BOODE
waterwell systems

Water Well Screen & Casing Systems

BOODE waterwell systems · ecoline · Johnson Screens · PSI · BluePump® · BORESAVER · Mikolit® · BAROID® · Cebo · AM American Mfg Company · SABA · kwik-ZIP®

Boode PVC Well Screen & Casing are approved by the UK Secretary of State under regulation 31 of the Water Supply (Water Quality) Regulations 2000" [previously Regulation 25 of the 1989 Regulations] & are listed in the "List of Approved Products and Processes for use in Public Water Supply" published by the DWI www.dwi.gov.uk

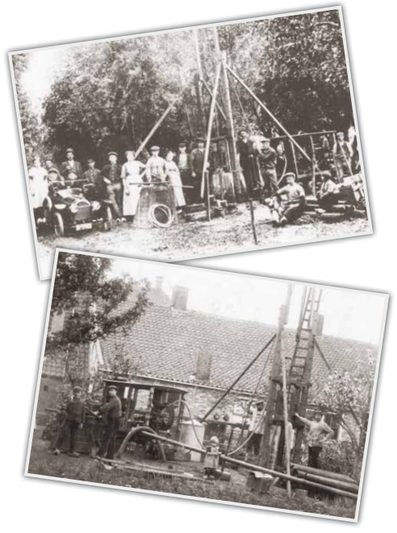
Contents

"Groundwater is a priceless resource lying beneath most of the Earth's land surface."

Company Profile

Boode is a family owned company and has been active in groundwater abstraction since 1897. Started as a water well drilling company, we progressed to become one of the world leaders in the manufacture of high quality PVC water well casing & screen systems from the late 1950's and continue to do so today.

From our manufacturing plant & Head Office in Holland, our subsidiary company Boode UK in England, authorised agents throughout Europe and partners strategically located in parts of the world, we provide truly global water solutions.



Why Choose Boode?

Boode works to stringent parameters and high specification standards using advanced materials and manufacturing equipment. Boode is renowned for the quality of its products, its specialist technical expertise and its range of product and service applications including water wells & groundwater hydrology, environmental, drainage & irrigation, geothermal & geotechnical.

Boode well screen and casing is the first PVC screen and casing to be approved by the UK Secretary of State under Regulation 31 of the Water Supply Regulations. Boode products are also KIWA approved, BS6920 approved and ISO9001:2015 quality assured.

PVC Screen / Casing™

Boode Select PVC well screen and casing is manufactured from carefully selected materials. The combination of the highest grade compounds, calcium zinc-based stabilisers and the latest extrusion, slotting and threading technology makes Boode products the finest in the world.

Boode Select PVC screen and casing is available in a range of threaded connections with the highest joint stripping loads or for solvent welding utilising a specially developed solvent. Boode's solvent weld connection (Type A) is one of the strongest connections on the market.

Boode Select PVC screen and casing is available up to 630mm (24") and can be installed to depths in excess of 300 metres.

Applications:

Water wells, dewatering, geothermal systems, water abstraction wells, recharge wells, monitoring boreholes, well point dewatering, deep well dewatering, salt water intakes, pressure relief wells, aquifer storage & recovery wells and for irrigation purposes.

Advantages of Boode Screen and Casing:

- Safe, legal & compliant for potable water abstraction
- Maximum tensile strength, collapse resistance and joint stripping loads.
- Highest quality lead free PVC compounds
- Smallest possible screen slots on the market
- Strongest threaded & solvent weld connections on the market
- Cost-effective and long lasting
- Makes installation fast, easy and low in cost
- Fully approved to Regulation 31, KIWA and BS6920

Please see next pages for the technical details.

Proven quality worldwide

Connections

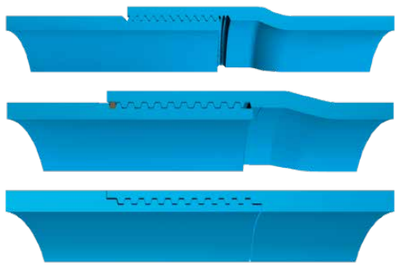
A Glue connection spigot and socket

B Trapezoidal thread connection with socket

D BSP thread connection with socket

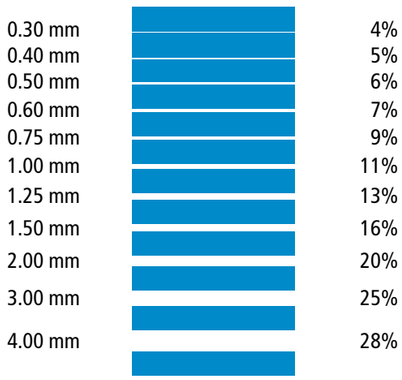
C Trapezoidal thread connection flush butt jointed

E Coarse thread (rope type) connection



** Optional Rubber seal

Standard slot width range showing average percentage open area.



Boode PVC Casing & Vertical Slot Screen 1"– 24"(26 mm – 630 mm)

Outside x inside diameter in mm	Inch	Wall thickness in mm	PN	SDR	Collapse resistance in bar (kp/cm2)	Weight approx. kg/m	Screen minimum slotsize in mm	Type of connection	A socket length in mm	B+C+D thread lengths in mm	OD over connection type A	OD over connection type B+D	OD over connection type E	Joint stripping Load A connection in kN	Joint stripping Load B connection in kN	Joint stripping load C connection in kN
32 x 28.2	1"	1.9	12.5	16	17.2	0.26	0.3	A	45		34			9		
32 x 27.2	1"	2.4	16	13	36.4	0.33	0.3	A-E	45		37		41	12		
40 x 35.2	1-¼"	2.4	12.5	17	17.8	0.44	0.3	A	50		45			15		
40 x 34	1-¼"	3.0	16	13	36.4	0.54	0.3	A	50		46			19		
26 x 19.8	3/4"	3.1	20	9	161.0	0.34	0.3	A-B-D	40	38 - 30	33	31		13	4.9	
33.2 x 25.6	1"	3.8	20	9	147.6	0.52	0.3	A-B-C-D	50	38 - 30	41	38		19	9.4	4.6
41.6 x 31.6	1-¼"	5.0	20	8	170.1	0.81	0.3	A-B-C-D	50	38 - 30	52	49		31	12.8	8.8
47.8 x 38.2	1-½"	4.8	20	10	93.8	0.91	0.3	A-B-C-D	50	38 - 30	57	54		35	18.4	7.6
50 x 45.2 HIR	1-¾"	2.4	12.5	21	8.8	0.52	0.3	A-E	55		55		63	19		
50 x 40	1-¾"	5.0	20	10	93	0,99	0.3	A-B-C-D	55	45	60	57		38	19,5	8,7
59.5 x 51.5 HIR	2"	4.0	20	15	25.6	0.99	0.3	A-B-C-D	60	45 - 30	68	65		38	17.8	10.2
63 x 57	2"	3.0	10	21	8.5	0.79	0.3	A-B-E	65	45	69	66	78	31	10.4	
63 x 55.4	2"	3,8	12.5	16	18	0,99	0.3	A-B	65	45	71	67		38	16,2	
75 x 67.8	2-½"	3.6	10	21	8.8	1.13	0.3	A-B	80	45	82	79		44	18.5	
75 x 66	2-½"	4,5	12.5	16	9.9	1,4	0.3	A-B-C	80	45	84	81		54	26	9.6
90 x 81.4	3"	4.3	10	21	8.6	1.62	0.3	A-B	85	45	99	95		63	30.1	12.5
90 x 79.2	3"	5.4	12.5	16	14	2,02	0.3	A-B-C	85	45	101	98		78	38.1	20.7
90 x 76.6	3"	6.7	20	13	35.6	2.46	0.4	A-B-C	85	45	103	100		96	56.3	25.0
110 x 103.2	3-½"	3.4	8	32	2.2	1,60	0.3	A-B	100	45	117	114		62	23.8	
110 x 101.6	3-½"	4.2	10	26	4.3	1.96	0.3	A-B-E	100	45	119	115	125	76	35.9	17.7
110 x 99.4	3-½"	5.3	12.5	21	8.9	2.44	0.3	A-B-C-E	100	45	121	117	129	95	51.2	25.1
113.8 x 103.8	4"	5.0	12.5	23	6.6	2.39	0.3	A-B-C	105	45	124	120		93	41.2	21.7
113.8 x 97.4	4"	8.2	16	14	32.0	3.78	0.4	A-B-C	105	45	130	126		149	85.7	39.4
125 x 117.2	4-½"	3.9	8	32	2.2	2,09	0.3	A-B	115	45	133	130		81	35.4	
125 x 115.4	4-½"	4.8	10	26	4.4	2.54	0.3	A-B	115	45	135	131		99	50.7	23.3
125 x 113	4-½"	6.0	12.5	21	8.8	3.14	0.3	A-B-C	115	45	137	134		123	69.6	31.7
125 x 110	4-½"	7.5	16	17	17.8	3.88	0.4	A-B-C	115	45	140	137		152	92.7	51.6
140 x 129.2	5"	5.4	10	26	4.4	3.20	0.3	A-B-C	120	60	151	145		125	44.5	30.7
140 x 126.6	5"	6.7	12.5	21	8.7	3.93	0.4	A-B-C	120	60	154	148		154	67.4	42.7
140 x 120	5"	10.0	16	14	31.1	5.72	0.4	A-B-C	120	60	160	155		224	123.7	56.0
160 x 150.2	5-½"	4.9	8	32	2.1	3,36	0.4	A-B	150	60	170	164		131	39.9	
160 x 147.6	5-½"	6.2	10	26	4.5	4.20	0.4	A-B-C-E	150	60	173	167	184	164	67.7	44.4
160 x 144.6	5-½"	7.7	12.5	21	8.8	5.16	0.4	A-B-C	150	60	176	170		202	97.9	44.5
165 x 155	6"	5.0	7.5	33	2.1	3.52	0.4	A-B	150	60	175	170		138	44.4	
165 x 150	6"	7.5	12.5	22	7.4	5.20	0.4	A-B-C	150	60	180	175		204	97.1	44.1
165 x 146	6"	9.5	16	17	15.6	6.50	0.4	A-B-C	150	60	184	179		255	138.0	63.8
180 x 166	6½"	7.0	10	26	4.5	5.33	0.4	A-B-C	150	70	194	189		209	95.1	59.4
180 x 162.8	6½"	8.6	12.5	21	8.6	6.49	0.4	A-B-C	150	70	198	192		254	131.4	60.5
200 x 187.6	7"	6.2	8	32	2.2	5,32	0.4	A-B	160	70	212	207		207	84.3	
200 x 184.6	7"	7.7	10	26	4.4	6.52	0.4	A-B-C-E	160	70	216	210	228	255	124.2	56.7
200 x 180.8	7"	9.6	12.5	21	8.8	8.04	0.4	A-B-C	160	70	219	214		315	172.1	74.8
225 x 211.8	8"	6.6	7.5	34	1.9	6.34	0.4	A-B	170	85	238	233		249	108.5	
225 x 207.6	8"	8.7	10	26	4.4	8.28	0.4	A-B-C	170	85	243	237		325	169.4	78.4
225 x 203.6	8"	10.7	12.5	21	8.5	10.09	0.4	A-B-C	170	85	247	241		396	226.2	101.5
225 x 199	8"	13.0	16	17	15.8	12.13	0.4	A-B-C	170	85	251	246		476	288.0	114.0
250 x 234.6	9"	7.7	8	32	2.1	8,26	0.4	A-B	170	85	265	260		322	155.4	
250 x 230.8	9"	9.6	10	26	4.4	10.15	0.4	A-B-C-E	170	85	269	264	282	398	218.1	95.2
250 x 226.2	9"	11.9	12.5	21	8.5	12.47	0.4	A-B-C	170	85	274	268		489	290.7	135.3
280 x 255	10"	12.5	12.5	22	7.0	14.72	0.4	A-B-C	170	90	305	295		577	247.7	128.5
280 x 248	10"	16.0	16	18	15.2	18.60	0.5	A-B-C	170	90	312	302		729	369.3	187.2
315 x 295.6	11"	9.7	8	32	2.1	13,11	0.4	A-B	180	90	334	325		511	197.5	
315 x 290.8	11"	12.1	10	26	4.4	16.13	0.4	A-B-C	180	90	339	330		633	296.4	179.4
315 x 285	11"	15.0	12.5	21	8.5	19.80	0.5	A-B-C	180	90	345	336		777	411.7	235.0
330 x 301	12"	14.5	12.5	23	6.6	20.13	0.5	A-B-C	200	90	359	348		790	356.8	194.1
330 x 292	12"	19.0	16	17	15.6	26.00	0.5	A-B-C	200	90	368	357		1020	541.2	282.8
355 x 321.2	13"	16.9	12.5	21	8.5	25.14	0.5	A-B-C	200	90	389	379		987	552.3	271.2
400 x 375.4	14"	12.3	8	32	2.1	21,11	0.4	A-B	220	100	424	416		823	386.1	
400 x 369.4	14"	15.3	10	26	4.3	25.90	0.5	A-B-C	220	100	431	422		1023	550.7	276.8
400 x 361.8	14"	19.1	12.5	21	8.6	32.01	0.5	A-B-C	220	100	439	429		1257	737.6	341.0
450 x 411	16"	19.5	12.5	23	6.4	36.94	0.5	A-B-C	220	115	489	474		1450	662.2	410.1
500 x 469.4	18"	15.3	8	32	2.1	32,83	0.5	A-B-C	200	115	530	520		1281	632.2	321.2
500 x 461.8	18"	19.1	10	26	4.3	40.41	0.5	A-B-C	200	115	539	528		1587	895.8	469.4
630 x 591.4	24"	19.3	8	32	2.1	52,18	0.5	A-C	240	125	668			2036		574.8

*Available with Horizontal slots to DIN 4925 on request.

Boode CSS™ - Continuous Slot PVC Screen

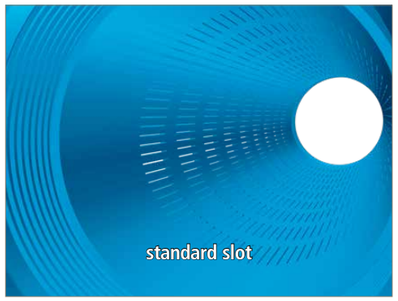
Boode CSS PVC Screen is the only PVC continuous slot screen on the market and is particularly effective for water wells where a high flow rate is required. An evolution from Boode Select screen, CSS offers exceptionally high percentage open areas, greater depth capability with increased collapse resistance.

Advantages of Boode CSS

- Advanced solid construction suitable for installation to depths of ±400 metres
- Screen is provided with C-Type female flush butt joints with male adaptor
- Maximum open area of 50%
- Suitable for low yield water bearing strata.
- Lightweight and easy to handle

Outside diam mm	Wall Thickness mm	Inside diam mm	Weight per m kg	Type of connection	Diameter over connection	Tensile strength kg	Possible slotwidth mm
56	2.5	44	0.82	A	61	650	0.3-3
75	3	58	1.39	C	75	1250	0.3-3
90	4.5	72	2.10	C	90	1450	0.3-3
125*	6	104	3.54	C	125	2600	0.4-3
140	6.5	116	4.69	C	140	3100	0.4-3
165	7.5	139	7	C	165	4900	0.5-3
200	7	172	7.56	C	200	6200	0.6-3

*With external ribs.
Lengths: As required, maximum 3mt.
CSS™ screen is made from high impact resistant uPVC.



Standard slot width range showing average percentage open area

Standard Slot Screen (Lengtwise)		Continuous Slot PVC Screen (CSS)	
4%	0.30 mm	0.30 mm	6%
5%	0.40 mm	0.40 mm	8%
6%	0.50 mm	0.50 mm	10%
7%	0.60 mm	0.60 mm	12%
9%	0.75 mm	0.75 mm	15%
11%	1.00 mm	1.00 mm	20%
13%	1.25 mm	1.25 mm	25%
16%	1.50 mm	1.50 mm	30%
20%	2.00 mm	2.00 mm	40%
25%	3.00 mm	3.00 mm	50%
28%	4.00 mm		

Boode BGP™ - Gravel Coated PVC Screen

Boode BGP is a gravel-coated PVC screen for water well installations in areas where suitable gravel packs are not readily available, but a sand-free water supply is essential, where multiple aquifers are targeted or where installations are very deep and a filter pack needs to be correctly & accurately placed.

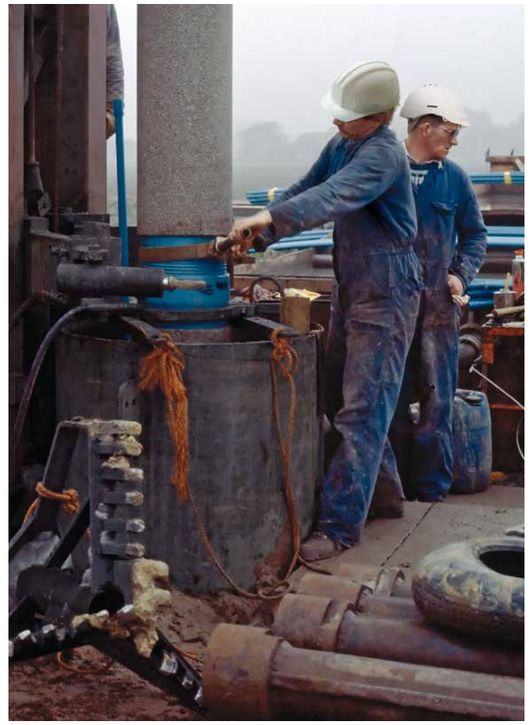
Ideal for the rehabilitation of damaged or corroded wells or where a smaller diameter borehole is required.

There is virtually no permeability loss as the powerful waterproof bonding replaces normal capillary retention. The gravel coating consists of carefully selected, uniform silica gravel (>98,6% SiO2).

BGP Screen is available in diameters from 33mm to 400 mm.

Advantages of Boode BGP Screens

- Uniform gravel coat ensures 100% coverage.
- Excellent sand control
- Recommended for rehabilitating damaged or corroded wells.
- Ideal where a smaller diameter borehole is required
- Increased collapse resistance



Screen outside diam*	Outside diam over gravel	Gravel thickness	Tolerance -/+ mm	Length m	Approx. weight kg/m
33.2 (1”)	52	10.95	- 0 / + 3	1	2.5
41.6 (1¼”)	64	12.7	- 0 / + 3	1	3.5
47.8 (1½”)	72	13.1	- 0 / + 3	1	4.0
50 (1½”)	72	12	- 0 / + 3	1	3.5
59.5 (2”)	92	17.25	- 0 / + 3	1	6
75 (2½”)	93	10.50	- 0 / + 3	1	7
90 (3”)	118	15	- 0 / + 3	1	8
110 (3½”)	143	18	- 0 / + 4	1	10.5
113.8 (4”)	143	16.1	- 0 / + 4	1	11.5
125 (4½”)	154	17.5	- 0 / + 4	1	13.5
	153	14.5	- 0 / + 4	2	13.5
140 mm (5”)	169	15.5	- 0 / + 3	1	15
160 (5½”)	195	16.5	- 0 / + 7	1 - 2 - 2.5	16
165 (6”)	195	15.5	- 0 / + 7	1	15
	197	16	- 0 / + 5	2	15
180 (6½”)	209	16.5	- 0 / + 7	1 - 2 - 2.5	17.5
200 (7”)	229	16	- 0 / + 3	1 - 2	17.5
225 (8”)	256	15.5	- 0 / + 6	1 - 2	24.5
280 (10”)	311	15.5	- 0 / + 4	1 - 2	35
315 (11”)	343	23	- 0 / + 5	1 - 2	50
330 (12”)	359	13	- 0 / + 6	1 - 2	44
400 (14”)	432	16	- 0 / + 7	1 - 2	51.5

* for diameters and wall thicknesses please refer to page nos. 8-9

Boode Pac™ - Dual Wall PVC Screen

Boode PAC dual wall pvc screen consist of inner and outer concentrically aligned Select PVC screen which is joined and secured by upper and lower retaining rings.

Filter media is Quartz gravel or Glass beads, which are inserted between the two screens and sealed. A range of granular sizes is available to suit different drilling conditions. Boode Pac comes either factory prepacked or for contractor packing on location, if required.

Boode Pac can be installed to depths upwards of 600 metres. Easy to install, Boode Pac can reduce screen requirement, allowing optimum abstraction from smaller aquifers. Boode Pac screen is available in diameters from 32 mm to 630 mm.

Advantages of Boode Pac

- Cost effective - smaller diameter needed to allow optimum abstraction from smaller aquifers
- Increased collapse resistance
- Use in conjunction with Boode Select Casing
- Ease of installation
- Can reduce bio-fouling and encrustation

Boode HDPE Screen / Casing

Boode HDPE screen and casing is designed for site investigation & monitoring use, particularly in applications where there is ground contamination.

Boode offers 'natural' carbon-free HDPE screen and casing (32 mm to 63 mm) where hydro-carbon sampling is needed.

For larger wells Boode offers black HDPE with a range of diameters from 75 mm up to 315 mm.

Advantages of Boode HDPE

- Custom made solutions
- Various lengths and slot sizes possible
- Can also be made as BGP (gravel packed)

Outside Diameter in mm	Inside Diameter in mm	Wall Thickness in mm	Base Material PE	Pressure PN	Classe SDR	Weight per meter	Minimum slotsize in mm	Thread length in mm connection type C
32.2*	25.0	3.6	80	16	9	0.33	0.30	38
40*	32.6	3.7	80	12.5	11	0.43	0.30	38
50*	40.8	4.6	80	12.5	11	0.67	0.30	38
63*	51.4	5.8	80	12.5	11	1.04	0.30	45
75	61.4	6.8	100	16	11	1.47	0.50	45
90	79.2	5.4	100	10	17	1.46	0.50	45
110	96.8	6.6	100	10	17	2.17	0.50	45
125	110.2	7.4	100	10	17	2.77	0.50	45
140	123.4	8.3	100	10	17	3.48	0.60	60
160	141.0	9.5	100	10	17	4.55	0.60	60
200	176.2	11.9	100	10	17	7.10	0.60	70
250	220.4	14.8	100	10	17	10.60	1.00	85
315	277.6	18.7	100	10	17	16.70	1.00	90

* Natural (white) HDPE: Carbon free for environmental installations.
Connections: C-Type flush butt male & female with trapezoidal threads.
Lengths: As required, maximum 6mts.
Slot configuration: Horizontal.
Other diameters on request available.

Boode Accessoires

This is just a selection of the many possibilities,
please contact us for any special request.

Double glue connection

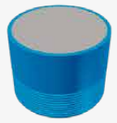
Glue-thread adaptor male

Glue-thread adaptor female

Threaded reducer

Wellhead

Lifting device



Threaded top cap

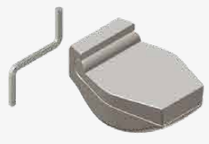
Top cap with valve

Flip top cap

Rubber O-ring

Rubber conical plug

Threaded bottom plug



Aluminium lockable top cap

Glue thread cap

Threaded cap

Threaded plug

End plug

Thread protection cap

Flange with Flange adaptor

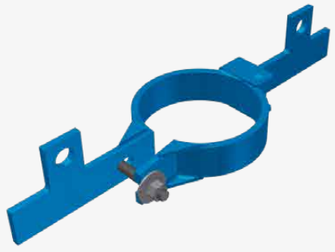
soft top cap

Wooden bottom plug
(non swelling)

End cap

Strap wrench

Geotextile wrap



Steel speedclamps

HDPE service box 140 mm ⌀

HDPE service box lockable 140 mm ⌀

HDPE service box lockable 190 mm ⌀

HDPE service box with fiberglass cover 140 mm ⌀

HDPE service box lockable with
PE cover 340 x 240 mm

HDPE service box ⌀ 120 mm

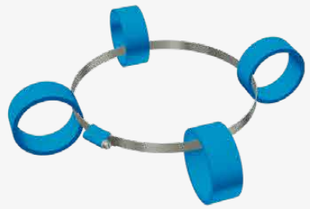
Borehole cover plate ⌀ 120 mm - stainless steel

HDPE service box 100 x 205 mm

Bend 45°

Bend 90°

PE core box



Centraliser

PE Centraliser

KWIK ZIP centraliser

HDPE well cover - lockable

Steel security cover - lockable - galvanised

Boode – Official Agent for Johnson Screens

The best drillers and most demanding customers in the world know the quality of Johnson products. Backed by more than 100 years of experience, they have been the world leader in stainless steel water well screens since 1904.

The industry standard for well screens around the world

The development of the continuous-slot profile wire technology by Johnson in the early 1930s revolutionized the industry, and quickly became the industry standard for well screens around the world.

Today, operators continue to drill deeper & into more challenging formations & this revolutionary technology is being continuously advanced and improved upon, providing the best well screens for municipal, industrial, commercial, agricultural, domestic and environmental applications.

Along with the acclaimed V-Wire™ Rodbased Screens Johnson's provide the following:

- JSL / ZSM connection Riser Pipes
- Muni-Pak™ Pre-packed Screens
- Pipe Based Screens
- Punch & Bridge Slotted Screens
- Surface treatments
- Extensive technical support

All Johnson products can be constructed out of 304, 304L, 316L and 904L stainless steel. Other corrosion-resistant alloys are available upon request.

****Johnson screens can be installed with Boode PVC well casing****

Boode – Official Retailer for Baroid IDP

Baroid Industrial Drilling Products (a Product Service Line of Halliburton) is a worldwide network of sales and service engineers, laboratory scientists, and support personnel dedicated to servicing all facets of the industrial drilling industries.

Since the its beginnings in the water well drilling industry in the 1950s, products and services have been expanded to include all types of drilling. Baroid Industrial Drilling Products now supply a comprehensive line of products specifically engineered to optimize performance and end-user costs for:

- Drilling
- Grouting
- Plugging
- Abandonment
- Well rehabilitation and development

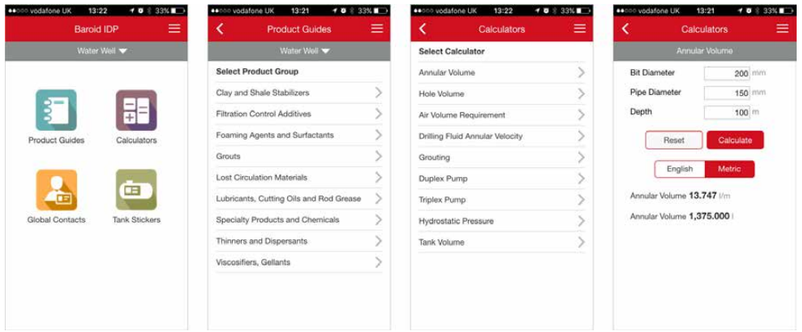
The comprehensive Baroid product line, backed by the strength of Halliburton's worldwide distribution system along with the Baroid IDP Retailer networks, coupled with the concept of Engineered Fluid Solutions for each and every drilling situation, guarantees improved drilling performance and superior expertise in well site service.

Productoverzicht:

Our product overview can be found at: https://www.boode.com/downloads/product-sheets
For the full range of Baroid products please visit: https://www.baroididp.com/en/products-applications
Or please contact us. We look forward to being of service to you.

Baroid IDP App

The Field Reference Guide App is a quick source of information for Baroid IDP users in the field. This tool allows any user (retailer, customer, or employee) to locate information quickly about any of the Baroid IDP products and/or product usage. The user can also calculate pre-set product formulas. The mobile app receives up-to-date content via mobile sync from the administrator website and content repository as long as the user has Internet access.



Download on the App Store

GET IN ON Google Play

Bentonite Sealing Pellets

Bentonite sealing pellets are a natural high-swelling clay material in compressed, shaped pellets for sealing and plugging.

Bentonite sealing pellets create a stable, permanent, low permeability seal in water wells, monitor/observation wells, dewatering holes, soil sampling holes, mineral exploration holes and abandoned boreholes.

Boode supplies bentonite products from Mikolit and Cebo. Each manufacturer has products with its own specific characteristics and enables us to offer a suitable product for every application.

Mikolit®

Product	Description
Mikolit 00	Low swelling capacity
Mikolit 300	Medium swell capacity
Mikolit B	High swelling capacity

Cebo

Product	Description
Cebogel QSE	High swelling capacity
Cebogel Drill-Grout	Bentonite Grout
Cebogel Drill-Grout Plus	Bentonite Grout

*Other CEBO products also available: Drill grout and Thermo grout.

Gravel Pack

Gravel pack is important for every water well system as it helps to ensure maximum yield and sustainable operation of the system.

A well placed gravel pack should consist of uniform, clean & rounded grains of sand or gravel which should be matched to the choice of the screen and the analysis of the formation.

Boode gravel pack is washed & dried and contains no peat residues or humic substances. Boode gravel pack are 98.6% SiO2 and carry a Kiwa® ATA mark, according to Kiwa evaluation K240 "Sand and gravel for drinking water."

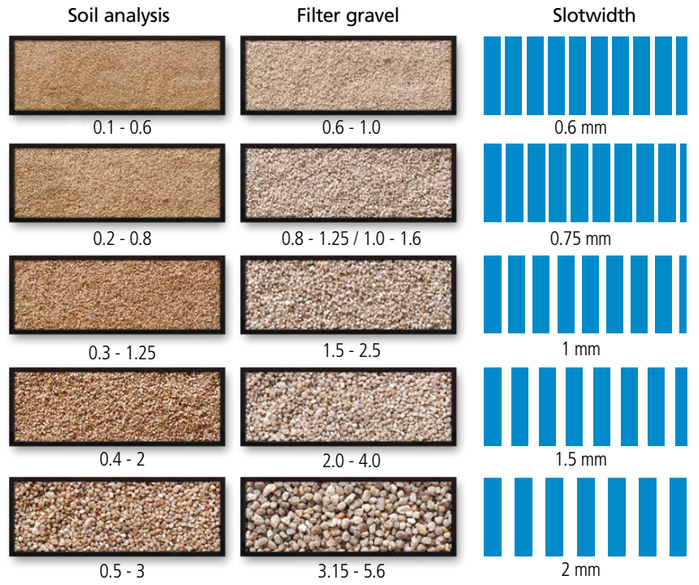
Applications:
Water well, dewatering, geothermal energy systems, groundwater sampling and environmental research.

Boode gravel pack is available in the following sizes:
- filter gravel 0.4 - 0.8
- filter gravel 0.6 - 1.0
- filter gravel 0.8 - 1.25
- filter gravel 1.0 - 1.6
- filter gravel 1.5 - 2.5
- filter gravel 2.0 - 4.0
- filter gravel 3.15 - 5.6

* Other sizes are on request available.

Characteristic	Advantage
Clean	Little loss of material during development. Less development time.
Well rounded grains	Higher hydraulic conductivity and porosity. Reduced drawdown. Higher yield. More effective development.
Uniformity	Less seperation during installation. Lower head loss through filter pack.

Selection chart



Borehole Monitoring

Boode supplies products for the inspection and monitoring of water wells:

- Water level indicators
- Borehole inspection cameras

Boode is an official retailer of PASI Geophysical instruments and Laval Underground Surveys.

Water Level Indicator

Product

PASI Water level indicator - Type BFK – Audio & Visual Alert

- Water level indicator with PVC round cable, four-conductors, with Kevlar core and external protection sheath (diam. 4.7 mm).
- Graduation at 1 centimetre intervals (directly printed on the cable itself and protected by external anti-scratching transparent polyurethane
- Probe diameter: 10 mm
- Water level indication by both acoustic signal and LED

Available unit lengths:
30 mt, 50 mt, 100 mt, 150 mt, 200 mt, 300 mt, 400 mt and 500 mt.

On request available:
- BFP (flat cable)
- BFKT (temperature)
- Downhole indicator (available for all BFK models and prefixed at factory)

Pocket water level Meter - 15 m - Audio & Visual Alert

- 15 m cable: 2-core flat cable - black cm-division - Accuracy: < 1 cm
- Probe: Stainless steel Ø 15 mm / 190 mm long
- Drum: plastic, impact and temperature resistant
- Power supply: 4 standard batteries 1.5V

Water Well Camera

Product

PASI water well camera

PASI has created an innovative WELL-CAMERA that is a compact and lightweight system which is reliable, cost effective, easy to use and easy to transport for rapid on-site inspections.

A complete PASI well camera system is comprised of the following:

- reel and camera head (waterproof up to 35 bar (350 m))
- control unit with integrated LCD,
- battery charger
- USB 2.0 grabber board and microphone
- Software and USB cable for display and recording of pictures, movies and vocal comments to any external laptop.

Product

R-Cam 1000 XS Portable Borehole Camera System

The ***Laval R-Cam 1000 XLT*** downhole camera is a completely portable, self-contained video inspection system that can inspect boreholes up to 300m (1000 ft.) deep and 30.5cm (1.64 ft.) in diameter.

The R-Cam 1000 XLT is a lightweight, smaller size, professional camera and comes equipped with:

- Dual wide angle colour camera, side and down view with 360 rotation
- Digital on screen depth counter and control box (including qwerty keyboard)
- 9” colour LCD mounted monitor with built-in record and playback feature, the monitor comes with a 16GB internal storage or external USB storage.
- 18 Super Bright, Water Clear, shock proof LED down view lights
- 32 Super Bright, Water Clear, shock proof LED side view lights
- Powered reel with adjustable speed
- 300m (1000 ft.) kevlar reinforced cable
- 2 wheeled trolley for ultimate mobility
- Portable 12v battery and charger (min 4 hour run time)
- Camera centralizer bands

Also available:
Laval R-Cam 1000 TLE (with cable winding system)

PVC Solvent / Cleaner

Boode supplies solvent and cleaning products from SABA and Griffon. Each manufacturer has products with unique specific characteristic, which enables us to offer you a suitable product for every application.

SABA manufactures PVC solvents and cleaning products which are specifically designed for applications in industry and horticulture. With over 80 years of knowledge and experience SABA has become a word leading manufacturer over the years.

SABA PVC solvents are very suitable for pressure connections, drainage systems and Boode solvent fittings. Sabaclean products are universal PVC detergents which can be used in combination with the specific SABA PVC solvents.

Griffon provide high quality products for the sanitary and installation industry, building and infrastructure engineering. Griffon is an internationally acknowledged specialist of joining technology for piping systems in PVC and metal.

SABA

Product
Saba PVC 2810 is a high quality THF-free hard PVC solvent and very suitable for bonding PVC pipes with a solvent connection. Sabaclean PVC & ABS products are universal purpose cleaning products for cleaning the materials to be bonded and removing the solvent residue.

GRIFFON

Product
Griffon PVC cleaner for cleaning and degreasing of materials to be bonded in PVC, PVC-C and ABS. Griffon UNI 100 GT is a hard PVC solvent and ideal for bonding large diameters and at higher temperatures (> 35 ° C).

Boresaver: Well Rehabilitation Treatment

Boresaver is an approved range of specialist treatments for water supply systems contaminated with iron bacteria, iron oxide, manganese oxide and calcium carbonate deposits.

Boresaver treatments can completely remove the deposits that build up and cause blockages in wells, pipes, pumps and any other water related equipment. Developed to achieve maximum flow capacity, the Boresaver range also improves water supply quality and extends the working life of pumping equipment and associated plant.

Safe and easy to use; Boresaver treatments are biodegradable and environmentally friendly. They can be used without dismantling equipment and will not attack or deteriorate any materials inside the system.

Boresaver treatments are approved for use in potable water supplies. Our technical department can give you comprehensive advice on both the rehabilitation and maintenance of water supply systems and how to use the Boresaver treatments.

Problem	Product Range	Applications
Iron oxide Iron bacteria Manganese oxide Calcium carbonate deposits	Boresaver Ultra C Boresaver Ultra C Pro Boresaver IKL Pro Boresaver Liquid Enhancer	Water Supply Wells Geothermal Pipelines Quarrying Mining Leachate pumping Irrigation Remediation

BluePump®

The BluePump is a Dutch quality product, developed by FairWater with the help of its partners in Africa (e.g. Oxfam & IRD Swaziland).

The BluePump is a robust, durable handpump which is suitable for deep wells (up to 100m) The design of the BluePump is simple but durable; all parts are made of high quality materials. Installation, service and maintenance is provided by trained, capable and reliable local dealers ensuring years of trouble free, life giving service.

BluePump

Why the BluePump?

- BluePumps are easy to install and to maintain without special tools.
- BluePump pistons have no (rubber) seal.
- BluePumps have double stainless steel, long lasting foot valves.
- BluePumps have high grade PVC pipes and stainless steel rods.
- BluePump rods have long lasting innovative double floating centralizers making pumping lighter.
- BluePumps have heavy duty bearings lasting 10+ years.
- BluePumps are lighter to operate and produce more water.
- BluePumps are designed to pump <100m. deep.
- BluePump dealers provide excellent customer service & long-term back-up.

BluePump distributors

The BluePump is available with Boode BV in The Netherlands, as well as through a network of qualified dealers in Africa.

BluePump distributors in:

The Netherlands, UK, Angola, Burkina Faso, Cameroun, Central African Republic, Democratic Republic of Congo, Ethiopia, Ivory Coast, Kenya, Malawi, Mozambique, Niger, Republic of Congo, South Africa, Swaziland, Tanzania, The Gambia, Uganda.

BluePump Partners:

ASAP, Bluezone Ltd, British Army, Foundation Dogon Education, Global Resource Alliance, GRA Tanzania, IRD Swaziland, Join the Pipe, Obakki Foundation, OXFAM, Sanex, SORIM, Swe-Gam and Techno Relief Services.

BluePump.com

American Mfg Company

AM American Mfg Company
Quality Mud Pumps and Parts

Boode – Distributor for American Mfg Company

American Mfg Company is a quality manufacturer of replacement parts for the wide variety of mud pumps, centrifugal pumps, rig parts, and swivel parts found on the World market today.

American Mfg Company Pumps And Parts carry over $5,000,000 of interchangeable mud pumps parts, centrifugal pump parts, rig parts and swivel parts in stock for all major manufacturers such as Gardner Denver, Failing, Wheatley, National, Emsco, Ideco and Opi, as well as OE AM pumps.

Products:

- American Manufacturing Pumps
- FMC
- FMC Bean Pump
- Gardner Denver Duplex Pumps
- Gardner Denver Triplex Pumps
- Gardner Denver Servicing and Stimulation Pumps
- Gardner Denver Production and Industrial Pumps
- Failing Mud Pumps
- Wheatley Mud Pump
- National Mud Pump
- GASO Mud Pumps
- Emsco Mud Pumps
- Ideco Pumps
- OPI Mud Pumps
- Centerline Pumps
- Mission Centrifugal Pumps
- MCM O' Drill Centrifugal Pumps
- Halco Centrifugal Pumps
- Harrisburg Centrifugal Pumps

Your #1 Manufacturer of Top Quality Pumps and O.E.M. Interchangeable Pump Parts

Applications

Geothermal Energy

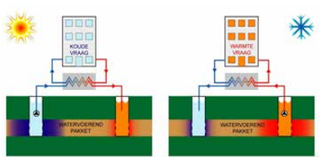
(UTES / ATES systems)

UTES (Underground Thermal Energy Storage) and ATES (Aquifer Thermal Energy Storage) systems provide heating in winter and cooling in summer to buildings, through heat exchangers, via the extraction of groundwater from boreholes drilled into natural underground layers where the heat and cold are stored.

The installed systems vary in depth from 30mts to 200mts+ in suitable geological formations, and can contribute to savings of up to 75% on current heating& cooling bills.

Advantages

- Renewable energy source
- Carbon emissions reduced by up to 60%
- Low risk proven technology
- Payback achievable in less than 5 years



Boode is member of:

bodem energie nl

www.bodemenergienl.nl

Water wells

Dedicated water supply for domestic, industrial, agricultural, municipal & humanitarian requirement

Groundwater recharge

Groundwater recharge is a process for sustainable groundwater management, defined as a downward flow of water reaching the water table and replenishing groundwater resources.

Irrigation

The artificial application of water to land & soil, used to assist the growing of agricultural crops, maintenance of landscapes & revegetation of dry areas.

Construction dewatering

Deepwell dewatering systems are employed to lower groundwater levels to provide stable working conditions in excavations

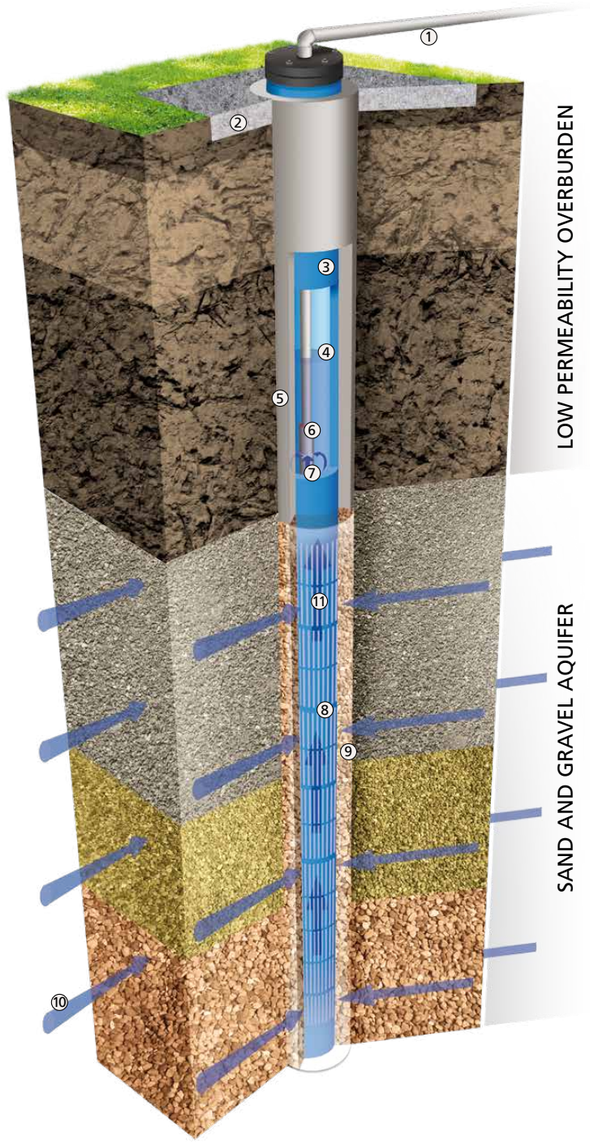
Site investigation

Site investigation is the gathering of information to a certain subsurface ground conditions.

Water intake system

Boode PVC Well Screen & Casing can be utilised as horizontal sea/river intakes (salt water or freshwater). The image shows a saltwater intake system for a desalination plant in Lithuania.

Technical Data– Well Design



Key

1. Discharge Pipe From Boode Wellhead
2. Concrete Slab For The Well House Foundations (Note: Many Details At The Top Of The Borehole Are Not Shown, In Order To Keep The Diagram Simple. For Example:- The Well House, Control Valve, Flow Meter, Electricity Supply Cable Etc.)
3. Boode PVC Pump Chamber Casing
4. Pumping Water Level In The Borehole
5. Cement Or Bentonite Grout Sealing The Annulus Around The Pump Chamber Casing
6. Electric Submersible Pump
7. Water Inflow To The Pump Intake
8. Boode PVC Well Screen
9. Gravel Filter Pack Filling The Annulus Around The Well Screen
10. Groundwater Is Drawn Through The Screen Slots And Flows Up To The Pump Intake
11. Groundwater Flows Through The Sand And Gravel Aquifer To The Well Screen

Technical Data – Pumping Data

How much water can you get through a well screen?

Well screens have different open areas, depending upon the construction and design of the screen. There has been much research and field experimentation in the last 80 years to try to work out the optimum flow rate through the slots in a screen, for different grain size and permeability aquifers, to minimise friction head losses, corrosion, erosion by fine sand or silt, or encrustation.

Various authorities have presented safe, optimum or recommended entrance velocities. These range from a generally accepted optimum of 3cm/second to an upper limit of 45cm/second. It is not possible to be more precise because every borehole and aquifer is different.

All authorities stress the value of local knowledge amongst drillers, hydrogeologists and engineers. Experience of what works best locally is usually more successful than theoretical calculations.

The well screen slots in contact with the natural or artificial gravel pack are always partially blocked by the granular material in the gravel pack. Therefore the entrance velocity, or the amount of water that can get through the screen slot is not determined solely by the aperture of the slot.

Instead, it is controlled by the apertures between the grains of sand or gravel jammed up against, or partially, into the slot. Biofilms or encrustation can build up over time and further reduce the size of open holes either in the gravel pack or the screen. These factors cannot be controlled or predicted accurately. Therefore the table below is a simple conservative guide to the amount of water that can obtained for a length of one metre length of 1 mm slot screen and a two metre drawdown. These flow rates can be exceeded, if a clean gravel pack can be developed with large well rounded grains around a screen with wider slots.

Pumping Data For PVC Screen

Listed below is approximate data relating to the volume of water that can be pumped through a 1 metre length of screen with 1 mm slots (with a 2 metre drop in the water level), all based on practical experience and results.

diameter mm	Ø inches	m^3/h	l/min.	igpm	usgpm
60	2	3	50	11	13
90	3	4.5	75	17	20
113	4	6	100	22	26
125	4.5	7.5	125	28	33
140	5	8.5	142	31	37
165	6	10	167	37	43
200	7	12	200	44	52
225	8	13.5	225	50	59
250	9	19.5	325	72	85
280	10	22	367	81	95
315	11	27	450	99	117
330	12	29	483	106	126
355	13	31	517	114	134
400	14	35	583	128	152
450	16	40	667	147	173
500	18	45	750	165	195

Technical Data – PVC/HDPE Data

Technical data for PVC and HDPE screen and casing systems

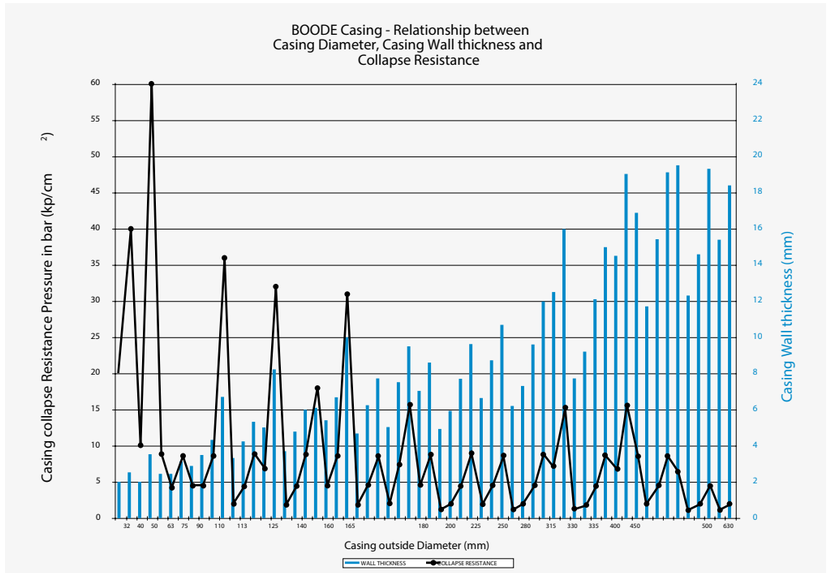
Mechanical and physical properties	PVC	HDPE
Tensile strength	7823 lbf/in2 55 N/mm2 (550 kp/cm2)	3129 lbf/in2 22 N/mm2 (220 kp/cm2)
Elasticity coefficient	426690 lbf/in2 3000 N/mm2 (30000 kp/cm2)	113800 lbf/in2 800 N/mm2 (8000 kp/cm2)
Specific gravity	78.5 lb/ft3 1.4 g/cm3	53.2 lb/ft3 0.95 g/cm3
Impact strength at 20°C/68°F	Rigid PVC approx. 5 Kj/m2 (cmkp/cm2) High impact resistant PVC approx. 15 Kj/m2 (cmkp/cm2)	>20 Kj/m2 (cmkp/cm2)
Colour	BOODE blue	Natural (white) Black
Chemical resistance at 20°C	Non corrodible in aggressive groundwater and regenerative chemicals. For full details of the BOODE chemical resistance: please contact us.	

Open area (PVC)

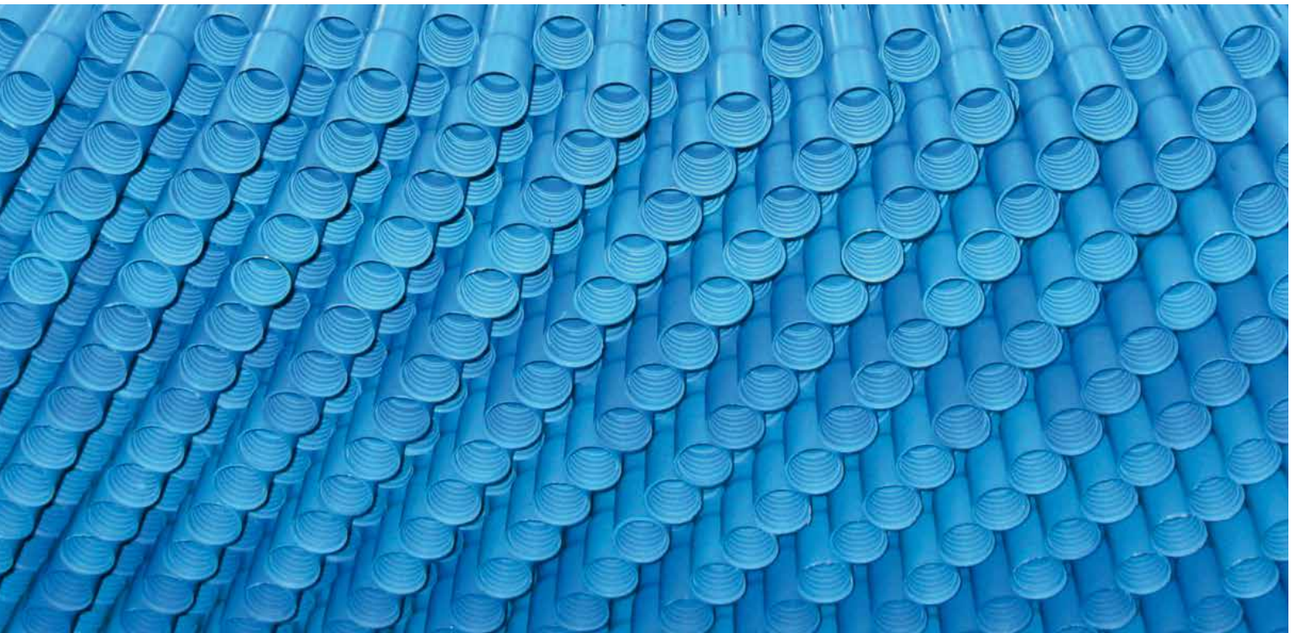
Standard slot width range showing average percentage open area

Standard Slot Screen (Lengtwise)		Continuous Slot PVC Screen (CSS)	
4%	0.30 mm	0.30 mm	6%
5%	0.40 mm	0.40 mm	8%
6%	0.50 mm	0.50 mm	10%
7%	0.60 mm	0.60 mm	12%
9%	0.75 mm	0.75 mm	15%
11%	1.00 mm	1.00 mm	20%
13%	1.25 mm	1.25 mm	25%
16%	1.50 mm	1.50 mm	30%
20%	2.00 mm	2.00 mm	40%
25%	3.00 mm	3.00 mm	50%
28%	4.00 mm		

Relationship between casing diameter, casing wall thickness and collapse resistance (PVC)



Please visit our website to view the enlarged graphic.



Environment

PVC is a low carbon material, much lower than many alternatives and displays astonishing longevity, even in the harshest environments. PVC has numerous benefits and offers a reliable and low impact solution to water abstraction and movement.

Carbon impact of PVC

One measure of a material's environmental impact is its carbon footprint. Carbon footprinting is a complex exercise and takes into account the embedded carbon impact of the materials (the impact of producing the raw material in the first place), the carbon impact of processing the materials, and the impact of disposal/recycling. This is expressed in Kgs or tonnes of carbon dioxide equivalent (CO2e).

Material	Carbon impact per Kg (material & processing)
Boode PVC	2.816
Stainless steel (304L)	5.341

Transport impact

Boode's well screen & casing materials are manufactured in Holland (transported by road and sea for the UK market). Consequently, the environmental impact associated with transport for product supplied from Holland is significantly lower than material sourced from the Far East or Indian Sub-Continent. The table below shows Kg CO2e per tonne delivered from a range of locations (Shanghai, Mumbai, and Rotterdam).

Kg/tonne CO2 China	CO2 India	CO2 Holland (for UK)	CO2 Holland (Ex-Works)
325.02	198.81	23.02	0.00

Longevity of PVC

One of the key attributes of PVC is its longevity, and more importantly its ability to provide longevity across a massively wide range of differing environments. Key to this is PVC's resistance to oxidising substances. The same is not true of other well materials. Consequently, the life-cycle of PVC in the field is in the region of 100 years minimum. If alternative materials are used in areas with high levels of corrosivity they may only have an operation life of a couple of years.

Production waste

Boode recover and recycle a minimum of 95% of all production waste from their production in a closed loop recycling process.

BOODE
waterwell systems

- SELECT PVC™ CASING & SCREEN
- BGP™ GRAVEL COATED PVC SCREEN
- CSS™ CONTINUOUS SLOT PVC SCREEN
- BOODEPAC™ DUAL WALL PVC SCREEN
- HDPE CASING & SCREEN
- FULL RANGE OF PVC ACCESSORIES

ecoline

- PRICE-FOCUSED PVC CASING, SCREEN & RISER

Johnson Screens

- JOHNSON STAINLESS STEEL SCREEN, CASING & JSL RISER PIPES

- BAROID IDP DRILLING FLUIDS & ADDITIVES

Cebo Mikolit

- BENTONITE SEALING PRODUCTS

BluePump®

- HANDPUMPS

BORESAVER

- WELL REHABILITATION TREATMENT

FAST

- WATER LEVEL DIPMETERS
- BOREHOLE CCTV

AM American Mfg Company
Quality Mud Pumps and Parts

- QUALITY MUD PUMPS AND PARTS

SABA

- SOLVENT / CLEANER

kwik-ZIP®

- CENTRALIZERS AND CASING SPACER SYSTEMS

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