

Presentation on BMP

Transporter on BEML ER 8x8

(In Service Vehicle)

Design of BMP Transporter on BEML ER 8x8



Aim

To Design and Develop a customised platform and Ramp assembly to load / unload and carry BMP I / II (weighing 14t +2%)

Feasibility Study

Considering In service BEML ER 8x8 vehicle – unladen weight 13.5 tonnes

GVW : 28 tonnes (in service)

BMP Vehicle weight : 14 tonnes + 2%, 14300 kg

Overall dimensions of BMP II:

Width : 3150 mm

Length : 6735 mm

Height : 2450 mm

Track width : 300 mm

GC : 420 mm (BMP)

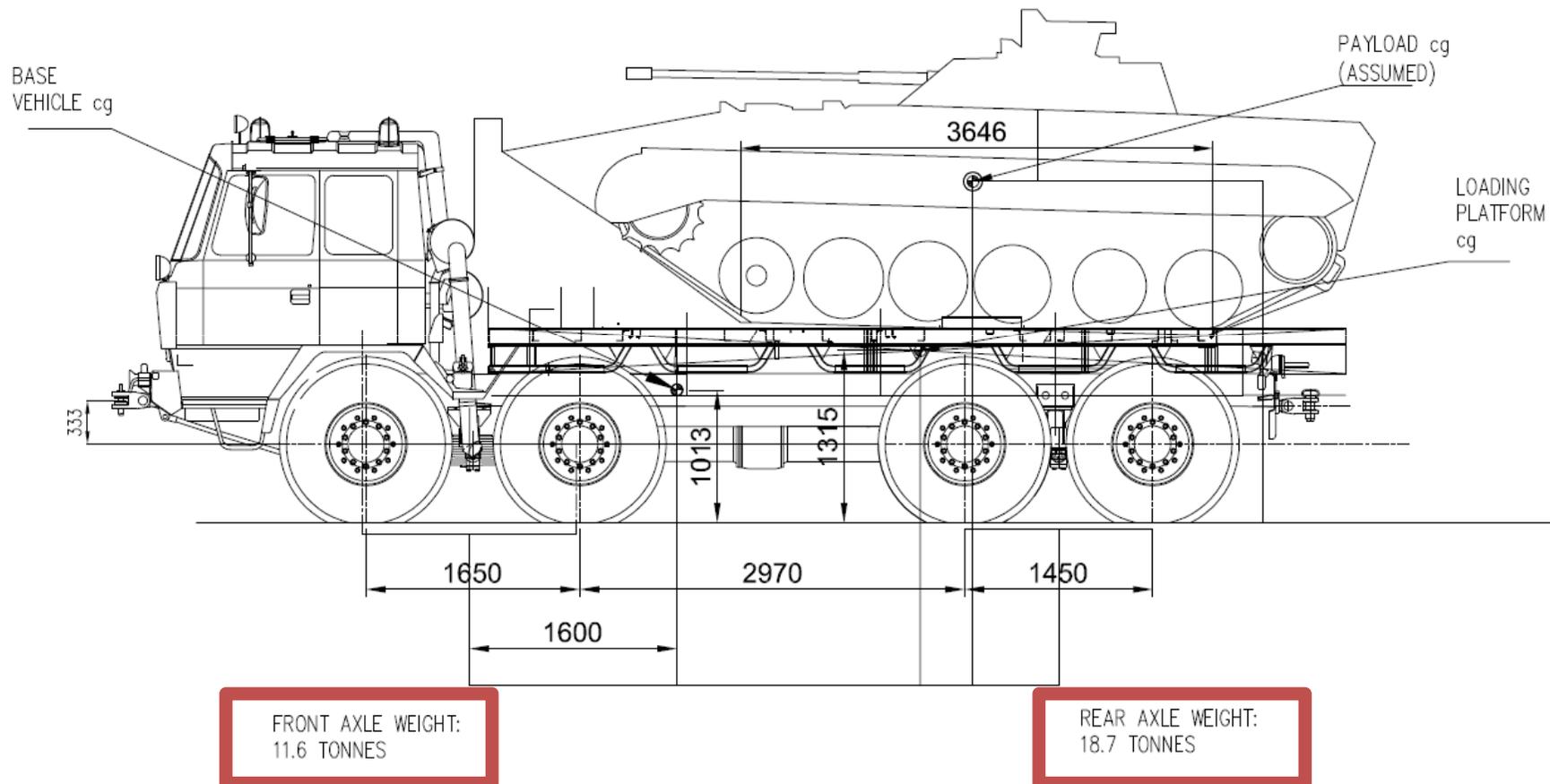
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Feasibility Study

Considering the above parameters customised loading platform and Ramp system to be designed and developed within 3 tonnes. GVW 30.8 tonnes.

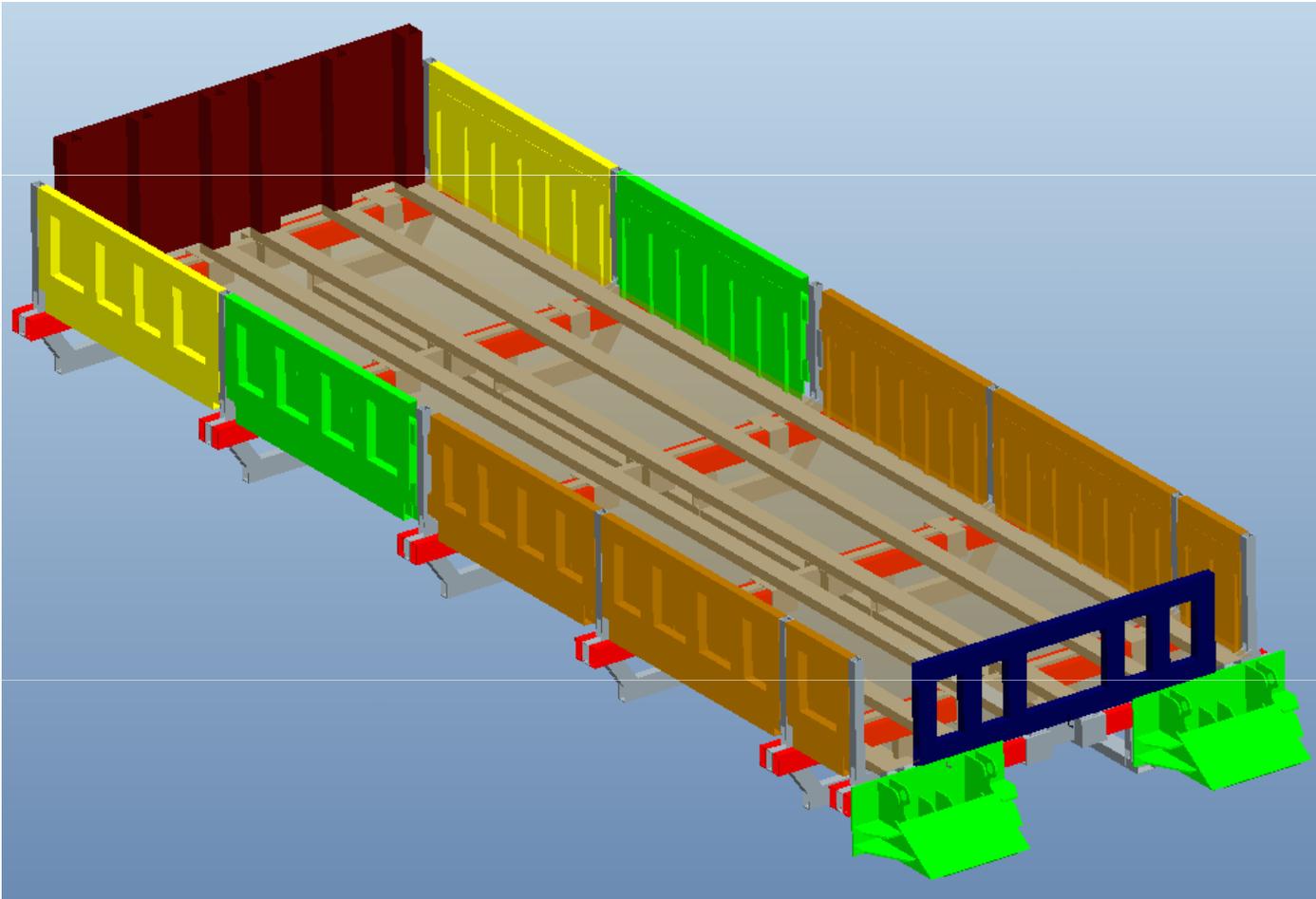
Ramp system to be fully mechanical for ease of maintenance.

Load distribution of BEML ER 8x8 with loading platform and Ramp system



Design of BMP Transporter on BEML ER 8x8

Design of customised Loading Platform (Transportation Condition- Logistics)



Overall Dimensions:

Width : 2500 mm (closed)

Length : 6400 mm

Height : 1000 mm

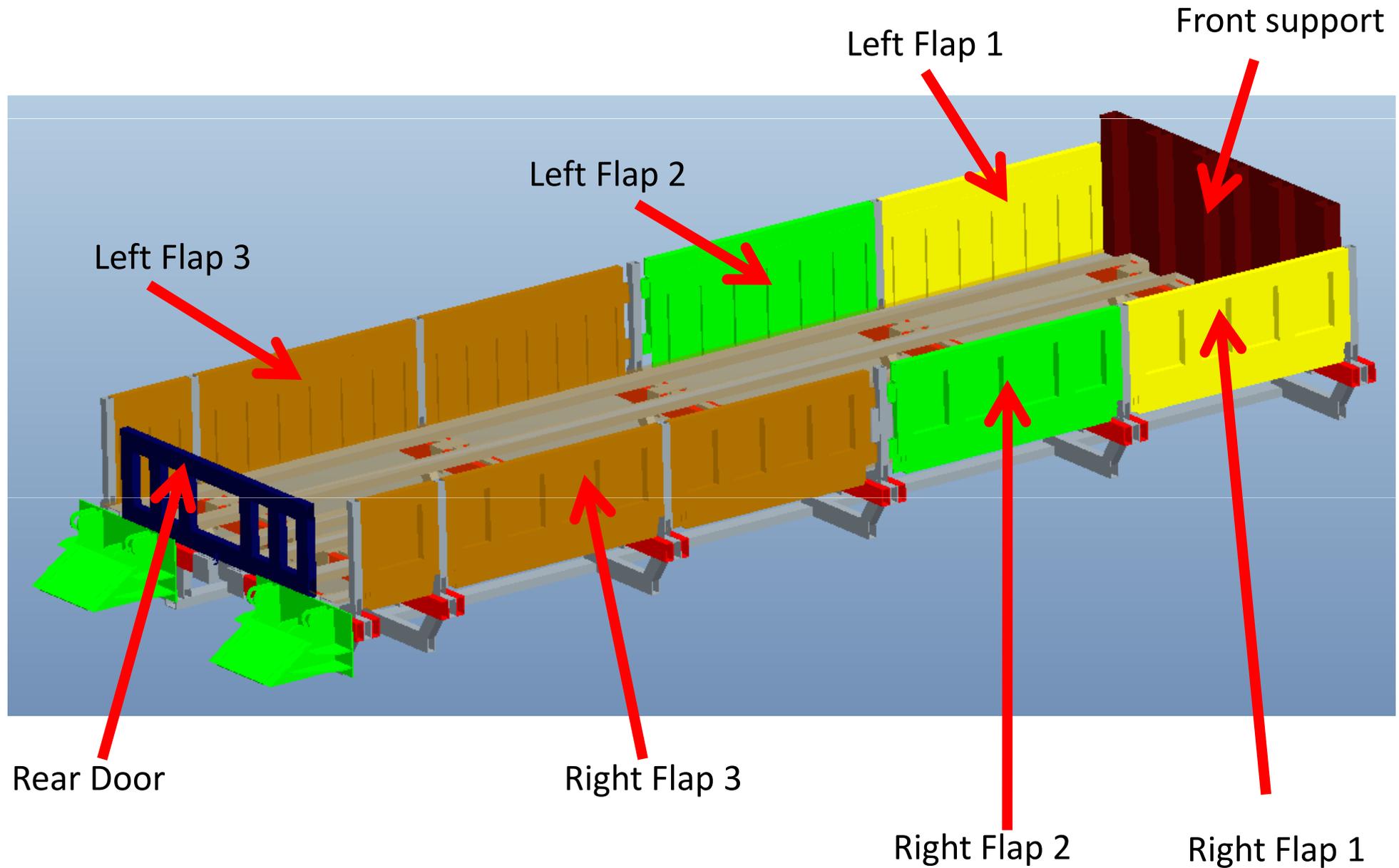
Weight : 2000 kgs (Approx)

Structure made out of

1. Standard ISMB : 100 x50
2. Rectangular Tube 100 x50 x5thk
3. Chequered Plate: 6mm (track width)
4. Chequered plate: 3.15 mm (Non Track Area)

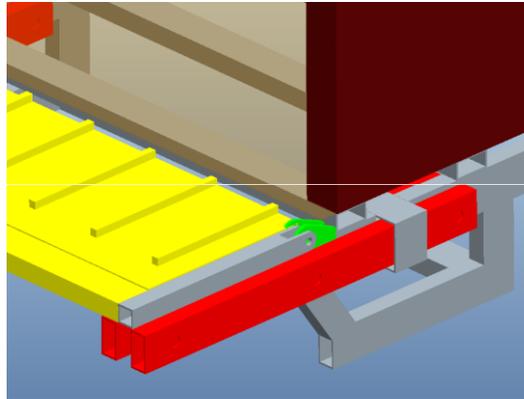
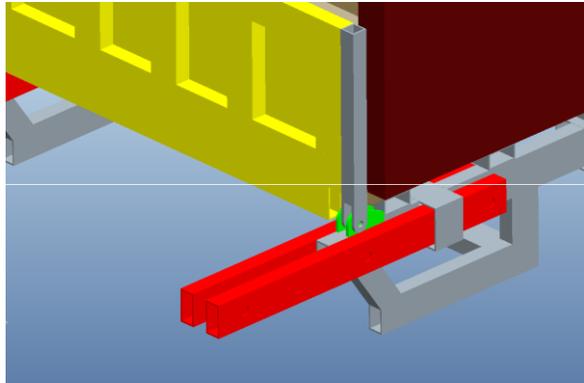
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Design of customised Loading Platform
(Transportation Condition- Logistics)

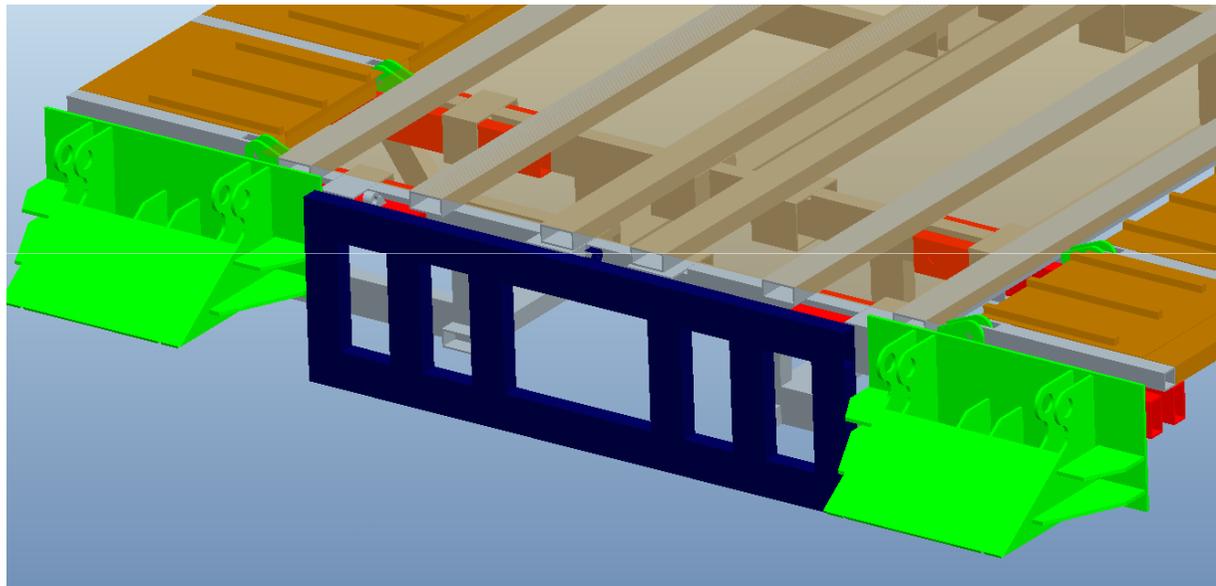


Design of BMP Transporter on BEML ER 8x8

Design of customised Loading Platform (Transportation Condition- BMP)



Overall Dimensions:
Width : 3400 mm (open)
Length : 6400 mm
Height : 400 mm (Open)
Weight : 2000 kgs (Approx)

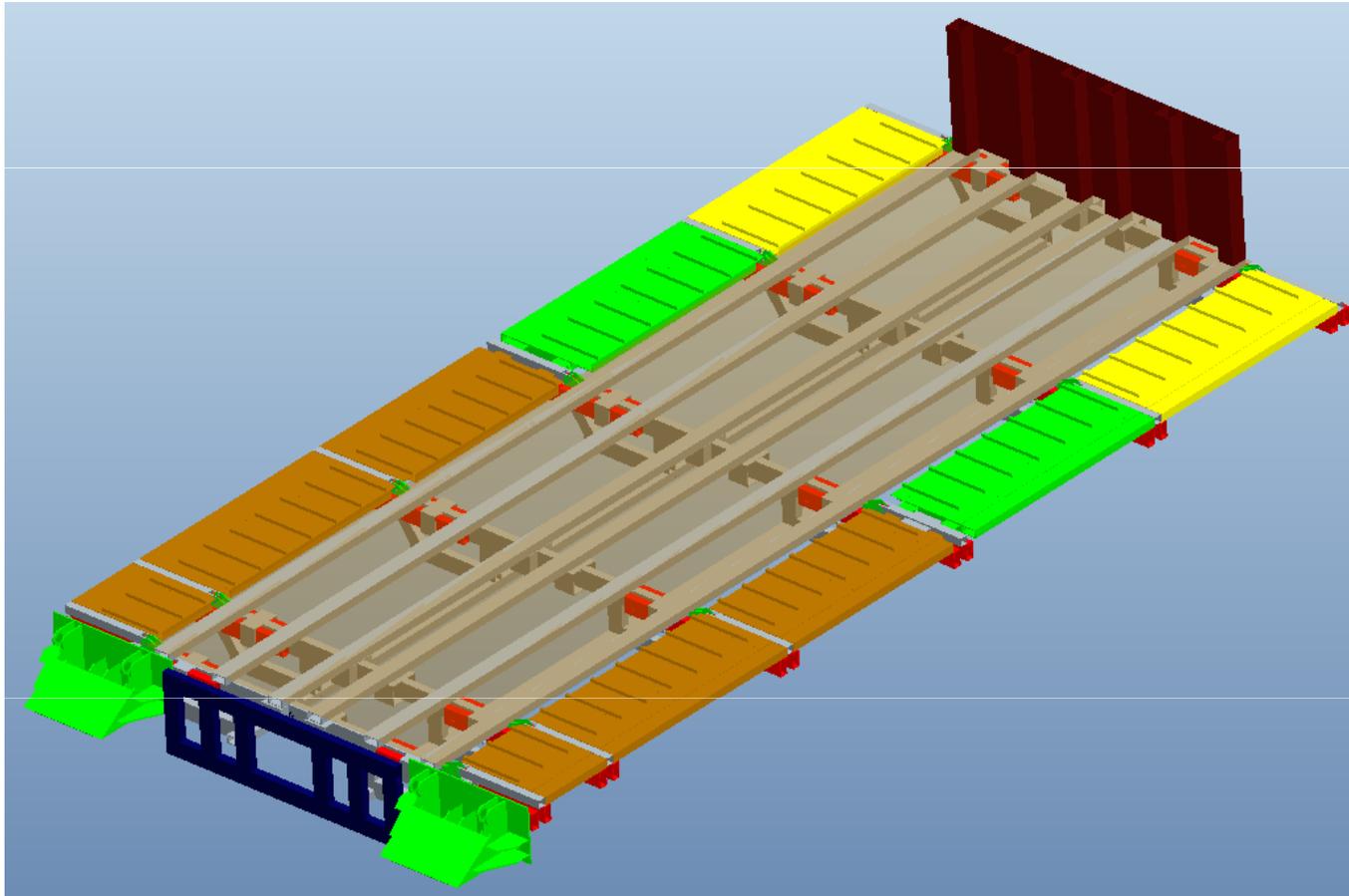


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Design of customised Loading Platform (Transportation Condition- BMP)



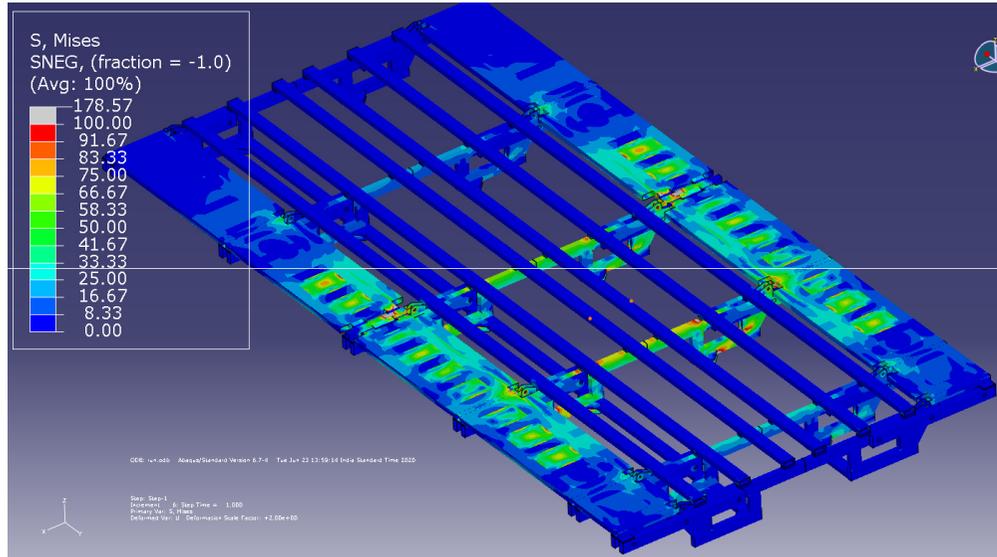
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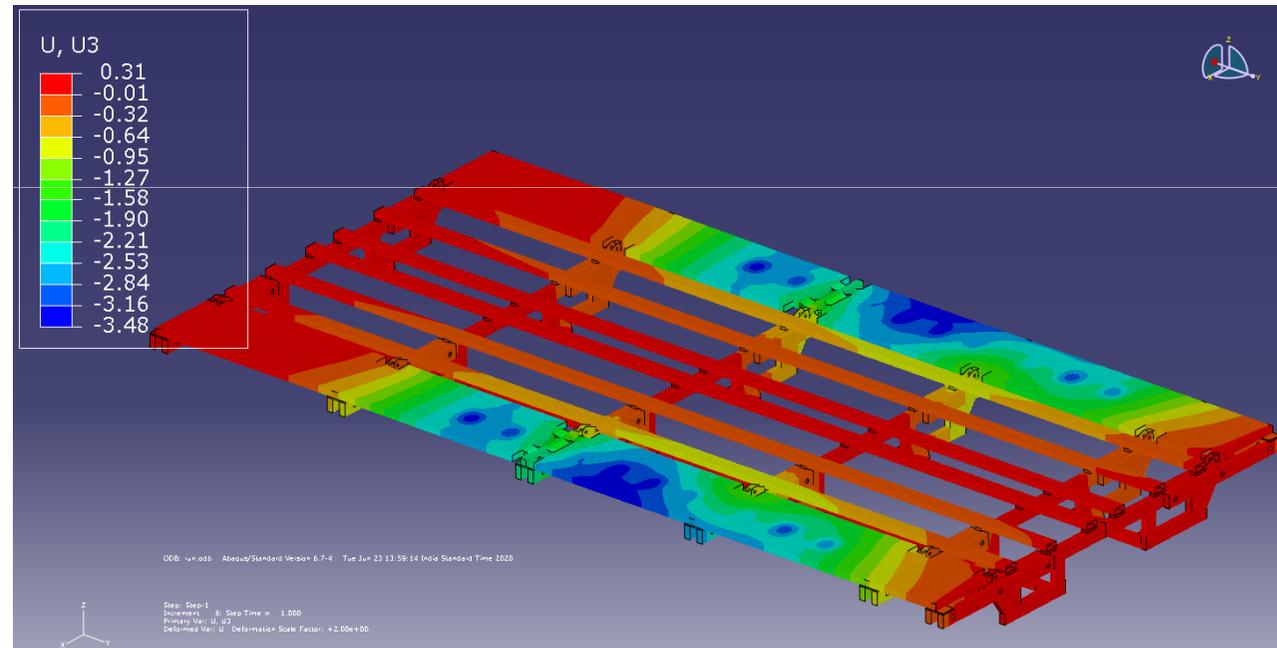
Stress Analysis of customised Loading Platform



Max Stress : 100 Mpa

Factor of safety : More than 2

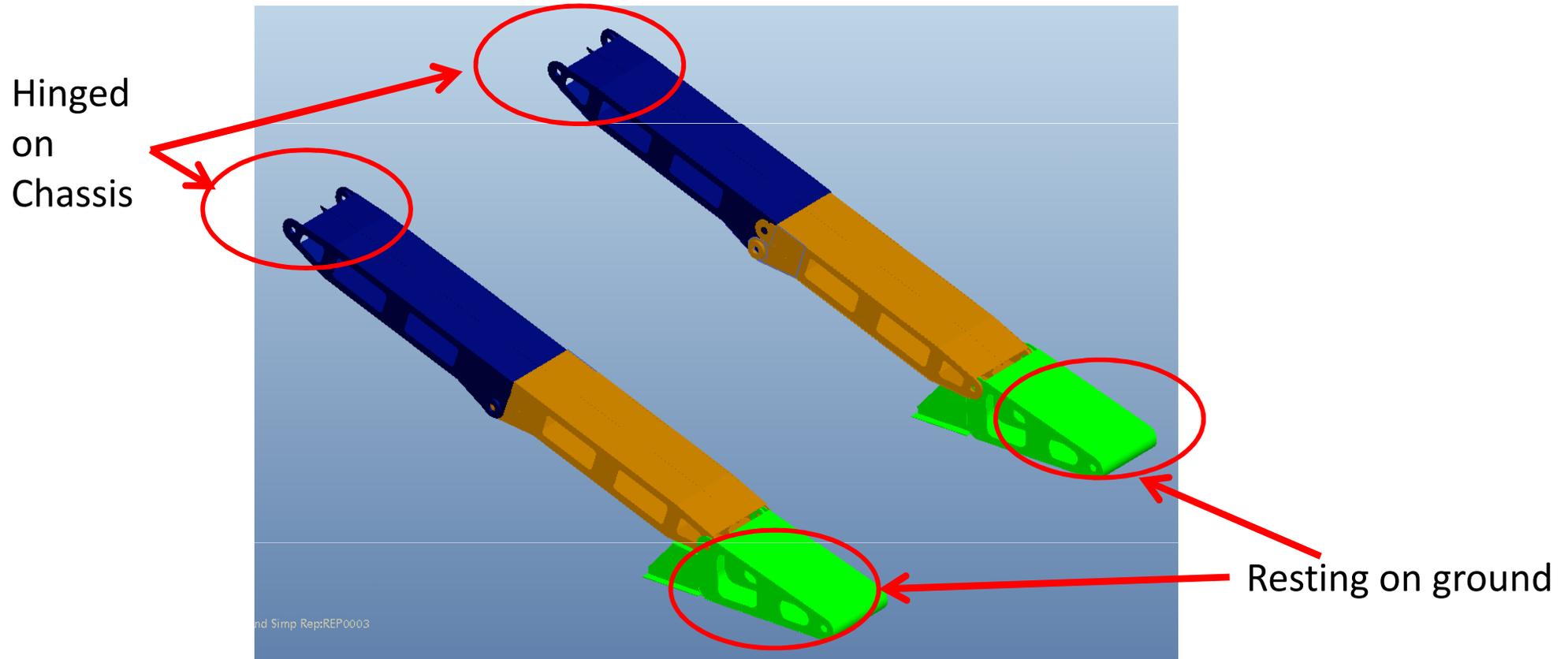
Max Deflection : 3.5 mm



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Design of Ramp system

Considered 20 deg Ramp for loading and unloading of BMP I / II



Mechanical type 3 piece ramp can be installed by inserting suitable pins

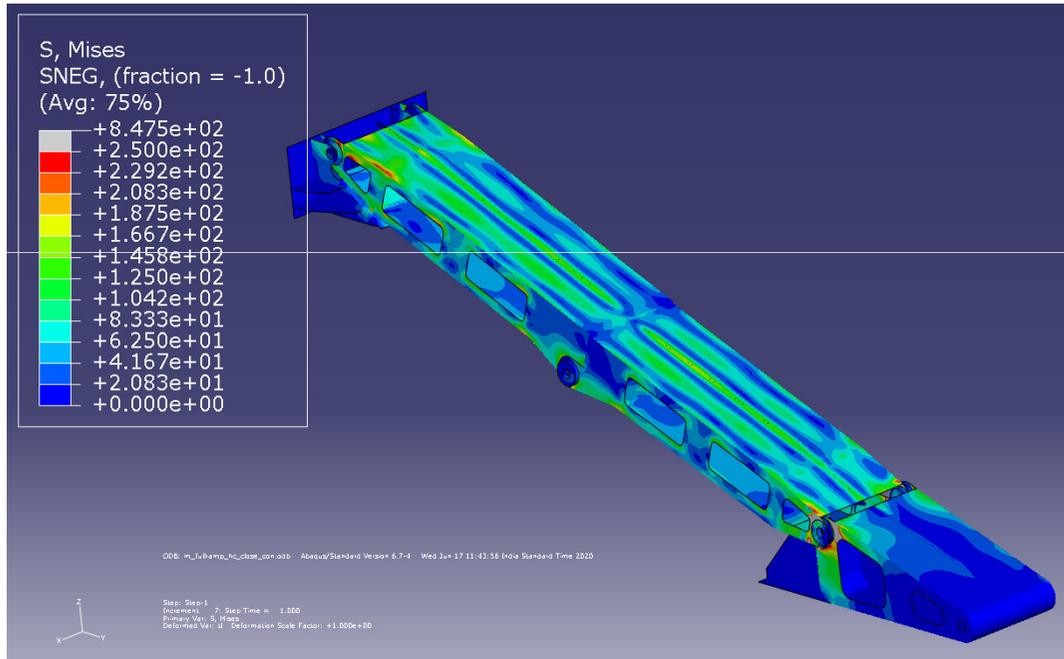
Length: 4500 mm

Width : 500 mm

Weight: 1 tonnes (approx)

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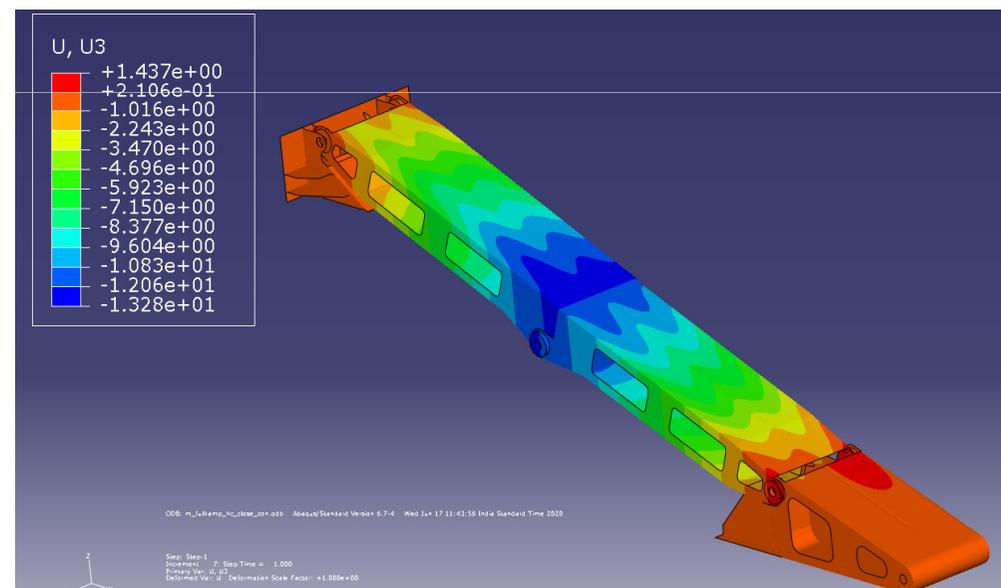
Stress Analysis of Ramp system



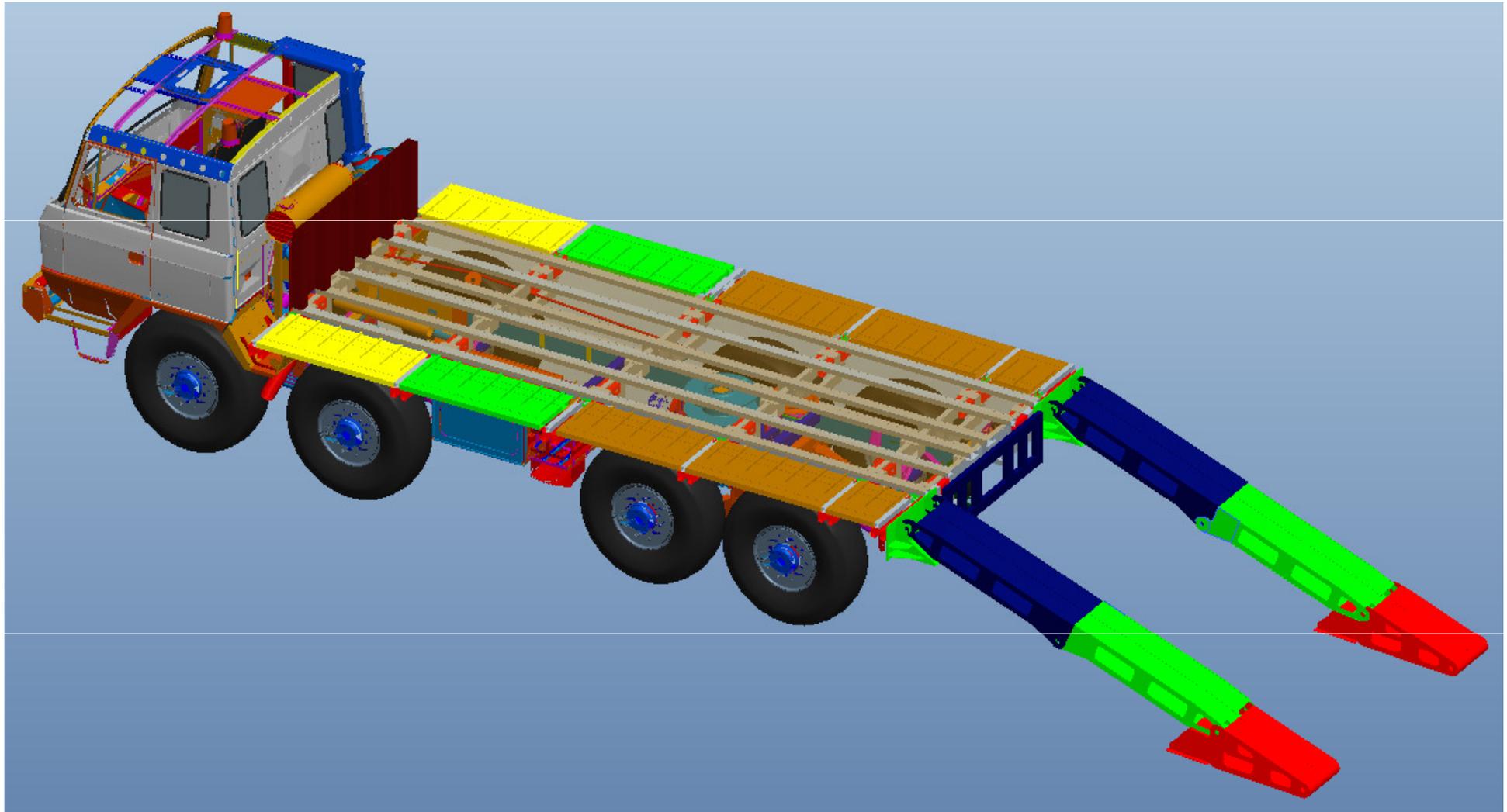
Max Stress : 250 Mpa

Factor of safety : More than 1.65

Max Deflection : 13 mm

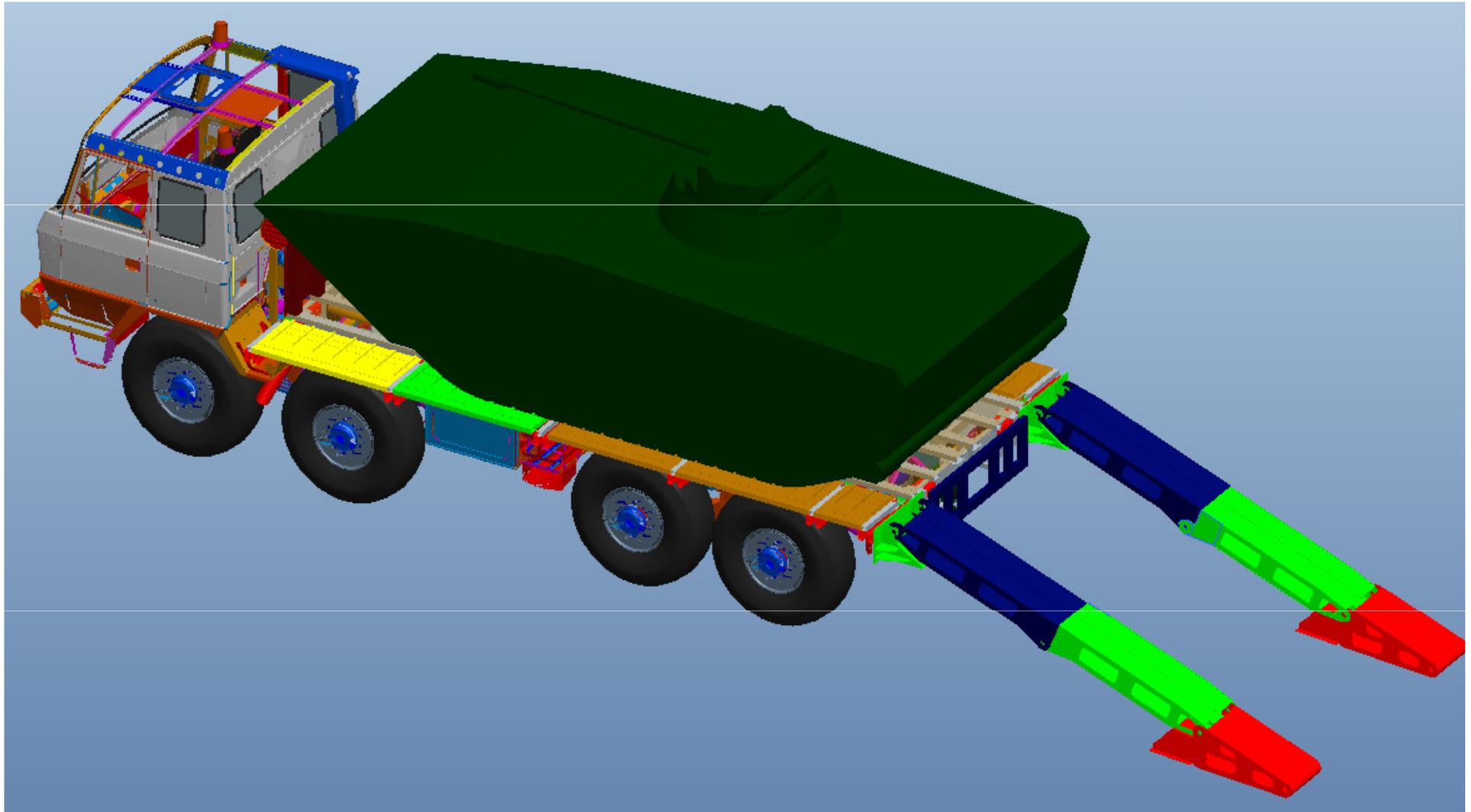


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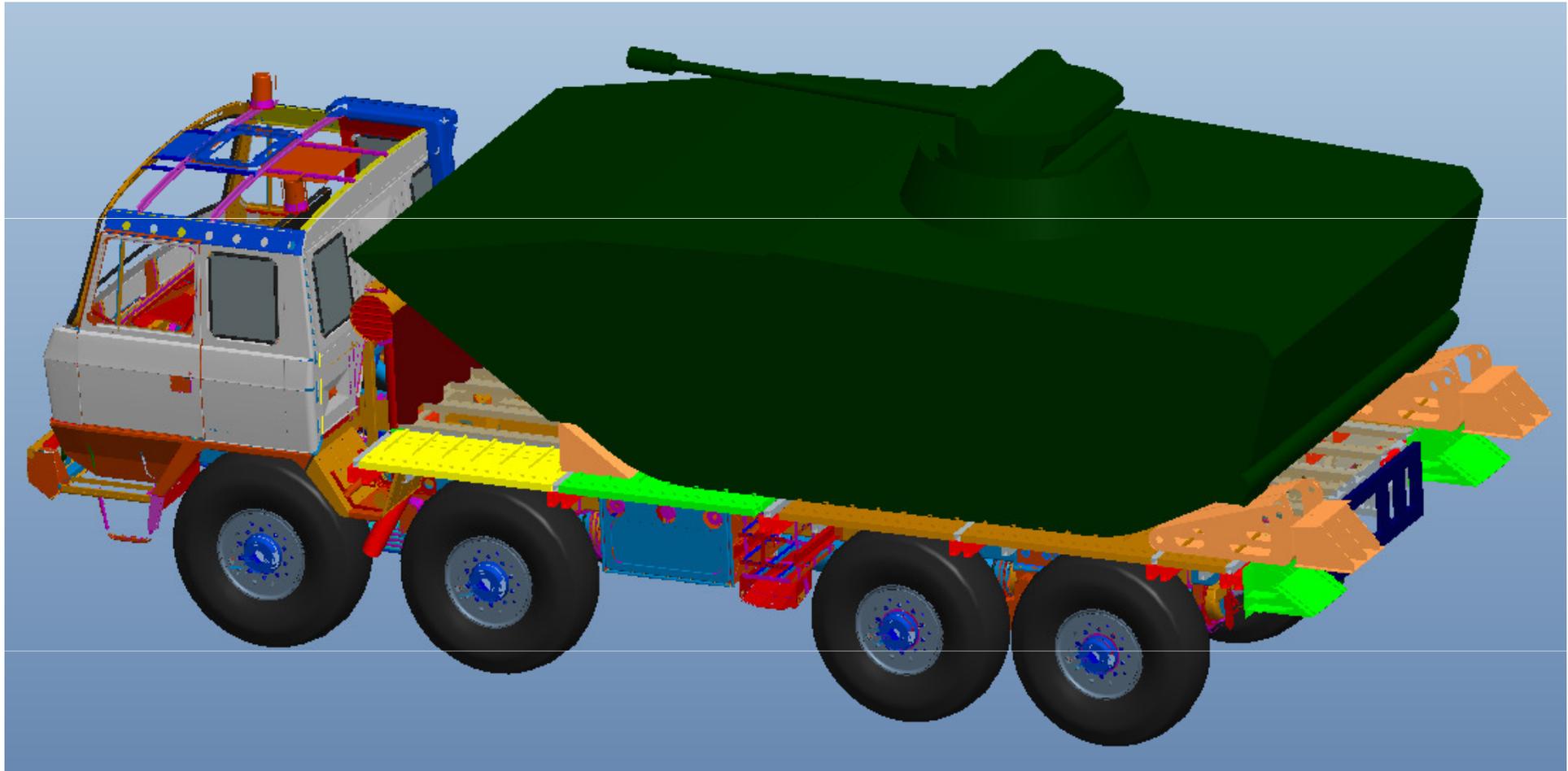
Loading Mode – Ramps deployed

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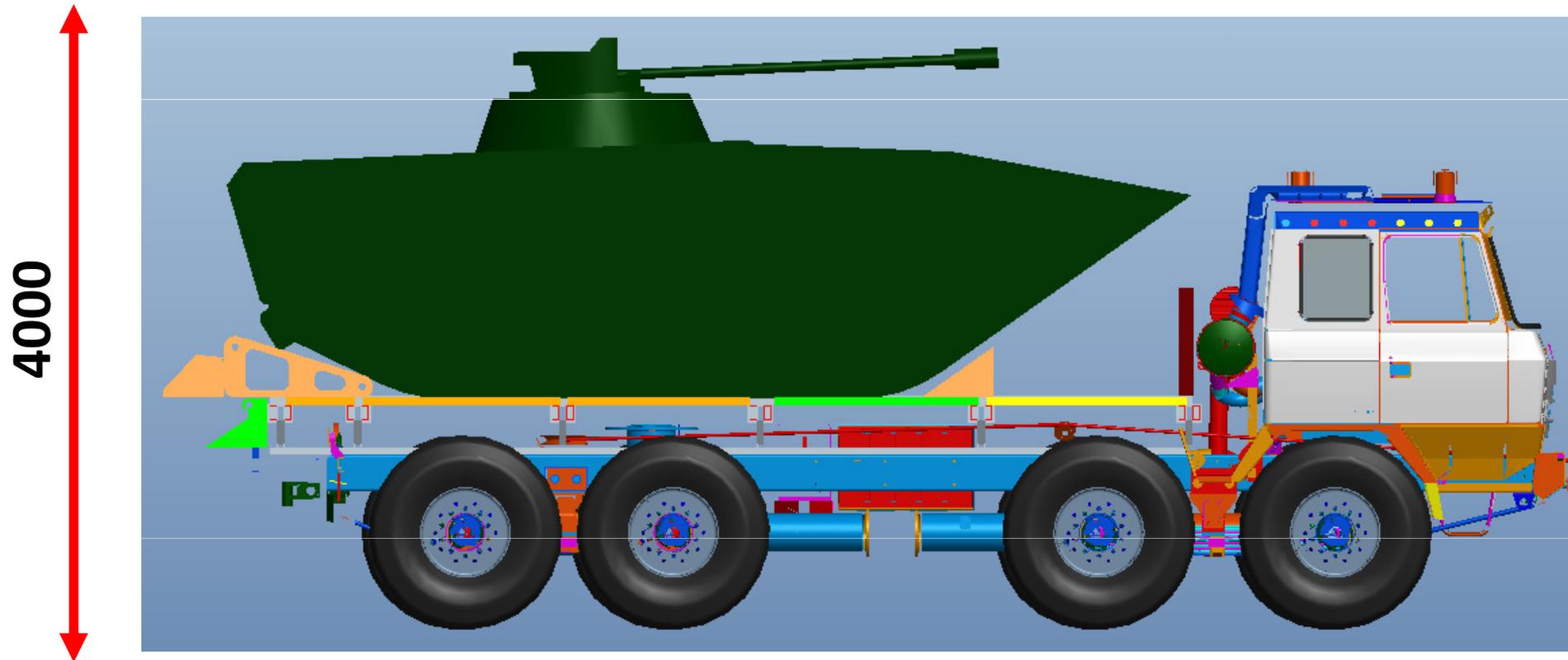
Loading Mode – Ramps deployed

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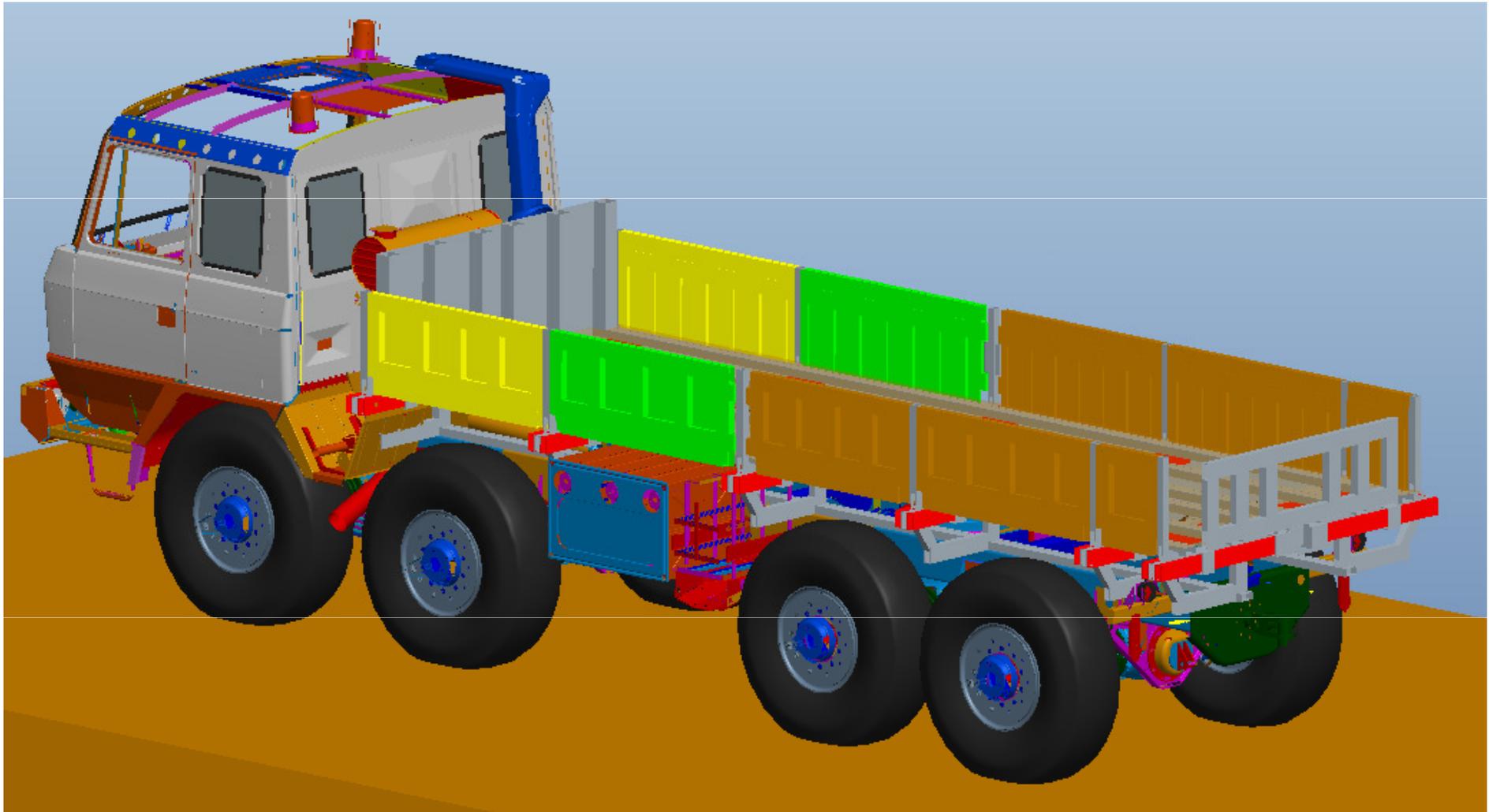
Loading Mode – Ramps deployed

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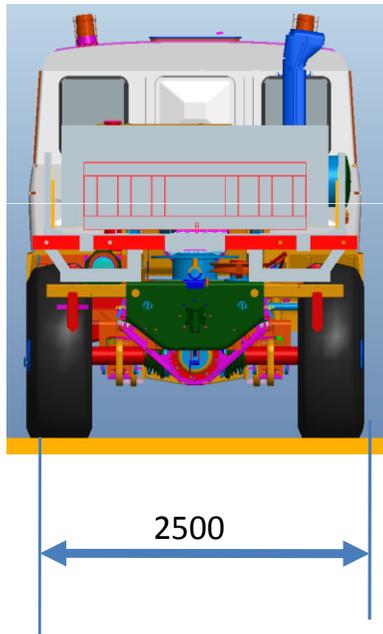
Transportation Mode

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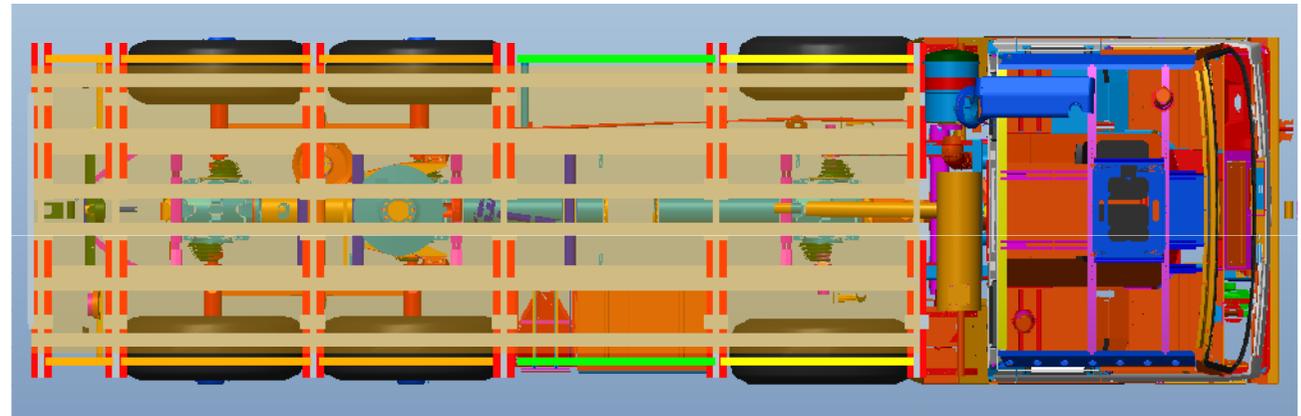
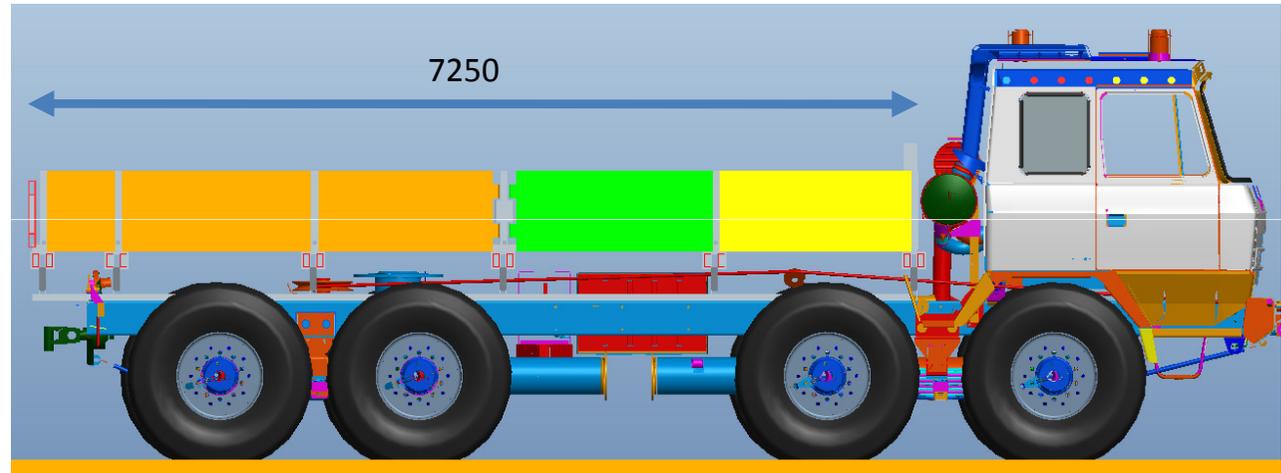


Transportation Mode - Logistics

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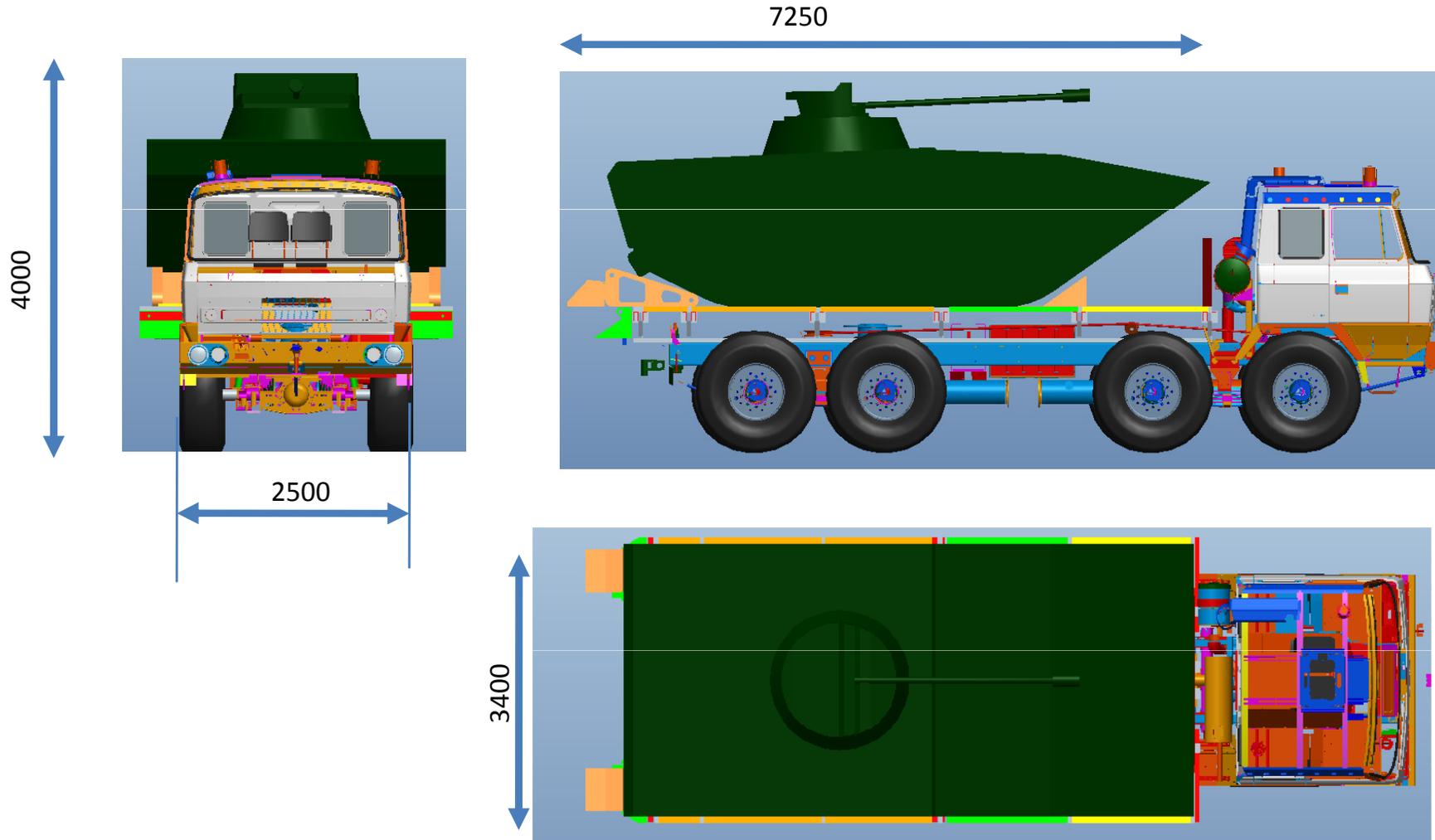


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Transportation Mode - Logistics

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Transportation of BMP

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Note:

1. Firm lashing arrangements will be provided on the loading platform.
2. Chock Blocks on either sides will be provided
3. Guide rails during loading will be provided
4. Anti skid rods will be provided on the ramp and loading platform track surface.
5. Loose ramps will be placed on the platform with firm locking during transportation mode.

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