

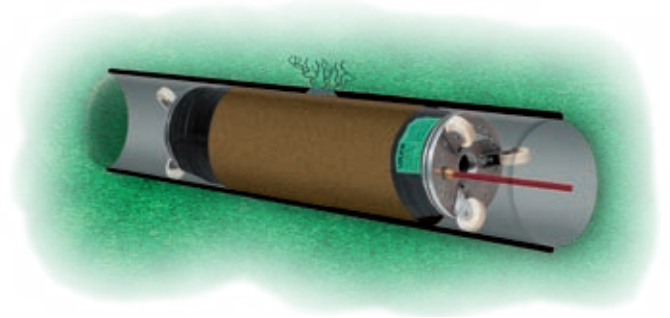
# REHABILITATION PACKERS

Rehabilitation packers **P**, **FP**, **DP**, **HP** and **HPP** are used for repairing locally-damaged sewerages or other pipe-lines or for their successive maintenance. The packers can be applied to fissures, leaky joints, misalignments, root downgrowth and corroded sections. Sewerages made of all kinds of materials in the diameter ranging from 50 mm to 1200 mm can be maintained or repaired in this way.

These packers can be divided into several groups: short packers, flexible packers, lateral packers and long packers. They are made of a special rubber guaranteeing the necessary flexibility, strength and resistance. All their metal parts are made of corrosion-resistant materials.

The maintenance work consist of placing the packer and its insertion piece (a fabric of glass fibres impregnated with a special artificial resin) into the piping on the

damaged point. This procedure can be monitored by using a closed-loop television while the packer is not under pressure. Then the packer is inflated to the working pressure and the glass-fibre-fabric insertion piece is pressed against the wall of the pipe. As the overflowing resin penetrates the fissures and cavities, the damaged spot and the glass-fibre-fabric insertion piece become firmly connected. After the resin gets hardened, its static load capacity is supported with a short tube with gradual reductions. Then the packer is deflated and pulled out of the piping.



Flexible packers are provided with a single-layer rubberized-fabric sleeve with metal faces with wheels at both its ends at an angle of 120°. The wheels ensure the stability of the packer in the pipeline. Its design allows water to flow freely during the repair. The effective surface ranges from 600 to 3500 mm. Their flexibility allows easy installation in the pipeline.



## Flexible Packers FP

Type	Part - No	Pipe diameter mm	Rubber body diameter mm	Rubber body length mm	Total length mm	Application length in max. diameter mm	Weight kg	Operating pressure bar	Bypass
FP 10/15-1	7209	100-150	65	1000	1120	680	1,9	2,5	-
FP 10/15-1,5	7211	100-150	65	1500	1620	1180	2,3	2,5	-
FP 10/15-2	7210	100-150	65	2000	2120	1680	2,6	2,5	-
FP 10/15-2,5	7212	100-150	65	2500	2620	2180	2,9	2,5	-
FP 10/15-3	7213	100-150	65	3000	3120	2680	3,3	2,5	-
FP 10/15-3,5	7214	100-150	65	3500	3620	3180	3,7	2,5	-
FP 10/15-4	7215	100-150	65	4000	4120	3680	4,0	2,5	-
FP 15/25-1	7201	150-250	105	1000	1180	580	5,0	2,0	2"
FP 15/25-1,5	7216	150-250	105	1500	1680	1080	6,3	2,0	2"
FP 15/25-2	7202	150-250	105	2000	2180	1580	7,5	2,0	2"
FP 15/25-2,5	7217	150-250	105	2500	2680	2080	8,8	2,0	2"
FP 15/25-3	7218	150-250	105	3000	3180	2580	10,0	2,0	2"
FP 15/25-3,5	7219	150-250	105	3500	3680	3080	11,3	2,0	2"
FP 15/25-4	7220	150-250	105	4000	4180	3580	12,5	2,0	2"
FP 20/30-1	7236	200-300	144	1100	1340	680	10,0	1,5	2"
FP 20/30-1,5	7237	200-300	144	1600	1840	1180	11,1	1,5	2"
FP 20/30-2	7238	200-300	144	2000	2240	1580	12,2	1,5	2"
FP 20/30-2,5	7239	200-300	144	2600	2840	2180	13,3	1,5	2"
FP 20/30-3	7240	200-300	144	3000	3240	2580	14,4	1,5	2"
FP 20/30-3,5	7241	200-300	144	3600	3840	3180	15,5	1,5	2"
FP 20/30-4	7242	200-300	144	4000	4240	3580	16,6	1,5	2"
FP 30/40-1	7203	300-400	235	1100	1340	680	19	1,5	2"
FP 30/40-1,5	7221	300-400	235	1600	1840	1180	21	1,5	2"
FP 30/40-2	7204	300-400	235	2000	2240	1580	23	1,5	2"
FP 30/40-2,5	7222	300-400	235	2600	2840	2180	26	1,5	2"
FP 30/40-3	7223	300-400	235	3000	3240	2580	28	1,5	2"
FP 30/40-3,5	7224	300-400	235	3600	3840	3180	31	1,5	2"
FP 30/40-4	7225	300-400	235	4000	4240	3580	33	1,5	2"
FP 45/60-1	7205	450-600	365	1200	1440	600	36	1,0	4"
FP 45/60-1,5	7226	450-600	365	1700	1940	1100	40	1,0	4"
FP 45/60-2	7206	450-600	365	2000	2240	1400	42	1,0	4"
FP 45/60-2,5	7227	450-600	365	2700	2940	2100	46	1,0	4"
FP 45/60-3	7228	450-600	365	3000	3240	2400	49	1,0	4"
FP 60/80-1	7207	600-800	365	1400	1640	750	37,5	1,0	4"
FP 60/80-1,5	7229	600-800	365	1700	1940	1050	41,5	1,0	4"
FP 60/80-2	7208	600-800	365	2000	2240	1350	43,5	1,0	4"
FP 60/80-2,5	7230	600-800	365	2700	2940	2050	47,5	1,0	4"
FP 60/80-3	7231	600-800	365	3000	3240	2350	50,5	1,0	4"
FP 80/100-1,5	7235	800-1000	550	1800	2040	950	82	1,0	4"
FP 100/120-2	7234	1000-1200	550	2200	2440	1250	88	1,0	4"

# TABLE OF RESISTANCE FOR PIPE STOPPERS AND REHABILITATION PACKERS

**A – Pipe stoppers and Rehabilitation packers**

**B – Pipe stoppers resistant to oil**

**C – Cone pipe stoppers ULK and PULK**

Chemicals	Concentration %	A	B	C
Acetone		+/-	--	++
Acetylene – Alcohol		++	++	++
Aniline		+/-	--	--
Petrol		--	++	++
Benzene		--	--	--
Boric Acid	10	++	++	++
Brake Fluid		++	--	++
Butanol		++	++	++
Butyric Acid		--	+/-	--
Calcium Hydroxide		++	+/-	++
Calcium Hypochlorite	15	++	--	++
Diesel Oil		--	++	++
Ethanol		++	++	++
Formaldehyde	40	++	++	++
Glycerine		++	++	++
Kerosene		--	++	+/-
Methanol	50	++	++	++
Mineral Oil		--	++	++
Methyl Chloride		--	--	--
Natural Gas		--	++	++
Nitric Acid Diluted	50	+/-	+/-	--
Ozone		--	--	++
Phenol		--	--	--
Phosphoric Acid	60	+/-	--	++
Propanol		++	+/-	++
Sodium Hydroxide	20	++	++	++
Sodium Hypochlorite	10	+/-	--	++
Sulphuric Acid	20	++	++	++
Sulphuric Acid	50	++	+/-	++
Sulphuric Acid	60	--	--	+/-
Toluene		--	--	--
Ammonium Hypochlorite		+/-	--	++
Vinegar Acid		++	+/-	+/-
Ferrous Hypochlorite		++	++	++
Sea Water		++	++	++

++ resistant  
+/- partially resistant  
-- non-resistant

