



TRAMWAYS AND LIGHT RAIL VEHICLES

- **Speed** : up to 80kph
- **Challenge** : Squealing noise, especially in tight curves, impairing passenger comfort and generating public nuisance. Low or ultra low floor vehicles
- **VALDUNES INDUSTRIES solution** : resilient wheel, with wide range of radial stiffness from rubber sprung wheel to VUT® low stiffness wheel. Potential use of damping devices according to specific needs (damping rings, vibration absorbers, permanently fixed or removable)
- **Result** : squealing noise reduced up to 10 dB(A)

MAIN PASSENGER LINES AND FREIGHT TRAINS

- **Speed** : up to 200 kph
- **Challenge** : rolling noise, detrimental to passenger comfort, generation public nuisance and not compliant to noise regulation or directive
- **VALDUNES INDUSTRIES solution** : composite vibration absorbers; VMS® low stress wheel coupled with composite braking blocks
- **Result** : noise reduction up to 5-7 dB(A)

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METRO, TRAM-TRAINS AND SUBURBAN TRAINS

- **Speed** : up to 120 kph
- **Challenge** : Squealing noise in urban zones, impairing passenger comfort and generating public nuisance. Vibration propagation in densely populated areas
- **VALDUNES INDUSTRIES solution** : resilient wheels, damping rings and optimized version that provides high efficiency and repeatability (VLN®-OPT)
- **Result** : Squealing noise reduced up to 15-20 dB(A) on specific frequencies

HIGH AND VERY HIGH SPEED TRAINS

- **Speed** : 200 kph and above
- **Challenge** : rolling noise, detrimental to passenger comfort, generating public nuisance and not compliant to noise regulation or directive
- **VALDUNES INDUSTRIES solution** : optimised wheel geometry coupled with dampening device or shields
- **Result** : standard noise reduction up to 4 dB(A)





NOISE REDUCTION

ENVIRONMENT

REDUCTION OF NOISE AND VIBRATION

PASSENGER COMFORT

RESPECT OF NOISE DIRECTIVES AND
REGULATIONS (NOISE TSI)



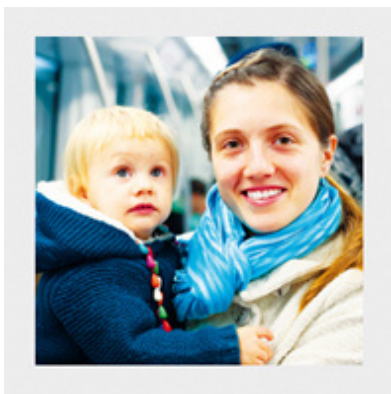
**VALDUNES INDUSTRIES OFFERS
CUSTOMISED SOLUTIONS AND ITS
WIDE EXPERTISE**

- Solutions for squealing and rolling noise
- Wheels specifically designed to reduce noise and vibrations through optimised geometry
- Damping devices, permanent or replaceable, for easier maintenance
- Acoustic tests facility and simulation tools (STARDAMP, Deufrako)



**COMPLETE SYSTEMS SPECIFICALLY DESIGNED FOR DIFFERENT
MARKETS**

- **Urban transportation** : Tramways, LRVs and metros
- **Suburban transportation** : Tram-trains and trains
- **Passenger transportation** : Main passenger lines
- **High speed and very high speed trains**
- **Goods transportation** : freight trains



**PERSONALISED SOLUTIONS
A REAL EXPERTISE**

