



PENDING

(IN202341044653)

Activating flux composition and coating for deeper penetration while a-tig welding of corten steel

NEED

In shipyards, bridges, and railways, welding thick Corten steel often needs groove preparation, filler materials, and multiple passes. This raises costs, slows production, and weakens joints. But what if one pass was enough, even for 10 mm thickness?

TECHNOLOGY OVERVIEW

A novel activating flux enables single-pass autogenous TIG welding of Corten steel (3–10 mm) with full penetration and strong weld joints. It eliminates groove cutting, filler use, and rework, while maintaining metallurgical integrity—thus saving time, energy, and costs in heavy-duty fabrication workflows.

TECHNOLOGY KEY FEATURES

Single-pass welds up to 10 mm thickness, no groove prep, no filler, maintains joint strength and structure, works with Corten steel, uses oxide mix-based flux paste, improves productivity.

[Read more here](#)

MARKET ANALYSIS

Global welding market expected to reach USD 27.22 billion by 2033, growing at 5.2% CAGR (2023–2033). Key drivers include automation, infrastructure upgrades, and corrosion-resistant materials. India's fabrication demand surges via rail, energy, and defense sectors. [Source: Precedence Research, IMARC Group]

Target Industries

Heavy fabrication units and component manufacturers for railways, ships, and bridges and/or welding machine manufacturers, automation integrators, or consumables suppliers and/or R&D labs or defense-tech developers working on corrosion-resistant structural fabrication.

AT A GLANCE

SDG 9 (Industry, Innovation & Infrastructure), SDG 12 (Responsible Consumption & Production), SDG 13 (Climate Action)

Technology is available for licensing/ co-development.

Reach out to Prof. Deepak Chitkara, Coordinator, BITS Technology Enabling Centre,
BITS Pilani Contact Details: tec.bits@pilani.bits-pilani.ac.in, 91 1596-255913

