



Lower CO₂ emissions by reducing weight



Environmental benefits

- For every 100 wagons, using SKF Low Weight Railway End Caps reduce carbon emissions by 632 kg/yr
- End cap is fully recyclable



SKF Low Weight Railway End Caps can help railway operators and manufacturers cut CO₂ emissions.

Whether their fleet operates at high speeds or low, moves freight or passengers, today's rail operators are looking for ways to make their trains more energy efficient, without sacrificing performance, safety and reliability, or violating environmental regulations.

Reducing weight in assets and components offers one way to achieve this difficult balance. SKF has done it for wheelsets with the SKF Low Weight Railway End Caps.

Applying SKF knowledge engineering to end cap downsizing enabled a significant weight reduction – the new end caps are up to 37% lighter than conventional end caps operating in fleets worldwide.

Fewer materials for less CO₂ throughout the lifecycle

Reducing end cap mass reduces the need for raw materials, which helps cut CO₂ emissions and environmental impact of the end caps at every phase of production and operation, including:

- Raw materials delivery
- Production
- Delivery to fleet
- Fleet operations

The SKF Low Weight Railway End Caps weighs up to 37% less than conventional end caps. Replacing every end cap on the market with this SKF solution would cut CO₂ emissions by 25 280 tons annually.



SKF BeyondZero solutions can help reduce CO₂ emissions, preserve limited resources and protect the environment from the use and spread of toxic substances. For more details, including documentation of reduced environmental impact, visit www.beyondzero.com.



SKF Low Weight Railway End Cap

Optimized design boosts rail fleet energy efficiency and reduces environmental impact

By optimizing the geometry of the previous SKF Class K wheel end cap, SKF engineers reduced its weight by up to 37%. The result is the SKF Low Weight Railway End Caps – a Class K end cap that weighs just 3,76 kg.

Operational features

- Serves as a sealing end cap to cover wheelset bearing ends
- Bolts to the bogie axle to protect the axlebox bearing

Operational benefits

- Innovative design, shape and size reduces weight
- Operational in harsh environments
- Impact-resistant for robust bearing protection
- Water tight end cap to prevent water ingress
- Load capacity AAR-rated for Class K
- Corrosion-resistant for extended service life

Energy saving example

Class K low weight end cap vs. Class K traditional end cap

The following calculation is based on 100 freight wagons:

- Speed = 80 km/h
- Number of caps in one wagon = 8
- Total number of caps = 800
- Running time = 5 940 h per year
- Distance during one year = 475 200 km

Potential market usage of all types of end caps:

- Estimated 32 000 000 per year

Baseline: Class K end cap, 5.99 kg: most common solution on the market

Results per year (100 freight wagons)

Class K/traditional end cap – 5,99 kg.	1 696	kg CO ₂ e/ year
Class K/SKF Low Weight End Cap – 3,76 kg.	1 064	kg CO ₂ e/ year
Savings	632	kg CO₂e/ year

Results for 32 000 000 end caps

Class K/traditional end cap	67 840	ton CO ₂ e/ year
Class K/SKF Low Weight End Cap	42 560	ton CO ₂ e/ year
Savings	25 280	ton CO₂e/ year

© SKF and BeyondZero are registered trademarks of the SKF Group.

© SKF Group 2014

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein. Any statements in this publication concerning environmental impacts, as well as cost savings and revenue increases, are based on results experienced by SKF customers and/or based on internal calculations by SKF personnel and do not constitute a guarantee that any future results will be the same.

PUB 42/57 14628 EN · July 2014

Certain image(s) used under license from Shutterstock.com.

