

## DURABLE, RESILIENT AND SUSTAINABLE

MAHENDRA PINGLE, Deputy General Manager-Market Development (Coated Steel), Tata BlueScope Steel, elaborates on ZINCALUME® steel jacketing.

ZINCALUME® steel meets the growing demands of a changing built environment for durability, resilience and sustainability. It is designed for a wide variety of uses – not only for the distinctive architectural applications such as roofing panels, wall panels and metal tiles, etc, but also other special applications where corrosion-resistance and longevity are of top priority. The thermal insulation for piping, especially in the processing industry, plays a vital role. It is highly imperative to maintain the required temperatures of fluids or gases. In applications like hot or

cold insulation (eg, turbines, boilers, pressure vessels, chemical processes in refineries or petrochemicals, pharma and metallurgical industries for equipment, piping and critical cryogenic processes), a properly designed 'Insulation System' enables achieving targets set through energy conservation, implementing the designed insulation system, through best erection practices at work site.

### The preferred material

Typically, the materials used for jacketing are aluminum sheet, aluminised steel, stainless steel, zinc coated steel and 55 per cent aluminum-zinc alloy coated steel, ie ZINCLAUME® steel, which is a preferred material due to its excellent impact resistance, higher strength, flexibility

and excellent corrosion-resistance and economical in some processing industry requirements.

The 55 per cent aluminum-zinc alloy coating provides both, the long-term corrosion resistance of aluminum along with the galvanic protection of zinc at scratches and cut edges. ZINCLAUME® steel jacketing outlasts regular galvanised steel in marine salt spray and industrial atmospheres for a long lasting installation. It provides superior fire-resistance and protection compared to aluminum. The special alloy coating of aluminum and zinc combines the best properties of both metals; it has the corrosion-resistance, high temperature oxidation resistance, and heat reflectivity of aluminum with the formability and galvanic protection of cut edges (typical characteristic of zinc).

### Do's and Don'ts

ZINCLAUME® steel roll jacketing is primarily used as a thermal insulation jacketing over piping and equipment

when the design considerations require greater fire-resistance than that offered by aluminum, but at a cost that is lesser than stainless steel. However, it is not recommended for harsh acidic chemical environments. It is recommended that it should not be allowed to come in contact with lead, copper or water run-off from any copper source. There shall be no contact with cement or concrete at any point.

The pipes are either insulated with rockwool, or, poly-urethane foam as per the process requirement (refer the cross section of pipe jacketing). It is recommended that the density and thickness of insulation should be carefully calculated so that the temperature transmitted to external jacketing will not exceed more than 45°C to 50°C. Although ZINCALUME® steel can perform up to 350°C before alloy metallic coating embitterment occurs, but the resin will flash off by 200°C. Hence, it is recommended that in no case the temperature on external ZINCALUME® steel sheet should be more than 150°C for better performance of the product.

### Success story

Prominent players in insulation jacketing business like Lloyd insulations have comprehensive competence to execute industrial thermal insulation projects on turnkey basis that live upto international standards. With an expertise in design, fabrication, supply and installation of advanced insulation, they cater to the special, individual requirements that the projects demand. They have consistently partnered with Tata BlueScope Steel for sourcing the best material for their special requirements. As **Suneet P Munjal, Executive Director, Lloyd Insulations**, shared while talking about his experience, "ZINCALUME® steel is one of the best product that provides excellent corrosion-resistance, special surface treatment for anti-darkening property, guaranteed mechanical property. Tata BlueScope steel always supplies products with brand marking to help clients check the genuine material at site. Tata BlueScope has supplied materials as per the specifications on time. They have enabled us to deliver as per client expectations to meet critical project schedules."

Speaking on the Jamnagar refinery project, **CR Kulkarni, Chief-Sales, Tata BlueScope Steel**, said, "Jamnagar refinery has used ZINCALUME® steel G300 AZ185 in various thicknesses. ZINCALUME® steel with AZ185 coating is expected to give a life ratio of around 1.25-1.50 to that with AZ150 coating in marine and industrial environment. At Jamnagar itself, till date, around 3.5 lakh sq m for piping and equipment has been jacketed with ZINCALUME® steel and we expect similar requirement in future."

(Communication by the management of the company)

