



Pipeline Accessories

NEW



Pipe Storage System Pipe Carrier Premium 4 pipes

- For health and safety
- For our environment
- 100 % recycled
- Reusable over years
- Protects pipe and coating

Pipe Carrier Premium 4 pipes



General information

The Pipe Carrier Premium is a suitable solution **for storage or transport** of pipes with a range from Ø 114,3 up to Ø 508 mm (4,5" – 20"). **It allows efficient and safe pipe handling and transport.**

The Pipe Carrier Premium improves pipe storage and pipe transport operations. The logistic processes of tubes and pipes are simplified with 5 carrier types that cover the above-mentioned diameter range. Each carrier has a length of 1,225 m. Two carriers beside each other use the full truck width (2,45 m) resulting in an optimal truck load configuration. Also, maximum safety during transport is ensured since the Carriers are designed to be tilting proof. With the Pipe Carrier Premium, pipes are supported sideways. This results in less stress for pipe and coating due to a better distribution of forces. An added advantage is that each model of the Pipe Carrier Premium is suitable for a certain diameter range. Less carriers are needed to cover different sizes.

Pipe Carrier Premium is made from **UV-stabilized recycled LDPE with a high load bearing capacity**. The LDPE surface respects any coating layer and no parts are sticking out, making them **safe for coated pipes**. The system is **weather proof, reusable** and **highly durable for short and long-term storage**.

Always contact 4 pipes in case of doubts or uncertainties during installation, operation and maintenance of the Pipe Carrier Premium parts.

Pipe Carrier Premium offers the following advantages:

- Application range: 4" - 20"
- Each carrier is suitable for a range of pipe diameters
- For storage and transport
- Two carriers cover truck width (2,45 m)
- Safe for pipe coating
- Reusable and safe for long term use
- Suitable for all weather conditions
- Product range 114,3 – 508,0 (4.5" - 20")
- Length of the carrier: 1.225 mm (48.2")
- Width of the carrier: 115 mm (4.53") Type 2: 130 mm (5.12")
- Maximum load capacity as indicated in the instruction

Equipment

Pipe Carrier Premium consists of a range of Base-Carriers and a range of Mid-Carriers (Types 2-5). The Base-Carrier is placed at the bottom. After placing the first layer of pipes on the Base-Carrier, the Mid-Carrier is positioned on top of the first layer of pipes. After that another layer of pipes can be placed on the Mid Carrier and another Mid-Carrier can be placed on top of pipes to continue with the pipe loading process. The number of Carriers depends on the total weight of the pipes. If the Pipe Carrier Premium is used for transport, Anti-Skid mats have to be placed underneath the Base-Carrier and in the pipe spaces as shown on next side. Always use pipe spaces to stack pipes. It is not allowed for sides of the Pipe Carrier Premium to make contact with the pipe.



Material specifications

PE-compound	color black
Hardness	92° shore A
Frictional resistance factor (F.r.)	0,3
F.r. with Anti-Skid rubber	0,6
UV-stabilized	yes
Application temperature max.	45°C / 60°C (-45°F / 140°F)
Lifetime of approx.	15 years - no guarantee

Pipe Carrier Premium 4 pipes

Types of Pipe Carrier Premium	Pipe diameter range (mm)	Pipe diameter range (inch)	Max. Load per Recess (kg)	Max. Load Base Carrier (kg)	Max. Load Mid Carrier (kg)
Pipe Carrier 6	Ø 114,3 - 194,2	Ø 4.50 - 7.65	1,436.0	8616	8616
Pipe Carrier 5	Ø 177,8 - 235,0	Ø 7.00 - 9.25	2,233.7	11169	11169
Pipe Carrier 4	Ø 219,1 - 296,3	Ø 8.63 - 11.67	2,750.0	11000	11000
Pipe Carrier 3	Ø 273,1 - 398,3	Ø 10.75 - 15.68	3,429.7	10289	10289
Pipe Carrier 2	Ø 355,6 - 508,0	Ø 14.00 - 20.00	5,050.1	10100	10100



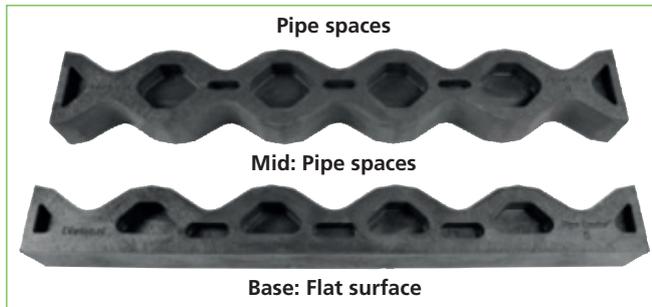
Anti-Skid

Weight of the Anti-Skid (200 mm x 8 mm) is approximately 1.4 kg/metre.



Base and Mid Carrier

The Base-Carrier is recognisable from the flat surface at the bottom.



Type	Weight (kg)	Art.-No.
Pipe Carrier Premium 6 Base	11.2	59080
Pipe Carrier Premium 6 Mid	12	59081
Pipe Carrier Premium 5 Base	11.8	59082
Pipe Carrier Premium 5 Mid	11.5	59083
Pipe Carrier Premium 4 Base	11.2	59084
Pipe Carrier Premium 4 Mid	12	59085
Pipe Carrier Premium 3 Base	12.3	59086
Pipe Carrier Premium 3 Mid	13.9	59087
Pipe Carrier Premium 2 Base	15.6	59088
Pipe Carrier Premium 2 Mid	18	59089

Application

The Base-Carrier is placed at the bottom. After placing the pipes on the Base-Carrier, the Mid-Carrier is positioned on top. The number of Carriers depends on the total weight of the pipes.

Further information on installation, storage and configuration can be found at:
www.4pipes.de/pipestorage

Pipe Carrier Premium 4 pipes

Installation of Pipe Carrier Premium for Storage

1. Preparation of storage facility

- Make sure the surface on which the Pipe Carrier Premium will be installed is levelled, a slope of maximum 2° (= 3,5 %) is acceptable.
- Make sure the surface on which the Pipe Carrier Premium will be installed is flat, unevenness in the terrain of maximum 10 mm are acceptable. Unevenness larger than 10 mm should be levelled out properly.
- Make sure the surface on which the Pipe Carrier Premium will be installed is free of ice, snow, oil, mud, algae, or any other substances that have a negative influence on the friction.
- Make sure the surface on which the Pipe Carrier Premium will be installed is free of obstacles (such as wood, stones, gravel or any other obstacles).
- When installing the Pipe Carrier premium on asphalt, concrete or pavement, the Pipe Carrier Premium can be placed directly on these surfaces. Otherwise the ground needs to be reinforced in order to carry the pipe stack. Suggested is to use concrete slabs, as specified in Appendix A, underneath the Pipe Carrier Premium.
- Make sure the storage area is visibly marked and that the transport and emergency routes are clearly indicated.
- Make sure the maximum operating temperature of 60°C is respected, otherwise contact 4 pipes for maximum load specifications at higher temperatures.

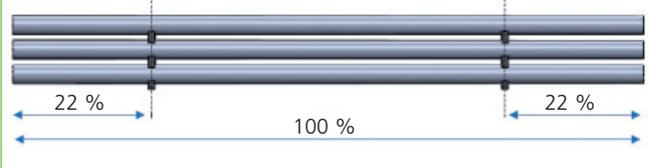
2. Preparation of placing pipes

- Before using the Pipe Carrier Premium, the Base-Carrier and Mid-Carrier should be subjected to an extensive visual inspection. If any below listed defect is observed, discard the relevant parts.
 - The Base-Carrier and Mid-Carrier may not show permanent imprints of pipes on the supporting faces
 - The logos on the sides of the Base-Carrier and Mid-Carrier may not be illegible.
 - The antiskid rubber mats may not be torn or crushed, during or after installation. If they happen to be torn or crushed, please purchase a replacement at 4 pipes.
 - The edges of the Base-Carrier and Mid-Carrier may not be worn off more than 10 mm. If it is worn out, please purchase a replacement at 4 pipes
- Make sure you are in a controlled environment where handling of the pipes can be done in a safe way.
- Determine the weight of the pipes in the stack.
- Determine the desired number of pipe layers of the stack.
- Refer to table 1 and the formula below to determine how many carriers you should use to support the pipes.

$$\frac{\text{Total pipe load}}{\text{Number of supporting Base Carriers}} < \text{Maximum load on Base Carrier}$$

- Take the corresponding Base-Carriers for the pipe diameter and place them parallel to each other on even ground, when using two supporting Base-Carriers place them on both ends at 22% of the whole pipe length.

Spacing the Pipe Carrier Premium parts



3. Placement of pipes

- Make sure that the Pipes that will be placed on one layer have the same diameter and are compatible with the Base-Carriers and Mid-Carriers.
- Make sure that during the lifting and loading procedures of the pipes, nobody is standing underneath the lifted pipes.
- The dynamic loads/forces to the Pipe Carrier Premium should be kept to a minimum. The vertical crane or forklift speed for loading and unloading the pipes should be limited to max. 0,1 m/s. Pipe needs to be positioned with minimum impact.
- When bottom layer of pipes is placed check if there is full contact between all pipes and Base-Carriers. If not, make sure the Base-Carriers are set at the correct position and reposition the pipe so that there is full contact between the pipe and Base-Carrier.
- After the bottom layer of pipes are placed two Mid-Carriers can be placed on top, align the Mid-Carriers with the Base-Carrier.
- Place another layer of pipes on the Mid-Carriers.
- Repeat the previous two steps till the recommended height is reached.
- The Pipe Carrier Premium is not meant for pyramid stacking but for square stacking. For pyramid stacking advise, contact 4 pipes.

4. Inspection

- During the storage of the pipes, at least once a month the pipe stack and Pipe Carrier Premium parts should be inspected visually.
- Check Pipe Carrier Premium parts for deformation. The parts must conform to the critical product specifications. In case of irregularities, the relevant Pipe Carrier Premium part should be discarded and replaced by an intact and approved part.

5. Unloading pipes from stack

- Before unloading the pipe stack, the stack should be inspected for conformity to procedures as prescribed in "Inspection" to ensure the stability of the pipe stack. In case the user is uncertain about the stability of the pipe stack, always contact 4 pipes for advice.
- Once the stability of the pipe stack is confirmed, the unloading of the pipes can start. Therefore proper handling and lifting equipment should be used.
- Make sure the stability of the pipe stack is controlled during the unloading of the stack. Make sure that during the lifting of the pipes, nobody is standing underneath the lifted pipes.
- The dynamic loads / forces to the Pipe Carrier Premium should be kept to a minimum. The vertical crane speed for loading and unloading the pipes should be limited to max. 0,1 m/s. Pipes need to be removed with minimum impact.
- Carefully unload the top layer of pipes.
- Remove Mid-Carriers.
- Repeat the previous two steps when more layers of pipes are stacked.
- Carefully unload the Base-Carriers.

Pipe Carrier Premium 4 pipes

Installation of Pipe Carrier Premium for Transportation

1. Preparation of pipes for transportation

- Make sure the surface on which the Pipe Carrier Premium will be installed is flat, unevenness in the terrain of maximum 10 mm are acceptable. Unevenness larger than 10 mm should be levelled out properly.
- Make sure the surface on which the Pipe Carrier Premium will be installed is free of ice, snow, oil, mud, algae, or any other substances that have a negative influence on the friction.
- Make sure the Pipe Carrier Premium has enough support.
- Make sure the area where the pipes and Pipe Carrier Premium are being loaded and unloaded, is levelled.
- Make sure the maximum operating temperature of 60°C is respected, otherwise contact 4 pipes for maximum load specifications at higher temperatures.

2. Preparation of placing pipes

- Before using the Pipe Carrier Premium, the Base-Carrier and Mid-Carrier should be subjected to an extensive visual inspection. If any below listed defect is observed, discard the relevant parts.
 - The Base-Carrier and Mid-Carrier may not show permanent imprints of pipes on the supporting faces
 - The logos on the sides of the Base-Carrier and Mid-Carrier may not be illegible.
 - The antiskid rubber mats may not be torn or crushed, during or after installation. If they happen to be torn or crushed, please purchase a replacement at 4 pipes.
 - The edges of the Base-Carrier and Mid-Carrier may not be worn off more than 10 mm. If it is worn out, please purchase a replacement at 4 pipes
- Make sure you are in a controlled environment where handling of the pipes can be done in a safe way.
- Determine the weight of the pipes in the stack.
- Determine the desired number of pipe layers of the stack.
- Refer to table 1 and the formula below to determine how many carriers you should use to support the pipes.

$$\frac{\text{Total pipe load}}{\text{Number of supporting Base Carriers}} < \text{Maximum load on Base Carrier}$$

- Place a layer of Anti-skid rubber above the prescribed chassis beams and place the corresponding Base-Carriers for the pipe diameter parallel to each other on the Anti-skid.
- Place Anti-skid on the Base-Carriers.

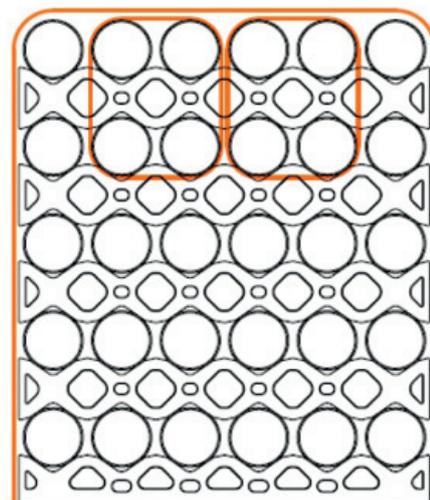
3. Placement of pipes

- Make sure that the Pipes that will be placed on one layer have the same diameter and are compatible with the Base-Carrier and Mid-Carrier.
- Make sure that during the lifting and loading procedures of the pipes, nobody is standing underneath the lifted pipes.
- The dynamic loads/forces to the Pipe Carrier Premium should be kept to a minimum. The vertical crane or forklift speed for loading and unloading the pipes should be limited to max 0,1 m/s. Pipe need to be positioned with minimum impact.
- When bottom layer of pipes are placed check if there is full contact between all pipes and Base- Carriers. If not, make sure the Base-Carriers are set at the correct position and

reposition the pipe so that there is full contact between the pipe and Base-Carrier.

- After the bottom layer of pipes are placed apply Anti-skid on the pipes and two Mid-Carriers can be placed on top, align the Mid-Carriers with the Base-Carrier.
- Place another layer of pipes on the Mid-Carriers and place Anti-skid on the pipes for the next Mid-Carrier.
- Repeat the previous two steps till the required height is reached.
- Secure the pipe stack with tie downs (see for number of Tie-downs that is needed for securing the total load), make sure all the pipes are secured. Use Slide Stop or see for an example of securing all pipes. If in doubt about securing the load, contact 4 pipes.

Load (kg)	Number of tie-downs (STF750 daN, LC 2500)
10000	3
15000	5
20000	6
25000	8
30000	9



Securing all pipes with tie-downs

Pipe Carrier Premium 4 pipes

4. Unloading pipes from stack

- Before unloading the pipe stack, the stack must be inspected on stability first with the tie-downs still in place and second with the tie-downs released. In case the stability of the pipe stack is uncertain stop with unloading and always contact 4 pipes.
- Once the stability of the pipe stack is confirmed, the unloading of the pipes can start. Therefore proper handling and lifting equipment should be used.
- Make sure the stability of the pipe stack is controlled during unloading of the stack. Make sure that during lifting of the pipes, nobody is standing underneath the lifted pipes.
- The dynamic loads / forces to the Pipe Carrier Premium should be kept to a minimum. The vertical crane speed for loading and unloading the pipes should be limited to max 0,1 m/s. Pipes need to be removed with minimum impact.
- Be careful when removing tie-downs because of high tension.
- Carefully unload the top layer of pipes.
- Remove Mid-Carriers and Anti-skid mats.
- Repeat the previous two steps when more layers of pipes are transported.
- Carefully unload the Base-Carriers.

Warnings and recommendations

- Before using the Pipe Carrier Premium, the Base-Carrier and Mid-Carrier should be subjected to an extensive visual inspection. If any below listed defect is observed, discard the relevant parts.
 - The Base-Carrier and Mid-Carrier may not show permanent imprints of pipes on the supporting faces.
 - The logos on the sides of the Base-Carrier and Mid-Carrier may not be illegible.
 - The anti-skid rubber mats may not be torn or crushed, during or after installation. If they happen to be torn or crushed, please purchase a replacement at 4 pipes.
 - The edges of the Base-Carrier and Mid-Carrier may not be worn off more than 10 mm. If it is worn out, please purchase a replacement at 4 pipes.
- Never use the Pipe Carrier Premium on slopes of more than 2° ($\approx 3,5\%$).
- Unevenness in the terrain of more than 10 mm are not acceptable.
- Make sure the maximum operating temperature of 60°C is respected. Otherwise contact 4 pipes for maximum load specifications at higher temperatures.
- Never use Pipe Carrier Premium for objects with a temperature of more than 60°C .
- Never use Pipe Carrier Premium parts that should have been discarded according to the critical product specifications.
- The Pipe Carrier Premium must be free from substances that have a negative influence on the friction.
- The alignment of the Pipe Carrier Premium is vital importance for the safe functioning of the Pipe Carrier Premium. Base-Carriers needed for one pipe stack should be aligned parallel. In case of two parallel Carriers, the distance between the Carriers should be 56% of the pipe length.

- Never store pipes with different outer diameters on one layer.
- Never exceed the vertical crane speed of max 0,1 m/s during loading and unloading of the pipes.
- Never allow anybody underneath the lifted pipes during loading and unloading of the pipes.
- Always respect the maximum number of pipe layers which are capable for the Pipe Carrier Premium.
- During the storage of the pipes, at least once a month the pipe stack and the Pipe Carrier Premium parts should be inspected visually.
- Before unloading the pipe stack, ensure the stability of the pipe stack.
- After dismantling the Pipe Carrier Premium, subject the parts to an extensive visual inspection and discard the parts that do not meet the critical product specifications.

This instruction manual is put together with great care. When safety risks and issues are noticed which are not covered by this instruction, please contact 4 pipes to share this remark.

Concrete beam

