NADIR plus

FLUIDI

PE 100-RC
new generation
pipe

INDUSTRIE ITALIANE nupi

What is NADIR plus Fluidi?

NADIR plus Fluidi is a pipe for transporting fluids under pressure in conformity with UNI EN 12201 and ISO 4427, made in high-density polyethylene and with high-resistance to crack growth and punctures, also known as **PE100 RC** (*resistance to crack*).
NADIR plus Fluidi pipes also meet the German technical specification DIN PAS1075:2009.[1]
This specification defines the minimum requirements that polyethylene pipes must have in order to be used in systems that require alternative methods of installation.
Nadir plus Fluidi is also suitable for transporting industrial fluids in conformity with standard EN ISO 15494.

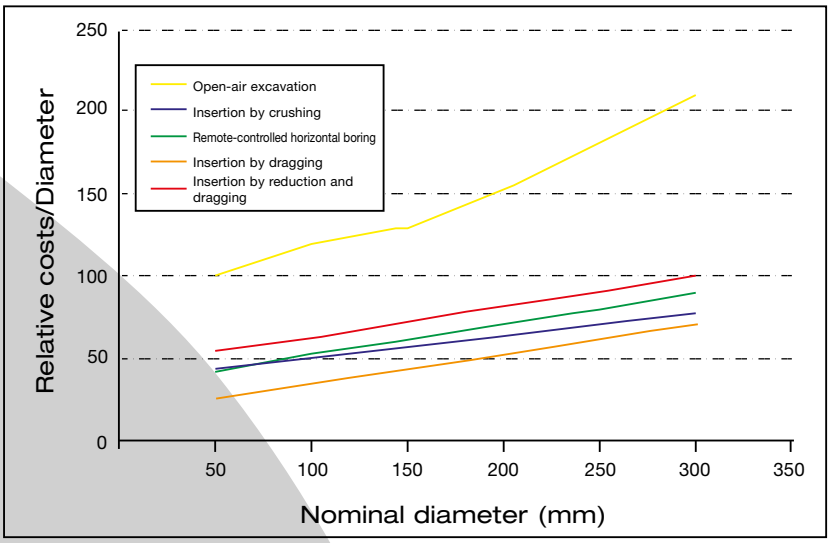
Why use NADIR plus Fluidi?

With a view to further reducing the growing installation costs, new installation techniques have been developed, one of which requires **no excavation** while other more traditional open-air methods require **no sand bed**.
These techniques, particularly costly for traditional polyethylene pipes, require the use of pipes offering **extremely high resistance** to slow crack growth and point loading. **NADIR plus Fluidi** offers just such characteristics, as they are extremely resistant to impact, abrasion, point loading from stones, cutting, and external scratching.
This guarantees safety and reliability, even in the case of traditional installation methods with a sand bed, leaving a margin of error for inaccurate or negligent handling and installation operations.

Economic advantages

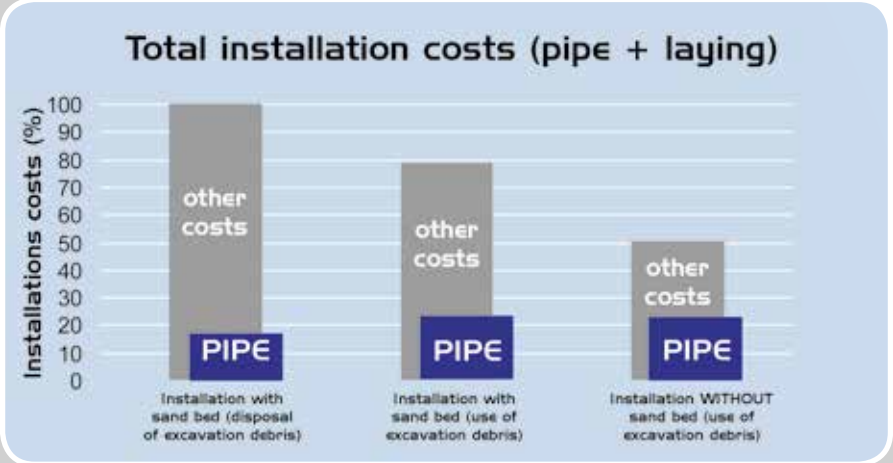
NADIR plus Fluidi offers the possibility to reduce overall installation costs, environmental impact, and social costs related to the installation.

For traditional open-air excavation installation, **NADIR plus Fluidi** offers an initial reduction in installation costs where the use of debris is planned and a reduction in costs of up to 50% in case of installation with no sand bed and the use of excavation debris.



Potential savings through pipe relining techniques

Example of calculating installation costs



NOTE: THE PIPE CONSTITUTES ONLY 10-15% OF THE TOTAL INSTALLATION COSTS. EVEN IF THE PIPES COST MORE, THE OVERALL INSTALLATION COST IS MUCH LESS!

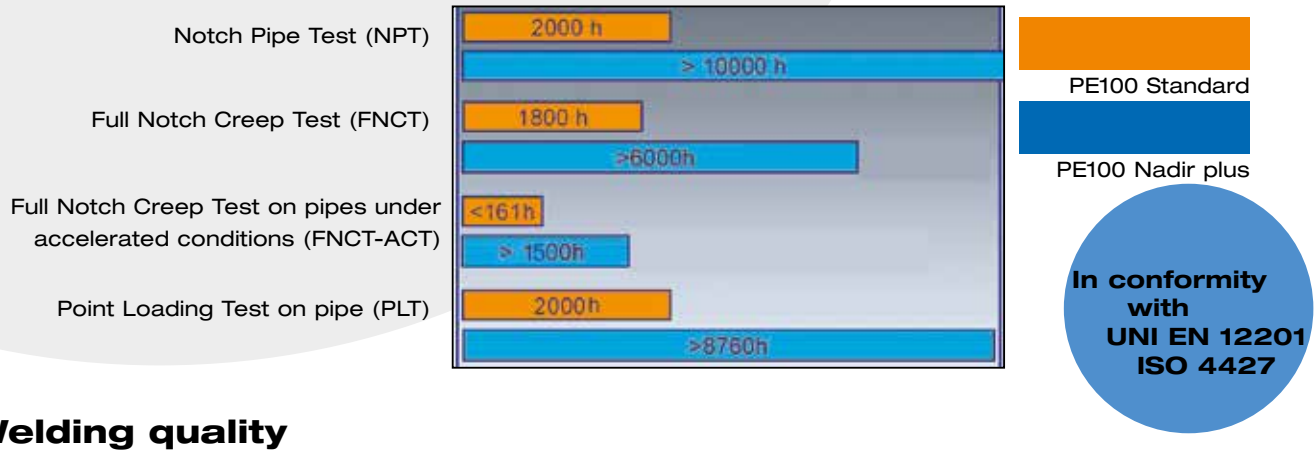
1: DIN PAS1075:2009 - Pipes made from Polyethylene for alternative installation techniques - Dimensions, Technical requirements and Testing (Tubazioni in Polietilene per la posa con tecniche alternative – Dimensioni, Requisiti tecnici e Test).

Mechanical characteristics

The main characteristic that makes these pipes extremely reliable, even under extreme operating conditions, is their high resistance to crack growth and point loading typical of the basic material (PE100 RC), as demonstrated in results of main tests conducted by leading certified laboratories, like:

Notch pipe test	→	**NPT** (EN ISO 13479)
Full Notch Creep Test	→	**FNCT** (according to ISO 16770 and DIN PAS1075 Attachment A1)
Point loading test	→	**PLT** (according to DIN PAS1075 Attachment A3)

NADIR plus Fluidi (PE100 RC) and NADIR (PE100) compared:
NADIR plus Fluidi offers the utmost resistance to slow crack growth and point loading, making it the only pipe capable of meeting the strict requirements established by various technical specifications and European standards.

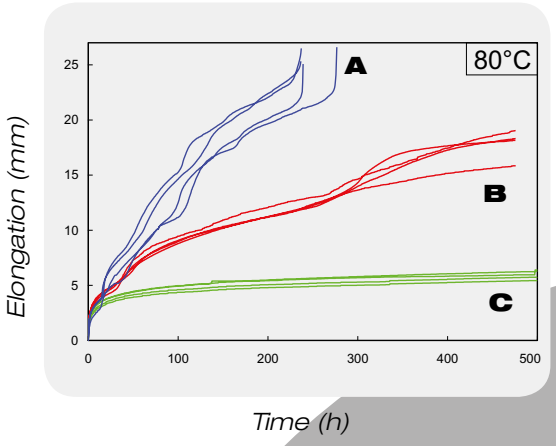


Welding quality

Poor quality joints are one of the leading causes of rupture in polyethylene piping systems. The *Slow Peel Test* measures long-term performance of electrowelded joints. This results in elongation generated by a constant load and potential rupturing of the joint.

Comparison between two types of traditional PE100 pipe and NADIR plus Fluidi

PE100 pipe by another manufacturer (case A)
Rupture in the short-term and high elongation
PE100 pipe NADIR (case B)
No rupture, modest elongation
PE100 pipe NADIR plus Fluidi (case C)
No rupturing, minimal and constant elongation for more than 500 hours of testing



Reliability over time
Accelerated aging tests (long term and high temperature) conducted on the materials used in **NADIR plus Fluidi** pipes have confirmed the exceptional duration of this product, offering a **minimum useful lifespan of 100 years**.

Summary of NADIR plus Fluidi performance

SAFETY	Product reliability
	High tolerance under extreme operating conditions
	High tolerance to human error (negligence, accidental damage)
DURABILITY	Minimum useful lifespan 100 years
	High welding quality
	No repairs/maintenance
ECONOMIC ADVANTAGES	Installation costs
	Operating costs
	Social costs

NADIR plus Fluidi pipes obtained the most prestigious trademarks recognized by international organizations such as **KIWA, DIN-CERTCO, DVGW** and **OVGW**.

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