

INDEPENDENT PIPE PRODUCTS, INC.

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DESIGN-FLOW[®]
HDPE PIPE

Handling & Storage Manual

RECOMMENDATION TO CUSTOMERS:

- * UNLOADING**

- * HANDLING**

- * STORAGE**

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DESIGN-FLOW[®] Handling & Storage Manual HDPE PIPE

GENERAL RECOMMENDATIONS

FOR UNLOADING POLYETHYLENE PIPE: ****PALLETIZED SILO LOADS****

(Recommendacions general para descarga de Tuberiapioyethylene: ****Carga en Paleta****)

1. Be sure equipment is rated to handle the weight of the pipe. (Este seguro que el equipo pueda con el peso de la Tuberia.)
2. Unloader must have adequate room on both sides of the trailer. **ADVISE ALL PERSONS EXCEPT LIFT OPERATOR TO STAND CLEAR OF THE TRAILER!**
(Descargador tendra' suficiente espacio en los dos lados del remolque. **AVISAR TODAS PERSONAS EXCEPTO EL OPERADORQUE SE QUEDEN LIBRES DEL ELREMOLQUE!**)
3. Unload one pallet at a time from side of trailer. (Descarge una paleta al tiempo por lado del remolque.)
4. Repeat all steps until trailer is unloaded. (Repeta todos los pasos hasta que el remolque quede descargado.)

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GENERAL RECOMMENDATIONS

FOR UNLOADING POLYETHYLENE PIPE: ****BUNDLED LOADS****

(Recommendacions general para descarga de Tuberia ployethylene: ****Carga en Bulto****)

1. Be sure equipment is rated to handle the weight of the pipe. (Este seguro que el equipo pueda con el peso de la Tuberia.)
2. Unloader must have adequate room on both sides of the trailer. **ADVISE ALL PERSONS EXCEPT LIFT OPERATOR TO STAND CLEAR OF THE TRAILER!**
(Descargador te'ndra' suficiente espacio en los dos lados del remolque. **AVISAR TODAS PERSONAS EXCPETO EL OPERADOR QUE SE QUEDEN LIBRES DEL EL REMOLQUE!**)
3. Unload one pallet at a time from side of trailer. Truck straps securing a bundle should be release when that bundle is to be unloaded. (Suelte un bulto al tiempo. Bandas asegurando un bulto deben ser libres quando el bulto se va descargar.)
4. **NEVER STAND ON LOAD OF PIPE!** Standing on the load is extremely dangerous. **(NUNCA SE PARE' EN LA TUBERIA!** parandose en la tuberia es muy pelegroso.)
5. Repeat all steps until trailer is unloaded.
(Repeta todos los pasos hasta que el remolque quede descargado.)

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GENERAL RECOMMENDATIONS

FOR UNLOADING POLYETHYLENE PIPE: ****STRIP LOADS****

(Recommendacions general para descarga de Tuberia ployethylene: ****Tira Carga****)

1. Be sure equipment is rated to handle the weight of the pipe. (Este seguro que el equipo pueda con el peso de la tuberia.)
2. Unloader must have adequate room on both sides of the trailer. **ADVISE ALL PERSONS EXCEPT LIFT OPERATOR TO STAND CLEAR OF THE TRAILER!**
3. (Descargador tendra' suficiente espacio en los dos lados del remolque. **AVISAR TODOS PERSONAS EXCEPTO EL OPERADOR QUE SE QUEDEN LIBRES DE EL REMOLQUE!**)
4. Unload one layer at a time. Truck straps securing a layer should be released when that layer is to be unloaded. (Descarge una capa al tiempo. Bandas asegurando una capa, deben ser libres quando la capa se va descargar.)
5. **NEVER STAND ON LOAD OF PIPE!** Standing on the load and cutting bands is extremely dangerous! (NUNCA SE PARE' EN LA TUBERIA! Parandose en la tuberia y cortando las bandas es muy peligroso.)
6. After each layer is off the trailer, remove dunnage from the top of pipe. (Despues de que descarge cada capa de tuberia, quite el acolchado sobre la tuberia.)
7. Repeat all steps until trailer is unloaded. (Repetar todos los pasos hasta que el remolque quede descargado.)

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GENERAL RECOMMENDATIONS

FOR UNLOADING POLYETHYLENE PIPE:

****LOOSE LOADS****

(Recommendacions general para descarga de Tuberia ployethylene: ****Flojo Carga****)

1. Be sure equipment is rated to handle the weight of the pipe. (Este seguro que el equipo pueda con el peso de la tuberia.)
2. Unloader must have adequate room on both sides of the trailer. **ADVISE ALL PERSONS EXCEPT LIFT OPERATOR TO STAND CLEAR OF THE TRAILER!**
(Descargador tendra1 suficiente espacio en los dos lados del remolque. **AVISAR TODOS PERSONAS EXCEPTO EL OPERADOR QUE SE QUEDEN LIBRES DE EL REMOLQUE!**)
3. **ONLY UNTIE ROPE THAT IS OVER TOP LAYER OF PIPE!**
(SOLO AFOLJE EL LASO QUE ESTA SOBRE LA CAPA DETUBERIA!)
4. **NEVER STAND ON LOAD OF PIPE!** Standing on the load and cutting any bands is extremely dangerous! **(NUNCA SE PARE1 EN LA TUBERIA!** Parandose en la tuberia y cortando las bandas es muy peligroso.)
5. Work forks between top layers, tilting forks back. Lift pipe over pipestakes on side of trailer. (Trabaje la horquitla en medio y encima del las capas, con la horquilla incliada. Levonte la tuberia sobre la estacas de tuberia en un lado del remolqu.)
6. Repeat all steps until trailer is unloaded. (Repeta todos los pasos haste que el remolque quede descargado.)

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RECOMMENDATIONS FOR HANDLING, UNLOADING AND STORING POLYETHYLENE PIPE

HANDLING AND UNLOADING

While polyethylene piping products are generally tough and resilient, use care to protect them from abuse such as dropping, throwing, or dragging.

As with any piping product, hazards exist with respect to the handling of the polyethylene pipe product. The following guidelines should be considered during the handling and unloading of the polyethylene pipe product in order to reduce the associated hazards to a reasonable minimum.

The truck must be parked on level ground with parking brake on and wheels chocked. If not, have the driver move the truck to level ground.

Polyethylene is extremely slippery when wet. Use caution at all times, especially in rainy weather.

Never stand on a load of polyethylene pipe!

Polyethylene pipe, although "plastic," can be much heavier than one might assume. Always check the weight prior to hoisting. See Table 1 for approximate weights of polyethylene pipe. Always check lift height capabilities of unloading equipment prior to unloading.

If using a forklift, the forks should enter the load slowly, and care should be taken to not damage the pipe with the fork tips. The chance of damage can be reduced if the steel forks are covered by protective material.

Do not roll or drop pipe off trucks. This is dangerous to the unloading personnel and may damage pipe.

The use of backhoes, end-loaders, or other material handling equipment to push the load off the trailer is hazardous to unloading personnel and may damage the pipe, and should therefore not be allowed.

People not involved in the unloading of the trailer should remain completely clear of the unloading area.



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HDPE PIPE

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RECOMMENDATIONS FOR HANDLING, UNLOADING AND STORING POLYETHYLENE PIPE (continued)

Bundles

Bulk packs should be unloaded using fork trucks, cranes equipped with at least three wide web slings, or cranes equipped with spreader bars with at least three wide web slings. The equipment should be of sufficiently rated capacity to safely handle the load.

Bulk packs may be stacked and individually strapped to the truck. In such a case, the bulk packs should be unloaded one at a time from the top, taking care to remove only the trucker straps over the pack being unloaded.

When using fork trucks, the bulk packs should be picked up one at a time under their midpoint. For load stability, the forks should be as far apart as possible.

Steel bands used on bulk packs should not be removed until the bulk packs have been transported to the storage area and secured in a stable and safe manner.

Silo Packs

It is recommended that silo packs be unloaded from the side of the trailer with a fork truck of sufficiently rated capacity.

The forks should be of suitable length to safely support the silo pack during unloading and transportation to the storage area.

To prevent damage, fork truck entry to the pallet should be between the top and bottom pallet boards.

Banding securing the integrity of the silo, should not be removed until the pallet has been unloaded from the trailer, transported to the storage area, and secured in a stable and safe manner.

Do not roll or drop pipe off trucks. This is dangerous to the unloading personnel and may damage pipe.

The use of backhoes, end-loaders, or other material handling equipment to push the load off the trailer is hazardous to unloading personnel and may damage pipe, and should therefore not be allowed.

People not involved in the unloading of the trailer should remain completely clear of the unloading area.



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RECOMMENDATIONS FOR HANDLING, UNLOADING AND STORING POLYETHYLENE PIPE (continued)

Stalk Pipe (i.e., partial bulks): Determine if load is a "strip" load or "loose" load.

IF STRIP LOAD:

Check the load to assure that all chocks are securely in place on both ends of the timbers. If not, nail a chock or other suitable wedge into position.

At no time or under any circumstances should the chocks on timbers be removed. The chocks prevent pipe from rolling.

Only after checking that all chocks are in place should the truck driver remove the nylon trucker straps securing the load to the trailer. Do not remove "belly" straps until unloading is to take place on that layer.

Pipe should be unloaded with fork trucks or cranes using at least three slings.

When banded pipe is being unloaded in full or partial rows, do not cut bands until pipe is lowered to the ground. Many pipe series will not be banded. Do not cut bands by gouging with an axe, chisel, hammer, etc.

IF LOOSE LOAD:

Pipe is secured on trailer by combination of side pipe stakes and 1/2" rope.

Only untie rope that is over layer of pipe to be unloaded.

Work forks between top layers, tilting forks back as moving slightly forward. Lift pipe over pipe stakes on side of trailer.

Repeat above steps until unloaded.

Minimize pipe handling and movement by using detailed advance planning of the construction scheme.

Do not roll or drop pipe off trucks. This is dangerous to the unloading personnel and may damage pipe.

The use of backhoes, end-loaders, or other material handling equipment to push the load off the trailer is hazardous to unloading personnel and may damage the pipe, and should therefore not be allowed.

People not involved in the unloading of the trailer should remain completely clear of the

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RECOMMENDATIONS FOR HANDLING, UNLOADING AND STORING POLYETHYLENE PIPE (continued)

TEMPORARY JOBSITE STORAGE

The size and complexity of the project and the components will determine pre-installation storage requirements. For some projects, several storage or staging sites along the right-of-way may be appropriate, while a single storage location may be suitable for another job. The site and its layout should provide protection against physical damage to components. General requirements are for sufficient size to accommodate piping components, to allow room for handling equipment to get around them, and to have a relatively smooth, level surface free of stones, debris, or other material that could damage pipe or components, or interfere with handling. Pipe may be placed on 4" wide wooden dunnage, evenly spaced at intervals of 5-1/2' or less.

PIPE STACKING HEIGHTS

Pipe received in bulk packs or strip load packs should be stored in the same package. If the storage site is flat and level, bulk packs or strip load packs may be stacked evenly upon each other to an overall height of about 8'. For less flat or less level terrain, limit stacking height to about 4'. Before removing individual pipe lengths from bulk packs or strip load packs, the pack must be removed from the storage stack, and placed on the ground. Individual pipes may be stacked in rows. Pipes should be laid straight, not crossing over or entangled with each other. The base row must be blocked to prevent sideways movement or shifting. See Figure 2, and Table 1. The interior of stored pipe should be kept free of debris and other foreign matter.

Do not roll or drop pipe off trucks. This is dangerous to the unloading personnel and may damage pipe.

The use of backhoes, end-loaders, or other material handling equipment to push the load off the trailer is hazardous to unloading personnel and may damage the pipe, and should therefore not be allowed.

People not involved in the unloading of the trailer should remain completely clear of the

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RECOMMENDATIONS FOR HANDLING, UNLOADING AND STORING POLYETHYLENE PIPE (continued)

Table 1. Allowable Stacking Heights for Storing
Stalk Joints of Polyethylene Pipe

Nominal Pipe Size (in.)	Number of Rows High (Approximate Wt. Lbs/Ft.)		
	Dimension Ratio <=18	Dimension Ratio 18-26	Dimension Ration 26-32.5
4	45	26	14
6	31	17	10
8	24	13	8
10	17	10	6
12	13	8	5
14	12	7	4
16	11	6	4
18	10	6	4
20	9	6	3
22	8	5	3
24	7	4	3
28	6	4	3
32	3	2	
36	3	2	
40	3	1	
48	2	1	
54	2	1	

COLD WEATHER HANDLING

Temperatures near or below freezing will affect polyethylene pipe by increasing stiffness. Care should be taken not to drop pipe, and to keep handling equipment and other things from hitting pipe. Ice, snow, and rain are not harmful to the material, but may make storage areas more troublesome for handling equipment and personnel. Inclement weather may cause unsure footing and traction, and require greater care and caution to prevent damage or injury.