



Packaging Information – IPS-CTS Gas Hard Sided Bundles

PERFORMANCE PIPE **CTS** PRODUCTS **HARD-SIDED BUNDLES IN BAGS (20' - Joints)**

Size	Bundle Style	Pipe OD	Joints Per Bag	Feet Per Bag	Bags Per Pallet	Bundles Per Truck 20'	Joints Per Truck 20'	DR	Feet Per Truck 20' Joints
½"	Hard*	.625	50	1,000'	15	12	9,000	7 – 11	180,000'
¾"	Hard*	.875	30	600'	12	12	4,320	7 – 11	86,400'
1"	Hard*	1.125	20	400'	30	12	7,200	7 – 11	144,000'
1 1/4"	Hard*	1.375	20	400'	24	12	5,760	7 – 11	115,200'

PERFORMANCE PIPE **IPS** PRODUCTS **HARD-SIDED BUNDLES IN BAGS (20' Joints)**

Size	Bundle Style	Pipe OD	Joints Per Bag	Feet Per Bag	Bags Per Pallet	Bundles Per Truck 20'	Joints Per Truck 20'	DR	Feet Per Truck 20' Joints
½"	Hard*	.840"	30	600'	15	12	5,400	7 – 11	108,000'
¾"	Hard*	1.050"	25	500'	30	12	9,000	7 – 11	180,000'
1"	Hard*	1.315"	15	300'	15	12	2,700	7 – 11	54,000'

*Denotes that this type of hard-sided bundle will require a 20' 2x6 runner attached along the bottom inside on each side of the encasings to stabilize the bundle. Pipe should also be placed in plastic bags. See bundling standards section below for details.

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
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
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 / 14	812 / 406 / 406	21-32.5	16,240'	16,240'	N/A
6"	Hard	6.625"	20	20 / 10 / 10	400 / 200 / 200	21-32.5	8,000'	8,000'	10,000'
8"	Hard	8.625"	14	16 / 8 / 8	224 / 112 / 112	21-32.5	4,480'	4,480'	5,600'

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



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BUNDLE PACKAGING STANDARDS

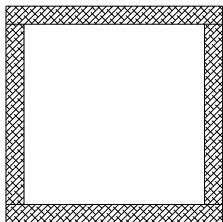
1. Hard-Sided Style: (1/2” through 8.625”)

- 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 seven (7) or eight (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) Twenty-foot (20’) straight lengths in sizes ½” CTS – 1” IPS in bags are encased at (5) equidistant locations. 20’ 2x6 runners will be nailed/stapled to the bottom inside of each side of the encasings to stabilize the bundle. Four cross boards shall be placed across the bottom of the bundles between the five encasements. These boards are the width of the bundle and used to help prevent the pipe from sagging. Pipe should also be placed in plastic bags. The bags should be at least 4 mils thick x 10 “wide. (Note: they can be purchased in 750’ rolls and cut to size).
- (e) Any loose bags of 20’ pipe shall be banded to the top of a full pack of another size and place on the top of the load on the truck. The size should be written on the outside of the bag.
- (f) Top, side and bottom board lengths are as follows:

IPS – Pipe Size	Top & Bottom / Second Bottom Board Length	Sideboard Length	Product Length
1 ¼”	46 / 43	10 ”	20’
1 ½”	44 ¾” / 41 ¾”	11 ¼”	20’
2”	45 ¾” / 42 ¾”	11 ¾”	20’-40’
3”	48 ½”	12 ½”	20’-40’
4”	48”	12 ¼ ”	20’-40’
6”	49 ¾”	18”	20’-40’-50’
8”	46 ½”	23 ½”	20’-40’-50’

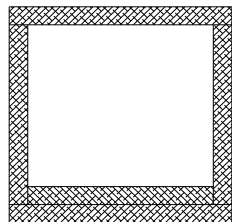
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IPS/CTS – Pipe Size in bags	Top & Bottom / Second Bottom Board Length	Sideboard Length	Product Length
½" CTS	44 ½" / 41 ½"	8 1/2"	20'
¾" CTS	44 ½" / 41 ½"	8 ½"	20'
1" CTS	44 ½" / 41 ½"	19"	20'
1 ¼" CTS	44 ½" / 41 ½"	22 ½"	20'
½" IPS	44 ½" / 41 ½"	11"	20'
¾" IPS	44 ½" / 41 ½"	20"	20'
1" IPS	44 ½" / 41 ½"	11 3/4"	20'



Single Bottom Board Bundle

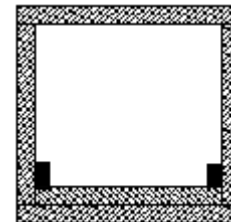
Sizes 3" – 8" IPS require single bottom board bundles



Double Bottom Board Bundle

Sizes 1 ¼" - 2" IPS require double bottom board bundles/ or single board if using 3x4" boards

Second Bottom Board



Double Bottom Bundle 2x6 - 20' Board Bundle W/Runner

Sizes ½" CTS - 1 ¼" CTS and ½" IPS – 1" IPS require double bottom boards, bags and 2" x 6" x 20' runners.

- (1) Banding: For Hard-Sided bundles, utilize 3/4" .040 or 3/4" X 050 polyester banding.
(a) Use one (1) band to compress each set of top, side and bottom boards.

D. Storage:

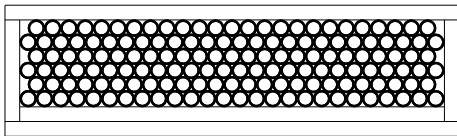
- (1) Hard-Sided bundles may be aligned "wood-on-wood" or offset "wood-on-pipe" during storage except that DR 21 or thinner product must be stored "wood-on-wood". For ease of handling with forklifts, the "wood-on-wood" method is recommended in storage yards.

E. Transport:

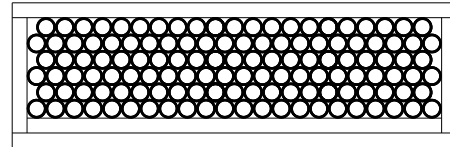
- (1) Hard-sided bundles can be offset "wood-on-pipe" or "wood-on-wood" during transport. If shipping product with "wood-on wood", the total bundles per load may need to be reduced to prevent exceeding the height restrictions. Performance Pipe's Transport Strapping Policy established minimum requirements 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.

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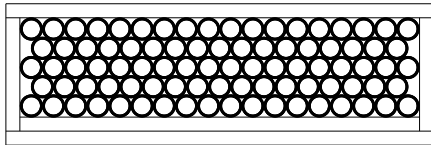
IPS - Hard Sided Bundles (Examples)



1 ¼" IPS
153 Joints Per Bundle

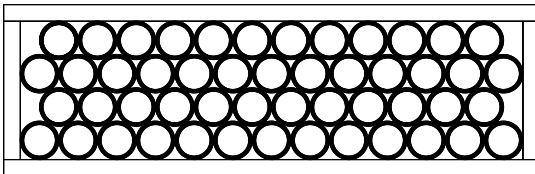


1 ½" IPS
129 Joints Per Bundle

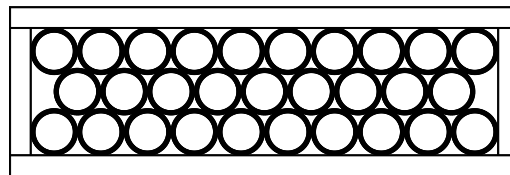


2" IPS
88 Joints Per Bundle

IPS – Hard Sided Bundles (Examples) – DR's 21 – 32.5

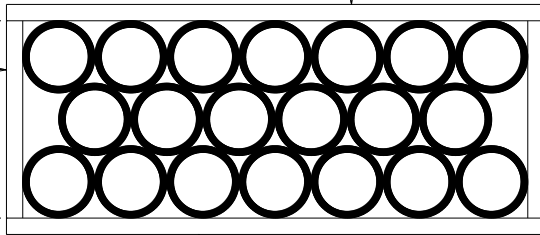


3" IPS
50 joints per bundles

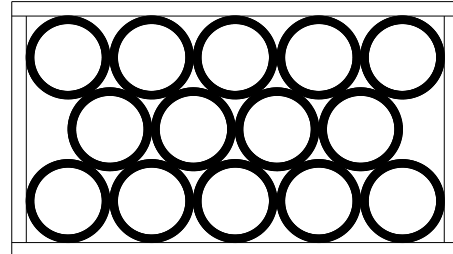


4" IPS
29 joints per bundles

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6" IPS
20 joints per bundle



8" IPS
14 joints per bundle

IPS – CTS Hard Sided Bundles (Examples) – 20' Pipe in Bags





Packaging Information – IPS-CTS Gas Hard Sided Bundles

IPS – Hard Sided Bundle Patterns (20', 40' & 50' Joints)

Size	Pipe OD	Bundle Style	Bundle Height (Note 2)	BTM Board Lengths (Note 1) (Note 3)	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
1 ¼"	1.660"	Hard	13.348"	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"	41 ¾" *44 ¾"	11 ¼"	129	28 / NA / NA	22/21/22/ 21/22/21	2,580'	N/A	N/A
2"	2.375"	Hard	15.102"	42 ¾" *45 ¾"	11 ¾"	88	28 / 14 / NA	18/17/18/ 17/18	1,760'	3,520'	N/A
3"	3.500"	Hard	15.593"	* 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"	12 ¼"	29	28 / 14 / 14	10/9/10	580'	1,160'	1,450'
6"	6.625"	Hard	21.100"	* 49 ¾"	18"	20	20 / 10 / 10	7/6/7	400'	800'	1,000'
8"	8.625"	Hard	26.564"	* 46 1/8"	23 ½"	14	16 / 8 / 8	5/4/5	280'	560'	700'

Note 1: Bundle height determined using 1 ½" thick board - (Double bottom boards).

Note 2: Bundle height determined using 1 ½" thick boards – (Single bottom board)

Note 3: * Figure is also top board length