

# *Stainless Steel: The optimum solution for modernizing India*

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**G**lobal environmental challenges and rising aspirations of citizens for a better quality life are compelling Governments across the world to develop smarter living spaces. Smart, in this context, implies the marriage of optimal functionality with ageless beauty.

India too, through its multi-pronged social and economic initiatives, is headed on the same path. This is evidenced by initiatives such as Smart Cities, expansion and modernisation of Railways, development of ports, Swachhta Mission, National Solar Mission, industrial corridors and airport modernisation, amongst others. Keeping the scale, economy, and sustainability of these projects in view, stainless steel is the smartest choice of material to build current and future infrastructure with.

The intrinsic characteristics of stainless steel, which includes corrosion and fire resistance, durability, hygiene, aesthetic appeal, ease of maintenance and 100 per cent recyclability makes it superior to any other alternative. The 2017 National Steel Policy mandates use of stainless steel in food and water management, given the hygienic properties of this metal. The Policy also mandates using stainless steel reinforcement bars for residential or commercial construction in seismic and coastal regions for the shock-absorbing and non-corrosive qualities of stainless steel. These reinforcement bars can also be used effectively for highway



bridge decks, overpasses, tunnels, marine structures and all projects that demand endurance. As per the Policy, the concept of life cycle costing must be deployed while selecting material for construction of projects. Almost always, stainless steel turns out to be the most cost effective option by this method.

The suitability of stainless steel for creating smart solutions is endless. The metal is used extensively in architecture, building and construction (ABC). Stainless steel not only enhances external aesthetics of buildings, but, it is also highly cost efficient owing to its longevity and low maintenance. If we replace water pipelines across India with stainless steel pipelines, we can reduce water leakage in public distribution systems from about 40 per cent to 2 per cent. This experiment has already been carried out successfully in cities like Tokyo and Taipei decades ago. As per analysis of International Stainless Steel Forum (ISSF), stainless steel rebars can prolong life of structures for up to 125 years.

A smart city relies heavily on its automotive, railway and transport (ART) sector. Having a high strength to weight ratio and being resistant to impact and temperature shocks, stainless steel is an ideal choice for vehicle exhausts, bus bodies, fuel tanks, and railway coach and wagon bodies. In public places, stainless steel street furniture is best suited for a range of urban applications, including bus shelters, escalators, handrails and waste bins due to ease of cleaning, resistance to vandalism and durability. Even the process industries, such as refineries, petrochemical, dairy, power, textile, sugar, food processing, distilleries, cement, drugs, paper etc., heavily use stainless steel for its hygiene and versatility.

Supported with research and technological interventions, stainless steel is ever-evolving. It is not surprising that the metal is now making inroads in defence and naval applications. For a nation that is an emerging superpower, and therefore brimming with opportunities, stainless steel is fit to provide the best solutions. ■