



**GANTREX**<sup>®</sup>  
ON TRACK. WITH YOU.

## Gantrex Short Rails – Maximizing Durability of the rails joint @ Hinge Point.

11th Southern Asia Ports, Logistics and Shipping 2016, Colombo – Srilanka.

Date : 22/09/2016

Presented by;  
Mr. Dinesh Bhati

# THE NEW GANTREX

GANTREX... More than 45 years of EXPERIENCE and SOLUTIONS



# GANTREX<sup>®</sup>

ON TRACK. WITH YOU.



# The GANTREX Group of companies

---

Founded in Belgium **45 years** ago

Turnover **85 Mio€** per year

More than **300 people** employed

**ISO 9001 : 2008** certified



# The GANTREX Group of companies

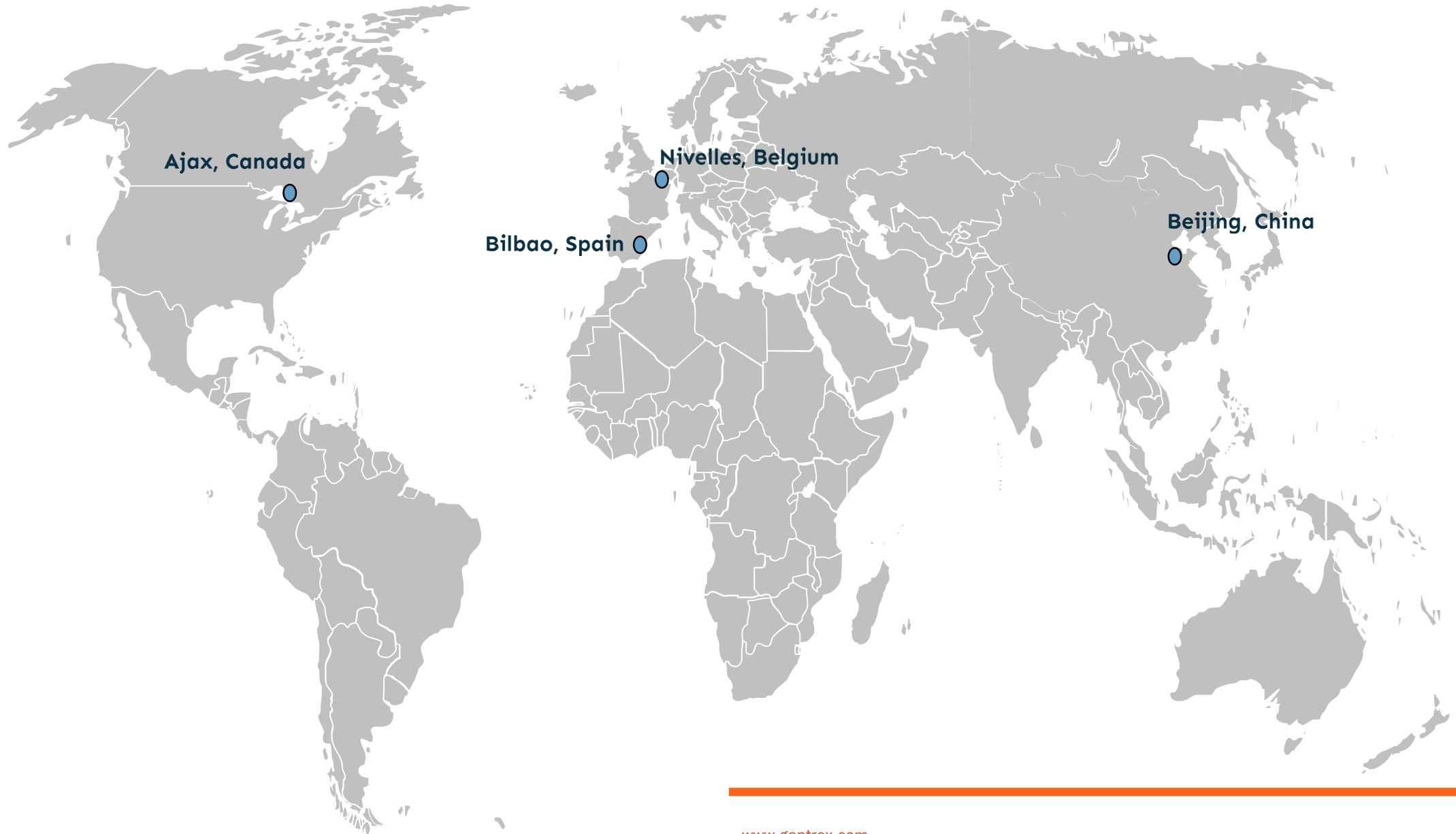
---

**Global leader** of crane and specialty tracks solutions  
completed by **substantial local presence** to be

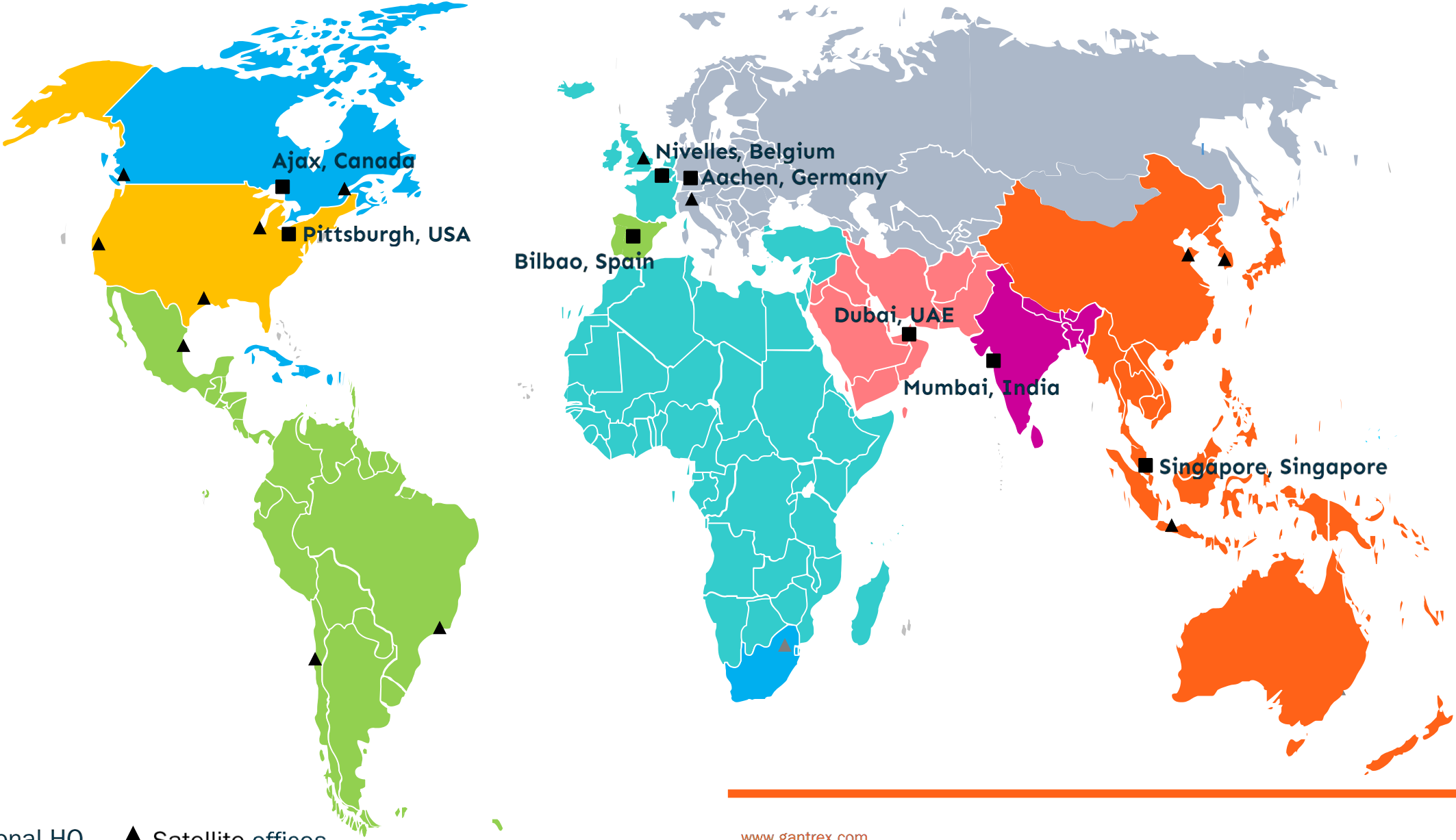
**With you**



# Operational Centers



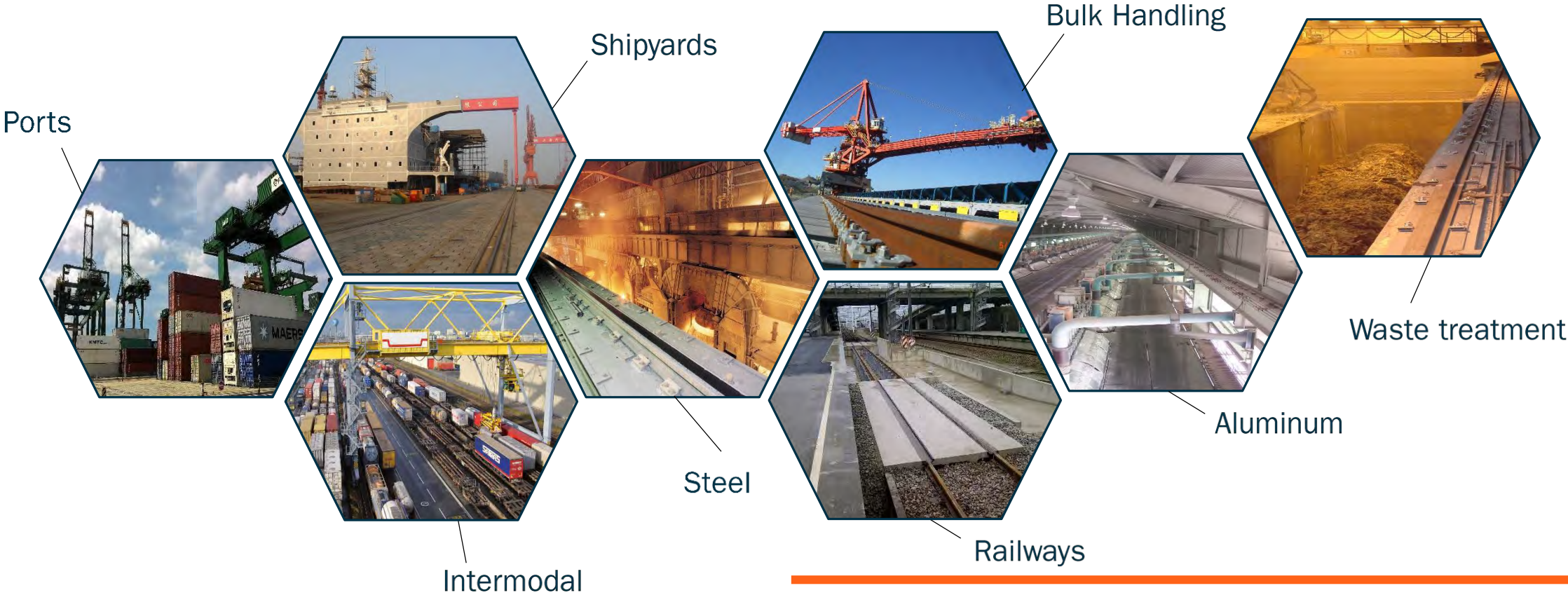
# Sales and Services Centers - Satellite Offices



# Industries we serve

Whether it's cranes traveling on rail or machinery moving on specialty tracks, you will find **GANTREX** there

AMONG OTHERS INDUSTRIES,  
FOR CRANES AND FOR SPECIALTY RAIL TRACKS



# Applications we cover

We offer a **diverse portfolio of capabilities**



Overhead  
Cranes



Cranes  
Trolley  
Tracks



Maintenance  
Pits



Automated  
Stacking Cranes



Rocket Movers



STS Crane  
Runways and  
Trolley



Automated  
Storage and  
Retrieval  
System



Super Heavy  
Cranes



Retractable Roofs

AND MORE . . .



# Solutions we provide

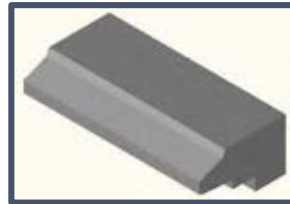
GANTREX' 45 years' experience and innovative solutions are offering the customer a **one-stop-shop** for reliable rail fastening **supply and installation** services

## Wide range of PRODUCTS

RAIL



RAIL TRENCH INFILL



GANTREX® CLIP



SOLEPLATE



GANTREX® PAD



TRACK DESIGN & CONSULTANCY



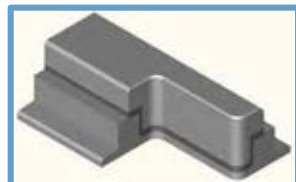
INSTALLATION SERVICES FOR OVERHEAD AND GROUND TRACKS



RAIL WELDING



HYDRAULIC BUFFERS



SHORT RAIL



STEEL CHAIR



GROUTING MATERIAL



GIRDER TIE-BACK

## Attentive SERVICES AND CUSTOMER SUPPORT

# Operationnal History - INDIA

- Gantrex India was established in the year 2007 in **Navi Mumbai, Maharashtra, India**. Gradually the office was expanded to increase the customer reach. The Project Team was established in July 2008 to complete the package of supply and installation. The Eastern Region Office was established in Kolkata in December 2009. The South Regional Office was established in Chennai in March 2012.
- Industries catering to – Ports, Shipyard, Steel, Aluminium, Cement, Power. Major Chennai in the Steel and Port Industry contributing to almost 80% of the client base.



# Our presence in INDIA



## GANTREX India Crane Rails Pvt. Ltd.

- Head Office in Navi Mumbai
- **3 Regional Offices** in New Delhi, Kolkata & Chennai to cater to the North, East and South Zone
- Pan India client coverage and efficient client communications
- **In house project team** to cater to installation jobs





**GANTREX**<sup>®</sup>  
ON TRACK. WITH YOU.

GANTREX TROLLEY RAIL SOLUTIONS

SHORT RAIL SYSTEMS AND  
SERVICES OFFERED

---

# SHORT RAILS



- Subject to high duty cycle due to trolley movements
- Discontinuity in rail a cause for shock and vibration

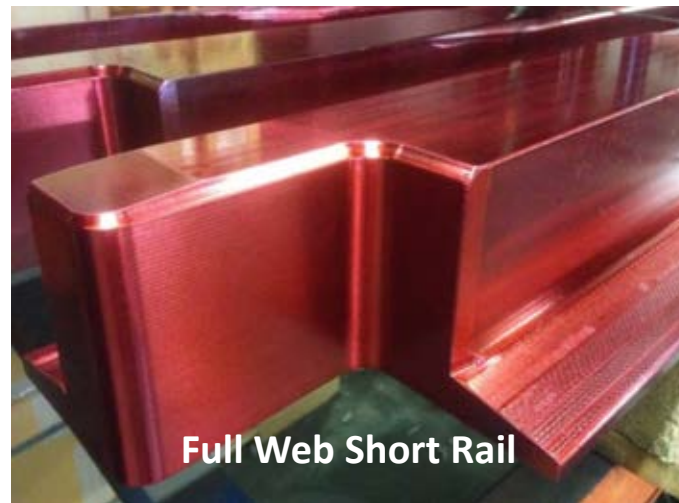
# SHORT RAIL OPTIONS



Standard Short Rail



Standard Short Rail  
With Welded Stiffener



Full Web Short Rail



Gantrex Short Rail

# STANDARD SHORT RAILS

Suggested material grade 110CrV  
Yield @ 1,080 N/mm<sup>2</sup>

Extreme plastic deformation zone due to lack of railhead support

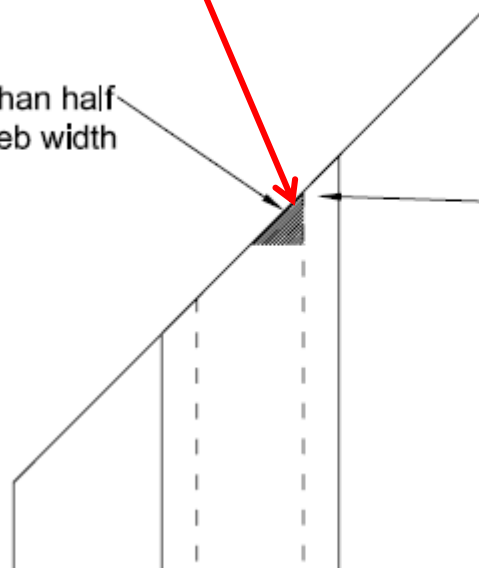
Rail crack formation through web



Less than half web width

Poorly supported Railhead due to thin web profile

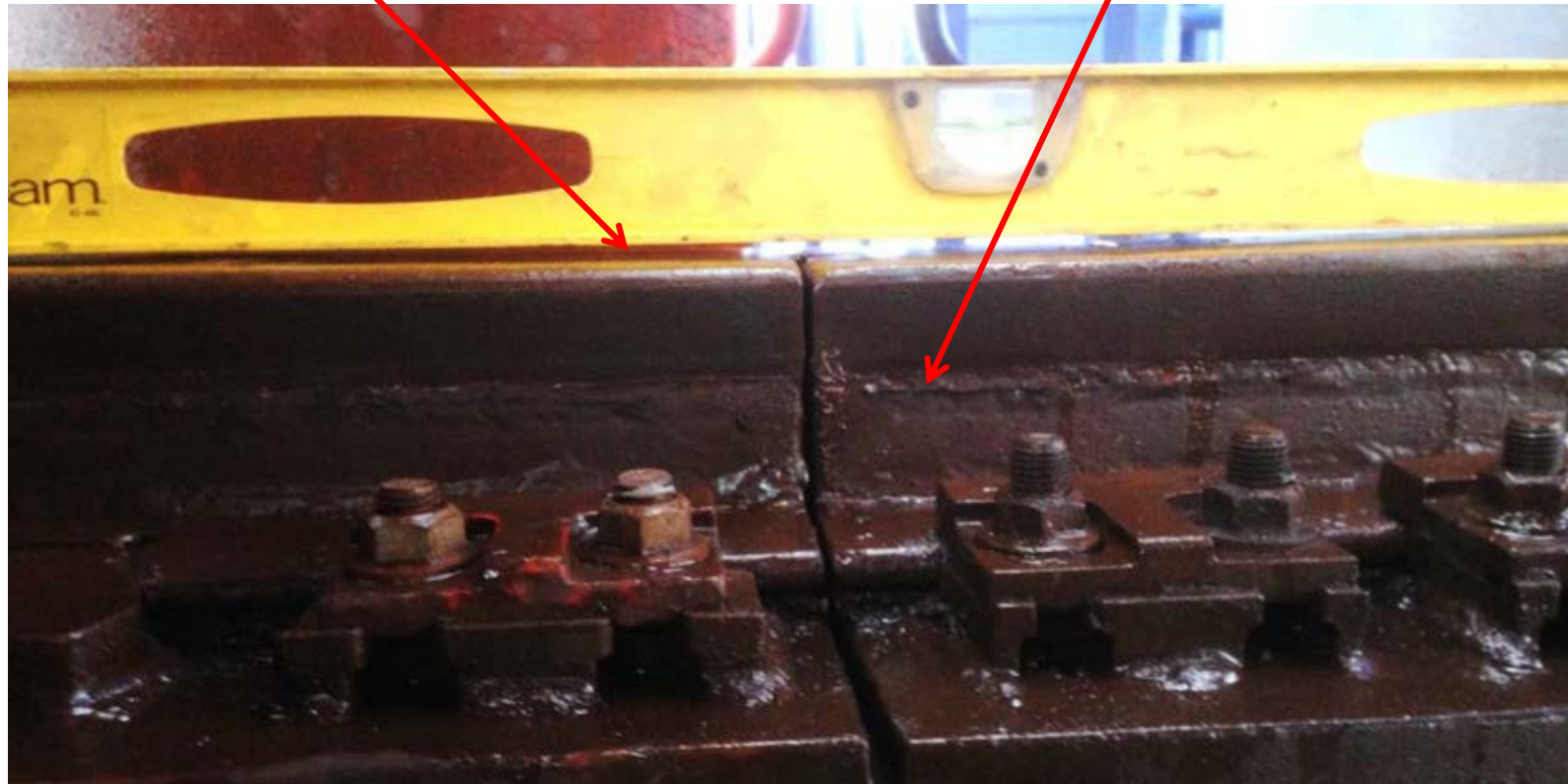
A75 Short Rail Section



# STANDARD SHORT RAILS WITH WELDED STIFFENER

Large localized wear causes  
shocks and vibrations

Stiffener weld cracks  
appear within months of  
installation

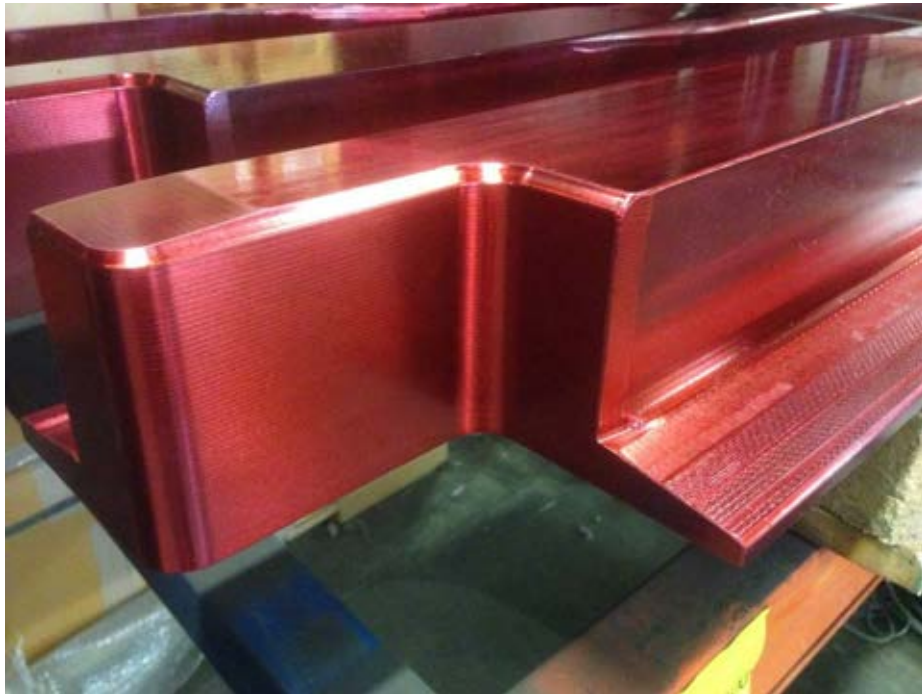


Stiffener weld cracks if  
left unchecked can  
propagate into the rail  
and cause rail cracks and  
failure



# FULL WEB SHORT RAIL

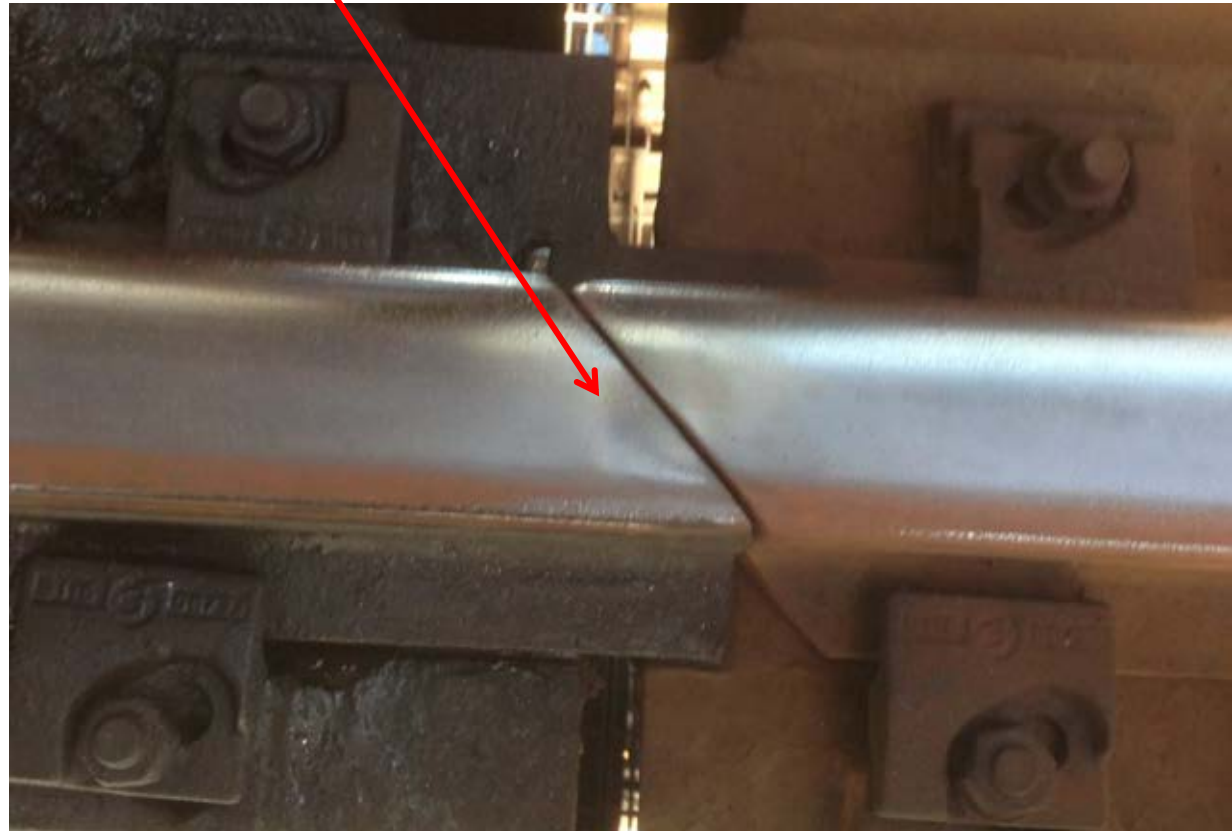
Fabricated from larger rails to keep uniform web thickness, suggested material grade 110CrV



Large localized wear causes shocks and vibrations

More robust solution than Standard SR

Eliminates Stiffener cracks



# TROLLEY RAIL SYSTEM

- Large impact loads and vibration at boom hinge
- All shock and vibration transferred into the trolley rail system and crane structure
- Increased wear and tear
- Accelerated fatigue

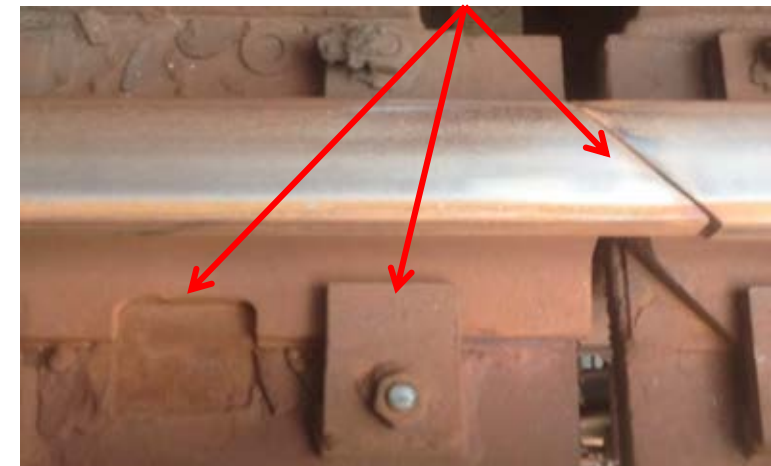


Rail and weld cracks

Stringer Structural Fatigue Cracks



Failed Fixed Points and Loose Clips and Clamps, large localized wear



# GANTREX SHORT RAIL SOLUTION

Railhead machined from larger rail sizes to fit existing profile, standard material grade 110CrV

Vulcanized rubber layer between Railhead and „Rail Foot“



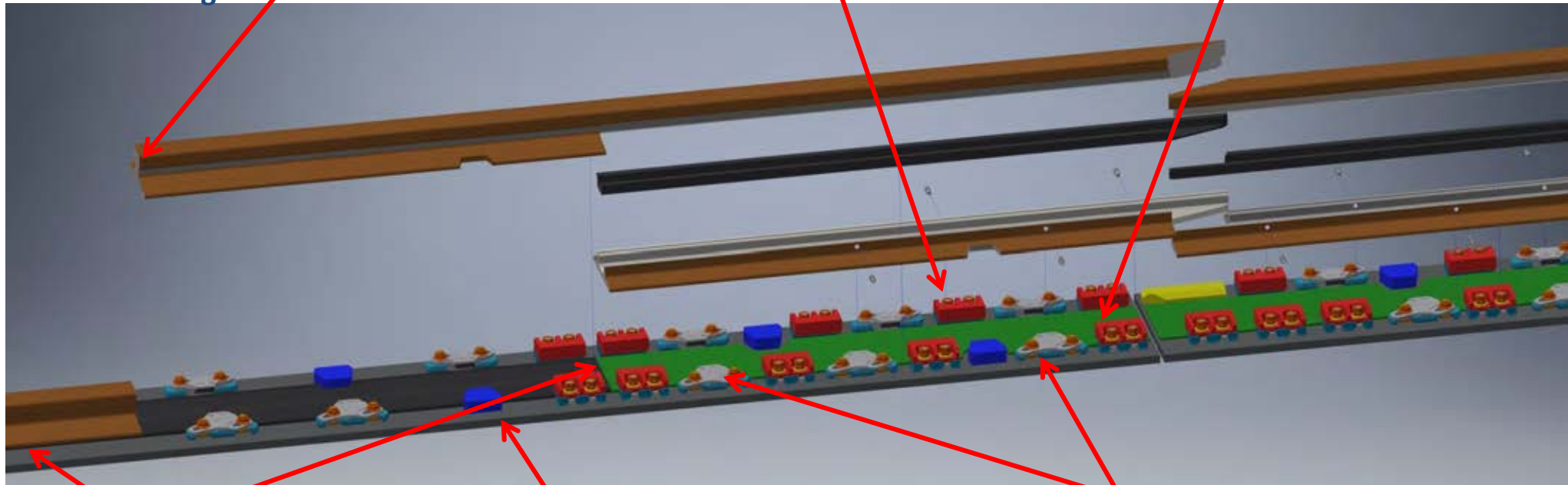
„Rail Foot“ machined as a cavity to fit the Railhead and to fit existing rail profile

# GANTREX SHORT RAIL SOLUTION

The Back end of the Railhead is machined to fit existing rail profile for welding

Improved Clamping through Gantrex SR Clamps

Steel Shim installed under the vulcanized rubber layer



RailLok™ Pad Installed up to the vulcanized rubber layer

Staggered Shear Blocks

Improved lateral stability through Gantrex RailLok™ Style Clips



# GANTREX SHORT RAIL SOLUTION



# GANTREX TROLLEY RAIL SERVICES

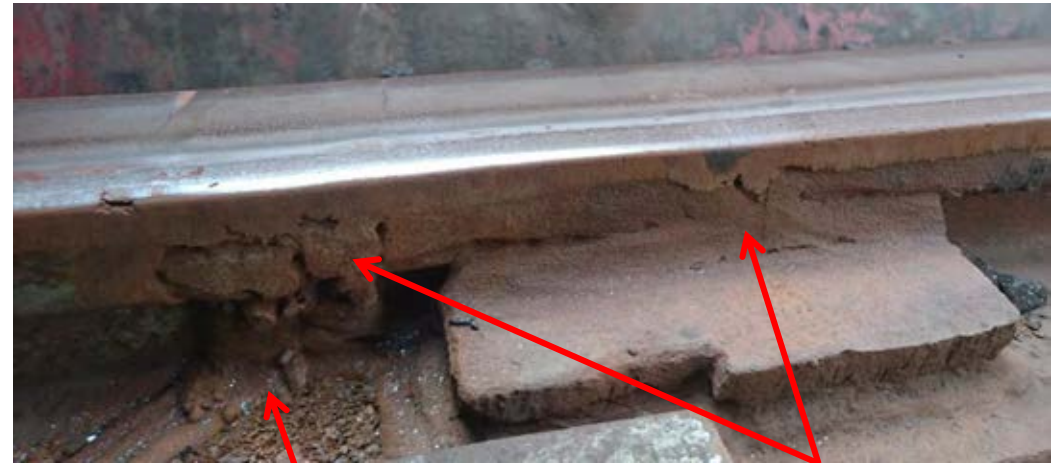
- Complimentary Short Rail and Stringer Analysis
- Detailed Survey, Inspection and Alignment
- Short Rail System Design
- Short Rail and Trolley Rail Material Supply
- Turnkey Short Rail System Replacement
- Turnkey Trolley Rail System Replacement

# COMPLIMENTARY ANALYSIS EXAMPLE



Battered Joint

Stiffener Cracks



Improper Rail Weld prone to failure

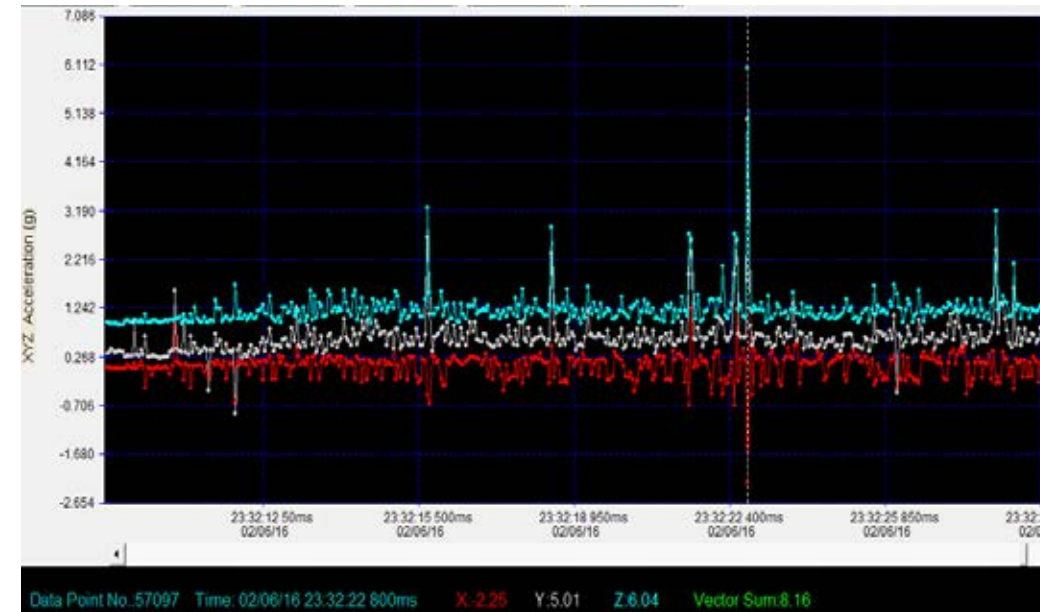
Multiple crack repairs



Potential Structural Crack

# COMPLIMENTARY ANALYSIS EXAMPLE

- Extreme Vertical Shock at Joint around 5G
- Lateral Shock at Joint around 2G (Suggests some lateral misalignment)
- Constant lateral and vertical vibrations throughout the trolley rail length
- Substantial shocks at trolley rail welds



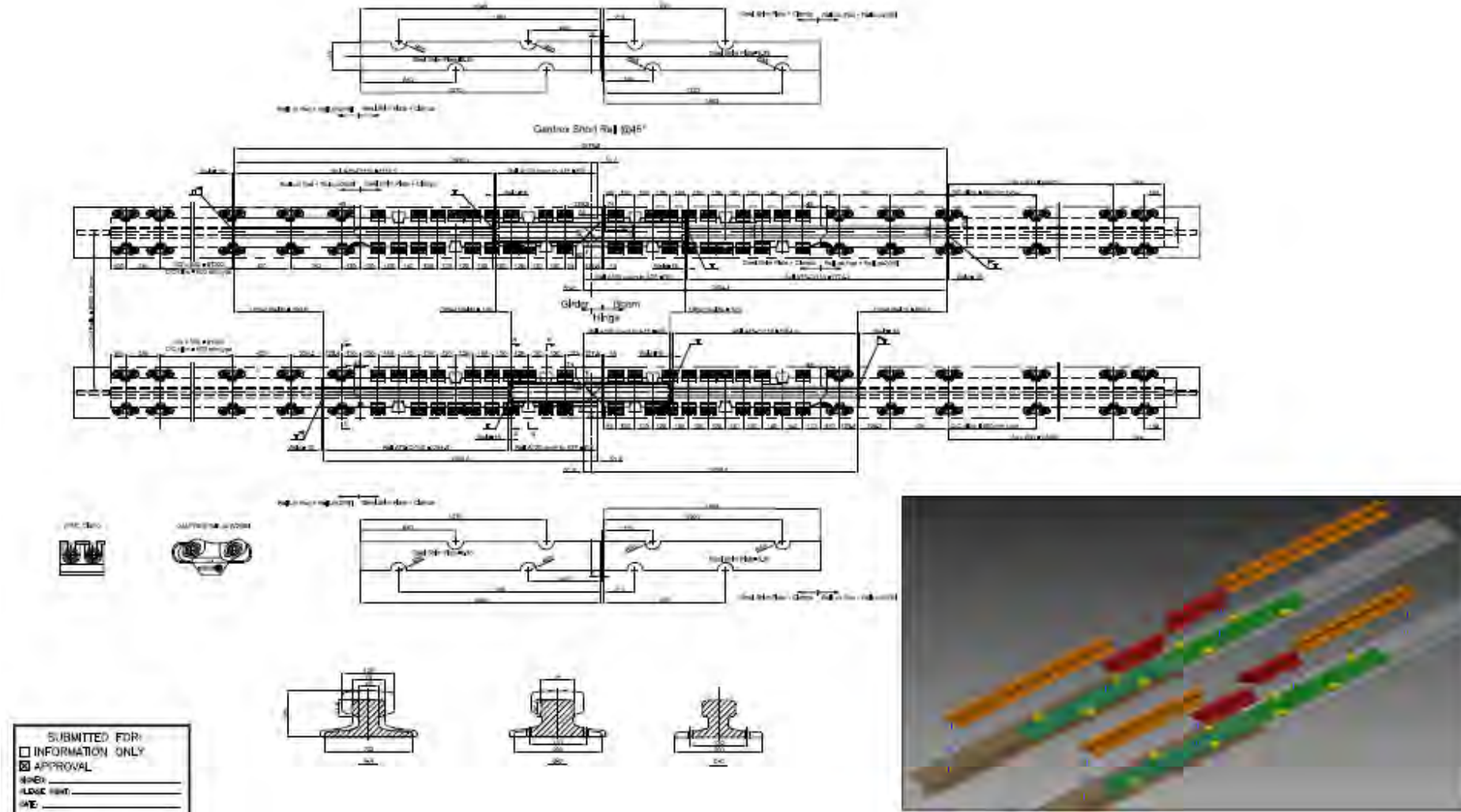


# COMPLIMENTARY ANALYSIS EXAMPLE

| Description/ Crane # | Vertical<br>Vibration | Lateral<br>Vibration | Wear at<br>Joint | Wear on<br>Trolley Rail | Battered<br>Joint | Stiffener<br>Cracks | Rail<br>Cracks | Weld<br>Cracks | Structural<br>Cracks |
|----------------------|-----------------------|----------------------|------------------|-------------------------|-------------------|---------------------|----------------|----------------|----------------------|
| Units                | G                     | G                    | mm               | mm                      |                   |                     |                |                |                      |
| 1                    | 5                     | 2                    | 2                | 5                       | X                 | X                   | X              |                | X                    |
| 2                    |                       |                      | 3                | 6                       |                   | X                   | X              | X              |                      |
| 3                    | 6                     | 8                    | 3                | 6                       | X                 | X                   | X              | X              |                      |
| 4                    | 4.9                   | 1.8                  | 3                | 7                       | X                 | X                   |                | X              |                      |
| 5                    |                       |                      | 4                | 8                       | X                 | X                   |                | X              |                      |
| 6                    |                       |                      | 3.5              | 9                       |                   | X                   |                |                |                      |
| 7                    | 2                     | 4.5                  | 2                | 6                       | X                 | X                   | X              | X              |                      |
| 8                    | 0.3                   | 2.2                  | 0.5              | 8                       |                   | X                   |                | X              |                      |
| 9                    | 5                     | 3.5                  | 4                | 5                       | X                 | X                   | X              | X              |                      |
| 10                   | 2.8                   | 1.2                  | 5                | 5                       | X                 | X                   | X              |                |                      |



# SHORT RAIL SYSTEM DETAILING EXAMPLE



# THE GANTREX SHORT RAIL - SUPPLY



# INSTALLATION

- A good installation goes a long way, Gantrex has specialized teams that can provide installation services as per the latest best practices and to Gantrex Highest Quality Standards



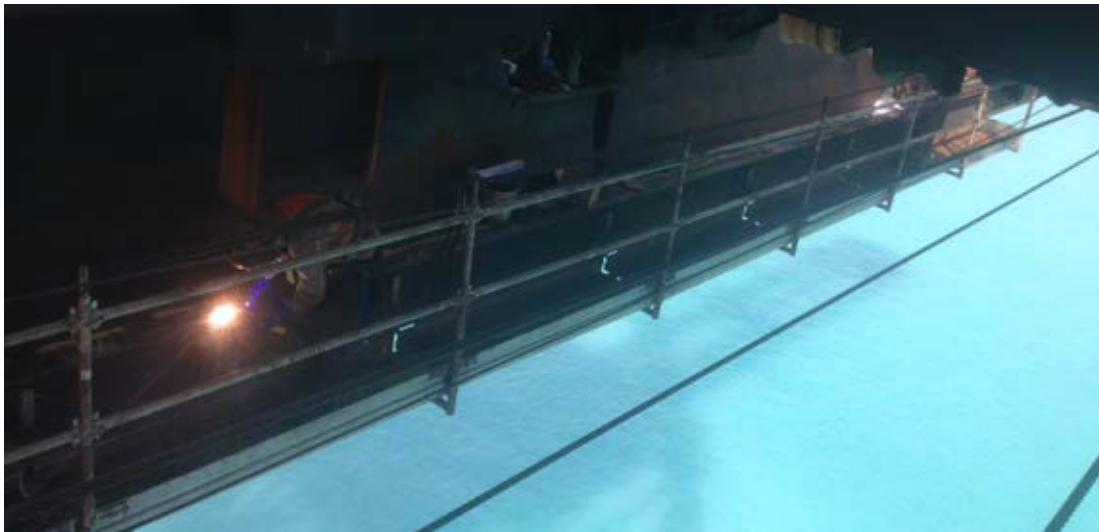
# GANTREX SCAFFOLDING SYSTEM

- Gantrex installs Modular Scaffolding systems for safe access to the trolley rail



# GANTREX SCAFFOLDING SYSTEM

- Gantrex Scaffolding is load rated and OSHA certified
- Scaffolding Installation Time
  - 4 – 6 hours with adequate trolley access
  - 8 – 10 hours with no trolley access
- Scaffolding Removal Time
  - 2 – 3 hours



# INSTALLATION – CLEAN UP

- Stringer top surface needs go be cleaned to bare metal to receive new material for proper alignment and installation of a more robust solution



# INSTALLATION – BED REPAIR

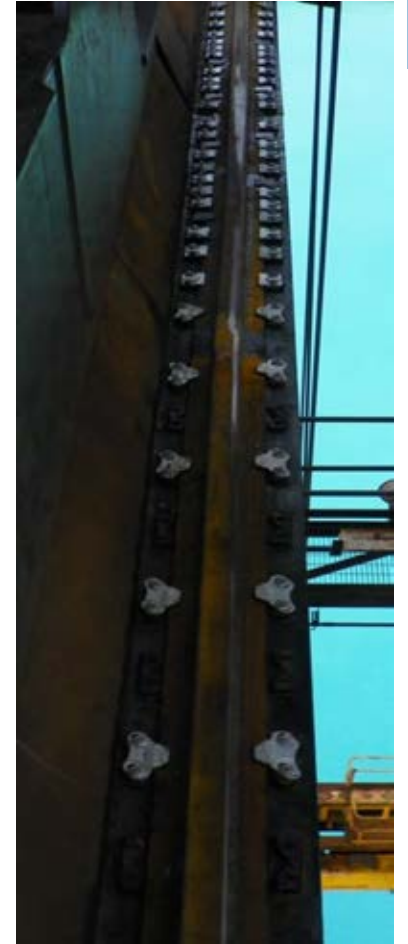
- Stringer top surface needs to be cleaned to bare metal to receive new material for proper alignment and installation of a more robust solution





# INSTALLATION SERVICES

- New Short Rails, Transition Pieces, Clamps, Clips and fixed points are installed as per Gantrex Generated and client approved drawings

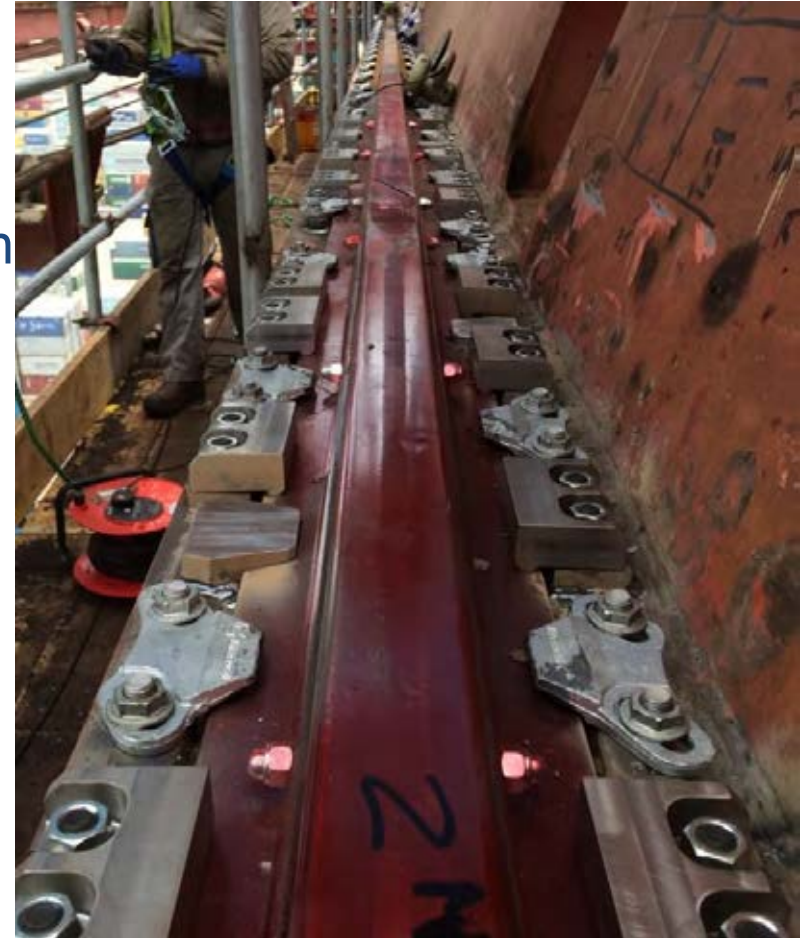


# SURVEY AND ALIGNMENT



# THE GANTREX DIFFERENCE

- Engineered Solutions
- Material and Layout improvements
- Improved installation techniques
- Reduced installation time (reduced crane down time)
- Certified reusable scaffolding system
- Standard 1 year warranty on labor
  
- Gantrex Short Rail
  - Amortizes shocks and vibration
  - Minimizes localized wear
  - Reduces maintenance to clips and clamps
  - Minimizes fatigue related structural failures
  - Improves driver comfort



# NEED MORE INFORMATION?

For more information please contact your  
Gantrex Trolley Rail Services Specialist:

Dinesh Bhati

Mobile: +91- 9930335775

Email : [dinesh.bhati@gantrex.com](mailto:dinesh.bhati@gantrex.com)



# Client reference -





**GANTREX**<sup>®</sup>  
ON TRACK. WITH YOU.



Thank You ...