

**PACKAGING SPECIFICATIONS FOR THE SUPPLY  
OF AXLES, WHEELS AND GEARBOXES****QUALITY MANAGEMENT SYSTEM – PROCEDURE**

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**MODIFICATIONS**

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<b>EDITION</b>	<b>DATE</b>	<b>DESCRIPTION</b>
-	26/01/2011	Initial Edition
A	25/04/2016	Change name from “Vossloh” to “Stadler Rail Valencia S.A.U.”
B	20/02/2017	Modification on wheels packaging specifications

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## 1 OBJECTIVE

These specifications are aimed at setting out the requirements for packaging. This implies:

- Guaranteeing that the materials do not suffer any damage during transport and storage, throughout the supply chain,
- Avoiding accidents and lowering the costs from rejects and labour,
- Decreasing the space used for storage, and
- Facilitating monitoring of the material and inventory recounts.

## 2 SCOPE OF APPLICATION

The supply criteria established in these specifications shall apply to the axles, wheels and gearboxes supplied to Stadler Rail Valencia S.A.U.

For the first shipments it is very important to pay special attention to the method described for acceptable and appropriate packaging. Should any doubt arise, contact the corresponding logistics officer at Stadler Rail Valencia S.A.U.

## 3 PACKAGING CHARACTERISTICS

### WHEELS

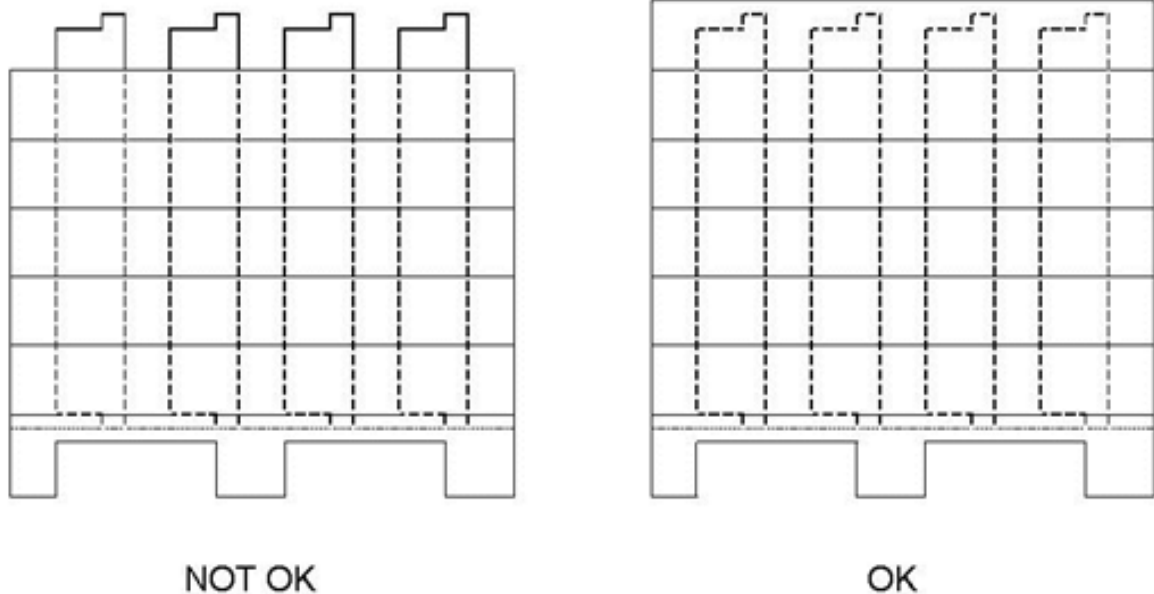
Wheels may be packaged either vertically or horizontally.

When wheels are packaged vertically, they must be placed on a pallet or wooden structure allowing them to be easily moved by forklift. The number of wheels contained in each package should not surpass 4 units.

The non-painted areas of the wheels, especially the hub, should be properly protected against rust and corrosion using an easily removal product (Ex. Tectyl 506).

The height of the wooden box or lateral braces must be higher than that of the wheels, such that they do not protrude, and so that the boxes may be double-piled.

The wheels must be separated by transoms or cross-bars impeding their movement, but that do not impede the removal of the wheels from above, and provide rigidity to the entire structure.



When wheels are packaged horizontally, they must be placed on a pallet or wooden structure allowing them to be moved by forklift. The number of wheels contained in each package should not surpass 4 units.

The non-painted areas of the wheels, especially the hub, must be properly protected against rust and corrosion using an easily removal product (Ex. Tectyl 506).

The wheels must be secured with non-metal strips and with strong plastic protection, or similar, at areas of contact.

In any case, the packaging must prevent water condensation inside. If this risk exists, the supplier must take measures to avoid or prevent it (draining or anti-humidity salts, holes in the base to let water exit or so).

## AXLES AND GEARBOXES

The axles must be supported on a wooden base that is easily moved by forklift. The axles must not protrude from this base.

All mechanised areas must be protected with oils or grease that protect against rust and corrosion. They must also be protected by reinforced cardboard, foam or similar substance in order to avoid blows or scratches.

The axles must be resting on the base at a non-mechanised area, in such a way as to avoid movement and oscillation through the use of non-metal strips. Areas of contact should be protected by reinforced cardboard, resistant plastics or something similar.

Should the packaging contain a gearbox, it must be placed on the wooden base in such a way as to avoid its movement.

## COMPLETE AXLES (WITH WHEELS, GEARBOX AND/OR TRACTION MOTOR)

In these cases, the complete axle must be anchored to a wooden mounting, secured with strips at wheel turning areas and at an intermediate point. The wooden mounting must be easily moved by forklift.

All mechanised areas must be protected by oils or grease to prevent rust and corrosion.

The wheels must be placed on support cradles or on the wooden mounting itself. In the latter case, they must be anchored to impede movement.

The gearbox must be supported by wooden chocks or something similar on the wooden mounting to avoid movement. As a general rule, the most external parts of the assembly (normally the axle) must not protrude from the vertical part of the wooden mounting. Should they protrude, the ends of the axle must be protected by wooden chocks, resistant plastic or something similar to avoid blows or scratches.