

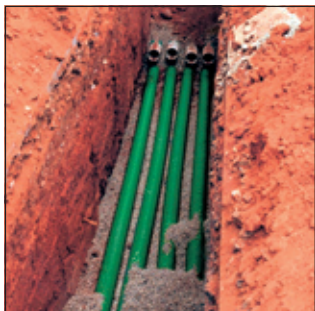
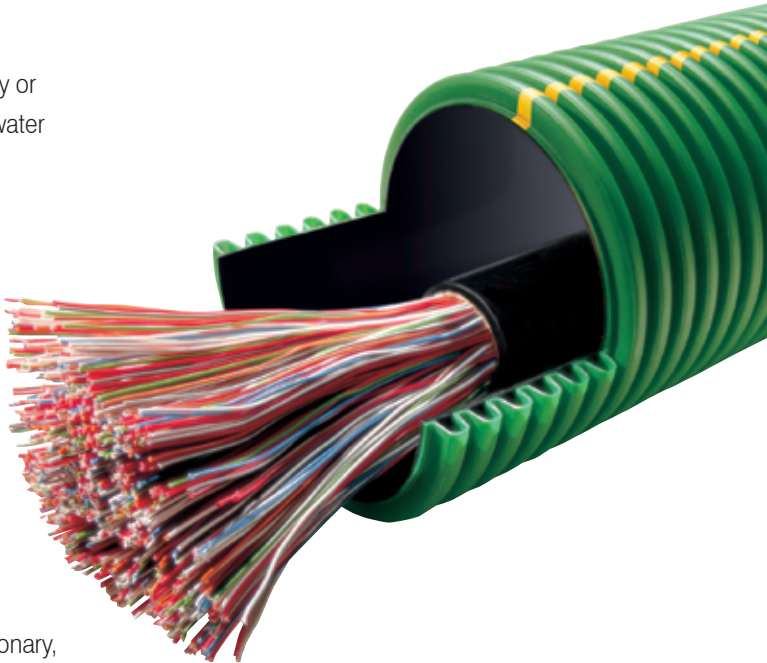
# Underground buried cable conduit and accessories



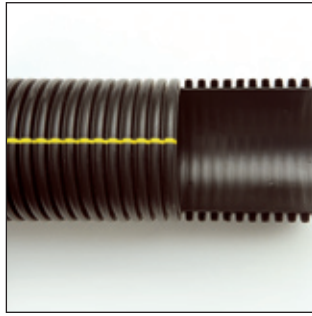
Engineers often specify or use uPVC sewer and water pipes as conduits for buried electrical and telecommunication cables. However these pipes are not designed for electrical applications, they are designed for conveying sewage and water.



**Kabelflex** is a revolutionary, purpose designed flexible cable conduit system developed in Germany and manufactured in South Africa. **Kabelflex** has a unique double walled corrugated construction and is manufactured from high density polyethylene (HDPE).



# Kabelflex - The flexible solution to your cable conduit problems



## Sizes

**Kabelflex** is available in four sizes (DN50, DN75, DN110, DN160). The size is quoted as DN (diameter nominal) followed by the nominal outside diameter in millimetres.

Sizes DN75, DN110 and DN160 are supplied in 6 metre straight lengths with a knock on coupling and have a double wall construction. Sizes DN50, DN75, DN110 and DN160 are also available in a very flexible version supplied in coils. They have a double wall construction and are supplied complete with a coupling and a pilot string with a breaking strain of 30kgf. This string should only be used to pull in a more substantial hauling rope.

Different lengths are available on request.

## Specifications

**Kabelflex** is manufactured to the highest quality standards and carries the SABS certification mark in respect of South African National Standard SANS 61386-24 : 2005 (type N 450) entitled "Conduit systems for cable management Part 24 : Particular requirements – Conduit systems buried underground". This is an IEC standard that has been adopted by SABS.

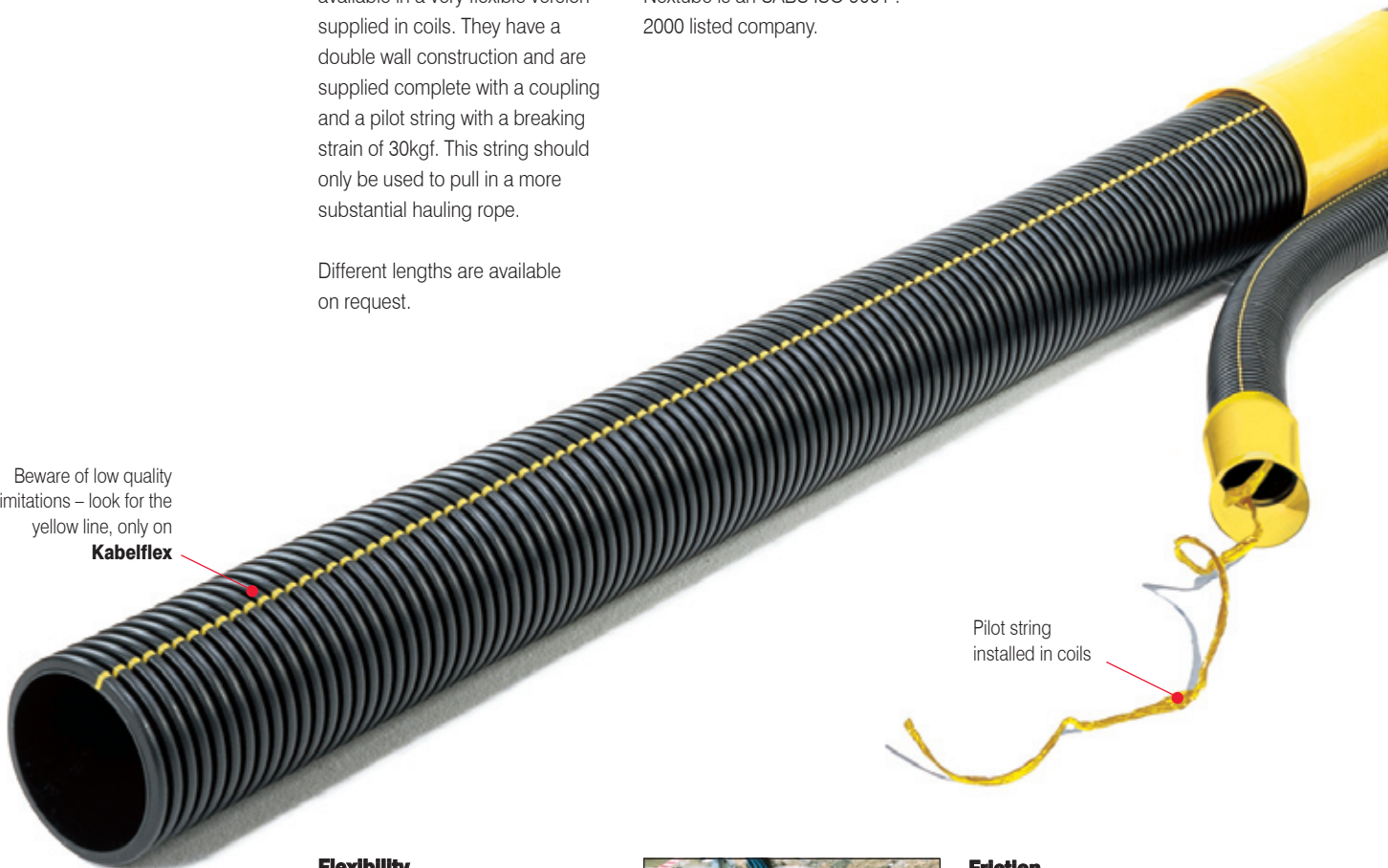
Nextube is an SABS ISO 9001 : 2000 listed company.

## Installation

**Kabelflex** is light, clean and easy to handle. It should be installed in accordance with SANS 1200 "Civil Engineering Construction" section LB "Bedding of Pipes", with reference to flexible pipes. However clause 3.2 can be relaxed to include fill material with a plastic index (PI) not exceeding 12. Please ask for our installation brochure. Proper installation is extremely important.

Beware of low quality imitations – look for the yellow line, only on

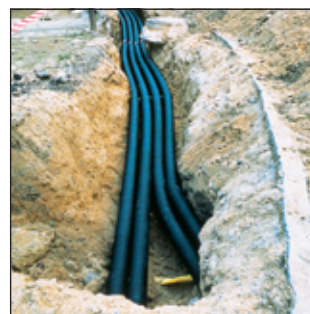
**Kabelflex**



Pilot string installed in coils

## Flexibility

Due to the inherent flexibility of **Kabelflex** the number of fittings such as pre-formed bends can be kept to a minimum. It also facilitates installation as the conduit can be laid around immovable obstructions. It is ideal for use in under road boring applications.



## Friction

**Kabelflex** has a waxy paraffin like surface with a low co-efficient of friction which makes the draw-in of cables very easy. The co-efficient of friction with a polyethylene sheathed cable is only 0.3. This means lower cable pulling forces, longer pulls, and less cable stretch and damage.

## Chemical Resistance

As **Kabelflex** is manufactured from HDPE it is highly chemically resistant. It is unaffected by acids or alkalis in the most aggressive soils and is also resistant to petroleum. A detailed chemical resistance specification is available on request.

# Kabelflex - Cost effective and innovative



## Joining

**Kabelflex** is joined by means of push fit couplings (which provide an IP30 index of protection). For conduit sizes DN75, DN110 and DN160 optional profiled rubber seals are available which are used with the couplings to provide a watertight connection resistant to a 2 metre head of water. Special cutting tools are available for quick and accurate cutting of the conduit.

## Impact Resistance

Impact resistance is a measure of how easily a pipe splits or cracks when subjected to an impact force. Pipes with a low impact strength will tend to crack and split when handled roughly or when plate compactors are used during installation. **Kabelflex** has a far superior impact strength to uPVC sewer pipes especially at low temperatures, which means easier handling and less breakages.

## Compression Resistance

**Kabelflex** has excellent compression resistance, or "ring stiffness" due to the reinforcing effect of the external corrugations. **Kabelflex** has more than 5 times the ring stiffness of normal duty uPVC sewer pipe\*\* (550kPa versus 100kPa). High ring stiffness is an important consideration where conduits are buried in areas with high superimposed loads, for example at road crossings. All buried cable conduits should have a ring stiffness of at least 450kPa.

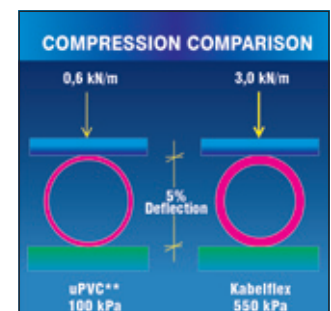
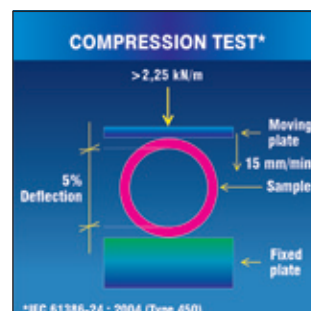
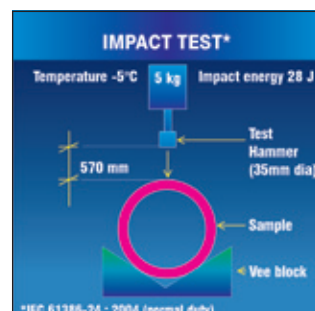
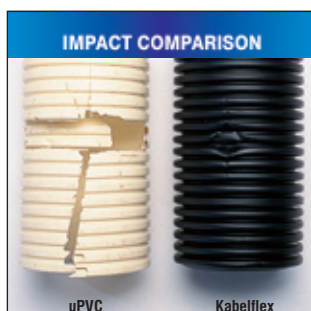
\*\*110mm pipe to SABS 791-1986

## Temperature Resistance

**Kabelflex** has an upper working temperature of 100°C versus 60°C for uPVC pipe (measured in accordance with DIN53446). The thermal conductivity of HDPE (0.4W/mK) is also better than uPVC (0.14W/mK) which means better dissipation of heat generated by cables.

## UV Resistance

**Kabelflex** is designed to be buried underground, however, it is UV resistant and can be stored outdoors for up to one year.



## Technical data:

Standard conduit colour is black, other colours available on request. **All specifications are subject to manufacturing tolerances.**

### Kabelflex conduit size

Outside diameter (mm)	50	75	110	160
Inside diameter (mm)	40	63	95	137
Standard straight length (m)	n/a	6	6	6
Standard length coils (m)	50	50	50	25
Min. bending radius (mm) 6m length	n/a	1 400	2 500	4 000
Min. bending radius (mm) coils	150	250	350	450

### DN50

### DN75

### DN110

### DN160

## Accessories:

**Kabelflex** is a complete cable conduit system and a number of accessories are available to complement the conduit range.

### Description

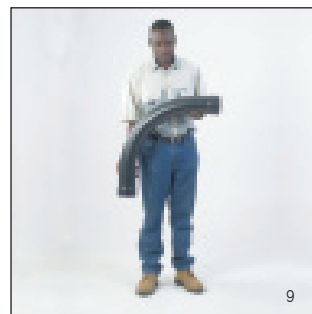
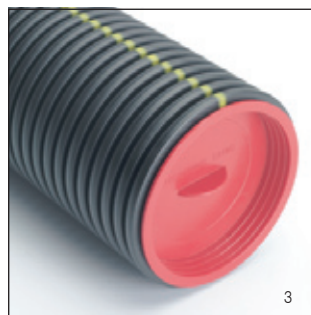
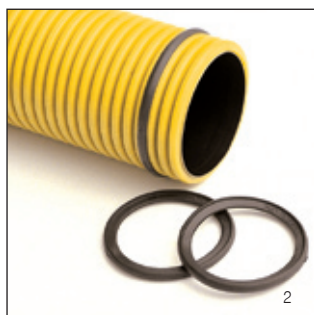
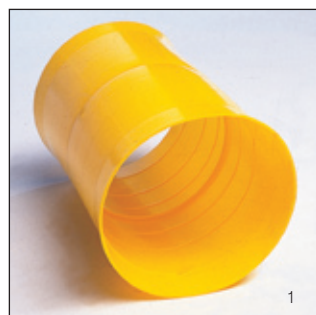
1. Coupling	•	•	•	•
2. Sealing ring	•	•	•	•
3. End plug	•	•	•	•
4. Spacer module		•	•	•
5. Bell mouth (manhole entry)		•	•	•
6. Mandrel		•	•	•
7. Duct brush		•	•	•
8. HDPE flexibend 0° to 90° (radius mm)	} not required	≥250	≥350	≥450
9. uPVC long radius bend 90° (radius mm)		350	500	600

### DN50

### DN75

### DN110

### DN160



## Technical properties HDPE:

### Property

Density	appr. 0.95
Tensile strength at break	23 – 30
Ball indentation hardness	30 – 65
Notched bar impact strength	> 5
Thermal conductivity	0.40 – 0.46
Coefficient of elongation	1.5 – 2.0 x 10 <sup>-4</sup>
Dielectric strength	800 – 900
Specific insulation resistance	appr. 10 <sup>16</sup>

### HDPE

appr. 0.95
23 – 30
30 – 65
> 5
0.40 – 0.46
1.5 – 2.0 x 10 <sup>-4</sup>
800 – 900
appr. 10 <sup>16</sup>

### Unit

g/cm <sup>3</sup>
N/mm <sup>2</sup>
N/mm <sup>2</sup>
mJ/mm <sup>2</sup>
W/m K
K <sup>-1</sup>
kV/cm
Ohm . cm

### Test method

DIN 53 479
DIN 53 455
DIN 53 456
DIN 53 453
DIN 52 612
DIN 52 328
DIN 53 481
DIN 53 482

Specifications subject to change without notice



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