Micro-D Backshell Entry Fill Percentage

ENTRY FILL PERCENTAGE

Entry fill percentage (the ratio of the wire bundle area to the backshell entry area) should not exceed 80% to help assure system performance and safety.

Round entry banding backshells are not large enough to meet this best practice requirement, depending on the number of wires and the wire size. Elliptical backshells should be used instead.

Use the **80% Entry Fill Table** to determine the minimum backshell entry size code for standard Micro-D wire types and sizes.

Use the **Entry Fill Calculator** for custom wire bundles and/or elliptical backshells.

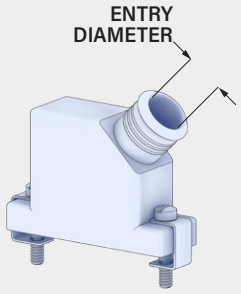
Elliptical banding backshells are recommended if the wire bundle area is greater than 80% of the backshell entry.

80% ENTRY FILL FOR ROUND ENTRY BACKSHELLS

This table shows recommended entry size codes for standard Micro-D pigtail wiring harnesses used with round entry banding backshells. If no entry size is shown (*), an elliptical backshell is recommended.

No. of Wires	Wire Type	Entry Size Code @80% Max Fill 24 AWG	26 AWG	28 AWG
9	M22759/11	06	06	05
	M22759/33	06	05	04
15	M22759/11	08	07	06
	M22759/33	07	06	05
21	M22759/11	09	08	07
	M22759/33	08	07	06
25	M22759/11	10	09	08
	M22759/33	09	08	07
31	M22759/11	11	10	09
	M22759/33	10	09	07
37	M22759/11	12	11	10
	M22759/33	10	09	08
51	M22759/11	*	12	11
	M22759/33	12	11	09
67	M22759/11	*	*	12
	M22759/33	*	12	10
69	M22759/11	*	*	*
	M22759/33	*	12	11
100	M22759/11	*	*	*
	M22759/33	*	*	*
130	M22759/11	*	*	*
	M22759/33	*	*	*

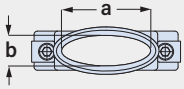
ENTRY SIZE FOR ROUND ENTRY BACKSHELLS



MICRO-D BANDING BACKSHELL WITH ROUND ENTRY

Entry Size Code	Entry Diameter Min. in	mm	Cross-Sectional Area sq in	sq mm
04	.110	2.8	.010	6.2
05	.141	3.6	.016	10.1
06	.173	4.4	.024	15.3
07	.204	5.2	.033	21.2
08	.235	6.0	.044	28.1
09	.266	6.8	.056	36.1
10	.297	7.5	.070	45.0
11	.329	8.4	.086	55.2
12	.360	9.1	.102	66.1

ENTRY FILL CALCULATOR

Step		Example
1	**Calculate Wire Cross-Sectional Area** Wire Cross-Sectional Area = (Wire Diameter)^2 * .79 * (No. of Wires) *(Repeat for each wire size and add together)*	*51 wires @ .045 inch diameter* .79 * 045 * .045 * 51 = .082 sq. in.
2	**Calculate Backshell Cross-Sectional Area** Round Entry Cross-Sectional Area = (Entry Diameter)^2 * .79 Elliptical Entry Area = .79 * a * b 	*Round Entry* *Size 12, .360 diameter* .79 * .360 * .360 = .103 sq. in. *Elliptical Entry* *Size 03 (507-175)* .79 * .644 * .290 = .148 sq. in.
3	Entry Fill Ratio = (1) Wire Cross-Sectional Area / (2) Backshell Entry Cross-Sectional Area	*Round Entry* .082 / .103 = .80 or 80% *Elliptical Entry* .082 / .148 = .55 or 55%

NOTES

1. When round entry banding backshells are used with solder cup Micro-D connectors, the transition angle from the outer pins to the entry port becomes severe and can increase damage susceptibility. Elliptical entry backshells minimize the transition angle and can reduce damage susceptibility.
2. For additional protection against wire abrasion, wrap wire bundle with polyimide tape in areas that may come into contact with interior angles.