



NEXUSFLO™

TWINWALL, SMOOTH BORE
SUBSOIL DRAINAGE PIPE

PRODUCT CATALOGUE

iPLeX
Pipelines

Benefits and advantages of land drainage

Carefully planned sub-surface drainage can make worthless land fully productive. Low spots can grow excellent crops, terraced hillsides that are properly drained can yield crops that compare with those from flatland and marginal land can be used to produce crops rather than sitting idle. Drainage is a management tool to help achieve maximum productivity with inflation-beating efficiency. NEXUSFLO drainage helps all other agricultural inputs to work together successfully. Well drained land increases in value, often far beyond the cost of the drainage system.



Better soil structure

Well drained fields are less liable to compaction. Water-logging is reduced and this keeps soil friable and sensitive crops healthy. Well drained, aerated soils warm faster for quicker, more even germination and encourage good root development; healthy root structures provide drought resistance. NEXUSFLO drained soil can hold more water, thus minimising run-off and therefore surface erosion.

Crops yield higher

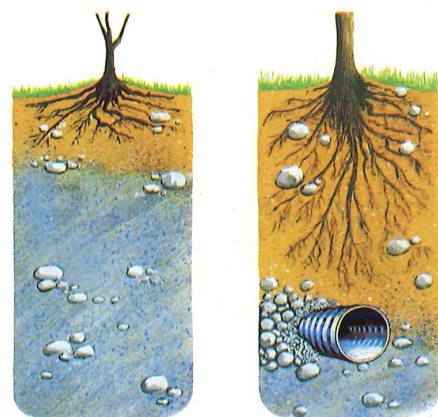
When drained with NEXUSFLO, land dries more uniformly, crops germinate and emerge consistently and produce better yields because of improved root growth, reduced stress, and greater ability to benefit from other crop management inputs, such as fertilizer and herbicides. NEXUSFLO drainage optimises opportunities to plant early, harvest at the best time, use longer season hybrids or crops, and improve the chance to complete all field operations precisely in time for maximum yields.

Water table control

Drainage is not simply a matter of lowering the water table. It also controls the soil water content by removing excess water from the soil, providing a better environment for the roots of growing crops. NEXUSFLO drainage installed at the proper spacings, depths and grades will ensure even water table control.

Root development

Plants growing in soil with high water tables in spring develop shallow root systems. As water tables recede, roots cannot absorb much water and plants may start to wilt in drought conditions. In a well drained soil, crops put down deep, well distributed roots because the water table is lower early in the plants' development. In dry periods, these plants can still reach water. Sturdier, well-rooted plants can also withstand high winds better than poorly rooted plants.



Irrigated crops thrive

A subsoil drainage system beneath expensive irrigation systems maintains a uniform water table, so crops can grow and thrive. The drains also prevent the buildup of harmful alkali salts in the soil, which can damage the productivity of irrigated land.

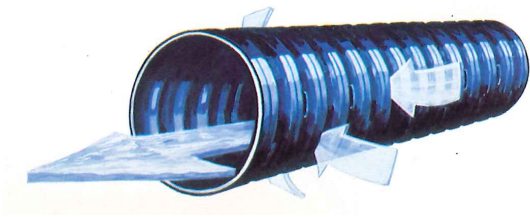
Helps control pollution

The NEXUSFLO drainage system increases the efficiency of fertilizers, herbicides and agricultural chemicals. It also reduces pollution from these products by checking the runoff, which can carry them and valuable topsoil to lakes and streams. By keeping the chemicals and fertilizer in the plant root zone, their benefits can be realized.

How NEXUSFLO provides land drainage benefits for you

Even subsoil drainage

Drainage water easily enters NEXUSFLO through the many holes in the uniform slot pattern, allowing an even water entry along the pipe length.



External load strength

The twinwall design of NEXUSFLO delivers excellent structural performance, to resist external loads from soil, backfill, or vehicle loads when installed correctly.



Flexibility

NEXUSFLO pipe can be installed continuously around curves and bends, Radii of curvature from 300mm can be provided for, allowing installation in long continuous lengths.



Colour coded

NEXUSFLO pipe is colour coded with a single permanent **blue** stripe for easy identification.



NEXUSCOIL pipe is unpunched and colour coded with a single permanent **yellow** stripe. It can be used in combination with NEXUSFLO to prevent tree root entry.



Where to lay NEXUSFLO

The siting of a drain has a significant effect on its operation. Where there is any doubt check the operation of an open drain before placing NEXUSFLO.

How to lay NEXUSFLO

Dig a narrow trench (2x the O.D. of the pipe is sufficient). NEXUSFLO can work effectively on low gradients. The minimum grade (slope) allowed for trench and pipe should be as follows:

NEXUSFLO nominal OD (mm)	Min. recommended gradient (%)*	Min. recommended gradient (m)*	Min. recommended gradient (m)
			Existing corrugated Novaflo*
110	0.1	1 in 1000	1 in 400
160	0.07	1 in 1500	1 in 1000
200	0.05	1 in 2000	n/a

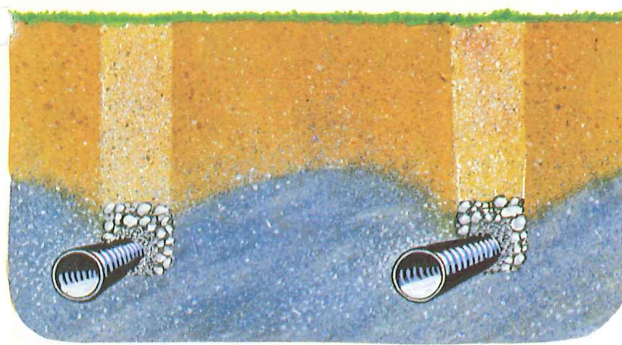
*Based upon minimum recommended flow velocity of 0.2m/sec (small risk of silting from clay particles and fine silts). Where coarse silts or fine sands could enter the pipe, steeper gradients and higher minimum flow velocities should be used. Designers and installers of NEXUSFLO systems should refer to NZAEI Guide to Subsurface Land Drainage – May 1988 for more information.

Depth of drainage

The maximum depth of burial in agricultural applications is not often limiting and is usually determined by the nature of the soil/water profile. For NEXUSFLO, the most crucial factors are trench width and bedding/haunching. No rule of thumb can be given and the best information is available in AS/NZS2566.

Deep drains have two advantages:

- (a) They lower the water table to a safer depth;
- (b) They lower the water table at a faster rate than shallow drains.



Backfill

An envelope of granular aggregate around the drain pipe improves the flow of soil water into the pipe by increasing the effective diameter of the drain and

may under certain circumstances allow the spacing of drains to be increased.

In permeable soils, water flows into the drain mainly through entry points at the sides and bottom of the drain pipe. It is thus particularly important that where used, the gravel envelope should completely surround the drain pipe in order to be fully effective.

Such an envelope can also act as a partial filter by reducing water velocity, hence reducing the ingress of fines.

In silty soils where particles can be washed into the pipe, thus eventually causing silting, a true filter surrounding the pipe itself (consisting of an appropriate filter fabric, such as FILTERSOK, or of carefully chosen filter gravel with "no fines" particle size range) can be used to impede the ingress of fines.

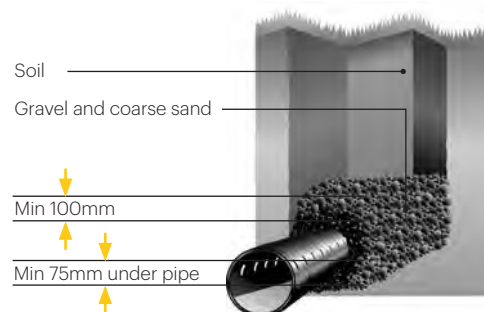
In mobile sandy soils, where fines from the backfill tend to enter and clog the gravel envelope and pipe, this can be impeded by using a suitable Geotextile filter enclosing the surrounding gravel.

Technical information

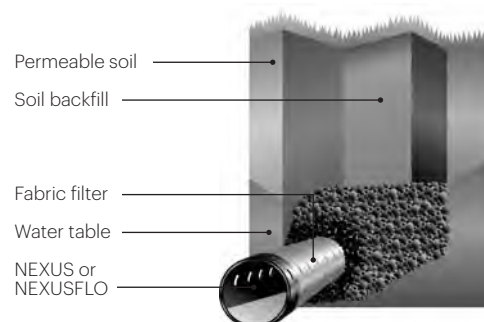
Bedding and backfill alternatives.

A. Standard installation in permeable non-sandy soils.

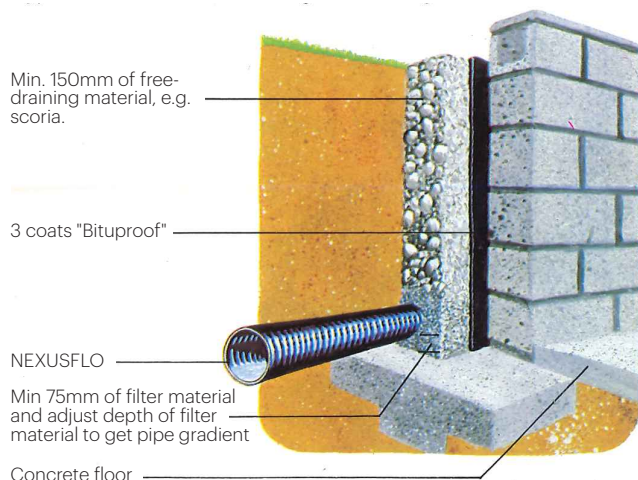
NEXUS and NEXUSFLO encased in a filter gravel envelope designed as a filter.



B. Installation in fine sandy soils.



Typical installation for retaining wall drainage.



Filter material

The use of filter material is basically a cost decision in farm drainage. In roading and building construction applications, a filter is essential.

The ideal filter material should be rounded, non-abrasive and have a grading such that soils are not allowed non-abrasive and have a grading such that soils are not allowed to pass through the filter and the fines do not enter the pipe. Normally, gravel for filter use should not exceed 20mm diameter.

Filter sok

Traditionally, filters have taken the form of coarse sand or fine gravel. However, these materials can be relatively expensive to obtain and place. A simpler and equally effective method of applying filter is by installing it as an integral part of the tubing. This is achieved using 'Filtersok,' a seamless woven fabric filter sleeve, which is applied on site to NEXUSFLO, using an applicator tube, before it is laid.

NEXUSFLO Couplers and associated fittings

NEXUSFLO drainage pipe and coils are connected using PVC couplers that are factory fitted. Additional couplers can be supplied as loose item. The range of PVC and PE fittings designed for use with NEXUSFLO range of pipes are available as follows:

End Cap			Level Invert		
	Size (mm)	Order Code		Size (mm)	Order Code
	110	430.110		160 x 110	123.150.100S
	160	430.160			
New Coupler			45° Junction		
	Size (mm)	Order Code		Size (mm)	Order Code
	110	420.110		100 x 45	104.100.45
	160	420.160		160 x 45	704.150.45
	200	420.200		160 x 110 x 45	704.150.100.45

Drain Spacing

The following table gives a guide for drain spacing proportional to drain depth and soil type. However, land utilisation considerations such as paddock area, crop or tree spacing and vehicular access must all be considered. The common result is a 20m spacing for cattle farm drainage and 60m for sheep grazed pasture.

	Effective drainage distance each side of pipe (m) at a drain depth of:		Permeability k (cm/sec)	A general description of soil permeability
	0.6 - 0.9m	0.9 - 1.2m		
Sand	15.2 - 22.9	22.9 - 45.7	10^{-2}	medium/high
Sandy Loam	12.2 - 15.2	15.2 - 22.9	2.4×10^{-4}	medium
Loam	10.7 - 13.7	12.2 - 15.2	4.7×10^{-5}	medium/low
Clay Loam	6.1 - 9.1	7.6 - 10.7	1.2×10^{-5}	low
Sandy Clay	5.3 - 6.1	6.1 - 7.6	5×10^{-5}	very low
Clay	3.6 - 4.6	4.8 - 5.3	1.2×10^{-6} thru 10^{-7}	very low, practically impermeable

k = coefficient of permeability

Dimensions and statistics

Nominal diameter	160mm	110mm	
Total volume	1.40m ³	1.28m ³	
Coil weight	40.6kg	49kg	
Mean weight/m	902g	490g	
Length of pipe per coil	45m	100m	

Outlets

Check winter water levels and make sure your NEXUSFLO outlets are above peak levels.

Durable

The double wall construction of NEXUS allows Iplex Pipelines to offer a guaranteed stiffness resulting in a more robust product.



Efficiency

The improved flow characteristics brought about by NEXUS smooth bore technology can lead to savings by: - increasing drainage row spacing - decreasing pipe diameter in low gradient situations - decreasing pipe diameter through better hydraulic performance.

Product Range

Product	Product Code	Nominal OD (mm)	Length of coils (m)	Colour
NEXUSFLO (punched)	NEXUS11015	110	15	● Black w/ Blue Stripe
	NEXUS11030	110	30	● Black w/ Blue Stripe
	NEXUS11050	110	50	● Black w/ Blue Stripe
	NEXUS110100	110	100	● Black w/ Blue Stripe
	NEXUS110450	110	450	● Black w/ Blue Stripe
	NEXUS16045	160	45	● Black w/ Blue Stripe
	NEXUS160185	160	185	● Black w/ Blue Stripe
	NEXUS2005	200	5	● Black w/ Blue Stripe
	NEXUS20029	200	29	● Black w/ Blue Stripe
NEXUSCOIL (unpunched)	NEXUS200120	200	120	● Black w/ Blue Stripe
	NEXUSCOIL11015	110	15	● Black w/ Yellow Stripe
	NEXUSCOIL11030	110	30	● Black w/ Yellow Stripe
	NEXUSCOIL11050	110	50	● Black w/ Yellow Stripe
	NEXUSCOIL110100	110	100	● Black w/ Yellow Stripe
	NEXUSCOIL110450	110	450	● Black w/ Yellow Stripe
	NEXUSCOIL16045	160	45	● Black w/ Yellow Stripe
	NEXUSCOIL160185	160	185	● Black w/ Yellow Stripe
	NEXUSCOIL20029	200	29	● Black w/ Yellow Stripe
	NEXUSCOIL200120	200	120	● Black w/ Yellow Stripe

More products from Iplex Pipelines

NOVADRAIN

DRAIN WASTE & VENT SYSTEMS

SUPERSTORM™ & STORMFIT

PVC STORMWATER DUCT SYSTEM

NEXUS™ HI-WAY

ROAD DRAINAGE SYSTEM

NOVAKEY™ & BLUE BRUTE

uPVC PRESSURE SYSTEMS

WHITE & BLUE RHINO™

HIGH IMPACT mPVC PRESSURE PIPE

BLUELINE

MEDIUM DENSITY POLYETHYLENE PIPE

POLIPLEX

POLYETHYLENE PRESSURE PIPE

ALKATHENE™

LOW DENSITY POLYETHYLENE PIPE

NOVATUBE

HORTICULTURAL LATERAL TUBE

GREENLINE, REDLINE™, RURAL BLACK & BLACKLINE

MEDIUM DENSITY POLYETHYLENE PIPE

PLASSON

METRIC COMPRESSION FITTINGS

NEXUS™FLO, NEXUS™COIL, NOVAFLO™ & NOVACOIL

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IPLEX EFFLUENT PIPE

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CULVERT PIPE

RAINWATER SYSTEMS

SPOUTING & DOWNPIPE

POLIGAS™

POLYETHYLENE GAS SYSTEMS

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