
STRATAFLO[®] ABS BORECASING

FOR WATER WELL & BOREHOLE DRILLING APPLICATIONS

STRATAFLO® ABS BORECASING OVERVIEW

ABS BORECASING SYSTEMS FOR WATER WELL AND BOREHOLE DRILLING APPLICATIONS

THERMOPLASTIC REVOLUTIONISES BORECASING

The water well and borehole drilling industry worldwide has continued to use traditional materials for borecasing systems. However, as the limitations of steel, PVC and fiberglass materials evolve, the DURAFLO ABS STRATAFLO borecasing system continues to be a proven performer in one of the worlds harshest environments, whilst retaining its reliability and cost effectiveness.

Although many thermoplastics have been used, no other system incorporates the correct combination of mechanical strength, corrosion resistance and lightweight allround toughness as STRATAFLO borecasing.

The DURAFLO ABS STRATAFLO borecasing system utilises all the desirable properties of a combination of materials in conjunction with a proven flush-jointed threading system. This allows a minimum diameter bore to be drilled, eliminating unnecessary oversize drilling and greatly reducing installation costs.

THE MATERIAL

Specially formulated Acrylonitrile Butadiene Styrene (ABS) polymer, which is free of toxic metallic stabilisers, imparts no odours or taints into the water.

The materials have been tested to and comply with AS 4020 and AS 3855.

Tensile strength (ISO 527)	38MN/m ²
Impact strength (ISO 180)	44kj/m
Hardness (R2039)	91
Density	1030kg/m ³
Heat distortion temp (ISO 306)	94°C

In addition, STRATAFLO displays total resistance to all the aggressive groundwater conditions encountered in the borecasing industry within a temperature range -30°C to +60°C.

THE DURAFLO STRATAFLO SYSTEM

STRATAFLO is a complete borecasing system comprising:

- Plain casing
- Slotted screens
- Bottom plugs
- Reducing and lifting adaptors
- Inspection caps
- Capping assembly
- Centralizers

Casings are available in nominal lengths of 5.8 metres, individually wrapped and crated for protection in transit.

Sizes range from 80mm-630mm nominal bore and although a standard range is produced (Table 1) casings and systems may be manufactured with varying diameters and wall thicknesses complete with all accessories to suit special customer requirements.

STRATAFLO slotted screen casings offer a long term economical alternative to traditional screen materials whilst incorporating the same tough properties as the adjoining STRATAFLO casing.





STRATAFLO® ABS BORECASING DIMENSIONS & SPECIFICATIONS

ABS BORECASING SYSTEMS FOR WATER WELL AND BOREHOLE DRILLING APPLICATIONS

WHERE HAS STRATAFLO BEEN USED?

The DURAFLO STRATAFLO ABS borecasing system is used extensively throughout Australia by local water authorities, mining and industrial operations and in the rural sector for crop and live stock irrigation schemes.

Following are some of the organisations specifying and using STRATAFLO to secure their essential water supply.

- BHP Iron
- Hamersley iron
- Loy Yang Power
- Queensland Natural Resources
- Sinclair Knight Merz
- Murray Darling Commission
- FMG

DIMENSIONS AND SPECIFICATIONS ALL VALUES AT 20°C

Size		Duty	ID Mean mm	OD Mean mm	Wall mm	External Collapse m H ₂ O	Joint Options T,P,S*
Inch	Millimetre						
3	80	STD	75	88.9	7	150	T
	80	HD	71	88.9	8.6	300	T
4	100	STD	96	114	9	150	T
	100	HD	92	114	11	300	T
	100	SPL	100	114	9.5	200	T
	100	SPL	118	136	9	100	T
5	125	STD	123	140	8.5	65	T
	125	HD	118	140	11	150	T
6	150	STD	148	168	10	65	T,P
	150	HD	141	168	13.5	150	T,P
	150	SPL	158	179	10.5	65	T,P
8	200	STD	192	219	13.5	65	T,P
	200	HD	184	219	17.5	150	T,P
	200	SPL	201	234	10.5	120	T,P
10	250	STD	220	250	15	65	T,P
	250	HD	213	250	18.5	120	T,P
	250	SPL	250	282	16	65	T,P
12	300	STD	277	315	19	65	T,P
	300	HD	268	315	23.5	120	T,P
	300	SPL	301	300	14.5	30	T,P
14	355	STD	312	355	21.5	65	T,P,S
	355	HD	302	355	26.5	120	T,P,S
16	400	STD	352	400	24	65	P,S
	400	HD	341	400	29.5	120	P,S
18	450	STD	396	450	27	65	P,S
	450	HD	384	450	33	120	P,S
20	500	STD	450	500	25	35	P,S
22	560	STD	508	560	26	35	P,S
24	630	STD	571	630	29.5	35	P,S

Other diameters and wall thickness casing produced to customer requirements.

- * Joint Option: T = Threaded Flush Joint
- P = Parallel Flush Joint (Solvent Weld)
- S = Socket Joint (Solvent Weld)

DRY STRING LENGTH. m

S	P	T	-
3	STD	75	-

DERATING FACTOR

20°	30°	40°	50°
1	0.87	0.73	0.60

STRATAFLO® ABS BORECASING DIMENSIONS & SPECIFICATIONS

ABS BORECASING SYSTEMS FOR WATER WELL AND BOREHOLE DRILLING APPLICATIONS

OPEN AREA APPROXIMATE OPEN AREA PER LINEAR METRE. cm²

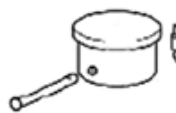
Norm size	Slotted Run per Length	Slots			
		1.0mm	1.5mm	2.0mm	3.0mm
50	2.58	86	120	151	126
80	2.58	154	201	260	212
100	5.43	207	290	365	305
115	5.43	227	270	400	322
125	5.43	246	345	435	364
150	5.38	326	457	576	482
160	5.38	380	500	544	455
200	5.38	416	583	734	615
250	5.34	540	756	953	798
300	5.34	642	899	1132	949
% Open Area		7	10	12	10

RELINING EXISTING BORES

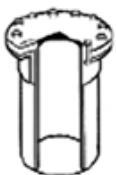
STRATAFLO is ideal for relining of existing bores because of the large range of diameters available (either standard or fabricated upon request) and the fact that there are no external protrusions such as sockets or couplings which facilitates minimum bore reduction upon relining.



SLOTTED SCREENS
Complete with box and pin thread precision machined from STRATAFLO casing material. (Refer to table above).



INSPECTION CAP
to prevent unauthorised access to observation wells.
The cap is supplied complete with retention bar, padlock and keys.



CAPPING OFF ASSEMBLY
To provide a pressure tight seat to the well. Comprises a steel backing ring, capping plate, gasket, and moulded stub flange in ABS material.



LIFTING ADAPTER
Mild steel. To lift the casing into the rig during the insertion process. BS879 pin.



BOTTOM PLUG
To seal off the bottom of the well; BS879 box.



REDUCING THREADED ADAPTER
To make a one step reduction in casing size e.g. 8 in BS879 box to 6 in BS879 pin.



PARALLEL THREADED ADAPTER
To connect casing to API threaded components of the same nominal diameter (API pin/ BS879 box).

STRATAFLO® ABS BORECASING DESIGN & INSTALLATION

ABS BORECASING SYSTEMS FOR WATER WELL AND BOREHOLE DRILLING APPLICATIONS

STRATAFLO ADVANTAGES

CORROSION RESISTANCE

STRATAFLO is unaffected by all extremes of pH encountered in ground water and contrasts with steel by its indifference to water hardness.

HIGH TEMPERATURE RESISTANCE

Unlike other thermoplastics which soften well below 60°C STRATAFLO will resist high temperatures which are present during accelerated curing of cement growing or as a result of hot ground waters as encountered in artesian wells.

LIGHTWEIGHT

STRATAFLO is approximately lastics materials. This weight advantage enables increased savings on freight, installation costs and allows for the elimination of heavy lifting equipment as is customary with metal casings.

FLUSH JOINING

Unlike other casings, STRATAFLO has no internal or external projections. Distinct advantages are the savings achieved through reduced bore diameters and the elimination of internal and external protrusions which cause "snagging".

DESIGN AND INSTALLATION

The many advantages of the DURAFLO ABS STRATAFLO borecasing system stem from the superior properties of the specially formulated thermoplastic. As with other traditional materials a variety of design installation and development guidelines must be adhered to for maximum benefit. It must be understood that STRATAFLO is not metallic casing and should not be driven at anytime – general guidelines for installation of PVC may be followed. With threaded STRATAFLO, it is not necessary to incorporate self tapping screws in the joints.

DEPTH

Maximum recommended dry-string lengths (refer to Table 1) should not be exceeded. The dry-string length is the length of casing which can safely be suspended from the top STRATAFLO casing thread. This maximum length may be substantially increased where part of the casing column is suspended in water (due to the effect of buoyancy on STRATAFLO casing in water).

COLLAPSE STRENGTH

The greatest external collapse pressure will take place during well development and pump priming at the start of the pumping cycle. Geological formations, casing to borehole clearance and well drawdown when pumping, also contribute to collapse pressure.

Where critical, collapse pressures should be minimized by control of:

1. Movement of formation debris
2. Over-compaction of gravel pack; and
3. 'Emptying' of the casing column by surging with air (water should be used)

All of the above are considered bad practice in any system (see Table 1).

JOINING METHOD

STRATAFLO borecasing has traditionally been supplied as a free running, flush thread casing system. However the system has evolved to include solvent cement joining. Table 1 nominates the options available in each size.

THREADS

Although STRATAFLO is made from tough materials, care should be taken to ensure threads are not damaged.

Free-running threads allow rotation by hand, but any resistance can be overcome by using a chain or strap wrench. Use of tool joint compounds is not recommended, however a silicone lubricant may be used if required. Threads must be free of debris at installation to ensure ease of installation.

STORAGE

STRATAFLO is generally much tougher and stronger than alternative plastic borehole casing materials and is less likely to suffer damage during handling and installation in a bore hole.

Storage height should not exceed one metre. Where temperature exceeds 30°C, stack height should not exceed 0.5 metres. Pipe should be stored on a level surface and, if stored outdoors, casing should be covered to minimize heat build-up through exposure to direct sunlight. Factory fitted sleeving should not be removed from casing until time of installation.

SLOTTED SCREENS

STRATAFLO slotted screens offer a long-term economical alternative to other screen materials. Available in a range of diameters and slot sizes to suit ground conditions and open area requirements.

Normally supplied in standard 5.8 metre lengths with STRATAFLO pin/box threads. Can also be supplied plain-ended for use with PVC casing, or threaded to suit other casing materials.



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