



BEND GUIDELINE



VERSION : 2025-05-09

V-ROD
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service@fiberglassrebar.com

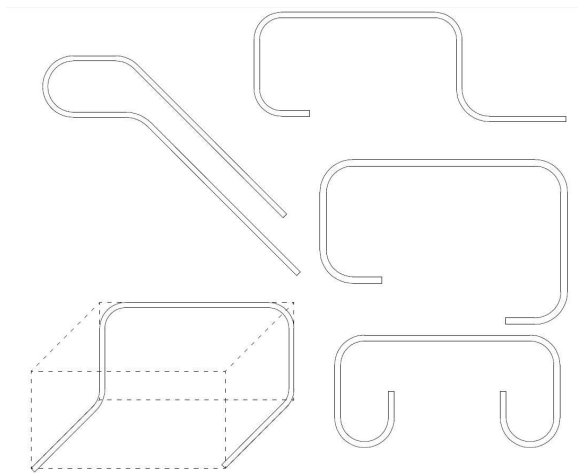
About this guideline

This document has been prepared to serve as a general reference guide when detailing/designing a concrete structure reinforced with V-ROD. The following pages show some examples of simple and complex shapes (and their dimensions limitations) that can be fabricated in piece.

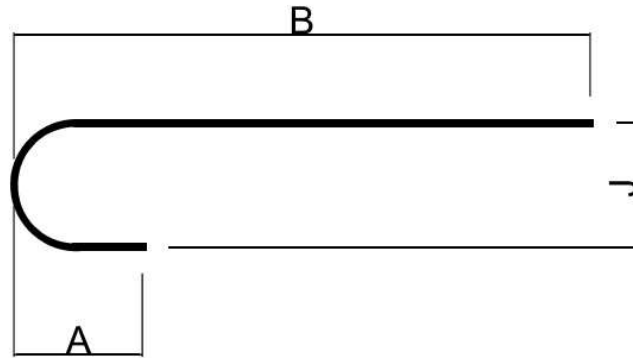
Some general limitations inherent to the technology itself are applicable to the fabrication of bent bars and these are:

- Parts must always keep the same direction (clockwise to counter-clockwise is impossible).
- 3D parts are impossible to fabricate.

To illustrate these limitations, here are a few images of shapes that can't be made in a single piece.



However, these shapes could be obtained by lapping different pieces together. Therefore, even if your piece cannot be made in one piece, do not hesitate to send a sketch along with dimensions and required quantities at service@fiberglassrebar.com. Our engineering team will be able to recommend you an assembly that will meet the requirements of the engineering standard in force as well as your own requirements.

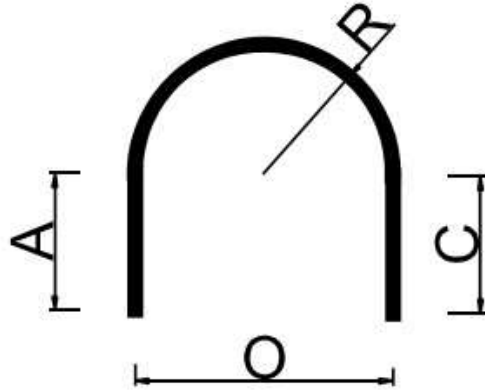


Type 01

#	Metric			Imperial		
		A & B	J		A & B	J
	DIA (mm)	MAX (mm)	(mm)	DIA (in)	MAX (in)	(in)
#2	6.4	2993	64	1/4	9'-5 7/8"	2 1/2"
#3	9.5	2864	95	3/8	9'-4 3/4"	3 3/4"
#4	12.7	2836	127	1/2	9'-3 5/8"	5"
#5	15.9	2807	159	5/8	9'-2 1/2"	6 1/4"
#6	19.0	2779	191	3/4	9'-1 3/8"	7 1/2"
#7	22.2	2725	248	7/8	8'-11 1/4"	9 3/4"
#8	25.4	2721	254	1	8'-11 1/8"	10"
#9	28.6	2667	311	1 1/8"	8'-9"	1'-0 1/4"
#10	31.75	2664	318	1 1/4"	8'-8 7/8"	1'-0 1/2"

Bigger shapes may be available upon request.

In case of doubt about the possibility of fabricating the desired bend, please verify with us by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com

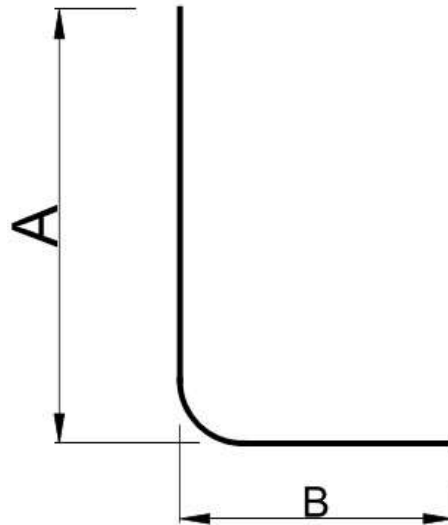


Type 10

#	Metric				Imperial			
		A & C	O	R		A & C	O	R
	DIA (mm)	MAX (mm)	(mm)	EXT (mm)	DIA (in)	MAX (in)	(in)	INT (in)
#2	6.4	2861	64	25.4	1/4	9'-4 5/8"	2 1/2"	1"
#3	9.5	2817	95	38.1	3/8	9'-2 7/8"	3 3/4	1 1/2"
#4	12.7	2772	127	50.8	1/2	9'-1 1/8"	5	2"
#5	15.9	2728	159	63.5	5/8	8'-11 3/8"	6 1/4	2 1/2"
#6	19.0	2683	191	76.2	3/4	8'-9 5/8"	7 1/2	3"
#7	22.2	2601	248	101.6	7/8	8'-6 3/8"	9 3/4	4"
#8	25.4	2594	254	101.6	1	8'-6 1/8"	10	4"
#9	28.6	2512	311	127	1 1/8"	8'-2 7/8"	1'-0 1/4"	5"
#10	31.75	2506	318	127	1 1/4"	8'-2 5/8"	1'-0 1/2"	5"

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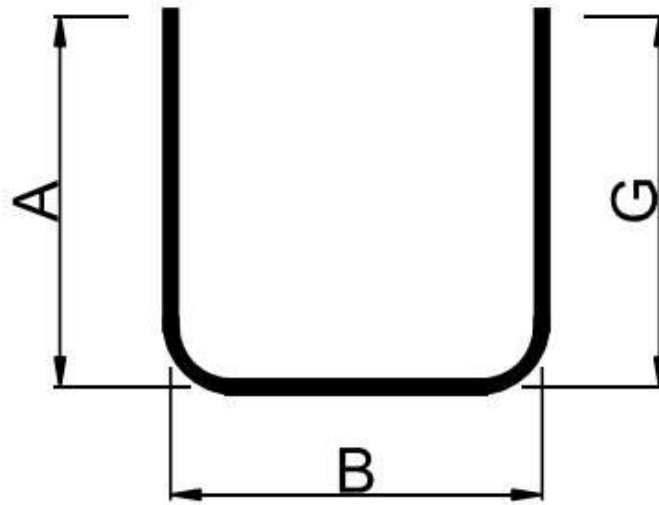


Type 02

#	Metric			Imperial		
		A	B		A	B
	DIA (mm)	MAX (mm)	MAX (mm)	DIA (in)	MAX (in)	MAX (in)
#2	6.4	2868	1717	1/4	9'-4 7/8"	5'-7 5/8"
#3	9.5	2864	1714	3/8	9'-4 3/4"	5'-7 1/2"
#4	12.7	2836	1686	1/2	9'-3 5/8"	5'-6 3/8"
#5	15.9	2807	1657	5/8	9'-2 1/2"	5'-5 1/4"
#6	19.0	2778	1628	3/4	9'-1 3/8"	5'-4 1/8"
#7	22.2	2728	1574	7/8	8'-11 3/8"	5'-2"
#8	25.4	2722	1572	1	8'-11 1/8"	5'-1 7/8"
#9	28.6	2668	1517	1 1/8"	8'-9"	4'-11 3/4"
#10	31.75	2665	1514	1 1/4"	8'-8 7/8"	4'-11 5/8"

Bigger shapes may be available upon request

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Type 02

Table 1 / Tableau 1

#	Metric				Imperial			
		A & G	B			A & G	B	
	DIA (mm)	MAX (mm)	MIN (mm)	MAX (mm)	DIA (in)	MAX (in)	MIN (in)	MAX (in)
#2	6.4	2867	127	1850	1/4	9'-4 7/8"	5"	6'-0 7/8"
#3	9.5	2867	134	1850	3/8	9'-4 7/8"	5 1/4"	6'-0 7/8"
#4	12.7	2839	140	1850	1/2	9'-3 3/4"	5 1/2"	6'-0 7/8"
#5	15.9	2807	146	1850	5/8	9'-2 1/2"	5 3/4"	6'-0 7/8"
#6	19.0	2779	153	1850	3/4	9'-1 3/8"	6"	6'-0 7/8"
#7	22.2	2725	159	1850	7/8	8'-11 1/4"	6 1/4"	6'-0 7/8"
#8	25.4	2721	165	1850	1	8'-11 1/8"	6 1/2"	6'-0 7/8"
#9	28.6	2667	171	1850	1 1/8"	8'-9"	6 3/4"	6'-0 7/8"
#10	31.75	2664	178	1850	1 1/4"	8'-8 7/8"	7"	6'-0 7/8"

If the "A" or "G" dimension exceed the maximum dimension shown in **table 1**, maximum and minimum dimensions need to be modified as per **table 2**.

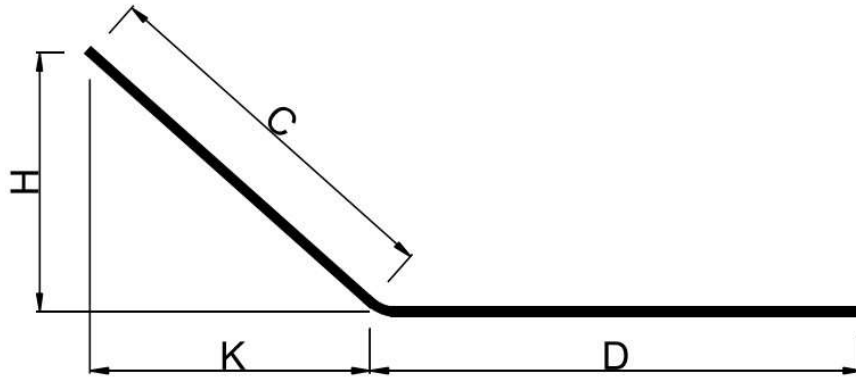


Table 2 / Tableau 2

#	Metric				Imperial			
		A & G	B			A & G	B	
	DIA (mm)	MAX (mm)	MIN (mm)	MAX (mm)	DIA (in)	MAX (in)	MIN (in)	MAX (in)
#2	6.4	3000	127	1717	1/4	9'-10 1/8"	5"	5'-7 5/8"
#3	9.5	3000	134	1714	3/8	9'-10 1/8"	5 1/4"	5'-7 1/2"
#4	12.7	3000	140	1686	1/2	9'-10 1/8"	5 1/2"	5'-6 3/8"
#5	15.9	3000	146	1657	5/8	9'-10 1/8"	5 3/4"	5'-5 1/4"
#6	19.0	3000	153	1629	3/4	9'-10 1/8"	6"	5'-4 1/8"
#7	22.2	3000	159	1575	7/8	9'-10 1/8"	6 1/4"	5'-2"
#8	25.4	3000	165	1571	1	9'-10 1/8"	6 1/2"	5'-1 7/8"
#9	28.6	3000	171	1517	1 1/8"	9'-10 1/8"	6 3/4"	4'-11 3/4"
#10	31.75	3000	178	1514	1 1/4"	9'-10 1/8"	7"	4'-11 5/8"

Other combinations of "A", "B" and "G" may be possible. Bigger shapes may be available upon request.

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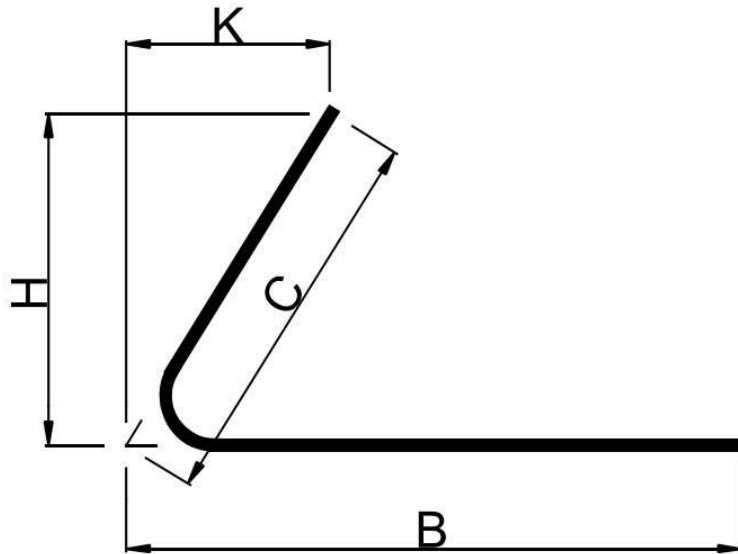


Type 03

#	Metric			Imperial		
		D + K	H		D + K	H
	DIA (mm)	MAX (mm)	MAX (mm)	DIA (in)	MAX (in)	MAX (in)
#2	6.4	2650	1674	1/4	8'-8 3/8"	5'-5 7/8"
#3	9.5	2514	1656	3/8	8'-3"	5'-5 1/8"
#4	12.7	2476	1637	1/2	8'-1 1/2"	5'-4 1/2"
#5	15.9	2439	1618	5/8	8'	5'-3 3/4"
#6	19.0	2401	1599	3/4	7'-10 1/2"	5'-3"
#7	22.2	2362	1579	7/8	7'-9"	5'-2 1/8"
#8	25.4	2325	1560	1	7'-7 1/2"	5'-1 3/8"
#9	28.6	2287	1513	1 1/8"	7'-6"	4'-11 5/8"
#10	31.75	2250	1494	1 1/4"	7'-4 5/8"	4'-10 7/8"

Bigger shapes may be available upon request.

In case of doubt about the possibility of fabricating the desired bend, please verify with us by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com

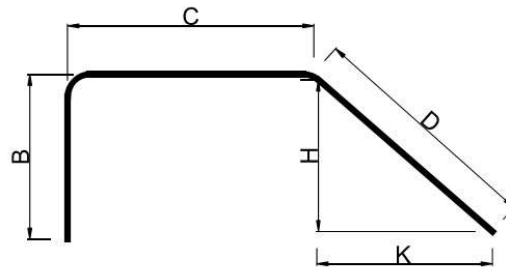


Type 35

#	Metric			Imperial		
		K + B	H		K + B	H
	DIA (mm)	MAX (mm)	MAX (mm)	DIA (in)	MAX (in)	MAX (in)
#2	6.4	2770	1790	1/4	9'-1"	5'-10 1/2"
#3	9.5	2743	1777	3/8	9'	5'-10"
#4	12.7	2708	1759	1/2	8'-10 5/8"	5'-9 1/4"
#5	15.9	2667	1741	5/8	8'-9"	5'-8 1/2"
#6	19.0	2629	1724	3/4	8'-7 1/2"	5'-7 7/8"
#7	22.2	2581	1701	7/8	8'-5 5/8"	5'-7"
#8	25.4	2552	1688	1	8'-4 1/2"	5'-6 1/2"
#9	28.6	2501	1665	1 1/8"	8'-2 1/2"	5'-5 5/8"
#10	31.75	2475	1652	1 1/4"	8'-1 1/2"	5'-5"

Bigger shapes may be available upon request

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Type 12

Metric					
		C + K		B	H
#	DIA (mm)	MIN (mm)	MAX (mm)	MAX (mm)	MAX (mm)
#2	6.4	173	2779	1717	1710
#3	9.5	179	2774	1714	1705
#4	12.7	184	2743	1686	1669
#5	15.9	312	2712	1657	1663
#6	19.0	318	2681	1629	1597
#7	22.2	324	2624	1575	1531
#8	25.4	329	2619	1571	1525
#9	28.6	457	2562	1517	1459
#10	31.75	463	2557	1514	1454

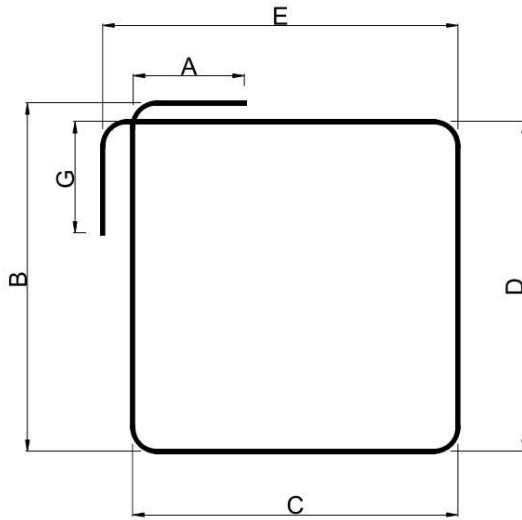
Imperial

		C + K		B	H
#	DIA (in)	MIN (in)	MAX (in)	MAX (in)	MAX (in)
#2	1/4	6 3/4"	9'-1 3/8"	5'-7 5/8"	5'-7 3/8"
#3	3/8	7"	9'-1 1/4"	5'-7 1/2"	5'-7 1/8"
#4	1/2	7 1/4"	9'	5'-6 3/8"	5'-5 3/4"
#5	5/8	1'-0 1/4"	8'-10 3/4"	5'-5 1/4"	5'-4 1/4"
#6	3/4	1'-0 1/2"	8'-9 1/2"	5'-4 1/8"	5'-2 7/8"
#7	7/8	1'-0 3/4"	8'-7 1/4"	5'-2"	5'-0 1/4"
#8	1	1'-1"	8'-7 1/8"	5'-1 7/8"	5'
#9	28.6	1'-6"	8'-4 7/8"	4'-11 3/4"	4'-9 3/8"
#10	31.75	1'-6 1/4"	8'-4 5/8"	4'-11 5/8"	4'-9 1/4"

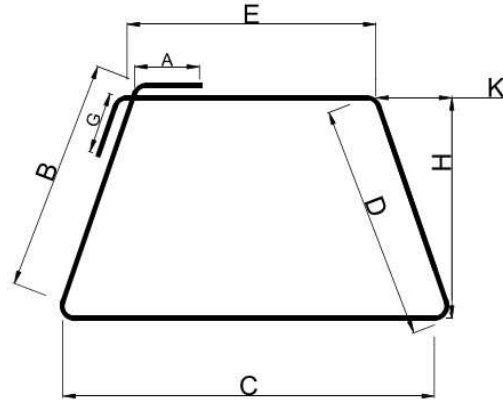


Other combinations may be possible. Bigger shapes may be available upon request.

In case of doubt about the possibility of fabricating the desired bend, please verify with us by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com



Type T02



Type T14

Table 1

Metric						Imperial				
		B & D		C & E			B & D		C & E	
#	DIA (mm)	MIN (mm)	MAX (mm)	MIN (mm)	MAX (mm)	DIA (in)	MIN (in)	MAX (in)	MIN (in)	MAX (in)
#2	6.4	127	1800	127	1200	1/4	5"	5'-10 7/8"	5"	3'-11 1/4"
#3	9.5	133	1800	133	1200	3/8	5 1/4"	5'-10 7/8"	5 1/4"	3'-11 1/4"
#4	12.7	140	1800	140	1200	1/2	5 1/2"	5'-10 7/8"	5 1/2"	3'-11 1/4"
#5	15.9	147	1800	147	1200	5/8	5 3/4"	5'-10 7/8"	5 3/4"	3'-11 1/4"
#6	19.0	267	1800	267	1200	3/4	10 1/2"	5'-10 7/8"	10 1/2"	3'-11 1/4"
#7	22.2	273	1800	273	1200	7/8	10 3/4"	5'-10 7/8"	10 3/4"	3'-11 1/4"
#8	25.4	279	1800	279	1200	1	11"	5'-10 7/8"	11"	3'-11 1/4"
#9	28.6	286	1800	286	1200	1 1/8"	11 1/4"	5'-10 7/8"	11 1/4"	3'-11 1/4"
#10	31.75	292	1800	292	1200	1 1/4"	11 1/2"	5'-10 7/8"	11 1/2"	3'-11 1/4"

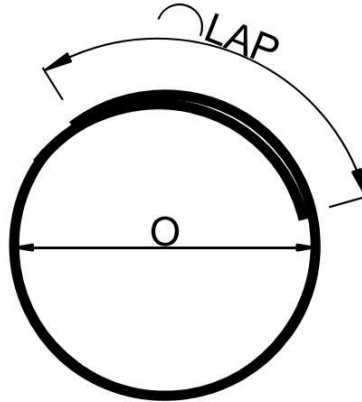
If the "D" or "B" dimension is smaller than the minimum dimension shown in **table 1**, maximum dimensions need to be modified as per **table 2**.



Table 2

Metric						Imperial				
		B & D		C & E			B & D		C & E	
#	DIA (mm)	MIN (mm)	MAX (mm)	MIN (mm)	MAX (mm)	DIA (in)	MIN (in)	MAX (in)	MIN (in)	MAX (in)
#2	6.4	127	1200	127	1800	1/4	5''	3'-11 ¼''	5''	5'-10 7/8''
#3	9.5	133	1200	133	1800	3/8	5 ¼''	3'-11 ¼''	5 ¼''	5'-10 7/8''
#4	12.7	140	1200	140	1800	1/2	5 ½''	3'-11 ¼''	5 ½''	5'-10 7/8''
#5	15.9	147	1200	147	1800	5/8	5 ¾''	3'-11 ¼''	5 ¾''	5'-10 7/8''
#6	19.0	267	1200	267	1800	3/4	10 ½''	3'-11 ¼''	10 ½''	5'-10 7/8''
#7	22.2	273	1200	273	1800	7/8	10 ¾''	3'-11 ¼''	10 ¾''	5'-10 7/8''
#8	25.4	279	1200	279	1800	1	11''	3'-11 ¼''	11''	5'-10 7/8''
#9	28.6	286	1200	286	1800	1 1/8''	11 ¼''	3'-11 ¼''	11 ¼''	5'-10 7/8''
#10	31.75	292	1200	292	1800	1 1/4''	11 ½''	3'-11 ¼''	11 ½''	5'-10 7/8''

In order to minimize the cost of per piece of stirrups, we recommend, if possible, that "A" be half of the "E" dimension and "G" be half of the "B" dimension. Other combinations may be possible. Bigger shapes may be available upon request. If the dimensions of your bent bar doesn't fit in the previous tables, please verify with us by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com.



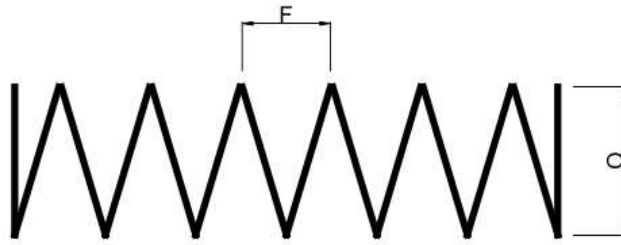
Type T03

We currently are able to produce circular stirrups with an internal diameter “O” equal to one of the following dimensions:

Metric (internal diameter “O”) mm					Imperial (internal diameter “O”) in				
100	160	170	205	220	3 7/8”	6 ¼”	6 ¾”	8”	8 5/8”
225	235	240	245	250	8 7/8”	9 ¼”	9 ½”	9 5/8”	9 7/8”
254	290	305	400	420	10”	11 3/8”	1’-0”	1’-3 ¾”	1’-4 ½”
540	610	648	660	679	1’-9 ¼”	2’	2’- 1 ½”	2’-2”	2’-2 ¾”
682	737	740	800	815	2’-2 7/8”	2’-5”	2’-5 1/8”	2’-7 1/2”	2’-8 1/8”
875	890	919	1020	1055	2’-10 ½”	2’-11”	3’-0 1/8”	3’-4 1/8”	3’-5 ½”
1090	1207	1220	1270	1397	3’-6 7/8”	3’-11 ½”	4’	4’-2”	4’-7”
1575	1778	1905	2235	2591	5’-2”	5’-10”	6’-3”	7’-4”	8’-6”

It is possible to fabricate circular stirrups with other “O” dimensions than the one shown in the previous table. However, a surcharge will be applicable.

In case of doubt about the possibility of fabricating the desired bend, please verify with us by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com



Type SP1

We currently are able to produce spirals with an internal diameter “O” equal to one of the following dimensions:

Metric (internal diameter “O”) mm					Imperial (internal diameter “O”) in				
100	160	170	205	220	3 7/8”	6 ¼”	6 ¾”	8”	8 5/8”
225	235	240	245	250	8 7/8”	9 ¼”	9 ½”	9 5/8”	9 7/8”
254	290	305	400	420	10”	11 3/8”	1’-0”	1’-3 ¾”	1’-4 ½”
540	610	648	660	679	1’-9 ¼”	2’	2’- 1 ½”	2’-2”	2’-2 ¾”
682	737	740	800	815	2’-2 7/8”	2’-5”	2’-5 1/8”	2’-7 1/2”	2’-8 1/8”
875	890	919	1020	1055	2’-10 ½”	2’-11”	3’-0 1/8”	3’-4 1/8”	3’-5 ½”
1090	1207	1220	1270	1397	3’-6 7/8”	3’-11 ½”	4’	4’-2”	4’-7”
1575	1778	1905	2235	2591	5’-2”	5’-10”	6’-3”	7’-4”	8’-6”

It is possible to fabricate spirals with other “O” dimensions than the one shown in the previous table. However, a surcharge will be applicable.

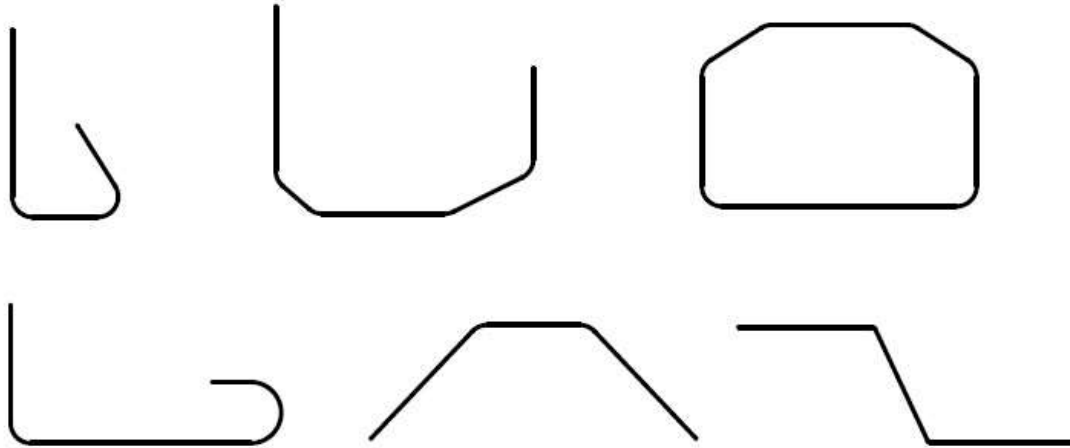
All our spirals are produced as a “slinky” and need to be stretched to the required pitch “F”. Maximum pitch “F” depends on the spiral dimensions and diameter.

Tapered spirals are also available upon request. The “shape” of the spiral can also “squared” instead “circular”.

Please, ALWAYS send a sketch along with dimensions and required quantities at service@fiberglassrebar.com for any spirals request.



OTHER SHAPES ARE AVAILABLE UPON REQUEST:



Please check with Pultrall by sending a sketch along with dimensions and required quantities at service@fiberglassrebar.com.