

WHAT IS *SmartCONDUIT*

SmartCONDUIT is a non-hydrscopic, impermeable composite piping system designed to contain electrical and communication cables in hazardous, high groundwater or hydrocarbon-rich environments.

The polyamide liner, while providing a chemical barrier against hydrocarbons, facilitates the insertion of cables due to its low-friction internal surface thus allowing for lubricant-free installations.

FIELD OF APPLICATION

The ability to use continuous lengths of *SmartCONDUIT* pipe makes conduit installation quick and safe. The chemical resistant barrier provided the high-performance liner allows its burial at critical sites such as gas stations, fuel depots, communications installations, petrochemical plants, refineries and power plants, etc.

MAIN CHARACTERISTICS OF *SmartCONDUIT* PIPING SYSTEM

Pipe sizes range from 32 mm OD (1") to 110 mm OD (4") are available in coils or straight lengths. A full range of electro-welding or mechanical fittings completes the *SmartCONDUIT* system including secure sealed end fittings, entry boots, pits and manhole covers.

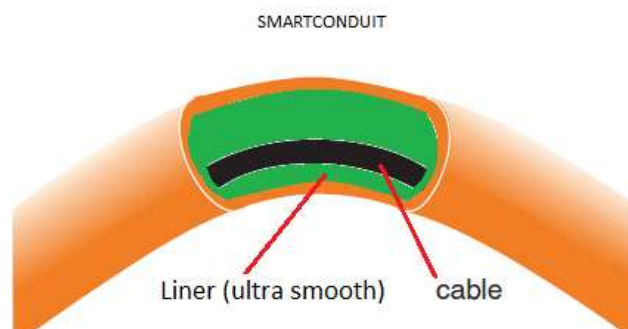
A complete range of equipment and tools makes the system fully reliable.

Nominal OD in.	Ø mm.	Code	Package (ft)	Package (m)	Note
1"	32	TCON32R100	328	100	
1 ¼"	40	TCON40R100*	328	100	
1 ½"	50	TCON50R100*	328	100	Coils
2"	63	TCON63R100*	328	100	
3"	90	TCON90R50*	164	50	
4"	110	TCON110B6*	191	58	Lengths

* Available upon request

SMOOTHNESS

SmartCONDUIT pipes with their inner barrier layer show extremely reduced friction behaviour due to the ultra smooth inner surface (r 0,007micron). This permits a safe and reliable installation of the cables.



DURABILITY

Greater than 30 years.

FEATURES AND BENEFITS

- Virtually zero permeation to hydrocarbons
- High internal wall smoothness ($2 \times 10^{-6} \text{m}$)
- Low friction coefficient (0,15)
- Low wear resistance
- High impact resistance
- High compression and collapse resistance
- Exclusive colour coding (X15) for easy identification
- State of the art bar-code joint electro-welding technology available, allowing traceability and GPS positioning when used with the multifunction Welding unit and accessories

SERVICE CONDITIONS

Service Temperature: -40 °C to +60 °C (-40 °F to +160 °F)

CORROSION PREVENTION

HDPE based pipes are well known to be fully resistant to any corrosion problem, offering the best choice for a buried pipe application where environmental conditions can affect the pipe durability (alkaline and acids with different concentrations and temperatures)

CHEMICAL RESISTANCE TABLE – GENERAL BEHAVIOUR VERSUS ACIDS, BASES, SALTS

Medium	Temperature	Liner
Acetone	23 °C	G
Toluene	23 °C	G
Trichloroethylene	23 °C	G
MEK	23 °C	G
Ethanol	60 °C	G
Methanol	60 °C	G
Methanol / Water 50/50	70 °C	G
Fuel / Methanol	40 °C	G
Ethylene-glycol / Water 50/50	115 °C	G
Ethylene-glycol / Water 50/50	135 °C	L
Sulfonitric acid*	95 °C	L
H ₂ SO ₄ 3 %	23 °C	G
HCL 10 %	23 °C	G
NAOH 5 %	60 °C	G
ASTM OIL n°3	80 °C	P
Brake Fluid	80 °C	G
CaCl ₂ 5 %	60 °C	G
ZnCl ₂ 50 %	40 °C	G


*Composition: H₂SO₄ 400mg/l, HNO₃ 50 mg/l, HCL 50 mg/l

LEGEND: L = low, G= good


WARRANTY

30 years of warranty. *SmartCONDUIT* is covered by an environmental insurance in compliance with the CEE Directive n. 85/374 and D.P.R. n. 244 of 24/05/88.

CERTIFICATIONS

SmartCONDUIT is certified By IM  in compliance with the European Harmonized Standards:

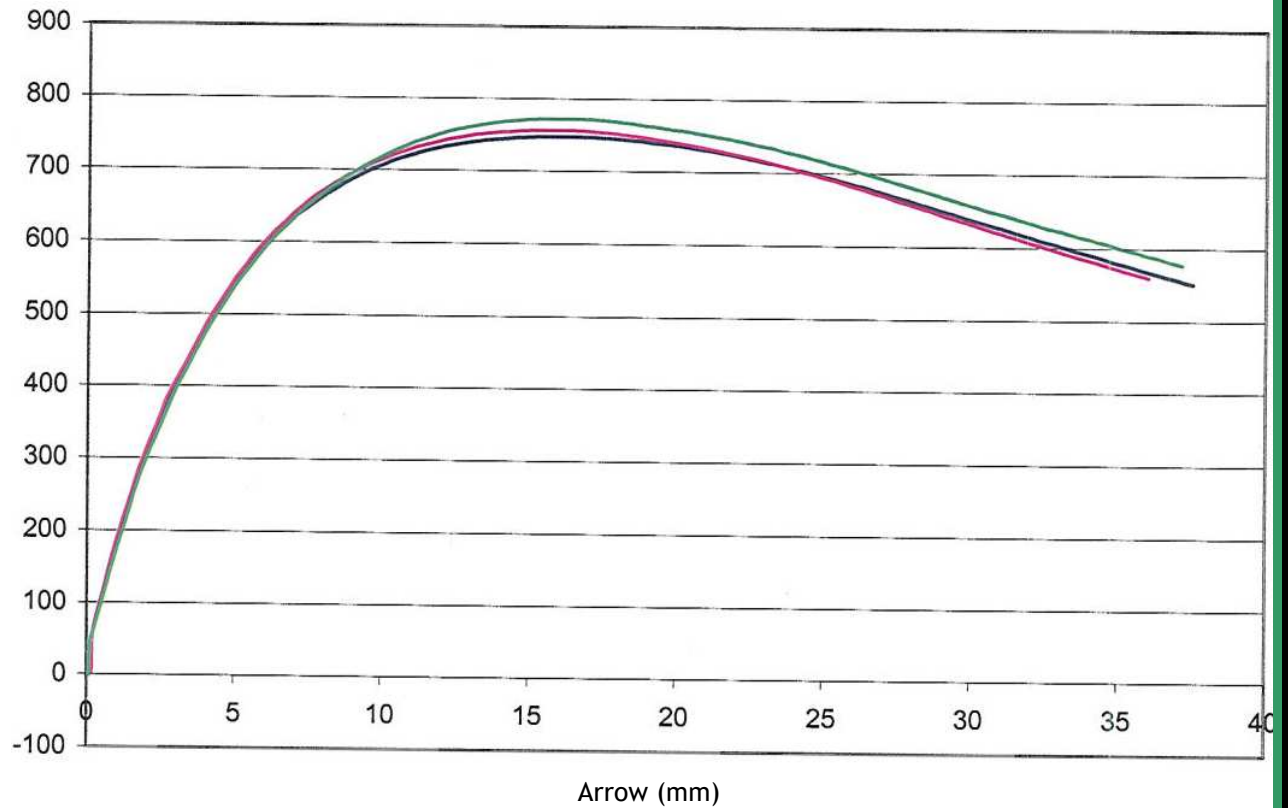
- EN 61386-24
- EN 61386-1

It is certified with the  mark.

SmartCONDUIT has also been tested and demonstrated compliant with the Australian Standard AS/NZS 2053-1.

SmartCONDUIT MECHANICAL PERFORMANCE

- **IMPACT RESISTANCE**
The pipe does not display any type of failure when impacted at -20°C with a weight of 6,8 Kg from a height of 300 mm (AS/NZS 2053-1)
- **BENDING**
The pipe resists to a bending force of 760 N (F_M) with an arrow at the maximum Force of 15 mm (AS/NZS 2053-1)
- **COMPRESSION**
The pipe resists to a compression force (F) of 1250 N showing a deflection % on the Diameter of 7,8% being classified as HD (AS/NZS 2053-1).
- **COLLAPSE**
The pipe does not show any kind of collapse when bent up to 9 times the OD at 50°C.
(AS/NZS 2053-1)
- **PULL OUT STRENGTH OF JOINTS**
The pipe joined to an electro-welded coupler did not show any kind of fracture or separation when the connection has been subjected to a pull force of 160N.



This technical data sheet must be regarded as an informative document. It is not exhaustive and shall be integrated with the document 127e10_SMARTCONDUIT_Product_Catalogue.

All listed documents and quality certificates can be downloaded directly from the website www.nupiindustriaitaliane.com or can be requested by e-mail to the following address: info@nupinet.com