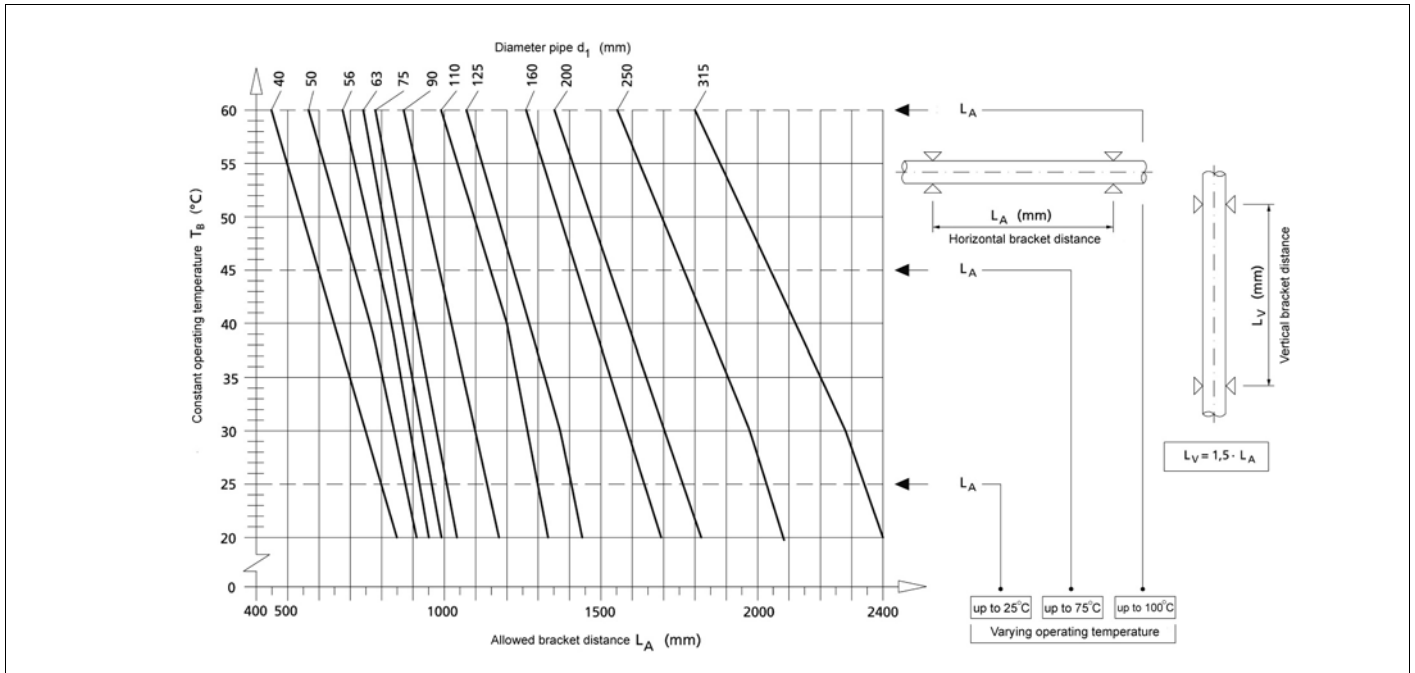


Bracket distances

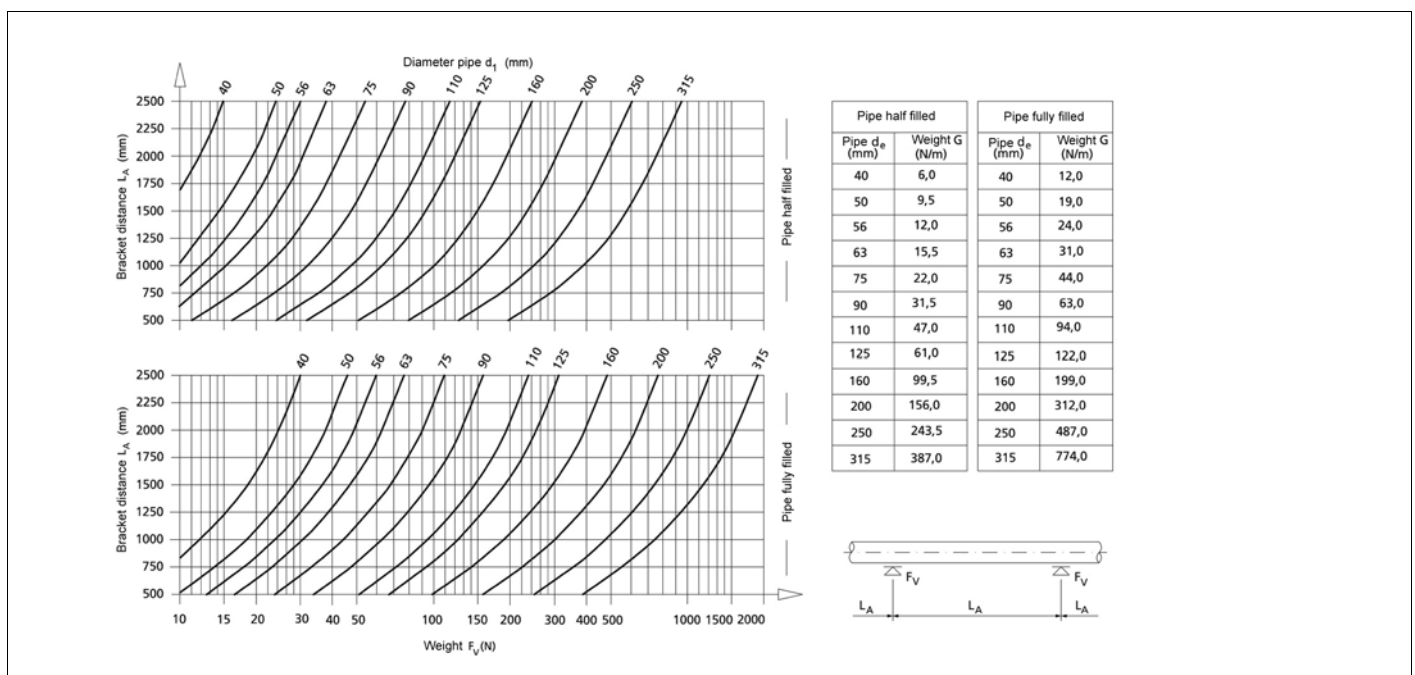
9 Bracket distances

9.1 Bracket distance at different temperatures

The bracket distances for Akatherm HDPE depend on the working temperature and the weight of the pipe including the medium. When the pipe is fully filled other bracket distances are applicable (see graphic drawing 9.2).



Graphic drawing 9.1 Bracket distances for vertical and horizontal HDPE pipe systems with standard filling



Graphic drawing 9.2 Bracket distances and weights for half filled and fully filled pipe systems at 20°C

9.2 Bracket distance in standard applications

9.2.1 Horizontal installation with expansion sockets without support trays

The bracket directly in front of the expansion socket has a shorter bracket distance (L_A^*). This enables a better guidance into the expansion socket (see illustration 9.1). The bracketing distances for this application can be found in table 9.1. The maximum distance between 2 expansion sockets is 5 m.

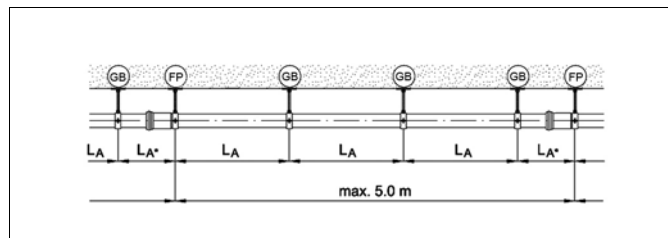


Illustration 9.1 Horizontal installation with expansion sockets without support trays

GB = guide bracket
 FP = anchor point
 L_A = bracket distance
 L_A^* = bracket distance before expansion socket

d_1	L_A	L_A^*
50	0,8 m	0,4 m
56	0,8 m	0,4 m
63	0,8 m	0,4 m
75	0,8 m	0,4 m
90	0,9 m	0,5 m
110	1,1 m	0,6 m
125	1,3 m	0,7 m
160	1,6 m	0,8 m
200	2,0 m	1,0 m
250	2,0 m	1,0 m
315	2,0 m	1,0 m

Table 9.1 Bracket distances horizontal installation with expansion sockets without support trays

9.2.2 Horizontal installation with expansion sockets and support trays

In this kind of installation the pipe is extra supported by support trays. The distance between the brackets can be larger than without support trays. The support trays are installed on to the pipe with straps. For distances see table below.

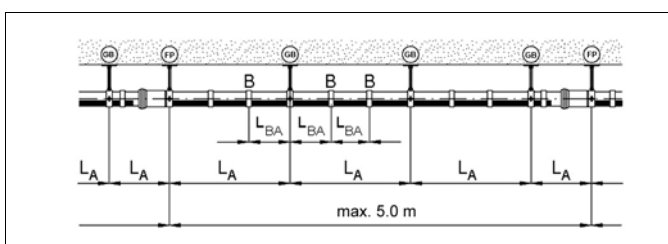


Illustration 9.2 Bracket distances horizontal installation with expansion sockets without support trays

GB = guide bracket L_A = bracket distance
 FP = anchor point L_A^* = bracket distance before expansion socket
 B = tray band L_{BA} = spacing for straps

d_1	L_A	L_A^*	L_{BA}
50	1,0 m	0,5 m	0,5 m
56	1,0 m	0,5 m	0,5 m
63	1,0 m	0,5 m	0,5 m
75	1,2 m	0,6 m	0,5 m
90	1,4 m	0,7 m	0,5 m
110	1,7 m	0,9 m	0,5 m
125	1,9 m	1,0 m	0,5 m
160	2,4 m	1,2 m	0,5 m
200	3,0 m	1,5 m	0,5 m
250	3,0 m	1,5 m	0,5 m
315	3,0 m	1,5 m	0,5 m

Table 9.2 Bracket distances horizontal installation with expansion sockets and support trays

9.2.3 Horizontal installation with anchor points

The bracket distances are identical to the installation with expansion sockets. Because the pipe generates different forces with different dimensions the anchor point brackets have to be placed at dimensional changes, branches and on the beginning and end of a pipe section.

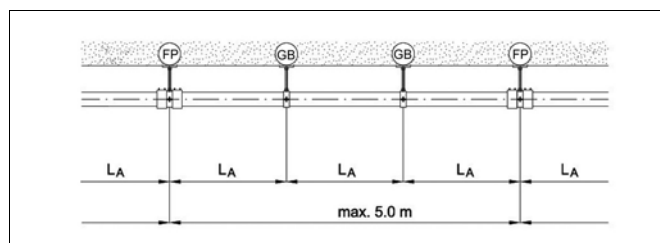


Illustration 9.3 Horizontal installation with anchor points

GB = guide bracket
 FP = anchor point
 L_A = bracket distance

d_1	L_A
50	0,8 m
56	0,8 m
63	0,8 m
75	0,8 m
90	0,9 m
110	1,1 m
125	1,3 m
160	1,6 m
200	2,0 m
250	2,0 m
315	2,0 m

Table 9.3 Bracket distances horizontal installation with anchor brackets

9.2.4 Horizontal installation with anchor points and support trays

The bracket distances are identical to the installation with expansion sockets and support trays. Because the pipe generates different forces with different dimensions the anchor brackets have to be placed at dimensional changes, branches and on the beginning and end of a pipe section.

Bracket distances

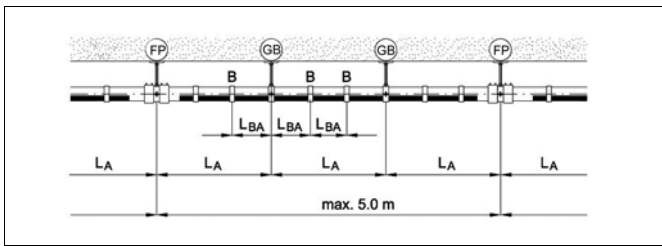


Illustration 9.4 Horizontal installation with anchor points and support trays

GB = guide bracket
 FP = anchor point
 L_A = bracket distance
 L_{BA} = spacing for straps

d ₁	L _A	L _{BA}
50	1,0 m	0,5 m
56	1,0 m	0,5 m
63	1,0 m	0,5 m
75	1,2 m	0,5 m
90	1,4 m	0,5 m
110	1,7 m	0,5 m
125	1,9 m	0,5 m
160	2,4 m	0,5 m
200	3,0 m	0,5 m
250	3,0 m	0,5 m
315	3,0 m	0,5 m

Table 9.4 Bracket distances horizontal installation with anchor brackets and support trays

9.2.5 Vertical installation to the wall with expansion sockets

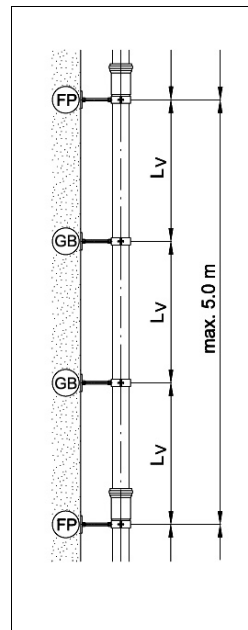


Illustration 9.5 Vertical installation to the wall

The bracketing distance for vertical installation is in general 1,5 times the distance of the horizontal bracketing. There is no separate bracket distance for immediately in front of the expansion socket because there is no sagging of the pipe and the insertion is always in line.

GB = guide bracket
 FP = anchor point
 L_V = bracket distance

d ₁	L _V
50	1,0 m
56	1,0 m
63	1,0 m
75	1,2 m
90	1,4 m
110	1,7 m
125	1,9 m
160	2,4 m
200	3,0 m
250	3,0 m
315	3,0 m

Table 9.6 Bracket distances vertical installation to the wall

9.2.6 Distance to wall/floor

In table 9.6 the diameters of the connecting tube are listed per pipe dimension and distance from the wall/floor (see illustration 9.6). When the pipe is larger than 160 mm a special construction is needed and has to be dimensioned.

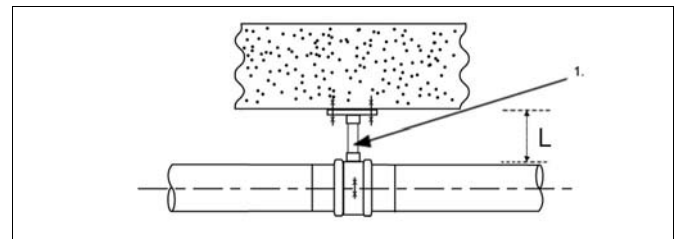


Illustration 9.6 1 = diameter of the connecting tube

Distance to wall/floor L (mm)	Pipe diameter d ₁										
	50	56	63	75	90	110	125	160	200	250	315
100	½"	½"	¾"	¾"	1"	1"	1¼"	1½"	-	-	-
150	¾"	¾"	1"	1"	1"	1¼"	1¼"	2"	-	-	-
200	¾"	¾"	1"	1"	1¼"	1½"	1½"	2"	-	-	-
250	1"	1"	1"	1"	1¼"	1½"	2"	-	-	-	-
300	1"	1"	1¼"	1¼"	1¼"	2"	2"	-	-	-	-
350	1¼"	1¼"	1¼"	1¼"	1½"	2"	2"	-	-	-	-
400	1¼"	1¼"	1¼"	1¼"	1½"	2"	-	-	-	-	-
450	1¼"	1¼"	1½"	1½"	2"	2"	-	-	-	-	-
500	1¼"	1¼"	1½"	1½"	2"	-	-	-	-	-	-
550	1¼"	1¼"	1½"	1½"	2"	-	-	-	-	-	-
600	1½"	1½"	1½"	1½"	2"	-	-	-	-	-	-

Table 9.6 Diameters of the connecting tube