



Packaging Information – IPS/DIPS Hard Sided Bundles

PERFORMANCE PIPE IPS PRODUCTS HARD-SIDED BUNDLES (20',40' & 50' Joints)

Size	Bundle Style	Pipe OD	Joints Per Bundle	Bundles Per Truck 20'/40'/50'	Joints Per Truck 20'/40'/50'	DR	Feet Per Truck 20' Joints	Feet Per Truck 40' Joints	Feet Per Truck 50' Joints
3/4"	Hard	1.050"	185	28 / NA / NA	5,180 / NA / NA	7 – 11	103,600'	N/A	N/A
1"	Hard	1.315"	116	28 / NA / NA	3,248 / NA / NA	7 – 11	64,960'	N/A	N/A
1 ¼"	Hard	1.660"	153	28 / NA / NA	4,284 / NA / NA	7 – 11	85,680'	N/A	N/A
1 ½"	Hard	1.900"	129	28 / NA / NA	3,612 / NA / NA	7 – 11	72,240'	N/A	N/A
2"	Hard	2.375"	88	26 / 13 / NA	2,288 / 1,144 / NA	7	45,760'	45,760'	N/A
				28 / 14 / NA	2,464 / 1,232 / NA	9 - 17	49,280'	49,280'	N/A
2 ½"	Hard	2.875"	78	20 / 10 / NA	1,560 / 780 / NA	7	31,200'	31,200'	N/A
				24 / 12 / NA	1,872 / 936 / NA	9	37,440'	37,440'	N/A
				28 / 14 / NA	2,184 / 1,092 / NA	11-17	43,680'	43,680'	N/A
3"	Hard	3.500"	50	28 / 14 / NA	1,400 / 700 / NA	21-32.5	28,000'	28,000'	N/A
4"	Hard	4.500"	29	28 / 14 / N/A	812 / 406 / N/A	21-32.5	16,240'	16,240'	N/A
5"	Hard	5.375	23	24 / 12 / 12	552 / 276 / 276	21-32.5	11,040'	11,040'	13,800'
5"	Hard	5.563	23	24 / 12 / 12	552 / 276 / 276	21-32.5	11,040'	11,040'	13,800'
6"	Hard	6.625"	20	20 / 10 / 10	400 / 200 / 200	21-32.5	8,000'	8,000'	10,000'
7"	Hard	7.125"	17	16 / 8 / 8	272 / 136 / 136	21-32.5	5,440'	5,440'	6,800'
8"	Hard	8.625"	14	16 / 8 / 8	224 / 112 / 112	13.5-32.5	4,480'	4,480'	5,600'
8"	Hard	8.625"	14	16 / 8 / 7	224 / 112 / 98	11.0	4,480'	4,480'	4,900'

Bundles per truck and feet per truck are determined stacking the bundles on pipe when loading.

Note: the joint lengths listed above are the more common lengths. Other less common joint lengths can be shipped on a flatbed as long as all product within a given column is the same joint length and the resulting load can be safely secured with 16 trucker straps or less in alignment with our trucker strap procedures. Joint lengths of 12' to 16' result in three columns of product on the trailer for which 16 straps limit the number of layers to five or less. Joint lengths of 10' or 11' result in four columns of product on the trailer for which 16 straps limit the number of layers to four or less.



Packaging Information – IPS/DIPS Hard Sided Bundles

PERFORMANCE PIPE **DIPS** PRODUCTS **HARD-SIDED BUNDLES** **(20', 40' & 50' Joints)**

Size	Bundle Style	Pipe OD	Joints Per Bundle	Bundles Per Truck 20'/40'/50'	Joints Per Truck 40'/50'	DR	Feet Per Truck 20' Joints	Feet Per Truck 40' Joints	Feet Per Truck 50' Joints
4"	Hard	4.800"	26	24 / 12 / N/A	624 / 312 / N/A	21-32.5	12,480'	12,480'	N/A
6"	Hard	6.900 "	17	16 / 8 / 8	272 / 136 / 136	21-32.5	5,440'	5,440'	6,800'
8"	Hard	9.050"	14	12 / 6 / 6	168 / 84 / 84	21-32.5	3,360'	3,360'	4,200'

BUNDLE PACKAGING STANDARDS

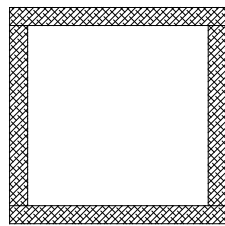
1. Hard-Sided Style: (¾" through 8.625")

- A. For encasing all straight lengths that are 8.625" OD or smaller.
 - (1) All Hard-Side bundles to be constructed from hardwood/softwood 2" x 6" or 3" x 4" lumber. Grooved boards are preferable, but not mandatory as the banding will create a notch in some soft woods securing the banding in place. (Note: 2" x 6" boards actually have a thickness of approximately 1.5", 3" X 4" have a 2.5" thickness)
- B. Lumber Sizes and Placement:
 - (1) The Hard –Side bundle is encased by lumber stated in (1) above.
 - (a) Fifty-foot (50') straight lengths are encased at 7 or 8 equidistant locations depending on bundling cart and plant.
 - (b) Forty-foot (40') straight lengths are encased at six (6) equidistant locations.
 - (c) Twenty-foot (20') straight lengths are encased at three (3) equidistant locations.
 - (d) Top, side and bottom board lengths are as follows:

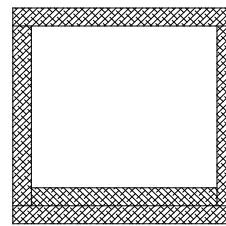
Packaging Information – IPS/DIPS Hard Sided Bundles

IPS – Pipe Size	Top & Bottom / Second Bottom Board Length	Sideboard Length	Product Length
¾"	22 ¾" / 19 ¾"	10 ¼"	20'
1"	22 ¼" / 19 ¼"	10 ¼"	20'
1 ¼"	46 / 43	10 "	20'
1 ½"	44 ¾" / 41 ¾"	11 ¼"	20'
2"	45 ¾" / 42 ¾"	11 ¾"	20'-40'
2 ½"	49"	12 ¾"	20'-40'
3"	48 ½"	12 ½"	20'-40'
4"	48"	12 ¼ "	20'-40'
5" (5.375")	46"	14 ¾"	20'-40'-50'
5" (5.563")	47 ½"	15 ⅛"	20'-40'-50'
6"	49 ⅜"	18"	20'-40'-50'
7"	45 ¾"	19 ⅜"	20'-40'-50'
8"	45"	23"	20'-40'-50'

DIPS – Pipe Size	Top & Bottom / Second Bottom Board Length	Sideboard Length	Product Length
4"	46 ⅛"	17 ¼"	20'-40'-
6"	44 ½"	18 ⅞"	20'-40'-50'
8"	48 ¼"	24 ¾"	20'-40'-50'



**Single Bottom
Board Bundle
(Greater than 2")**



**Double Bottom
Board Bundle
(2" and less)**

**Second Bottom
Board**

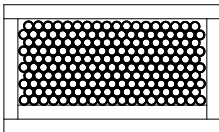
Sizes greater than 2"
require single bottom
board bundles

Sizes 2" and smaller
require double bottom
board bundles when
using 2 x 6 lumber. Not
required for 3 x 4 lumber.

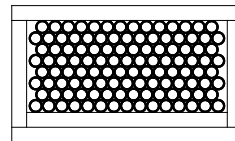
Packaging Information – IPS/DIPS Hard Sided Bundles

- C. Banding:
 (1) For Hard-Sided bundles, utilize 3/4" X 050 polyester banding.
 (a) Use one (1) band to compress each set of top, side and bottom boards.
- D. Storage:
 (1) Hard-Sided bundles may be aligned "wood-on-wood" or offset "wood-on-pipe" during storage except that DR 21 or thinner product must be stored "wood -on-wood". For ease of handling with forklifts, the "wood-on-wood" method is recommended in storage yards.
- E. Transport:
 (1) Hard-sided bundles can be offset "wood -on-pipe" or "wood -on-wood" during transport. If shipping product with "wood -on wood", the total bundles per load may need to be reduced to prevent exceeding the height restrictions. Performance Pipe's Transport Strapping Policy established minimum requirements regarding the number of truckers' straps used by all transportation providers to secure bundles. The policy also contains conditions regarding the tightening of straps after a carrier leaves a Performance Pipe facility.

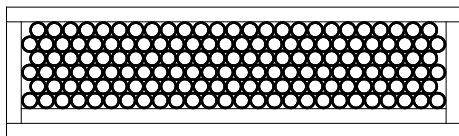
IPS - Hard Sided Bundles (Examples)



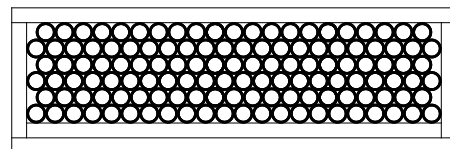
3/4" IPS
185 Joints Per Bundle



1" IPS
116 Joints Per Bundle

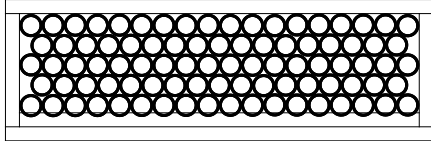


1 1/4" IPS
153 Joints Per Bundle



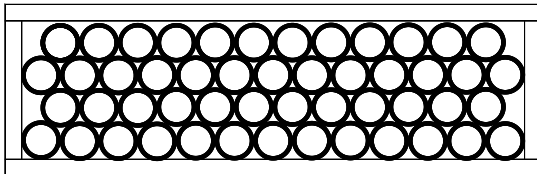
1 1/2" IPS
129 Joints Per Bundle

Packaging Information – IPS/DIPS Hard Sided Bundles

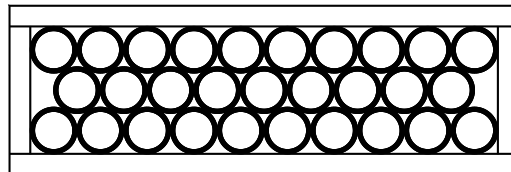


2" IPS
88 Joints Per Bundle

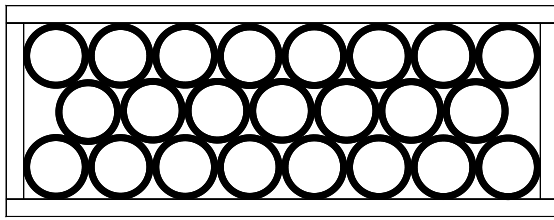
IPS – Hard Sided Bundles (Examples) – DR's 21 – 32.5 – (8" 11.0 - 32.5)



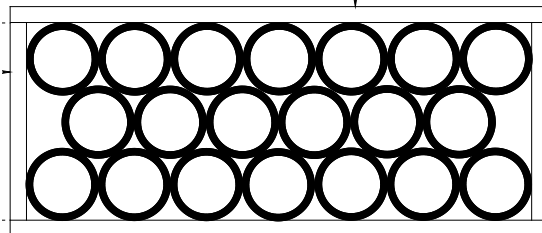
3" IPS
50 joints per bundles



4" IPS
29 joints per bundles

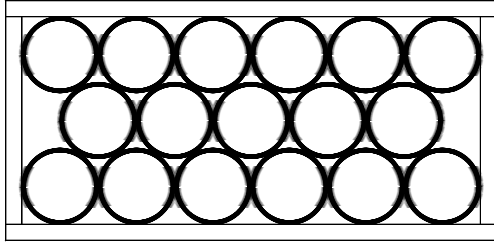


5" IPS
23 joints per bundle

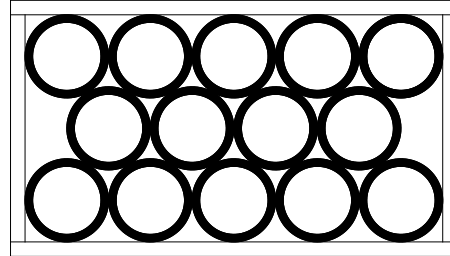


6" IPS
20 joints per bundle

Packaging Information – IPS/DIPS Hard Sided Bundles

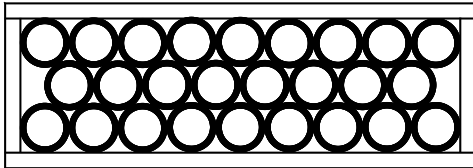


7" IPS
17 joints per bundles

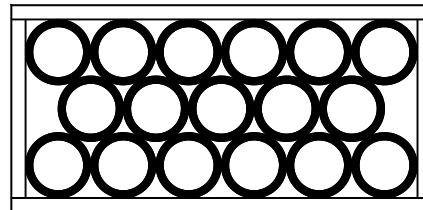


8" IPS
14 joints per bundle

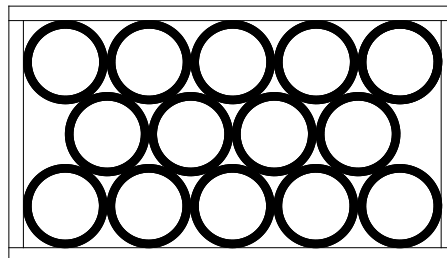
DIPS – Hard-Sided Bundles (Examples)



4" DIPS
26 joints per bundle



6" DIPS
17 joints per bundle



8" DIPS
14 joints per bundle



Packaging Information – IPS/DIPS Hard Sided Bundles

Performance Pipe Bundle Packaging Standards IPS – Hard Sided Bundle Patterns (20', 40' & 50' Joints)

Size	Pipe OD	Bundle Style	Bundle Height (Note 2)	Top Board Length	Bottom Board Lengths (Note 1)	Side Board Length	Joints Per Bundle	Bundles Per Truck 20'/40'/50'	Bundle pattern	Feet Per 20' Bundle	Feet Per 40' Bundle	Feet Per 50' Bundle
¾"	1.050"	Hard	13.734"	22 ¾"	19 ¾" / 22 ¾"	10 1/4"	185	28 / NA / NA	19/18/19/ 18/19/18/ 19/18/19/ 18	3,700'	N/A	N/A
1"	1.315"	Hard	13.787"	22 ¼"	19 1/4" / 22 1/4"	10 1/4"	116	28 / NA / NA	15/14/15/ 14/15/14/ 15/14	2,320'	N/A	N/A
1 ¼"	1.660"	Hard	13.348"	46"	43" / 46"	10"	153	28 / NA / NA	26/25/26/ 25/26/25	3,060'	N/A	N/A
1 ½"	1.900"	Hard	14.627"	44 ¾"	41 ¾" / 44 ¾"	11 1/4"	129	28 / NA / NA	22/21/22/ 21/22/21	2,580'	N/A	N/A
2"	2.375"	Hard	15.102"	45 ¾"	42 ¾" / 45 ¾"	11 ¾"	88	28 / 14 / NA	18/17/18/ 17/18	1,760'	3,520'	N/A
2 ½"	2.875"	Hard	15.834"	49"	49"	12 ¾"	78	28 / 14 / NA	16/15/16/ 15/16	1,560'	3,120'	N/A
3"	3.500"	Hard	15.593"	48 ½"	48 ½"	12 ½"	50	28 / 14 / NA	13/12/13/ 12	1,000'	2,000'	N/A
4"	4.500"	Hard	15.294"	48"	48"	12 ¼"	29	28 / 14 / NA	10/9/10	580'	1,160'	N/A
5"	5.375"	Hard	17.685"	46"	46"	14 ¾"	23	24 / 12 / 12	8/7/8	460'	920'	1,150'
5"	5.563"	Hard	18.198"	47 ½"	47 ½"	15 1/8"	23	24 / 12 / 12	8/7/8	460'	920'	1,150'
6"	6.625"	Hard	21.100"	49 3/8"	49 3/8"	18"	20	20 / 10 / 10	7/6/7	400'	800'	1,000'
7"	7.125"	Hard	22.466"	45 ¾"	45 ¾"	19 3/8"	17	16 / 8 / 8	6/5/6	340'	680'	850'
8"	8.625"	Hard	26"	45"	46 1/8"	23"	14	16 / 8 / 8	5/4/5	280'	560'	700'

Note 1: Sizes ¾" thru 2" require a double bottom board.
Note 2: Bundle height is determined using 1 ½" boards.



Packaging Information – IPS/DIPS Hard Sided Bundles

Performance Pipe Bundle Packaging Standards DIPS- Hard-Sided Bundle Patterns ([20'](#), [40'](#) & [50'](#) Joints)

Size	Pipe OD	Bundle Style	Bundle Height (Note 2)	BTM Board Length (Note 1)	Side Board Length	Joints Per Bundle	Bundles per Truck 20'/40'/50'	Bundle Pattern	DR	Feet Per 20' Bundle	Feet Per 40' Bundle	Feet Per 50' Bundle
4"	4.800"	Hard	16.114"	* 46 1/8"	13 1/8"	26	24 / 12 / N/A	9/8/9	26-32.5	520'	1,040'	N/A
6"	6.900"	Hard	21.851"	* 44 1/2"	18 7/8"	17	16 / 8 / 8	6/5/6	26-32.5	340'	680'	850'
8"	9.050"	Hard	27.725"	* 48 1/4"	24 3/4"	14	12 / 6 / 6	5/4/5	26-32.5	280'	560'	700'

Note 1: Figure is also top board length if one is required.

Note 2: Bundle height determined using 1 1/2" boards.