

RESISTOFLEX

SINCE 1947

Vibration Shock Seismic Control



- AUTOMATIC SLIDING DOORS
- AIR SPRING SYSTEMS
- BOGIE SUSPENSION ELEMENTS
- INTER COACH GANGWAYS
- SEISMIC ISOLATION BUILDINGS & BRIDGES

for

RAILWAY SYSTEMS

COMPANY PROFILE

RESISTOFLEX was founded in 1947 by Late Mr. R.K. Jain after graduating in Electrical & Mechanical Engineering from BHU, India. He was joined by Mr. Ratish Jain, B.Tech & Silver medallist from IIT Delhi. He forged several alliances with globally acclaimed companies in related fields. Presently the third generation lead by Mr. Aradhya Jain, B.Tech BITS Pilani University is taking the vision forward. Further RESISTOFLEX was co-opted to the Mechanical Vibration and Shock Sectional Committee of Bureau of Indian Standards.

WE offer a comprehensive range of products for **RAILWAYS** including:

- ❖ **Air Spring Systems**
- ❖ **Vibration & Seismic Isolation**
- ❖ **Automatic Sliding Doors**
- ❖ **Inter Coach Gangways**
- ❖ **Passenger Seats & Berths**
- ❖ **Track Fastening Systems**

RESISTOFLEX is **ISO 9001:2015 Certified** and offers complete engineering services which includes : Diagnostic Investigation, Technical Analysis, System Design, Supervision of Installation, Performance Evaluation & Post Monitoring.

RESISTOFLEX has advanced computer programs and decades of experience to design and recommend the most efficient and economical isolation system for applications as diversified as passive isolation of Delicate Instruments and active isolation of massive Forging Hammers.

Nearly one million products are made on a floor area of over 150000 sq. ft. in 4 modern plants equipped with latest manufacturing and dynamic test facilities.

Many products are regularly exported to U.S.A., U.K., France, Germany, Middle East, Taiwan, Korea, etc



CORPORATE OFFICE AND PLANTS

CORPORATE HEADQUARTERS AT NOIDA



*“India's first
Earthquake Isolated
Corporate
Building-on-Bearings”*

NOIDA OFFICE AND PLANT



NOIDA PLANT II



GREATER NOIDA PLANT



COMPANY PROFILE

COLLABORATIONS (RAILWAYS)



AIR SPRINGS & SUSPENSION SYSTEMS
for Road and Rail Vehicles, Pneumatic Actuation and Vibration Isolation.



SINGLE LEAF PLUG DOOR
for high speed trains.
SLIDING DOORS
for Metro, EMU, MEMU
IC doors.

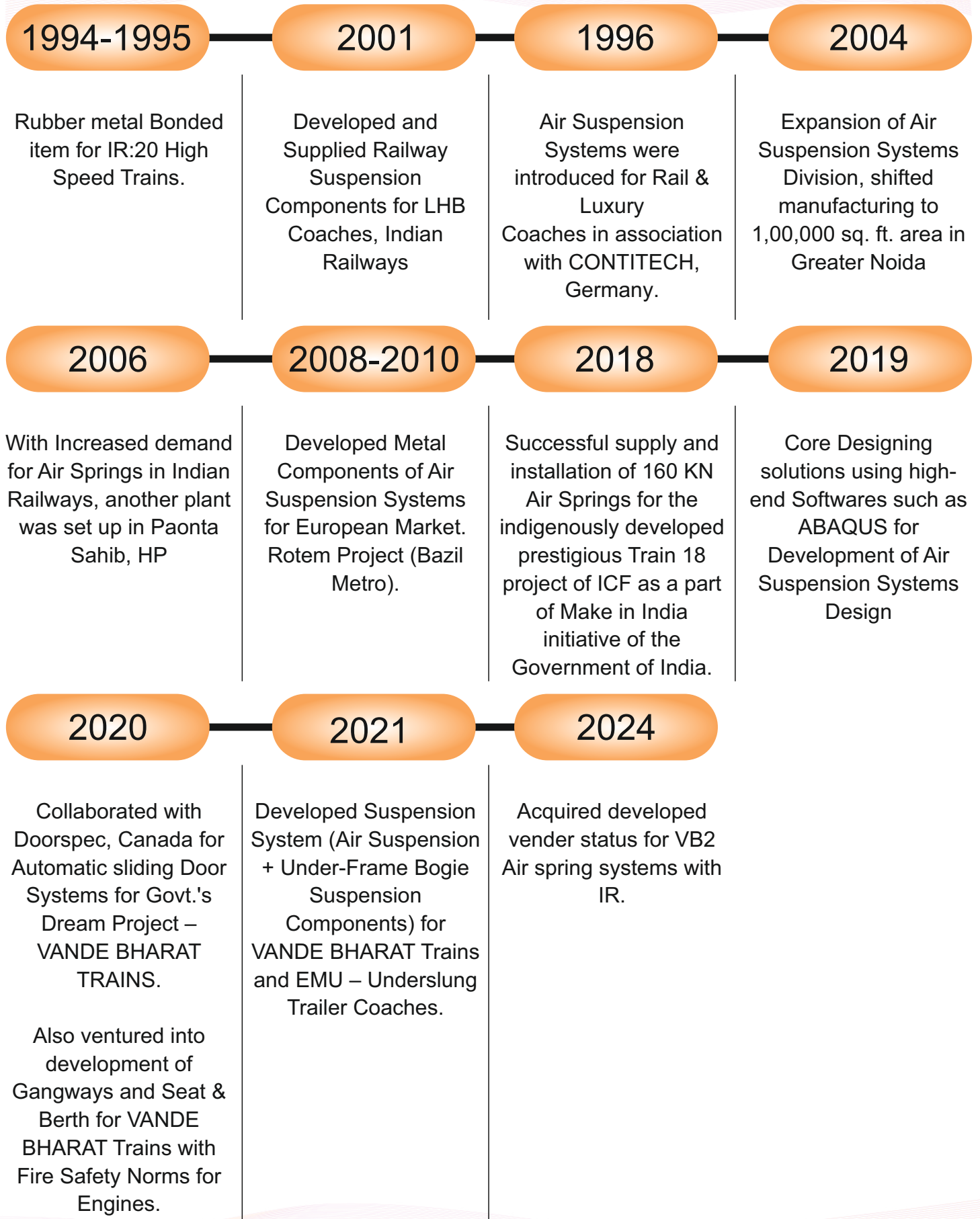
STRENGTH

- HEADQUARTERS : NOIDA
- PLANTS : 4
- LAND AREA : 45,000 SQ.M.
- COVERED AREA : 1,50,000 SQ.FT
- EMPLOYEES : 450+



MAJOR MILESTONES

RESISTOFLEX RAILWAYS DIVISION



IN-HOUSE FACILITIES



DESIGN
MANUFACTURING
&
TESTING



AIR SPRING SYSTEMS



Used world over since 1955



Successfully installed
in over 16000 coaches

Pioneered by us in India in 1997



120kN LHB

140kN MEMU

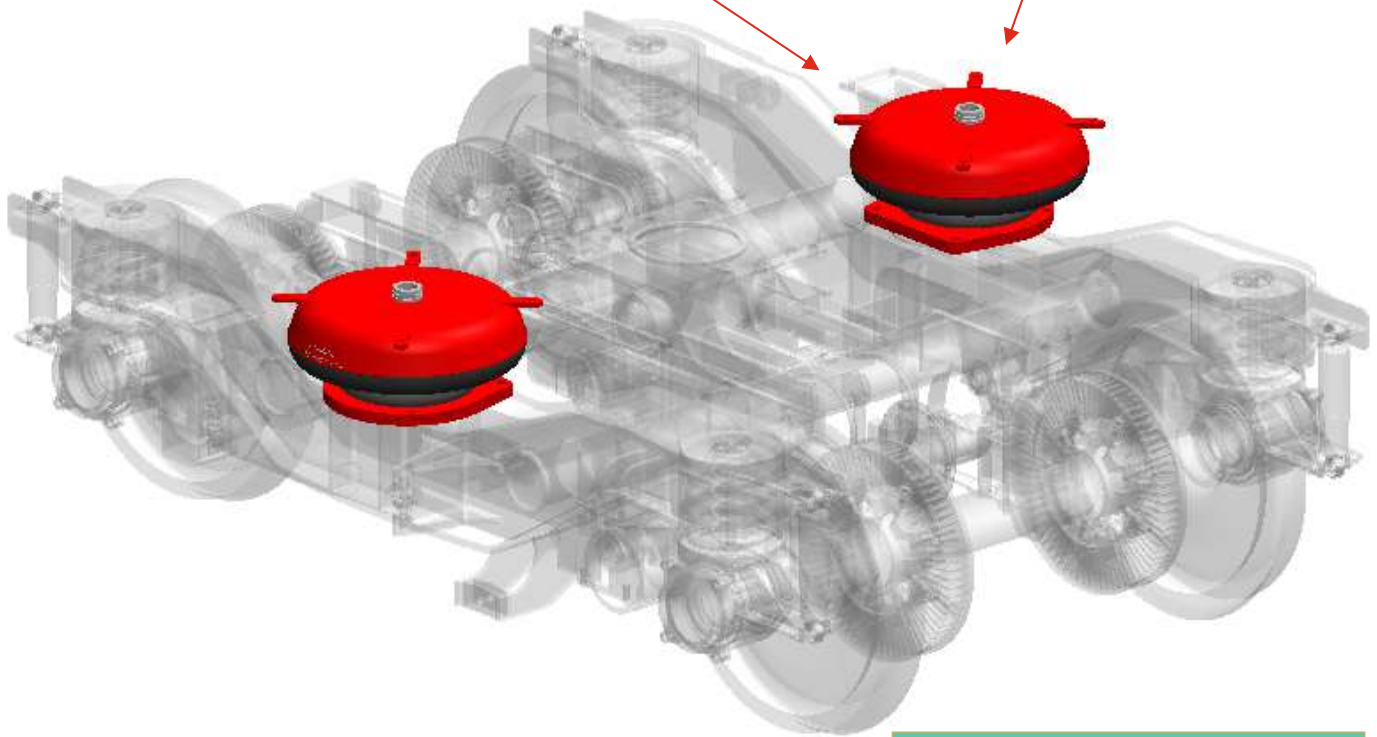
160kN LHB

180kN EMU, DEMU



AIR SPRING

RESISTOFLEX AIR SPRING (160kN) in first made-in-India engine-less train "TRAIN 18"



T18 - VANDE BHARAT EXPRESS
Compliant to
EN 45545 HL3



BOGIE SUSPENSION ELEMENTS

LHB



Ball Joint
Traction Lever



Ball Joint
Roll Link



Rubber Pad for
Primary Suspension



Axle Box Pivot Bush



Primary Bump Stop



Rubber Spring



Rubber Pad for
Longitudinal Bump Stop



Traction Center
Elastic Joint



Lateral Bump Stop

FOR EQUIPMENTS

HHP-DMU



Fleximount 500s



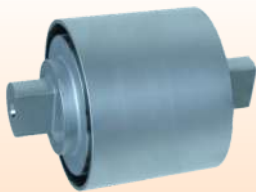
AC-DC-EMU



Cable Mount



VANDE BHARAT T18



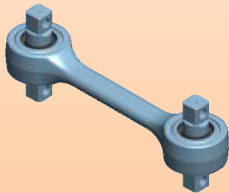
Primary Suspension Bush



Side Bumper



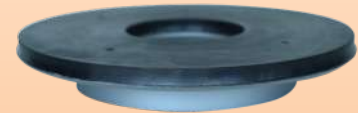
Stabilizer Link



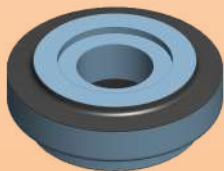
Traction Rod



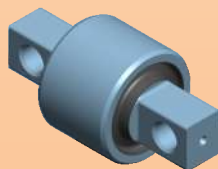
Central Pivot Bush



Rubber Pad



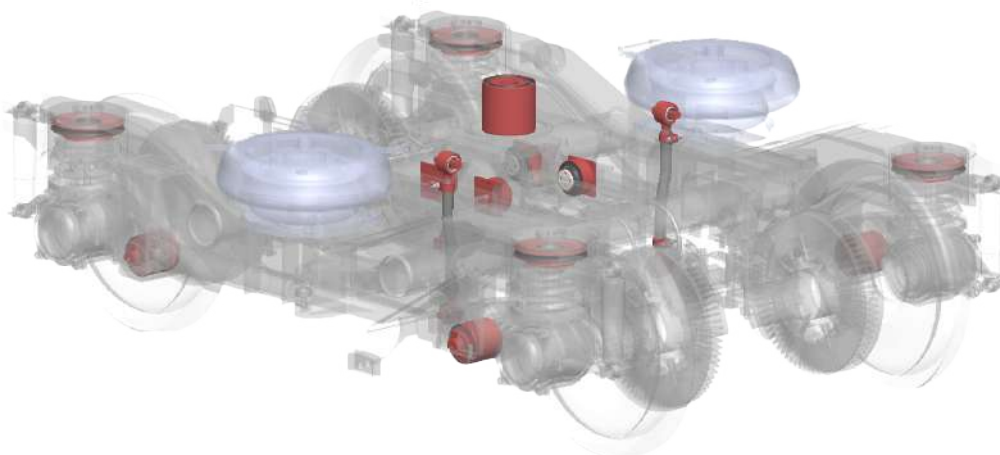
Motor Suspension Pad



Motor Suspension Bush



Bump Stop Primary Suspension



Maximizes

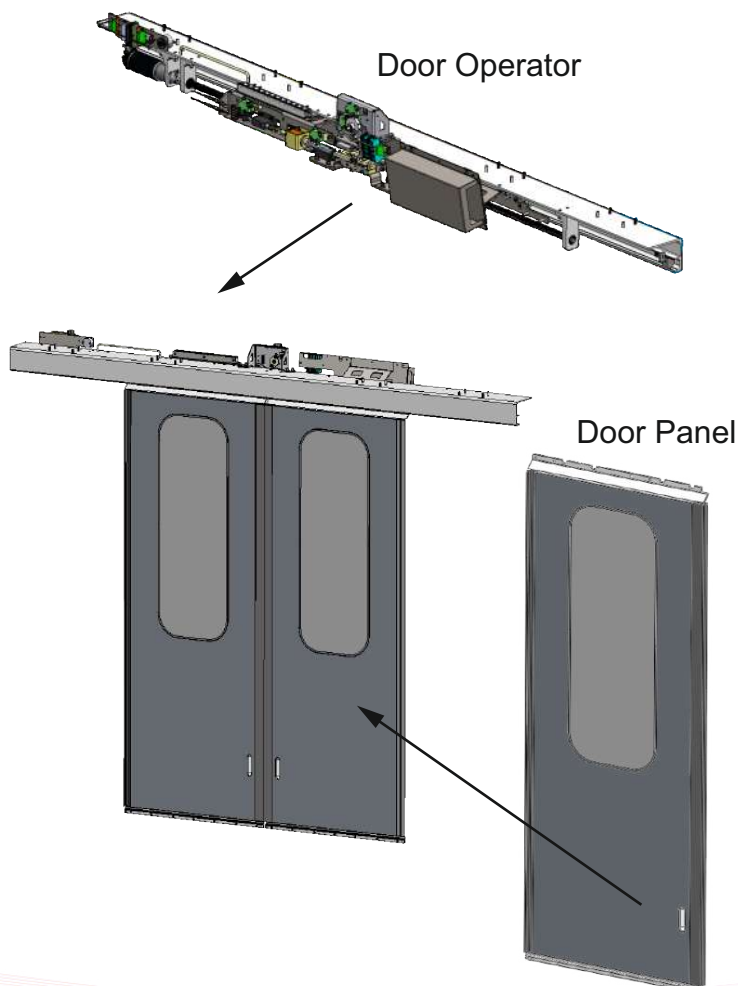
- Vehicle Dynamics
- Ride Comfort
- Sound Insulation
- Safety & Service

FEATURES:

- ★ Electric or electro-pneumatic
- ★ Lubricant free lead screw or belt system
- ★ Encoder Counts and ECU Current Obstacle Detection Monitoring System
- ★ Fault Diagnostics
- ★ Communications Link with TMS
- ★ Monitoring and diagnostics on PC
- ★ Optional reduced force push back
- ★ Audible and visual door close warning
- ★ Out of Service Lock
- ★ Passenger open Push Buttons or Push Plate
- ★ Effective Noise Reduction
- ★ Effective solution for reduce heat transmission
- ★ Emergency release
- ★ Designed as per EN specifications

MAIN COMPONENTS OF SLIDING DOOR

Complete Door Assembly

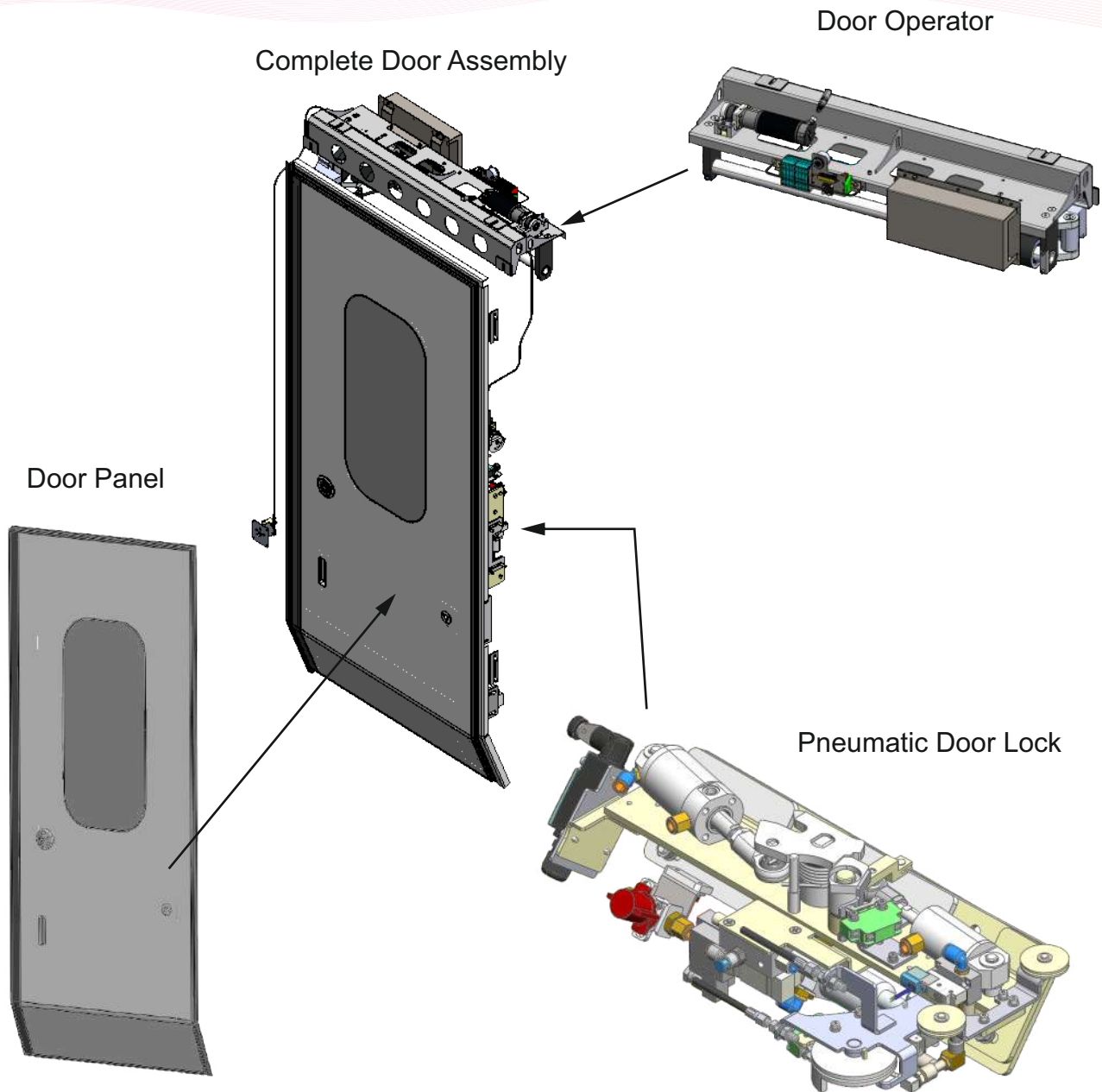





View from Outside



View from Inside

MAIN COMPONENTS OF PLUG DOOR

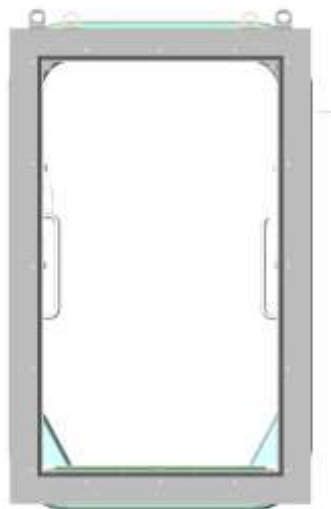
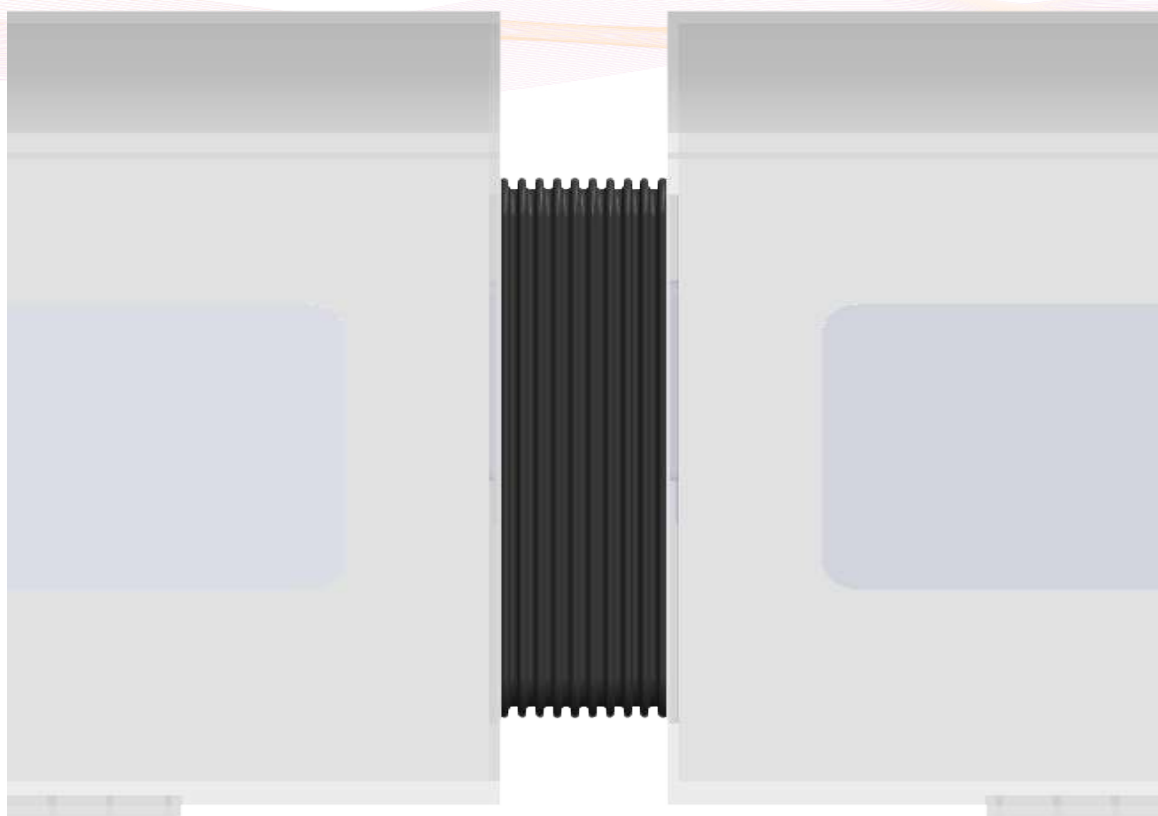


| | |
|---|------------------|
|  | F ire |
|  | S moke |
|  | T oxicity |

Compliant to **EN 45545-HL2/HL3**

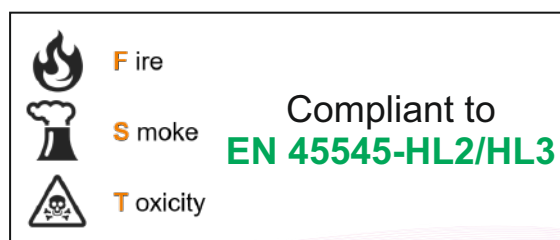
2 Years Warranty
6 Years CAMC

INTER COACH GANGWAYS



FEATURES:

- ★ Allowing safe inter coach passenger movement
- ★ Exceedingly flexible to any turning radius
- ★ High performance sound, water and pressure proofing
- ★ Fire retardant



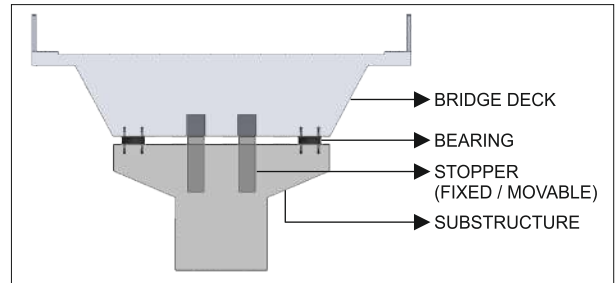
ANTI-SEISMIC DEVICES

BRIDGES

STEEL BOX STOPPERS

FEATURES

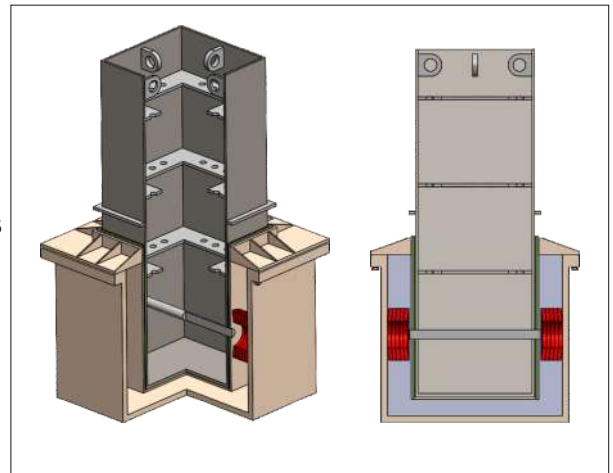
- Providing a second line of defence
- Designed to eliminate the possibility of unseating of bridge
- Secures structural integrity of the bridge under extreme seismic movements
- Movable Stoppers allow the in-service movements of the bridge deck, WITHOUT transmitting significant loads to piers and their foundations



VISCOUS DAMPER STOPPERS

FEATURES

- It has a mechanism that allows a fixed-moved design based on the requirement
- It has been adopted in around 100m span Bridges
- The gap between body and box is filled with viscous fluid
- Viscous fluid is velocity dependent. The resistance is small for small displacements but large during earthquakes

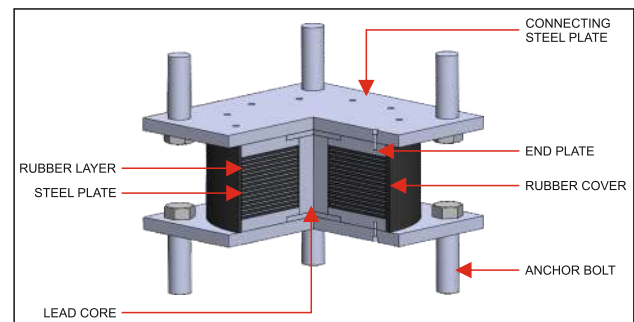


BUILDINGS / BRIDGES

SEISMIC ISOLATION SYSTEMS

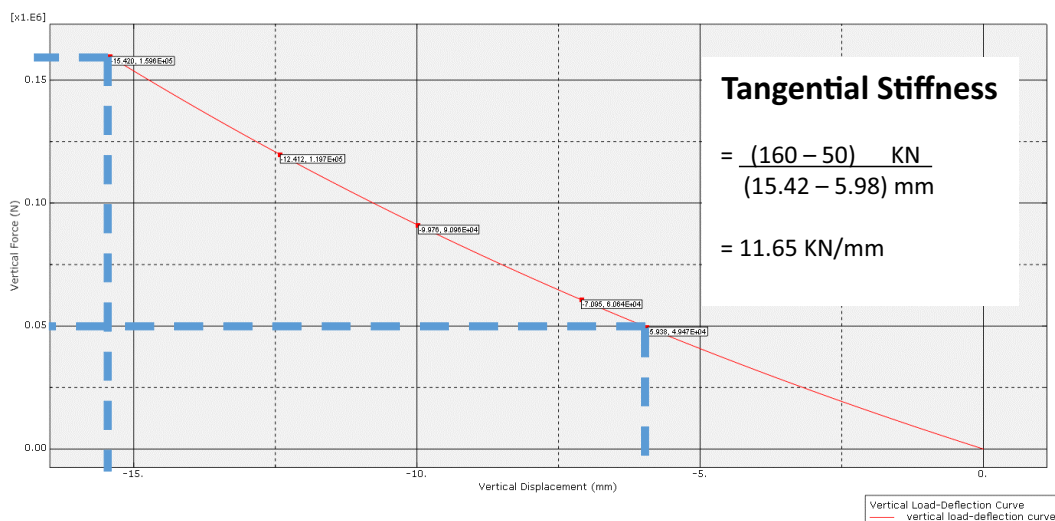
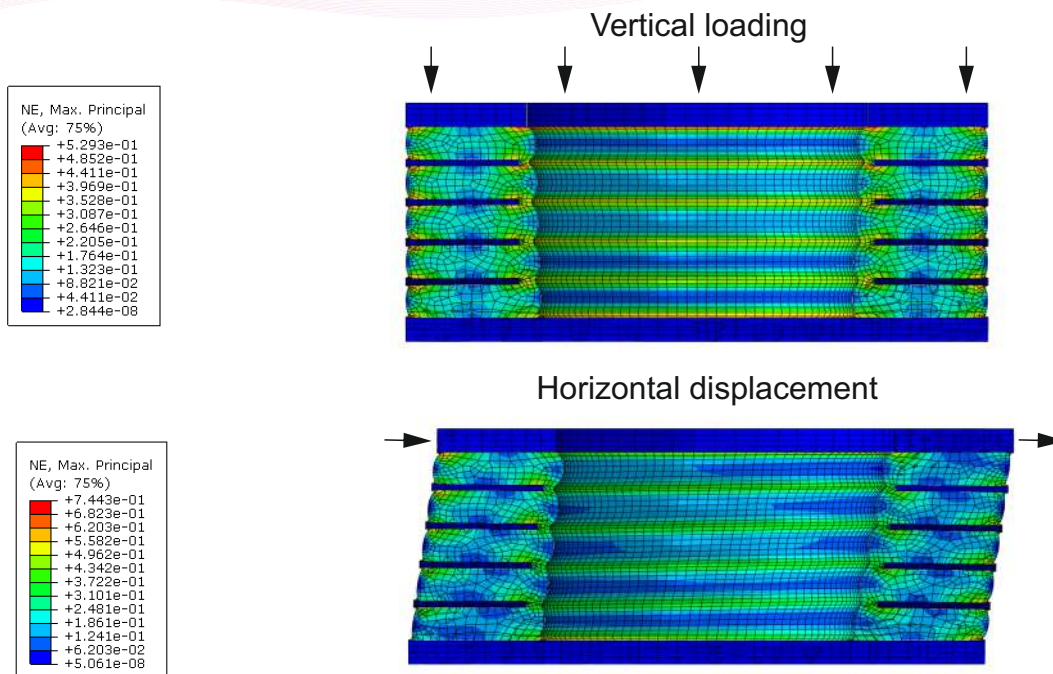
ADVANTAGES

- Uncouples a bridge superstructure from the horizontal components of earthquake ground motion, leading to a substantial reduction in the forces generated by an earthquake.
- Designed for “continued functionality” after a seismic event.
- Base Isolation using LRBs will ensure minimal Damage/No Failure of bridges during earthquakes which otherwise may lead to extreme delays in post-disaster relief operations to a region.
- Excellent alternative to conventional “steel rocker bearings” which are prone to damage even during slightest shaking.

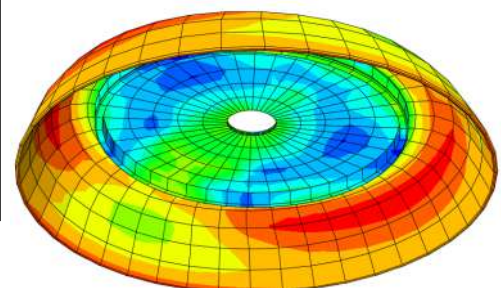
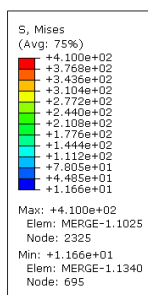
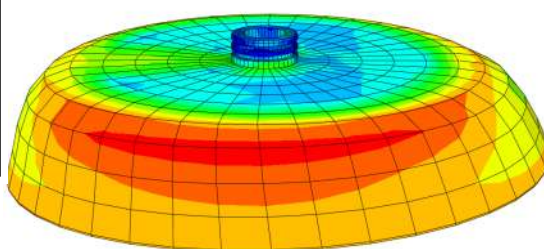
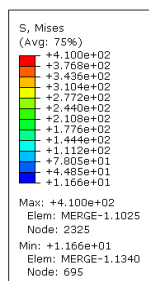


IN HOUSE DESIGN FACILITY

Over the years, RESISTOFLEX has ventured into Core Designing solutions using high-end Softwares such as ABAQUS for Development of Air Suspension Systems Design



Strength & Stiffness determination



Stress on top plate



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ISO 9001