



**Robust. Strong. Safe.**

# HeavyDutyLoading System

Transport of extra heavy 20 ft containers on 2x30 ft InnoWaggon

[www.innofreight.com](http://www.innofreight.com)

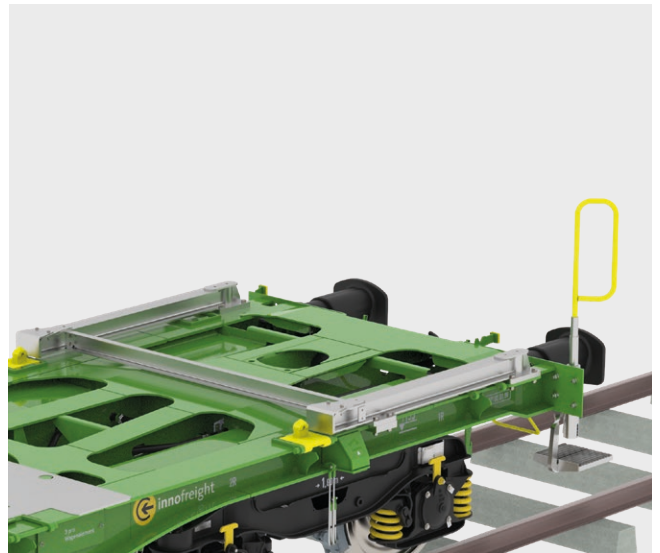




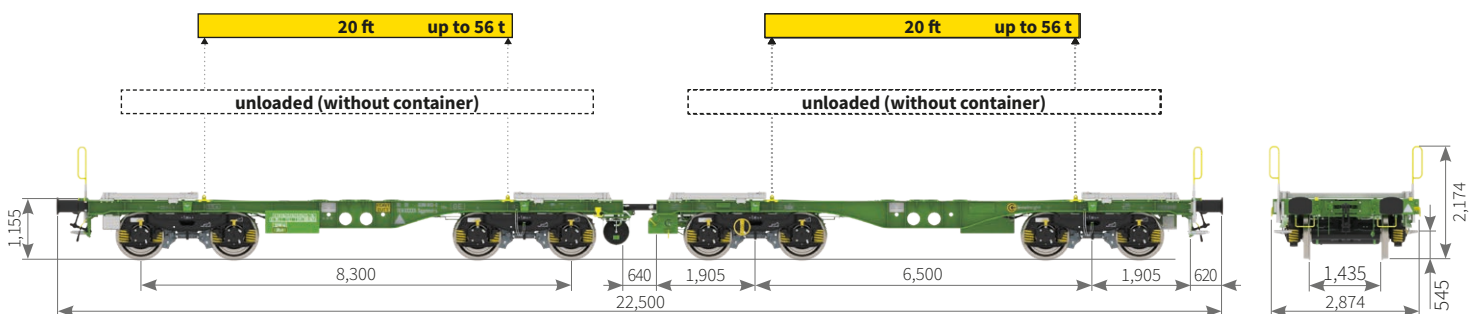
2x30 ft InnoWaggon with HeavyDutyLoading System and two 20-foot-long BESS modules



Detailed view with loaded BESS module



Detailed view of the stopper console



# HeavyDutyLoading System

The HeavyDutyLoading System enables the safe and efficient transport of heavy-duty 20 ft containers weighing up to 56 tons on 2x30 ft InnoWaggons. It allows fast loading without additional cargo securing and ensures maximum safety during rail operations.



With the HeavyDutyLoading System (HDLS), Innofreight is expanding its portfolio for the transport of particularly heavy goods. The system is designed to carry superstructures weighing up to 56 tons per 20 ft – a payload advantage of 8 tons over conventional solutions.

This additional payload is made possible by the interaction with the lightweight 2x30 ft InnoWaggon, which has proven to be particularly robust when transporting heavy loads. As the platform for the HDLS, a 2x30 ft InnoWaggon can transport up to 112 tons and can also be used empty thanks to integrated ballast plates. In the future, the HDLS will also be available in combination with the single version of the 30 ft InnoWaggon.

Customers benefit from the same advantages in both versions: Side-mounted stopper consoles replace additional lashings and enable efficient loading and unloading. This allows the cargo to be handled quickly and safely.

## Ecological transport solution

Battery energy storage systems (BESS) are ideal for use with the HDLS. The 20-foot-long modules store electricity – especially from wind and solar energy – and thus contribute to stabilizing the energy supply. Due to their heavy weight, they place special demands on technology and logistics – demands that the HeavyDutyLoading System reliably meets.

Innofreight fulfills these demanding requirements and plays a key role in driving industrial transformation in more ways than one: by enabling the safe and efficient transport of BESS modules and by delivering a clear ecological advantage along the entire logistics chain. For example: compared to conventional road transport from Koper to Budapest, moving 24 modules on twelve 2x30 ft InnoWaggons reduces CO<sub>2</sub>e emissions by 74.7 % – equivalent to savings of around 25 tons of CO<sub>2</sub>e per block train.

## System benefits

- > High payload
- > Easy loading without additional cargo securing
- > Robust design, low maintenance
- > Wagon runs in profile G1 without additional permits
- > Ecological advantages compared to truck transport

## Technical data with 2x30 ft InnoWaggon

Container per Innowaggon	2 (one on each half wagon)				
Tara	32,800 kg				
Max. payload	112,000 kg (2 x 56,000 kg)				
Track class	A, B1	B2, C2, D2	C3, D3	C4	D4
Load limit (t)	79.7	111.2	112	112	112
Loading gauge	G1				

## Transport of 24 BESS modules from Port of Koper (SI) to Budapest (HU)<sup>#</sup>

Truck transport



33,430 kg CO<sub>2</sub>e

TCE 1.1, 570 km  
33,430 kg CO<sub>2</sub>e

Innofreight solution



TCE 2.1, 684 km  
7,764.8 kg CO<sub>2</sub>e



TCE 2.2  
84.6 kg CO<sub>2</sub>e



TCE 2.3, 10 km  
615.7 kg CO<sub>2</sub>e

8,465 kg CO<sub>2</sub>e

=

74.7 % savings

# 2x30 ft InnoWaggon

## The lightweight base

Every superstructure needs a suitable base – the weight-optimized 2x30 ft InnoWaggon provides the optimized one for the transport of heavy duty containers. It consists of two close-coupled wagons in a special lightweight design, with four axles each. The wagon is approved for a maximum speed of 120 km/h.

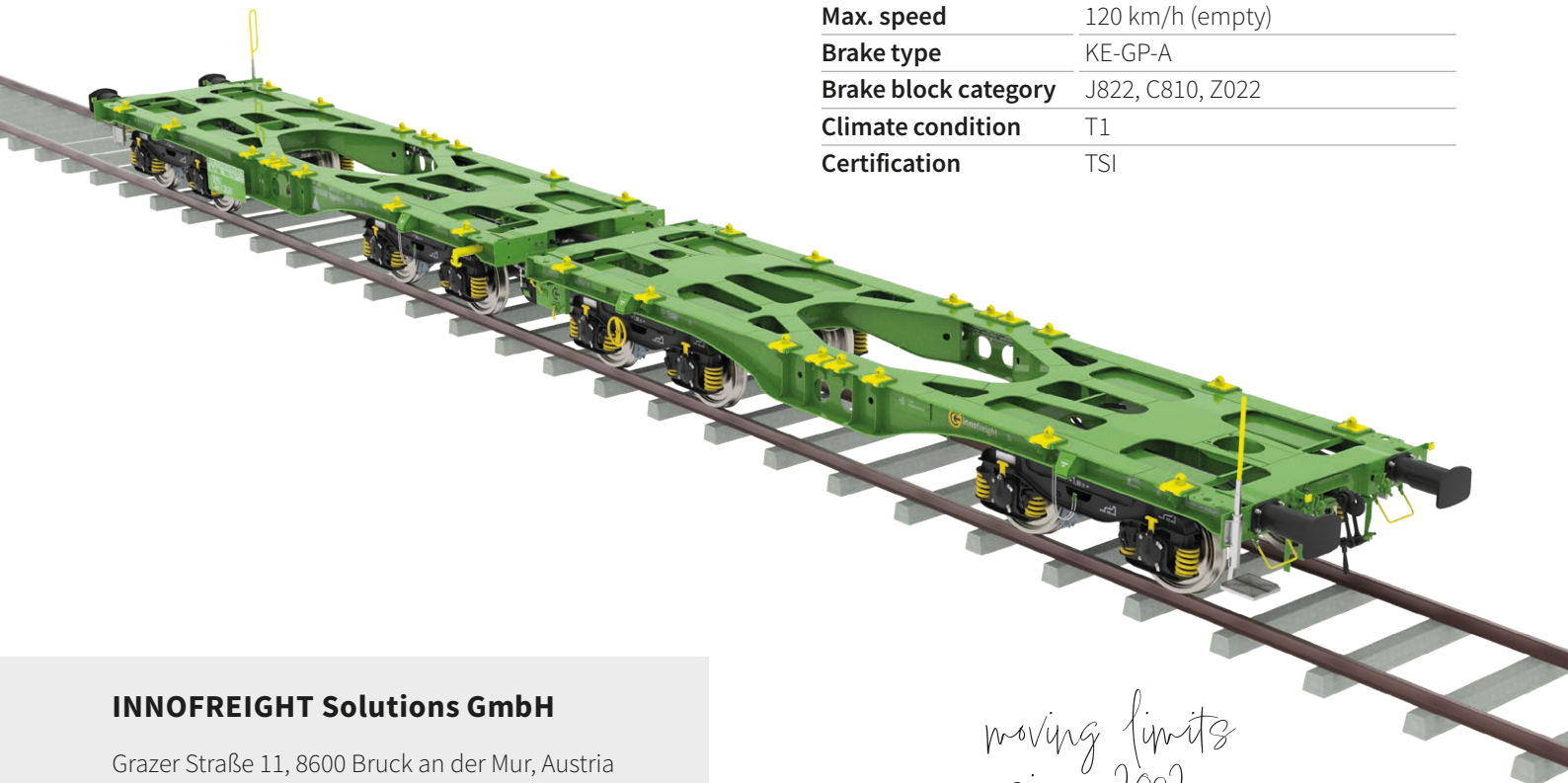
Compared with longer wagons, this short wagon has a higher load per meter, which allows shorter trains or higher payloads for the same train length, depending on requirements.

All InnoWaggon are equipped with GPS sensors from Nextiot which track position, speed, temperature and shock events. This data, available in the Innofreight OS app and on the Innofreight OS platform, can also be imported into customer systems via interfaces.

The 2x30 ft InnoWaggon is the shortest double wagon from Innofreight – a 30 ft single-unit wagon will be available soon. Innofreight offers also longer wagons, providing the appropriate base for all transported goods.

## Technical data 2x30 ft InnoWaggon \*

<b>Classification</b>	Sggmmrrs
<b>Classification code</b>	4658
<b>Track class</b>	A, B1, B2, C2, C3, C4, D2, D3, D4
<b>Tare weight</b>	28.4 t (2 x 14.2 t)
<b>Max. payload</b>	151.6 t
<b>Max. axle load</b>	22.5 t
<b>Max. meter load</b>	8.00 t/m
<b>Max. container pins</b>	32
<b>Floor height</b>	
<b>above rail level</b>	1,155 mm
<b>Loading length</b>	2 x 10,310 mm
<b>Length over buffer</b>	22,500 mm
<b>Width</b>	2,874 mm
<b>Track gauge</b>	1,435 mm
<b>Distance between</b>	
<b>bogie pins</b>	6,500 mm
<b>Bogie wheel base</b>	1,800 mm
<b>Wheelset diameter</b>	920 mm
<b>Number of axles</b>	8 (2 x 4)
<b>Min. curve radius</b>	75 m
<b>Max. speed</b>	120 km/h (empty)
<b>Brake type</b>	KE-GP-A
<b>Brake block category</b>	J822, C810, Z022
<b>Climate condition</b>	T1
<b>Certification</b>	TSI



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since 2002*