

Polyethylene (PE-HD) twin wall cable ducts  
for below ground installation



## HEKAPLAST:

Twin wall cable ducts or cable protection pipes manufactured in environmentally friendly PE-HD, available in coils or straight lengths

## Application:

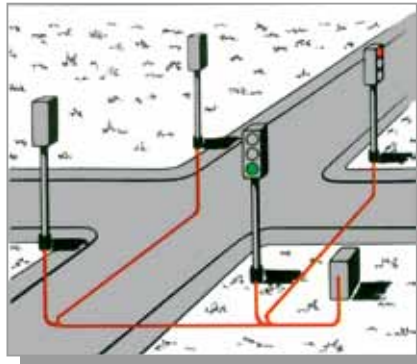
- Power supply lines
- Communication cables
- Wire systems in rail traffic
- All kinds of cable strands in industrial construction
- Suitable for installation at low temperatures thanks to PE-HD

# HEGLER

Corrugated and Twin  
Wall Pipes of Plastics



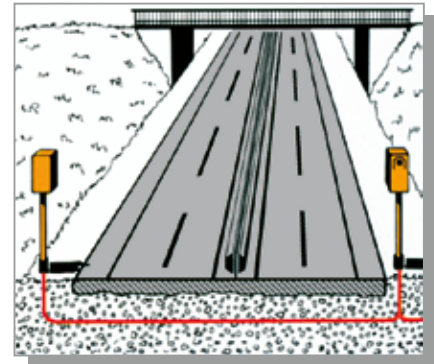
# HEKAPLAST Cable Ducts: Protective Pipes



## City roads

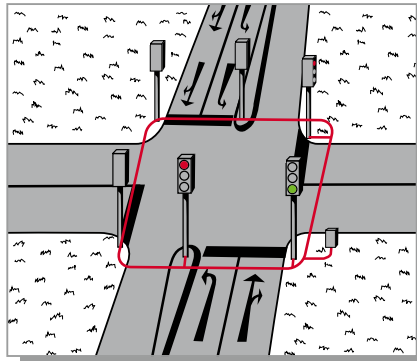
A two-track line of cable conduits under crossings and junctions is a must to regulate urban road traffic.

Main traffic roads should additionally be provided with a parallel cableway for „green wave“ and „speed funnel“.



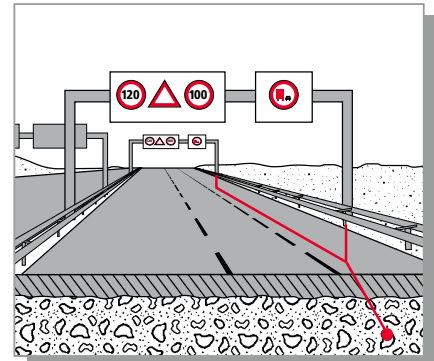
## Motorways

On motorways, there are telephone posts for emergency calls at regular intervals on both carriageways, while the connecting lines to the next motorway control station run on one side only. The telephone posts on the opposite side are connected to the pipe lines by tap lines underneath the roadways, which should run in cable conduits.



## Highways

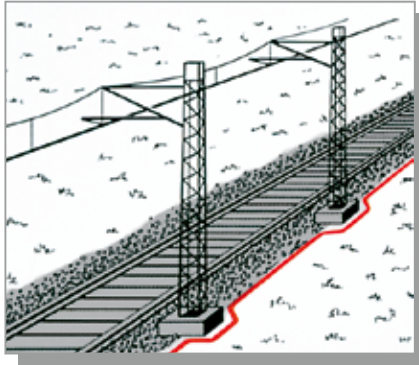
To allow for separate installation of power supply and traffic control wires in trunk roads and highways, it is recommendable to install at least two lines of cable ducts under each junction at crossings controlled by traffic lights.



## Traffic control systems

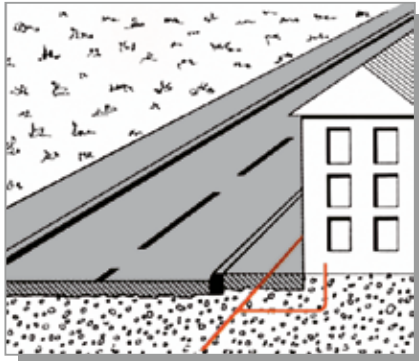
Motorways and population centres with heavy traffic are equipped with traffic control systems of changing traffic signals to regulate traffic flow, adapt speed, avoid bottlenecks and make use of spare capacities. For the necessary control lines, an adequate network of cable ducts needs to be provided.

# for Versatile and Universal Use



## Railway bodies

It is common practice to install wire systems for the control of railway traffic parallel to the tracks. More recent technical standards suggest the use of cable conduits. The flexibility of corrugated conduits renders this type of pipe particularly suitable for this purpose as they can be easily diverted around the pole foundations for overhead lines.



## Communication cables

Telecommunication, television and broadcasting systems are subject to constant changes and innovation. The technical standards prevailing in 10, 20 or 30 years' time are difficult to predict. The advantage of cable conduit systems is evident.



# HEKAPLAST Cable Ducts: Protective Pipes for



## HEKAPLAST-R

HEKAPLAST-R is a flexible twin wall pipe.

Its extremely high flexibility in longitudinal direction makes the pipe particularly well-suited for complicated cable routes like installations around foundations or other obstacles.

The table on page 6 shows the bending radii applicable to the different HEKAPLAST-R sizes.

### The handy pull-in aid

All HEKAPLAST rolls are supplied with a pull wire which is intended for the insertion of a hauling rope but not for cables.

Tensile strength of the pull wire:

- a) steel wire:  $F_R = 0.35 \text{ kN}$
- b) plastic wire:  $F_R = 0.52 \text{ kN}$

## Product description

HEKAPLAST cable ducts or cable protection pipes are twin wall pipes with smooth internal and profiled external surface, made of PE-HD. The special construction of these pipes allows the saving of raw material and natural resources.

### HEKAPLAST pipes are available in two options:

- in straight lengths: HEKAPLAST-S
- in rolls: HEKAPLAST-R

## Ring Stiffness

The ring stiffness of HEKAPLAST pipes, when determined in accordance with **DIN EN ISO 9969** „Thermoplastic Pipes – Determination of Ring Stiffness“, is as follows:

- DN 40 to 110:  $S \geq 8.0 \text{ kN/m}^2$
- DN 125 to 200:  $S \geq 5.0 \text{ kN/m}^2$

When **DIN 16961** „Structured-wall Pipes and Fittings of Thermoplastic Materials“ is taken as a basis, one can assume the following values for HEKAPLAST's ring stiffness:

- DN 40 to 110:  $S_{R24} \geq 31.5 \text{ kN/m}^2$   
(Pipe Class 5)
- DN 125 to 200:  $S_{R24} \geq 16.0 \text{ kN/m}^2$   
(Pipe Class 4)



# Simple Handling, Economic and Permanent Use



## Pipe joints

Pipes are connected by couplings with tightness being ensured by special, profiled seals. The seal should be lubricated and fitted in the first or second completely shaped corrugation of a pipe.

Prior to jointing it is recommended that the insertion depth is marked on the pipe to ensure the joint is fully made.

There are couplings with locking cams to provide for tension-proof joints for laying by machines.

## Tightness

The degree of tightness of pipes and pipe joints depends on the classification of the pipe system in accordance with DIN EN 60529.

## Components and Meaning of IP Codes

Identification letters IP		Meaning for protection of equipment	Meaning for protection of persons
Identification figure			
		against penetration of solids	against access to dangerous parts with
1 <sup>st</sup> figure	0	(no protection)	(no protection)
	1	≥ 50.0 mm diameter	back of hands
	2	≥ 12.5 mm diameter	fingers
	3	≥ 2.5 mm diameter	tools
	4	≥ 1.0 mm diameter	wire
	5	protected against dust	wire
	6	dust-proof	wire
		against penetration of water with harmful effects in case of	
2 <sup>nd</sup> figure	0	(no protection)	
	1	vertical dripping	
	2	dripping (gradient 15°)	
	3	spray water	
	4	splash water	
	5	jet water	
	6	strong jet water	
	7	temporary submersion	
	8	permanent submersion	

If profiled seals are used, the IP ratings IP 67 or IP 66 are met: the first figure in the code meaning „dust-proof“, the second figure „tight at temporary submersion“ if it is 7 or „tight in strong jet water“ if it is 6.

Without profiled seals, the pipe system still complies with IP rating 54 (5: protected against dust; 4: tight in splash water) because of its extraordinary manufacturing tolerances.

# The Pipe Range

## Technical details

Normal size (DN)	Outside diameter (mm)	Inside diameter (mm)	Smallest possible bending radius* (cm)
40	40 <sup>+0.8</sup>	33.0 $\pm 0.5$	20.0
50	50 <sup>+0.8</sup>	40.0 $\pm 0.6$	22.0
63	63 <sup>+0.9</sup>	52.0 $\pm 0.7$	24.0
75	75 <sup>+0.9</sup>	62.0 $\pm 0.8$	27.0
90	90 <sup>+0.9</sup>	76.0 $\pm 0.9$	30.0
110	110 <sup>+1.1</sup>	95.0 $\pm 1.1$	33.0
120	117 <sup>+1.2</sup>	103.0 $\pm 1.2$	35.0
125	125 <sup>+1.3</sup>	107.0 $\pm 1.3$	36.0
140	140 <sup>+1.4</sup>	120.5 $\pm 1.4$	38.0
145	146 <sup>+1.5</sup>	128.0 $\pm 1.5$	40.0
160	160 <sup>+1.6</sup>	139.0 $\pm 1.6$	42.5
175	175 <sup>+1.8</sup>	154.0 $\pm 1.8$	45.0
200	200 <sup>+2.0</sup>	173.0 $\pm 2.0$	50.0

\* Bending radii only applicable to HEKAPLAST-R



## Product quality

HEKAPLAST pipes are produced in two grades:

- standard quality and
- quality-controlled product.

For HEKAPLAST cable ducts of quality-controlled grade, quality is ensured by internal and external inspections in accordance with the specifications of DIN EN 50086-2-4 and the supervising testing authority, VDE, in Offenbach. As a visible sign of this quality control, the pipes are classified and marked according to VDE 0605.

## Installation instructions

Adequate bedding in a sand or gravel layer (soil group 1) and proper compaction,  $D_{Pr} \geq 95 \%$ , ensure that pipe deformation does not exceed 6 % for burial depths between 0.8 and 8.0 m and traffic loads SLW 60 to DIN 1072.

Installation and bedding shall be carried out in accordance with the relevant technical specifications which are: DIN EN 1610, ZTVA-StB 97 „Excavations in Traffic Areas“ of FGSV, Installation Guide A 535 of Kunststoffrohrverband and TELECOM Specifications ZTV-FLN 11 and 12.

In areas where high traffic loads occur and pipes are laid in several layers, the pipe trench shall be backfilled with a sand/cement mixture. When the laying depth is extremely low or high, pipes shall be bedded in a supporting layer of concrete.

## Storage and transport

Pipes should be stored in the original stillages prior to installation. It is important that they are stored on an even and smooth surface at all times.

Outdoor storage should be minimised and should not exceed 52 weeks (black colour).

Handling during transport should be exercised with the usual care: scrubbing rims, unsecured freight or uneven support to be avoided, no tipping or throwing from vehicles.

# HEKAPLAST Accessory

## HEKAPLAST-S (straight lengths)

Nominal size	DN	63	75	90	110	120*	125	140*	145*	160	175*	200
Item No.	7621...	063	075	090	110	120	125	140	145	160	175	200
Stillage contents	lengths	153	210	120	130	83	102	60	72	65	48	35
	m	918	1260	720	780	498	612	360	432	390	288	210
Stillage contents	length	6.10	6.10	6.10	6.10	6.20	6.10	6.10	6.10	6.10	6.10	6.10
	width	1.16	1.20	1.18	1.20	1.00	1.18	1.20	1.10	1.20	1.20	1.16
	height	0.58	1.00	0.91	1.33	1.18	1.40	1.04	1.48	1.46	1.31	1.31

\* not available from stock

Standard colour: black; standard length: 6 m. Other pipe lengths and colours on request.

## HEKAPLAST-R (coiled product)

Nominal size	DN	40	50	63	75	90	110	125	140*	160	200
Item No.	7629...	004	005	006	007	009	011	013	014	016	020
Coil length	m	50	50	50	50	50	50	50	50	50	50
Coil diameter	m	0.83	0.90	1.05	1.10	1.30	1.51	1.40	1.70	1.65	2.20
Coil width	m	0.23	0.28	0.29	0.34	0.42	0.45	0.65	0.63	0.82	0.80

\* not available from stock

Standard colour: black. Other colours on request.

## Accessories

Nominal size	DN	40	50	63	75	90	110	120	125	140	145	160	175	200	
Coupling with cam	Item No.	7710...	004	005	007	008	009	011	-	013	014	-	016	-	020
	Packing unit	pcs	100	100	100	100	50	75		60	40		36		20
Coupling without cam	Item No.	7710...	-	-	-	108	109	111	112	113	114	115	116	118	120
	Packing unit	pcs				100	50	75	75	60	40	45	36	30	20
Profiled seal	Item No.	7720...	304	305	307	308	309	311	312	313	314	315	316	318	320
	Packing unit	pcs	100	100	100	100	100	100	50	50	50	50	50	50	50
Plug	Item No.	7720...	204	205	207	208	209	211	212	213	214	215	216	218	220
	Packing unit	pcs	50	50	50	50	50	50	50	50	25	25	25	25	25
Bend 45°	Item No.	7710...	-	-	-	208	209	211	-	213	-	-	216	218	220
	Packing unit	pcs				1	1	1		1			1	1	1
Bend 90°	Item No.	7710...	-	-	-	408	409	411	412	413	414	415	416	418	420
	Packing unit	pcs				1	1	1	1	1	1	1	1	1	1
Spacer		two-, four-, six-, eight-strand, available in one- and double-sided design													

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