.0097	[6.3]	41.24	20.62	
12	0.130	[3.3]	0.0133	[8.6]	30.08	15.04	
10	0.164	[4.2]	0.0211	[13.6]	18.96	9.48	
8	0.216	[5.5]	0.0366	[23.6]	10.93	5.46	
6	0.254	[6.5]	0.0507	[32.7]	7.89	3.94	
4	0.324	[8.2]	0.0824	[53.2]	4.85	2.43	
3	0.352	[8.9]	0.0973	[62.8]	4.11	2.06	
2	0.384	[9.8]	0.1158	[74.7]	3.45	1.73	

Table 2 - Steel Wallduct Wire Fill Capacities for Data/Communications							
	CABLE/WIRE SIZE	DIAI In.	METER [mm]	ARE Sq. In.	EA (In²) [Sq. mm]	40% FILL (Per Sq. In.)	20% FILL (Per Sq. In.)
UNSHIELDED	4-Pair, Cat 5e	0.220	[5.6]	0.0381	[24.6]	10	5
TWISTED PAIR	4-Pair, Cat 6	0.250	[6.4]	0.0491	[31.7]	14	7
TELEPHONE	2-Pair, 24 AWG	0.140	[3.5]	0.0154	[9.9]	20	13
	4-Pair, 24 AWG	0.190	[4.8]	0.0263	[18.2]	14	7
	25-Pair, 24 AWG	0.410	[10.4]	0.1321	[85.2]	3	1
COAXIAL	RG58/U	0.195	[4.9]	0.0298	[19.2]	13	6
	RG59/U	0.242	[6.1]	0.0459	[29.6]	9	4
	RG6/U	0.270	[6.8]	0.0572	[36.9]	7	3
SHIELDED TWISTED PAIR	TYPE 1 TYPE 2 TYPE 3	0.390 0.465 0.245	[9.9] [11.8] [6.2]	0.1194 0.1698 0.0471	[77.0] [109.5] [30.4]	3 2 0	1 1 4
FIBER OPTIC	2-STRAND	0.180	[4.6]	0.0254	[16.4]	10	8
	4-STRAND	0.190	[4.8]	0.0263	[15.3]	14	7
	6-STRAND	0.210	[5.3]	0.0346	[22.3]	11	5
	FIBER ZIP CORD	0.110	[2.8]	0.0095	[6.1]	42	21

**NOTE:** Wire diameters can vary depending on manufacturer. Verify diameter and adjust fill capacities as required. Values are per one square inch of Wallduct area.

# **Product Notes**

To attach Wallduct to Trenchduct, use vertical risers as shown in ED738. All field cut openings in Wallduct should be grommeted as needed to protect edges from cutting cables and wires. Order Catalog # 686039-100FT.

Contact factory for availability of other sizes of Wallduct.

Use this table to select replacement Wallduct hardware.

Wallduct Replacement Hardware		
Part No:	Description	
1002412	<b>Hardware Bag</b> – Eight pieces 10-32 x 1/4" screws and twelve pieces of 10-32 x 7/16" screws for attaching steel Wallduct components.	
1000883	Hardware Bag – Twelve pieces 10-32 clips for attaching steel or aluminum cover plates.	
1002414	Hardware Bag – Eight pieces 10-32 x 1/2" stainless steel screws and eight pieces of 10-32 x 1/4" stainless steel screws for attaching aluminum Wallduct components.	







Wiremold / Legrand

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