



# Case Study

## IMPROVING QUALITY OF LIFE BY TACKLING PIPE LEAKAGE PROBLEM IN INDIA





## INDIA

India has a unique culture and is one of the oldest and greatest civilizations of the world. India has achieved all-round socio-economic progress since its Independence. India covers an area of 32,87,263 sq. km, extending from the snow-covered Himalayan heights to the tropical rain forests of the south.

As of January 1, 2024, the population was estimated at 1,443,721,994 people.

### The Challenge

Since 2015, India has started an ambitious national plan, The Smart Cities Mission, to modernize India through enhancing the core infrastructures to provide its people a clean, sustainable environment and quality of life. Among the 10 initiatives, 4 are directly or indirectly related to the use/treatment of water, which are 1) Adequate water supply, 2) Sanitation, 3) Affordable housing, especially for the poor, 4) Sustainable environment, Health, and education.

It is estimated that by 2030, 40 % of the country's population, or 600 million people, will reside in cities, after the Smart Cities Mission.

With the degree of population density in these cities, it is foreseeable that slums and low-rise buildings will be replaced by high rise buildings to accommodate the citizens. The stability and safety of water supply and treatment is the key to the success of India's Smart Cities Mission.

However, in reality, the establishment of reliable pipeline systems are often overlooked in India. Sewage pipes leaking, leaving a strip of dark slimy mark on the façade is a common scene in India. The leakage does not only affect the city from a visual standpoint, but it also poses health risks to the public. According to the New Indian Express, in Tamil Nadu, underground

sewage water was released into the canals of the city and polluting the water bodies.

In Cuttack, sewage pipe leakage causing pollution to water bodies had led to an outbreak of jaundice. Other water-borne diseases that could arise after the leakage include hepatitis, malaria, and cholera.

Leakage cases happened inside building as well. Chirag Panchal, Sales Manager of Trelleborg Seals & Profiles based in India, commented that, "It is not rare to see ceilings, walls with water marks in houses here. Sometimes even in high-end commercial properties. It is a real hassle when pipe leakage happened on the ceiling or the wall because the repair work involves your neighbor, and it can affect the lighting fixtures. The repaint or replacement of the ceiling is costly, and it is never a guarantee that the new element is 100 % the same as the original."

The leakage of sewage pipes in India attribute to many factors, among which is the offset joints, meaning that the end of the two pipe segments is not properly aligned. Offset joints is the result of improper pipe installation, for example, one end of the pipe is not fully inserted into the other end, leaving gap that allows water to seep out. Loose seals inside the groove, aging brittle seal rings, unfit seal rings that are unable to provide the necessary positive pressure environment inside the pipe are other common reasons that cause pipe leakage.



## Our activities

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Trelleborg focuses on providing leakage-free solutions to sewage and drinking water pipe suppliers in India since 2009. Seeing the large opportunities in India, we have set up a R&D center based in Bangalore, focusing on providing products that work well in India.

For example, the thermoplastic elastomers (TPE) materials used in the seal ring are anti ozone degradation, which is suitable to be used in pipes installed in the outdoor environment of extreme temperature and excessive sunlight. TPE materials have been tested to perform stable under intense UV-exposed condition, which is a frequent case in India. In addition, TPE materials are oil and chemical resistant, offering superb performance in sewage environment.

The stability of the materials ensures that the seals do not deform in shape or crack in the surface easily, which are the main causes of joints and leakage.

Since 2024 Trelleborg has been supplying seals for use in pipe fittings for household sewage system and underground drainage purposes. Sudhakar is one of the biggest local PVC pipe manufacturers supplying PVC and UPVC pipes to the Indian market. Trelleborg 582 Din-lock is now part of Sudhakar's leak proof drainage system for several high-rise projects in India.

Mr. Srinivas Vandanapu, Vice President of Sudhakar Group commented, "We use Trelleborg's Rubber Rings and Seals for our SWR Range Pipes, Fittings, and Underground Drainage Pipes. These seals are of exceptional quality, providing a perfect fit and ensuring no leaks. This level of precision and reliability is crucial, especially for high-rise projects."

He added, "Very few Indian companies use such superior seals, and this makes our association with Trelleborg unique. Their products set us apart in the market, highlighting our commitment to excellence. We highly recommend Trelleborg's rubber seals for their outstanding performance and reliability."



## Product details

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Trelleborg 582 Din-Lock is expertly designed for highly effective sealing of all DIN grooved plastic pipes and fittings. Comprised of thermoplastic elastomers (TPE) and Polypropylene, the seal requires low jointing force and ensures security across a wide range of pipe joint tolerances. The Trelleborg 582 provides a combined lip and compression seal, which is firmly locked into the pipe socket. This special design has eliminated the problem of the seal moving inside the grooves and provide leak proof solution.

The soft plastic reinforcement allows the seal to be fitted easily into the pipes socket by hand-bending the seals. The installation process for each seal is finished in 10 seconds, which is much more efficient compared to traditional jointing methods, such as applying glues, or fusion jointing.

### ADDITIONAL INFORMATION

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