TRENCHLESS ASIA 2026 THAILAND

TRENCHLESS ASIA 2026 10-11 JUNE

QUEEN SIRIKIT NATIONAL CONVENTION CENTER, BANGKOK, THAILAND

WWW.TRENCHLESSASIA.COM

Organised by

Official Host Authority

Official Supporting Authority

Supporting Authority

Sponsors

Supported by

Media Partner

TRENCHLESS ASIA 2026
THAILAND

SMART TRENCHLESS SOLUTIONS TO REHABILITATE WATER AND WASTEWATER NETWORKS

JAN BÖRJE PERSSON

JBP GROUP

N

www.trenchlessasia.com

Organised by

Official Host Authority

Official Supporting Authority

Supporting Authority

Sponsors

Supported by

Media Partner

Speaker:

Wednesday 10th June
14:50 - 15:10

Smart Trenchless Solutions to Rehabilitate Water & Wastewater Networks

Mr Börje Persson
CEO – JBP Group of Companies

PERSONAL PROFILE

Jan Borje Persson

Computer Engineer (HW)
Composite Engeneering
Started in Trenchless industry 1984
Principal and CEO JBP Group
Export Manger BKP Berolina (DE)
Board Member of ISTT
Chair of ISTT Finacial committee
Chair of ISTT Membership committee
Member of ISTT Technical committee
ISTT Fellow

CONTENT

- NRW International
- NRW Regional / Thailand
- Inspection Technologies
- Monitoring Technologies
- NRW / Wastewater – comparison of challenges & technologies
- Key takeaways

NON-REVENUE WATER DEFINITION

Non-Revenue Water (NRW), meaning it runs through a utility's pipes but its never paid for.

NON-REVENUE WATER
GLOBAL PERSPECTIVE

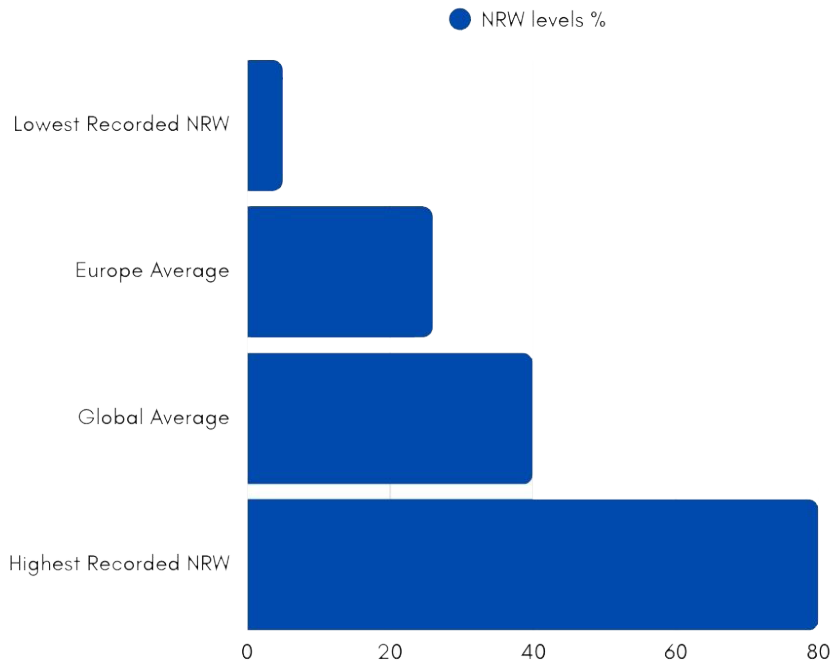
346 Daily lost **million cubic meters of water**

126 Annually lost **billion cubic meters of water**

$50 billion per year

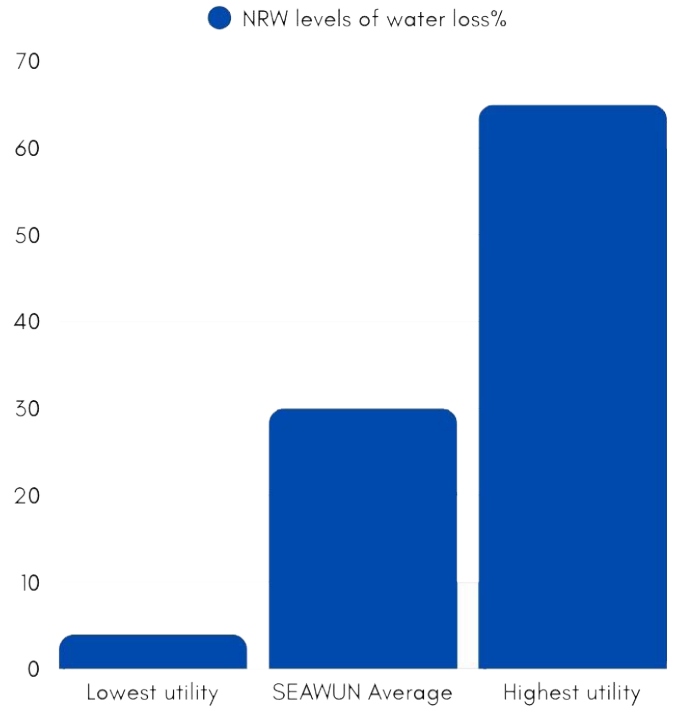
NON-REVENUE WATER
GLOBAL PERSPECTIVE

Non-Revenue Water (NRW) Levels by Region



NRW levels in Southeast Asia (SEAWUN study)

Southeast Asia



Source: My MPCA Non Revenue Water Loss

NON-REVENUE WATER
REGIONAL PERSPECTIVE

Present Situation in Thailand

Thailand’s two main water utilities are:
Metropolitan Waterworks Authority (MWA) – Bangkok, Nonthaburi and Samut Prakan

Provincial Waterworks Authority (PWA) – the rest of the country.

Recent data indicates that nationwide water losses remain around **30–32% of water produced**, meaning roughly one-third of treated water never generates revenue. According to Thailand's Statistical Yearbook figures cited in 2025, around **2,080 million m³** of water was produced while only **1,422 million m³** was sold, corresponding to approximately **31.6% NRW or 658 000 m³**

Source: MY MPCA Non Revenue Water Loss

NON-REVENUE WATER
REGIONAL PERSPECTIVE

A good example….

Bangkok (MWA)
Bangkok has historically struggled with high NRW:
Around **40–42% NRW** in the late 1990s.

Reduced to roughly **30%** through aggressive leak detection, district metering, pressure management and performance-based contracts.
Some MWA reports indicate water losses around **25%** in certain reporting periods.

The MWA is generally considered one of the stronger-performing utilities in Southeast Asia regarding NRW management.

Source: MY MPCA Non Revenue Water Loss

Provincial Areas (PWA)

The larger challenge is in provincial Thailand:

Many networks are old and spread across large geographic areas.
PWA itself acknowledges that NRW remains high due to aging pipelines and the high cost of systematic pipe replacement.

Smaller municipalities often lack sufficient leak detection programs, pressure management, and digital monitoring systems.

Source: MY MPCA Non Revenue Water Loss

Thailand, a water-rich country

Domestic water consumption in Thailand varies by region and income level, but the best available recent data indicates that the average Thai resident uses approximately **245 liters per person per day (L/person/day)** for household purposes.

For comparison:
Thailand's relatively high household consumption is influenced by:

- Warm climate and frequent bathing
- High urban water availability, especially in Bangkok
- Historically low water tariffs
- Significant use of water for outdoor cleaning and household activities

Another way to look at it:

- 245 L/day = **0.245 m³/day**
- **≈ 7.4 m³/month per person**
- **≈ 89 m³/year per person**

NON-REVENUE WATER
REGIONAL PERSPECTIVE

Thailand, in comparison with

Country	Domestic water use (L/person/day)
Thailand	~245
Malaysia	~245
Spain	~130–140
Sweden	~150
Germany	~120–130

NON-REVENUE WATER
REGIONAL PERSPECTIVE

Thailand, in comparison with

Water consumption **245 liters** per person per day

Waterloss per day, 1 863 014 **million litres** of treated water

15–20 THB/m³ (USD 0.40–0.55/m³).

Comparison with Thailand

Thailand: typically	**€0.40–0.60/m³** (15–22 THB/m³)
Europe: typically	**€1,5–3/m³** including wastewater.
Europe: typically	**€3–5/m³** including wastewater.

Thailand, in comparison with

Although Europeans pay much more per cubic meter, water is generally **not less affordable** because incomes are significantly higher.
In fact, for a typical household:

- Thailand: water costs roughly **1% of income**
- Europe: water costs roughly **1% of income**

The percentages are surprisingly similar.

NON-REVENUE WATER
REGIONAL PERSPECTIVE

Thailand, in comparison

Region	Revenue value of 1 m³ saved
Thailand	~€0.5
Europe	~€4

A European utility may therefore justify spending **6–8 times more** on rehabilitation, leak reduction, pressure management, or renewal for the same volume of water saved.

Thailand, a water-rich country

National Drinking Water Sources

Sources	Approximate Share
Rivers, reservoirs, lakes and surface water	70 – 80 %
Groundwater (wells and aquifers)	20 – 30 %

Thailand, a water-rich country
Chao Phraya River

The Chao Phraya River is Thailand's principal river and one of the country's most important natural and cultural landmarks.

Flowing through central Thailand and the heart of Bangkok before reaching the Gulf of Thailand, it has shaped the nation's history, economy, and urban development for centuries

Thailand, a water-rich country
Mae Klong River

The Mae Klong River is a major river system in western Thailand that flows from Kanchanaburi Province to the Gulf of Thailand. It is notable for its role in agriculture, transportation, and regional history, while its tributaries are closely linked to the internationally known “River Kwai” region.

Thailand, a water-rich country

Four indicators demonstrate the status of water efficiency;

Domestic water consumption

Non-revenue water (NRW)

Reserve margin

Water tariff.

Thailand, a water-rich country

Way forward….

NON-REVENUE WATER
STRATEGIES FOR REDUCTION

Infrastructure Rehabilitation: Prioritizing the replacement and repair of aging pipelines and facilities to prevent leaks.

Advanced Metering Infrastructure (AMI): Implementing smart meters to detect and address water losses promptly.

Pressure Management: Optimizing water pressure in distribution systems to minimize stress on pipes and reduce leakage.

Leak Detection Technologies: Utilizing acoustic sensors and other technologies to identify and locate leaks efficiently.

Regulatory Reforms: Establishing clear policies and accountability frameworks to ensure timely maintenance and investment in infrastructure

NON-REVENUE WATER
MONITORING TECHNOLOGIES

Smart Monitoring/ Leak Detection Systems:

..are technologies designed to track, analyze, and manage water usage, quality, and distribution in real time using sensors, connectivity and data analytics.

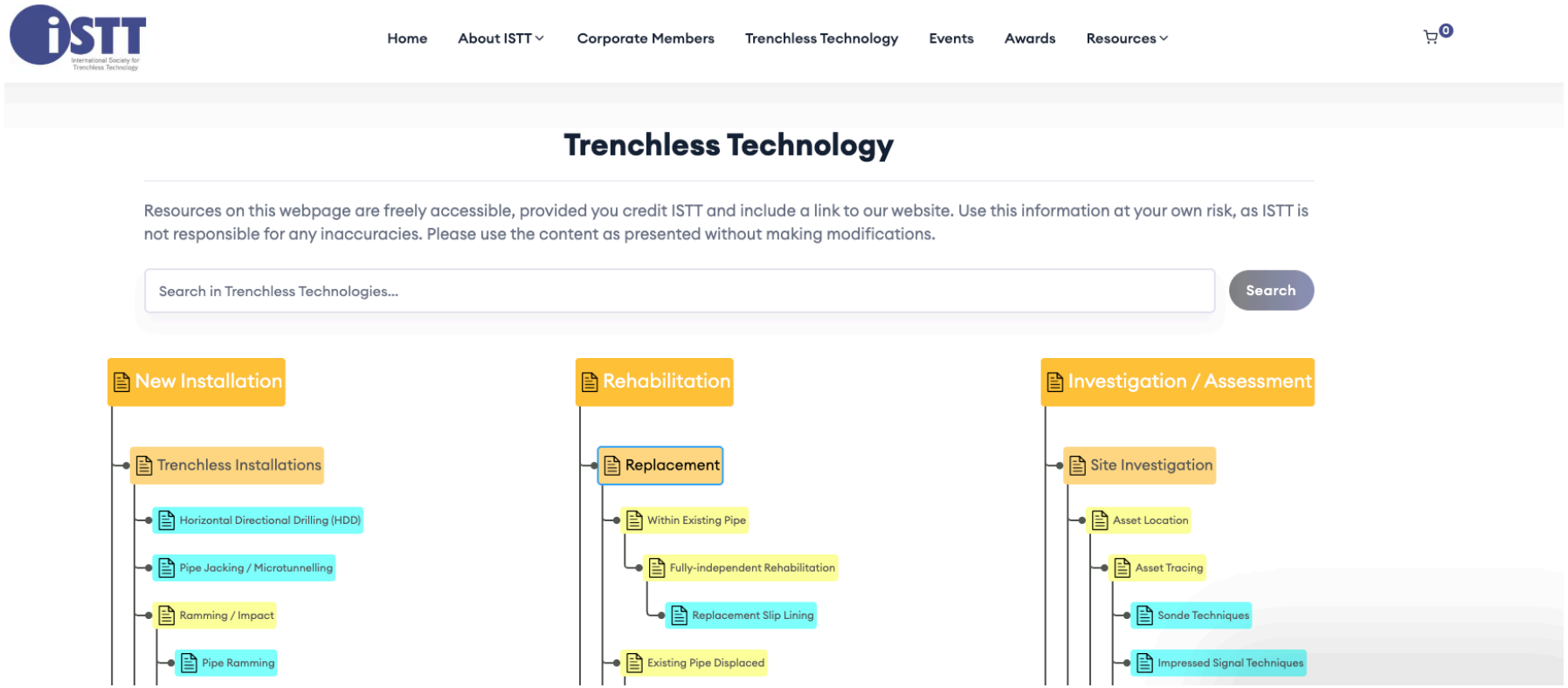
These systems help optimize water usage, detect leaks or contamination, and support sustainable water management in residential, commercial, industrial, and agricultural settings.

Image courtesy: ISTT

Clasifications Structural vs. Non-Structural

Industry Classification	Non-Structural	Semi-Structural		Fully Structural
AWWA Classification	Class I	Class II	Class III	Class IV
Trenchless Products	CML	SIPP	SIPP	Pipe Bursting Pipe Reaming
			CIPP	CIPP
	Epoxy	CIPP	Sliplining	Sliplining
			Close-Fit Sliplining	Close-Fit Sliplining
	SIPP	Modified Epoxy	Flexible Hose	FRP

NON-REVENUE WATER
REHABILITATION TECHNOLOGIES



https://istt.com/trenchless-technology

NON-REVENUE WATER
REHABILITATION TECHNOLOGIES

Inserted hose Lining

Cured-In-Place-Pipe (CIPP)

Melt-In-Place-Lining (MIPP)

Slip Lining

Close fit Slip Lining

Cement Mortar Lining (CML)

Spray Lining (SIPP)

Pipe Bursting

https://istt.com/trenchless-technology

Inserted Hose Lining

Inserted hoses or "hose linings" are linings that may be used to eliminate leakage in deteriorated pressure pipes. Typically, woven hose liners are flat fiber reinforced polyethylene hoses 150 to 500 mm in diameter

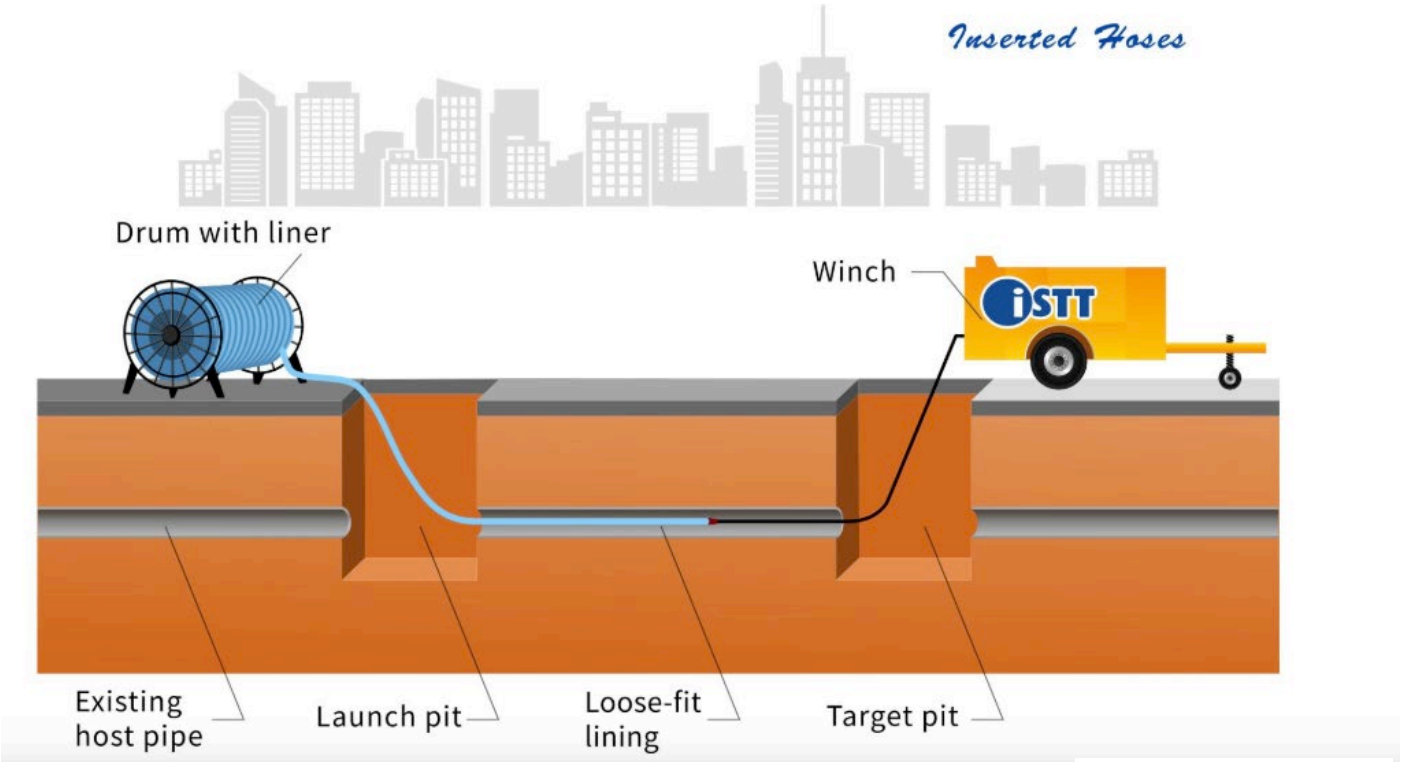
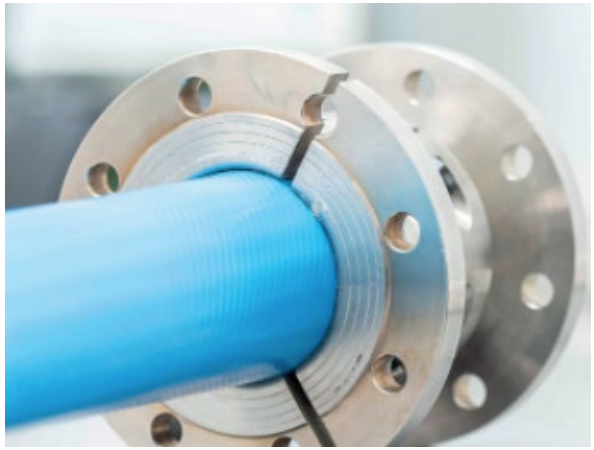


Image courtesy: ISTT

NON-REVENUE WATER
REHABILITATION TECHNOLOGIES

Inserted Hose Lining



THE ADVANTAGES AT A GLANCE

- No resin, no impregnation, no curing are necessary
- DN 50 up to DN 1200 mm
- Large installation lengths up to 3 km in one pull
- Fast construction speed (1 km per 3 hours)
- Flexible liner – Installation through multiple bends of 45° and more
- Inner surface for drinking water, gas and oil
- Independent system bearing inner pressure
- The flexibility and self-support can avoid influence from disturbance

Cured-In-Place-Pipe (CIPP)

Can be used to rehabilitate gravity sanitary sewers, storm drains and pressure pipelines for water, gas and process effluents. Circular pipe from 75 mm to 2,700 mm and a variety of noncircular pipe such as egg shapes, ovals, and box culverts can be lined.

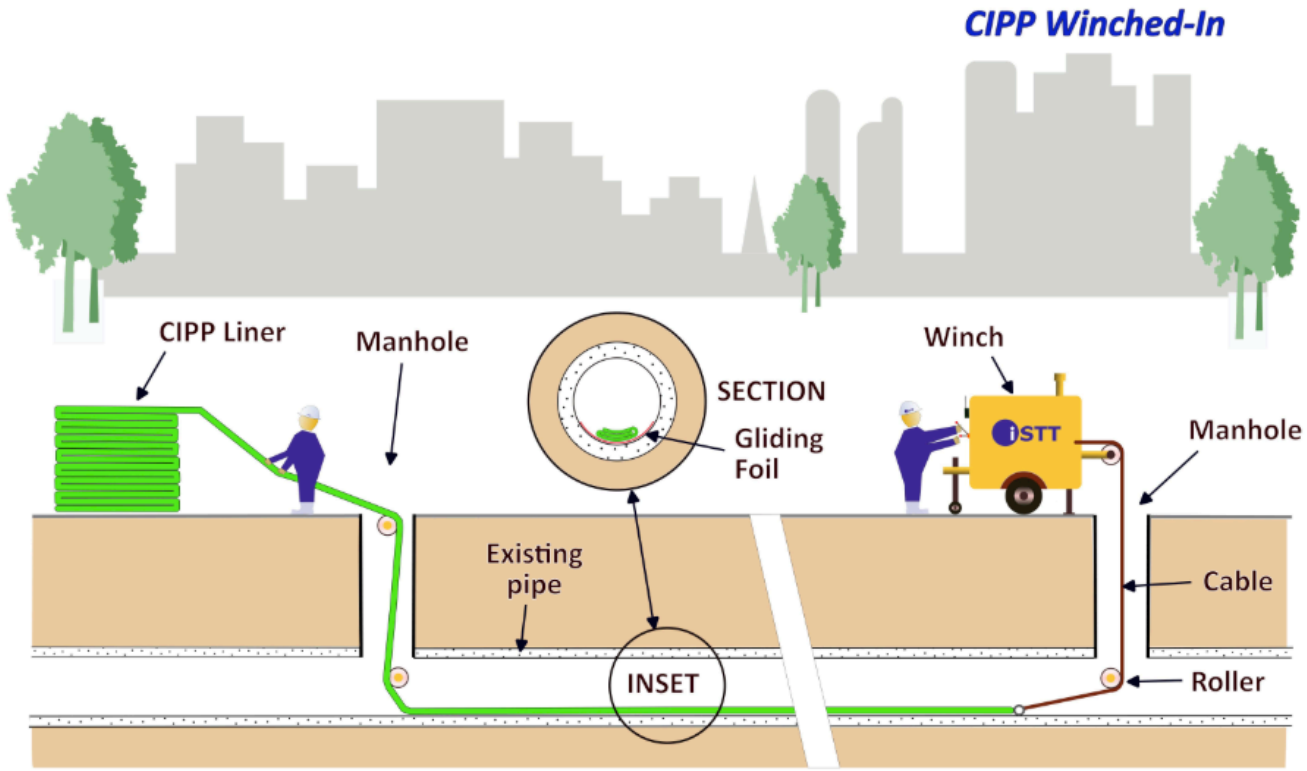


Image courtesy: ISTT

Melt-In-Place-Pipe (MIPP)

In this category of close-fit lining, a principally thermal approach to creating the lining is used by what is termed a "Melt-in-Place-Pipe" lining process. This process is applicable for both water mains and sewers

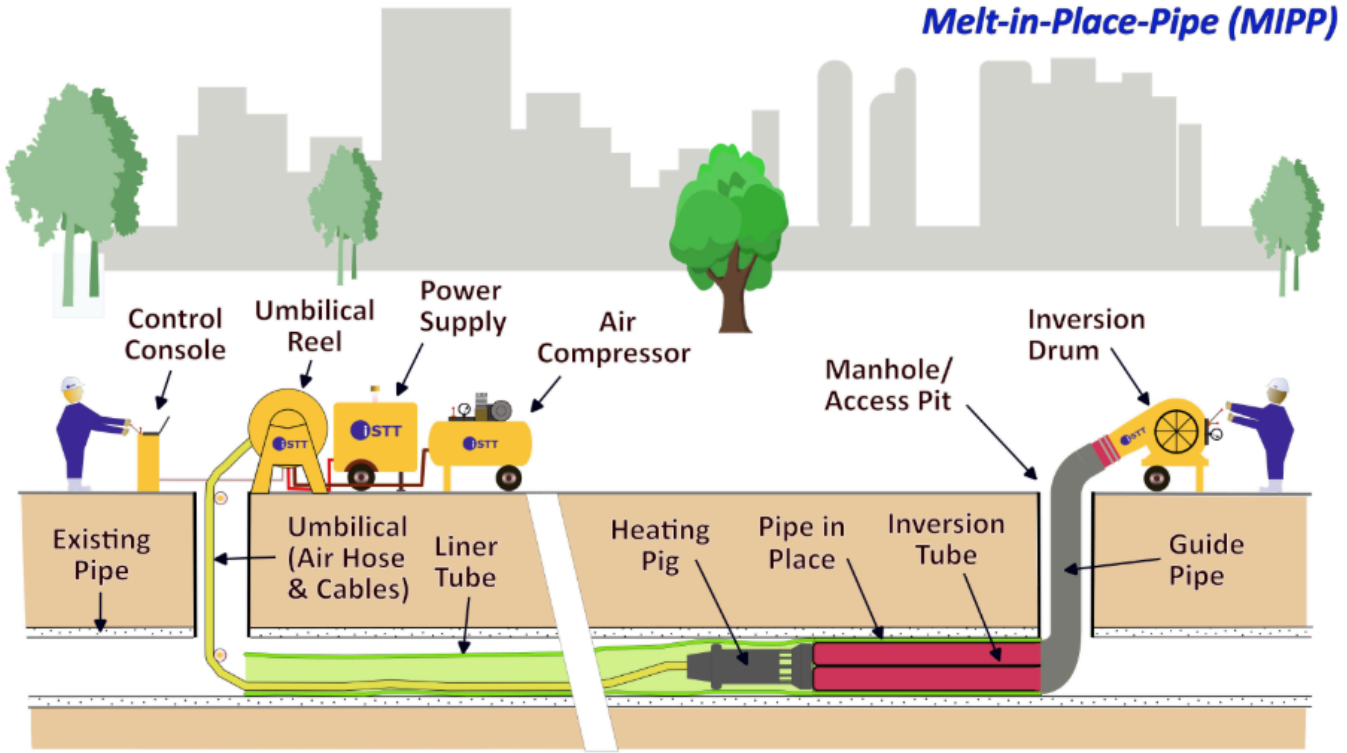


Image courtesy: ISTT

Slip-Lining

In this replacement application a new pipe of smaller outside diameter than the inside diameter of the existing pipe is inserted (pushed or pulled) within the existing pipe and provides a complete replacement of the structural and flow functions of the existing pipe

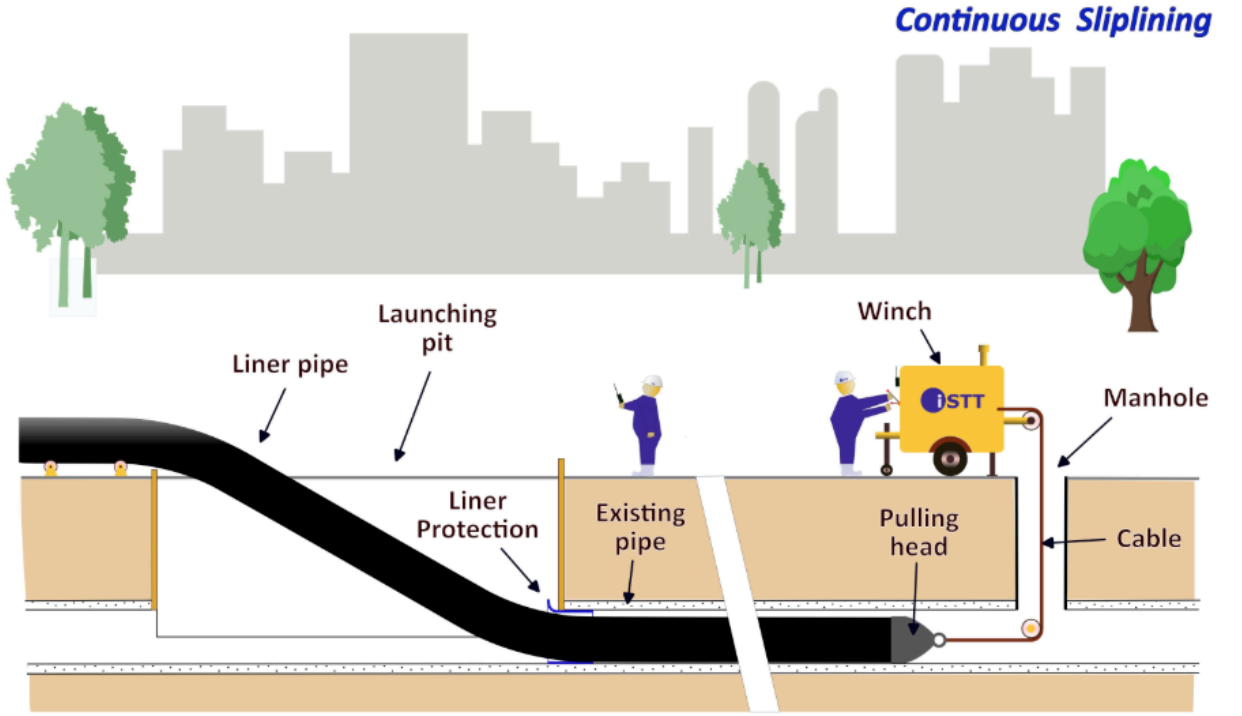


Image courtesy: ISTT

Closefit Slip-Lining

Diameter, Pressure and Length Range

Diameter range 75-1600mm depending on the particular technology.
Length up to 1,000m depending on the particular technology.
Pressure depends on SDR or interactive design status. SDR range 17-61 depending on the particular technology.

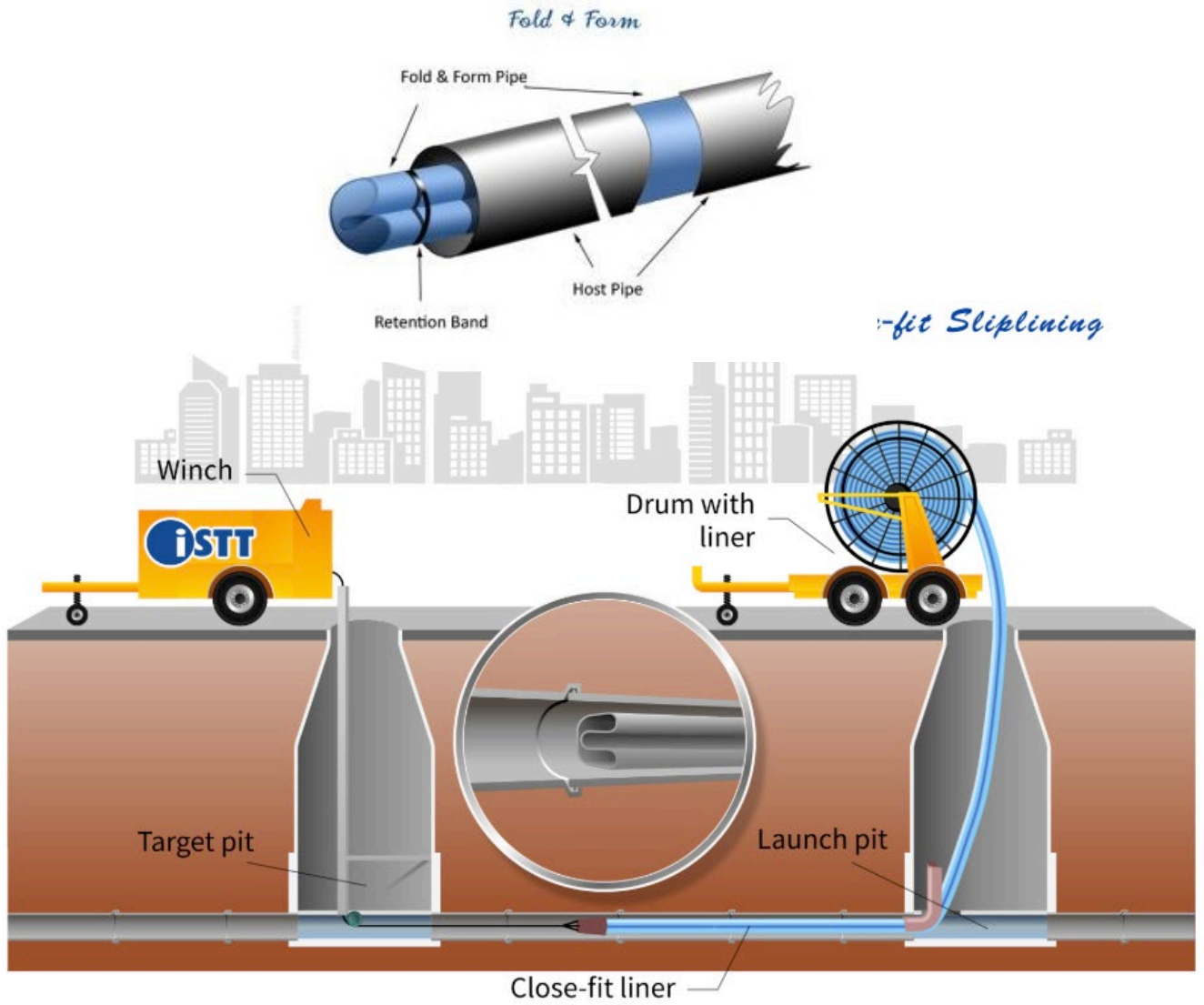
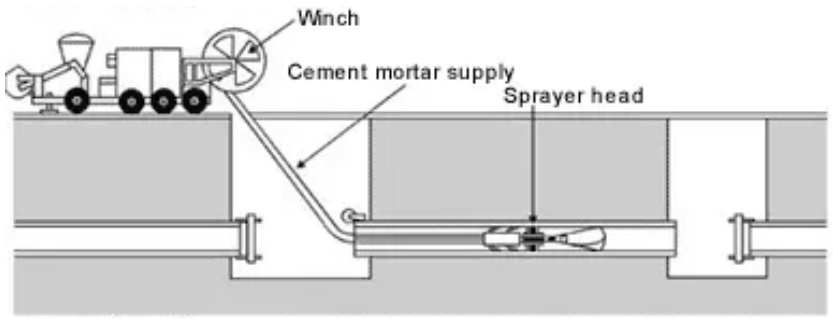


Image courtesy: ISTT

Cement Mortar Lining (CML)

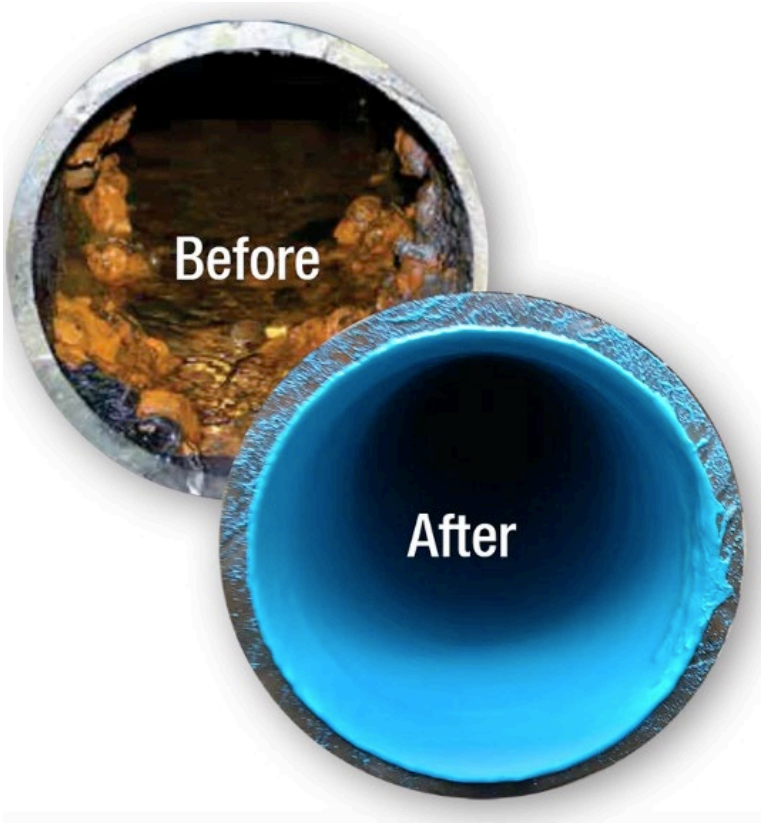
- Available for centrifugal spinning or pouring techniques.
- Automated process control: To ensure precise management of mortar composition, application speed, and curing conditions.
- Can be easily be reconfigured to accommodate changing requirements or pipe specifications.



Cement Mortar System

Spray-Lining (SIPP)

Polymeric coatings and liners (notably epoxy and polyurethane (PU)) are used to provide corrosion protection in small diameter metallic pipelines and corrosion protection and semi-structural rehabilitation and leak protection in man-entry pipes, tunnels and manholes



Pipe Bursting

Bursting can be used to upsize the pipeline increasing its flow capacity. Pipe bursting was initially developed in the 1980s to replace small diameter cast iron gas distribution lines, but has since grown in acceptance as an effective method for replacing pipelines for water.

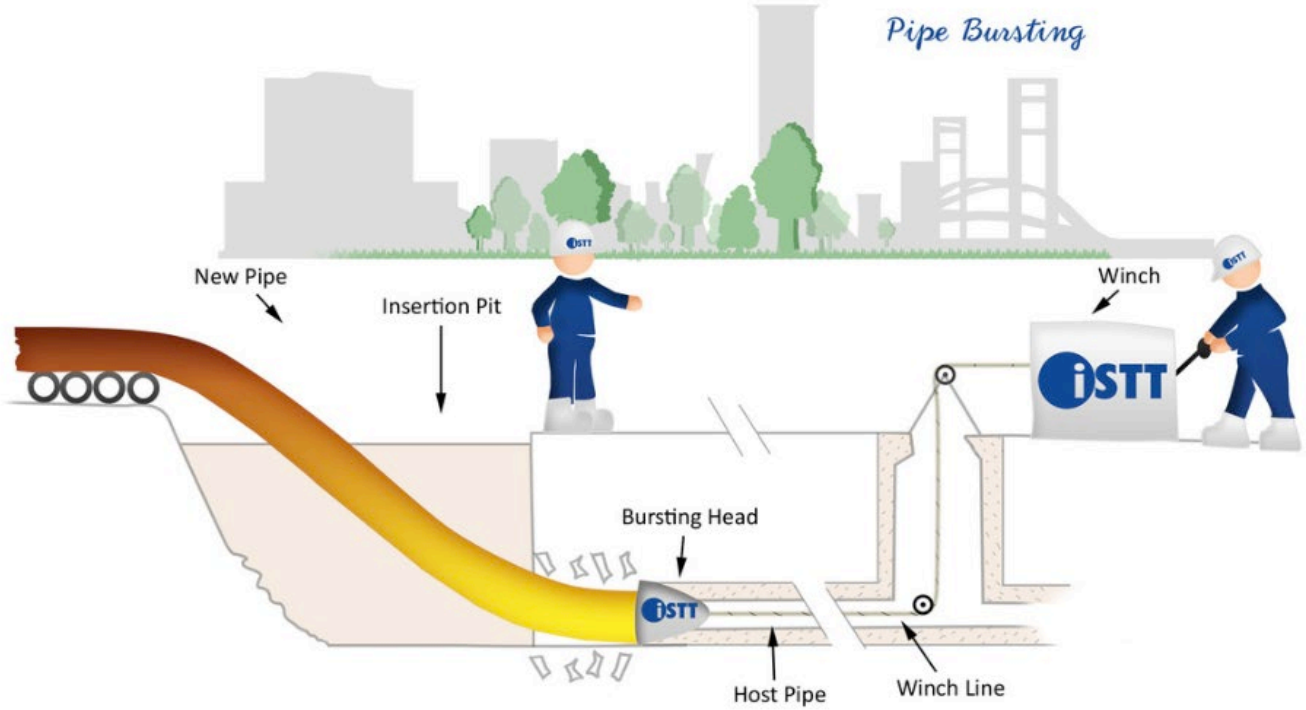


Image courtesy: ISTT

Advantages with Trenchless technologies:

Cost efective
Time savining
Environmental friendly
Fast installations
Reduced impact on traffic
Less impact on social life

The fastest and most costeffective way to reduce NRW

If you have time and interested to discuss, **meet us at stand no. 86**

MR BÖRJE PERSSON

CEO – JBP Group of Companies

BORJE.PERSSON@JBPCOMPOSITES.COM

Tel: +0034 96 131 1400

Thank you!

WWW.JBPTRENCHLESS.COM