The India Thermit Corporation

World Leaders in Rail Welding

Alumino - Thermic Welding

Flash Butt Welding
The Company

The India Thermit Corporation (ITC) is the world's largest executor of rail welds.

We are experts in using the Alumino-Thermic and Flash Butt techniques, having welded over 11 million rail joints till date.

ITC installs over 300,000 Flash Butt and Thermit welds every year. Our plants produce over 600,000 Thermit welding kits annually for our global customers.

ITC builds mobile Flash Butt welding plants using Schlatter welding heads for sale to external customers. We also operate these welding plants to execute Flash Butt welding with our own teams.

The company engages a skilled workforce of over 1,000 team members to deliver rail welding products and services to its global customers.

ITC is a quality conscious organization committed to customer satisfaction. Our production facilities are ISO 9001 : 2008 certified and are a testament to our quality management systems.

We have sophisticated and well equipped testing facilities for ensuring that our raw materials and finished products consistently meet the highest quality standards.

ITC is actively involved in several railroad construction related activities such as Track Linking, Gauge Conversion, Through Weld Renewal (TWR) and Through Rail Renewal (TRR) etc.
Products & Services

- Flash Butt Welding Machines with Schlatter heads
- Thermit Portion for a wide variety of rail sections used globally
- Pre Fabricated Moulds in 3 piece and 2 piece configurations
- Execution of Flash Butt and Alumino-Thermic Welds
- Equipment & Fixtures used for executing Alumino-Thermic welds
- Track Service Machines
- Glued Insulated Rail Joints used for signaling
- Training Personnel with the latest technology/processes in rail welding and providing refresher courses
- Turnkey Projects for Railway Track Construction

- Repair Welding of heavy machinery by the Alumino-Thermic process
- Atomized Aluminum Powder for use in a wide variety of industries
- Low Carbon Ferro Alloys
- Tin Base & Lead Base White Metals in conformance with various national and international standards
- Machining of Components such as tools, dies, fixtures, jigs etc
**Track Service Machines**

**Rail Drilling Machine**
- Weight – 19 Kg
- Drilling time – 1 min
- Drilling Tolerance – 0.2 mm

**Rail Cutting Machine**
- Weight – 32 Kg
- Cutting Time – 3 to 4 min
- Cutting Tolerance – 0.5 mm

**Compressed Air-Petrol Blower**
- Simultaneous Joint Capacity – 2
- Synchronized with Engine
- Moves on Track

**Weld Trimmer & Power Pack**
- Light Weight
- Customized Blades for any Rail Type
- Reduces Grinding Time
- Eliminates Cracks at Joint

**Rail Profile Grinder**
- Grinder RPM – 5600
- Grinding Time – 15 min
- Fuel Type – Kerosene Oil / Petrol
Flash Butt Welding

ITC builds Flash Butt welding plants (mobile and stationary) with Schlatter welding heads for sale to customers. We also operate these plants to execute Flash Butt welds with our own teams. We provide Flash Butt welding products and services to private companies and national railways.
Developments in Rail Welding

Single Shot Crucible

This crucible eliminates the need for carrying heavy welding equipment. It weighs a mere 11 kgs compared with 36 kgs for the traditional Long Life Crucible. It decreases the total welding time from 40 minutes for traditional crucibles to just 24 minutes, by shortening the weld preparation process.

It significantly reduces the manual errors associated with weld preparation.

Welding of Head Hardened Rails

We have developed the technique for welding Head Hardened rails with post weld air quenching treatment. This process involves the following steps -

- Welding of rails by normal SkV-F process
- Trimming excess metal with a weld trimmer
- Applying air quenching over the weld and heat affected zones on the rail head, immediately after trimming

As a result of this enhanced cooling, the hardness of the welded zone increases to conform well with hardness of the parent rail.

Automatic Tapping Thimble

After completing the Thermit reaction, the automatic tapping thimble enables the automatic tapping of molten steel. Using the automatic tapping thimble reduces manual errors and enhances safety by eliminating the need for a welder near the crucible.

Wide Gap Rail Joints

We can weld wide gap joints of up to 75mm by using specially designed prefabricated moulds.

Combination Rail Joints

We can weld dissimilar rail profiles by the SKV-F process using specially designed prefabricated moulds.

Three Piece Mould

These moulds decrease the presence of fins at the bottom of the joints, at the parting face of the two halves of the moulds. In this type of mould, a third piece is used at the bottom.
Glued Insulated Rail Joints

ITC operates a dedicated unit for manufacturing Glued Insulated Rail Joints. These joints are used for controlling the electrical flow of signals on rail road tracks.

Technical Specifications

<table>
<thead>
<tr>
<th>Tests</th>
<th>52 Kg Rail Section</th>
<th>60 Kg Rail Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Alignment</td>
<td>Within +1 mm and – 0 mm</td>
<td>Within +1 mm and – 0 mm</td>
</tr>
<tr>
<td>Lateral Alignment</td>
<td>Within ± 0.5 mm</td>
<td>Within ± 0.5 mm</td>
</tr>
<tr>
<td>Pull Out Test</td>
<td>Pull Out Strength of 150 Tons</td>
<td>Pull Out Strength of 170 Tons</td>
</tr>
<tr>
<td>Insulating Resistance in Dry Condition at 100 Volt D.C.</td>
<td>Greater than 25 Mega Ohms</td>
<td>Greater than 25 Mega Ohms</td>
</tr>
<tr>
<td>Insulating Resistance in Wet Condition at 100 Volt D.C.</td>
<td>Greater than 3 Kilo Ohms</td>
<td>Greater than 3 Kilo Ohms</td>
</tr>
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</table>
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