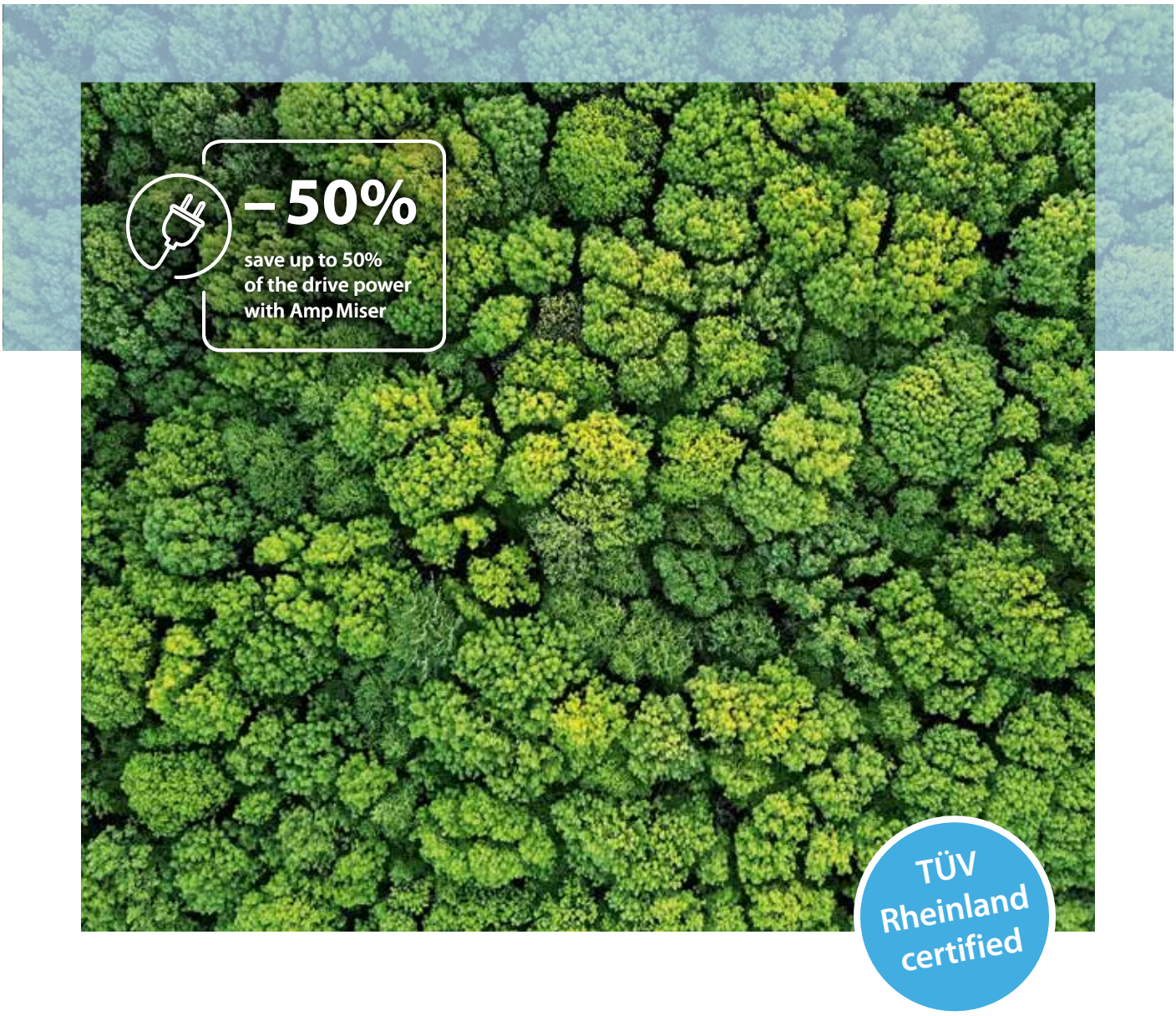
siegling
belting



AMP MISER
ENERGY-SAVING CONVEYOR BELTS

Siegling – total belting solutions

forbo
MOVEMENT SYSTEMS

AMP MISER –
50% ENERGY SAVINGS

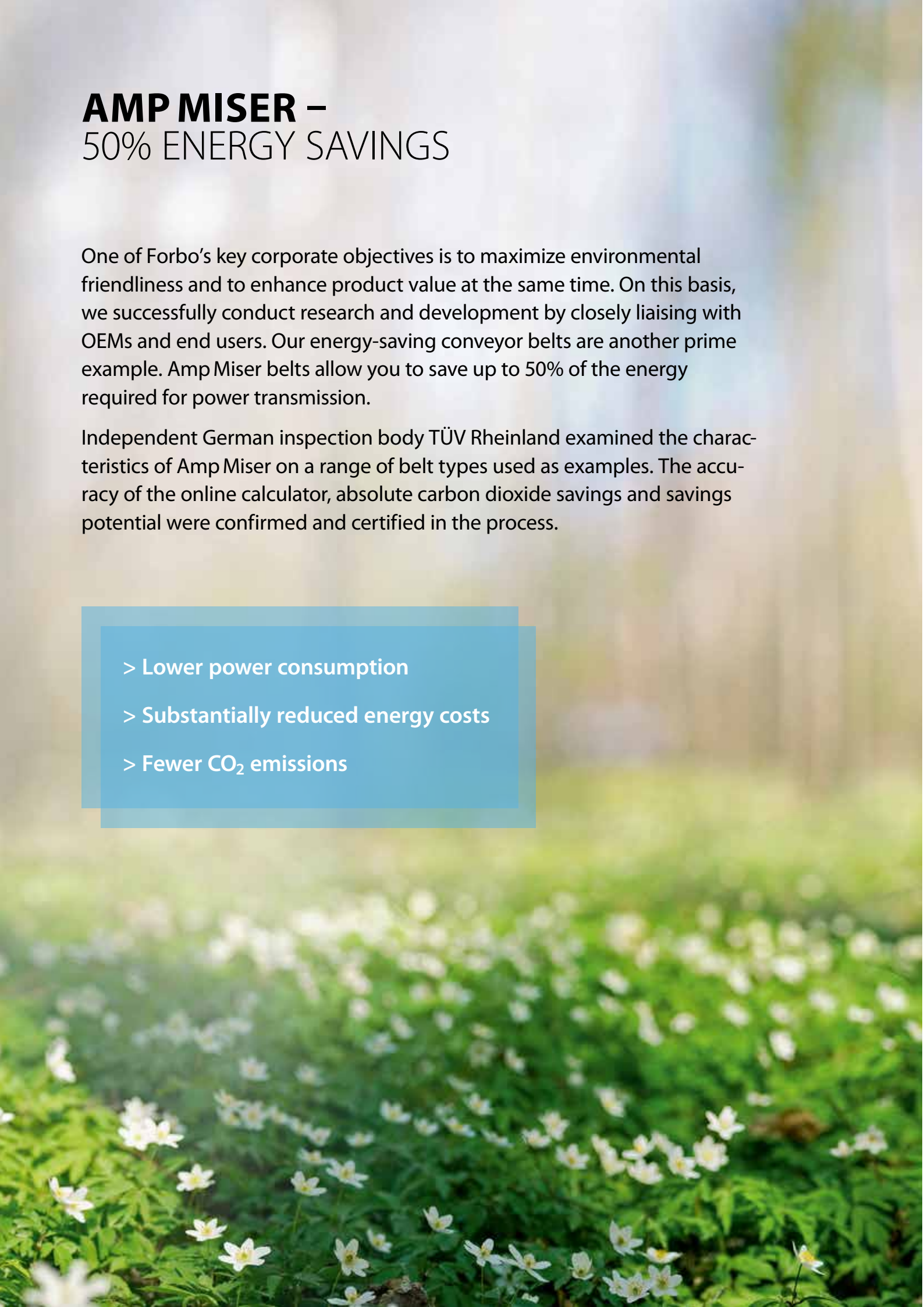
One of Forbo's key corporate objectives is to maximize environmental friendliness and to enhance product value at the same time. On this basis, we successfully conduct research and development by closely liaising with OEMs and end users. Our energy-saving conveyor belts are another prime example. Amp Miser belts allow you to save up to 50% of the energy required for power transmission.

Independent German inspection body TÜV Rheinland examined the characteristics of Amp Miser on a range of belt types used as examples. The accuracy of the online calculator, absolute carbon dioxide savings and savings potential were confirmed and certified in the process.

> Lower power consumption

> Substantially reduced energy costs

> Fewer CO_2 emissions



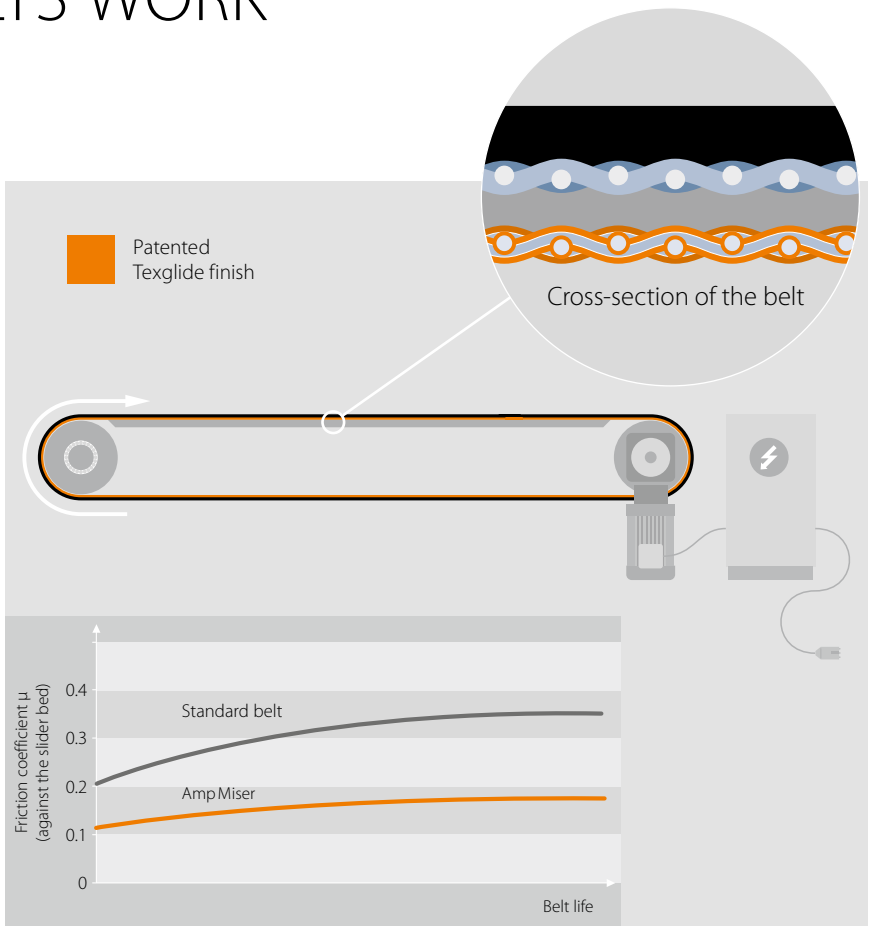
HOW AMP MISER CONVEYOR BELTS WORK

Due to a significantly reduced coefficient of friction, Amp Miser belts make an impact where energy losses in a conveyor are usually the greatest: in the friction between the bottom of the belt and slider bed. By adding patented Texglide to the underside fabric, a smooth layer is created that permanently acts like a dry lubricant and therefore minimizes energy consumption.

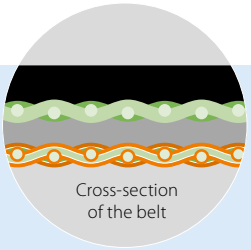
Amp Miser conveyor belts excel in areas where items are constantly conveyed and where many belts are in use, for example at airports and in logistics or distribution centers. Total energy savings of up to 50% have been measured in these types of applications.

Except where unpackaged food is concerned, the Amp Miser series is ideal for virtually any unit goods applications.

Further advantages are the resistance to chemical influences like kerosene vapors and the reduction of CO_2 emissions due to lower energy consumption.



Transilon ECOFIBER
Save even more resources and carbon emissions now!
All the tension member fabric in these new belt types is made of recycled PET. This already saves valuable primary raw materials and harmful carbon emissions during production. For outstanding energy savings while operating, Transilon ECOFIBER types also come with the patented Texglide finish.

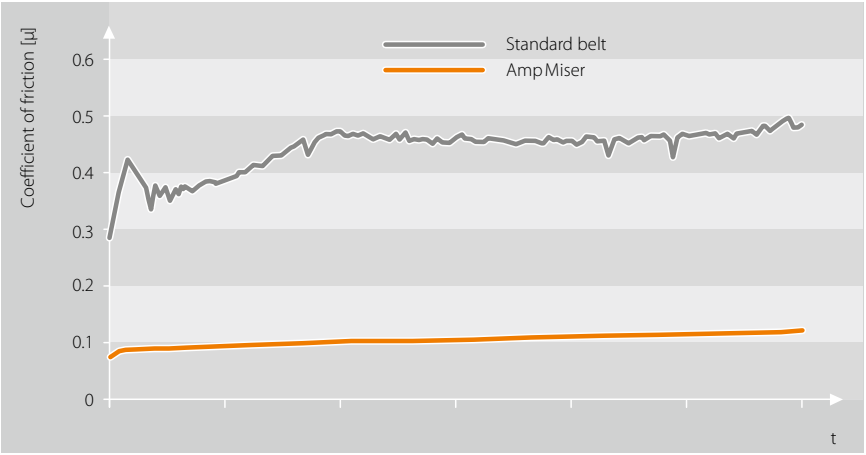


The properties		The advantages
ideal coefficient of friction for steel and zinc slider beds	▶	energy efficient, eco-friendly, lower operating costs
lower coefficient of friction on the underside	▶	less power required, longer conveyors possible with one drive
underside protected	▶	cleanliness, long service life

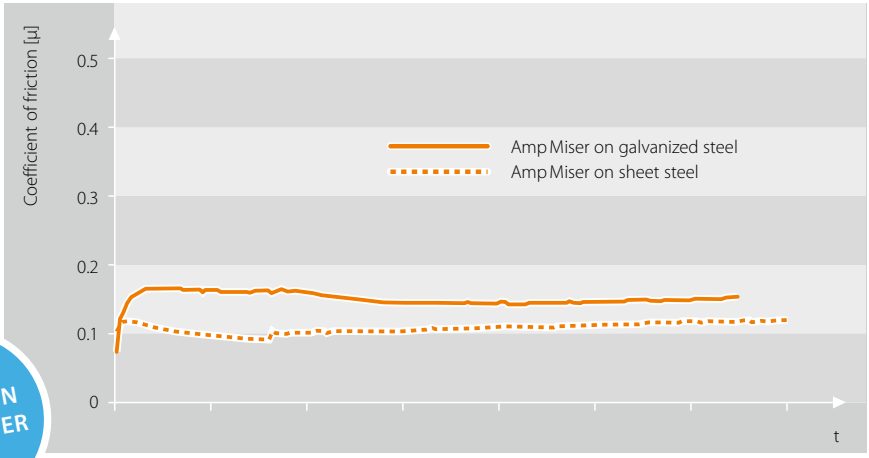
AMP MISER SETS NEW STANDARDS

Our energy-saving Amp Miser belts have an excellent track record under the tough conditions in logistics centers and on baggage conveyors*. Amp Miser with an improved tension member and Texglide technology stands apart for its exceptionally low friction coefficient between the underside of the belt and the slider bed – even when slider beds are galvanized. No other changes to the conveyor are required.

Extremely economical consumption
Compared with standard types, in typical applications with long conveyors and heavy loads, **up to 50% energy savings are now possible.**



Best choice on galvanized slider beds
The Amp Miser types are also perfect on otherwise tricky galvanized slider beds. The coefficient of friction is µ < 0.17. And it's just µ < 0.13 on non-galvanized steel.



BEST CHOICE ON ZINC SLIDER BEDS

* For more than 10 years, Amp Miser conveyor belts have had a good track record in the following companies:

- AUS Sydney Airport
- CN Hong Kong Airport
- D DHL, various sites
  Hermes Fulfilment, various sites
- DK Kastrup Airport, Copenhagen
- MO Macao Airport
- NL Schiphol Airport, Amsterdam
- USA Fort Worth Airport, Dallas
  Atlanta Airport
  San Francisco Airport
  UPS, various sites

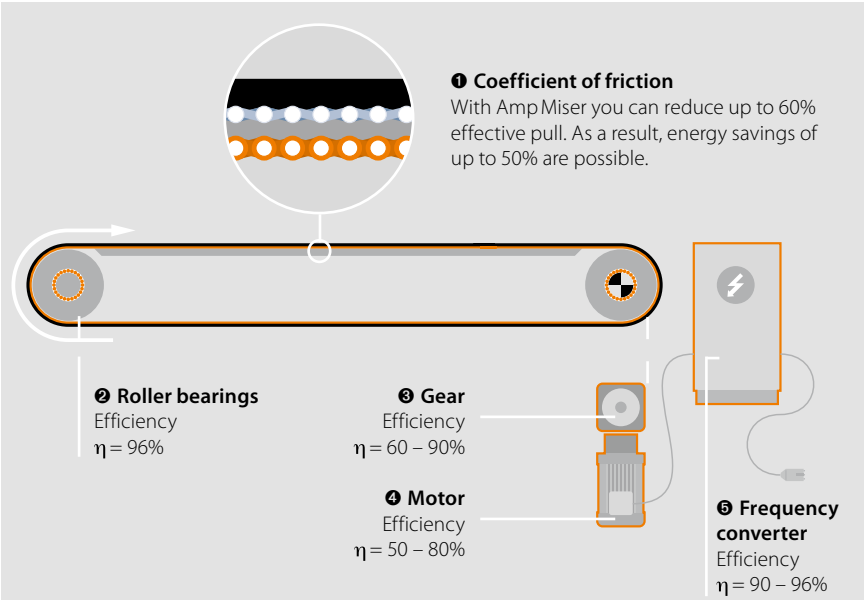
THE KEY SAVINGS POTENTIALS IN THE ENERGY REQUIREMENT OVERALL

The quality, design and condition of all other mechanical and electrical components also play a major role in energy consumption as a whole. Small drives for example are usually not very efficient because a lot of the energy is required to drive the conveyor's moveable parts alone.

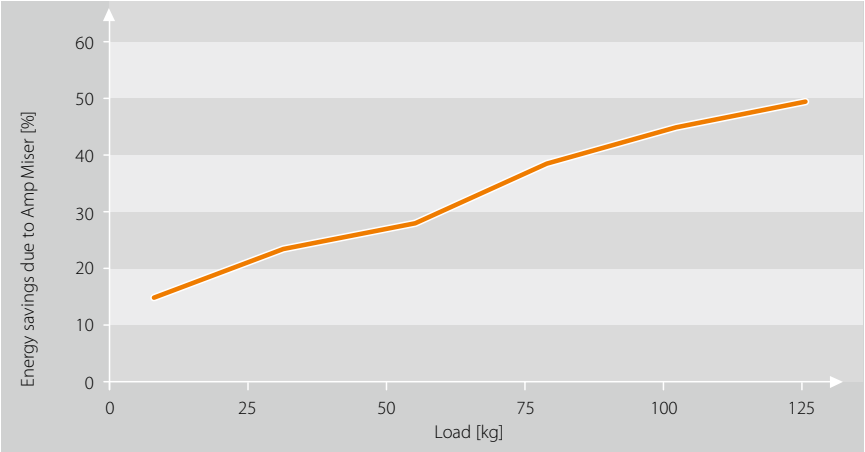
Even with a low coefficient of friction, by using Amp Miser conveyor belts you can save up to 50% of the conveyor's energy costs.

Significant savings can be made where:

- conveyors are long;
- loads are heavy (see graph below);
- slider beds are made of steel, galvanized steel or wood;
- speeds are high and constant;
- horizontal conveying is carried out.



Impact of efficiency in a conveyor



Energy savings depending on the load (test rig)

Calculate savings potential online now

Work it out for yourself

You can calculate your conveyor's savings potential online now at **www.ampmiser.com** without any obligation.
The savings can be enormous, especially where large conveyors are concerned.



FAQS

What does Amp Miser mean?
Amp Miser is an abbreviation of "Ampere Miser". The name emphasizes that installing an Amp Miser belt saves energy and improves your eco footprint as a whole. Our Amp Miser products are patented in Europe and the US. Patents have been submitted in many other countries too.

What does Texglide (TXGD) mean?
Texglide (TXGD) is a compound embedded in the underside of the fabric. Texglide isn't just an add-on, or a coating, but a permanent feature of the bottom of the fabric throughout the belt's life cycle. Texglide guarantees low friction between the belt and the slider bed.

What material is recommended for slider beds?
Amp Miser belts can be used on slider beds of all types (such as wood, steel or galvanized steel). In the case of galvanized steel, Amp Miser types cut the coefficient of friction to under 0.17, as regards steel to 0.13 and to less than 0.06 in plywood.

What problems arise on galvanized slider beds?
There are zinc coatings on the market that exhibit the same behavior as normal steel. Others are soft and produce zinc dust when abrasion occurs. This leads to black deposits on the bottom of the belt and a steep rise in coefficients of friction in standard belts.

Can Amp Miser belts be used on any type of conveyor?
Yes, but they're not appropriate on every conveyor.

- On short conveyors (< 2 meters) the effect is negligible. The motor requires more energy for itself and the drive than for the load.
- If the belt has rolling support and doesn't operate over a slider bed, the coefficient of friction is low anyway. Amp Miser has no impact.
- In the case of inclined conveying, Amp Miser only achieves energy savings when the type of conveying is horizontal.

  Vertically there's no impact on the coefficient of friction.
- The same goes for acceleration. Acceleration and coefficients of friction don't depend on one another.

The following parameters are ideal for Amp Miser belts:

Length > 2 meters	– speed > 0.3 m/s
Load ≥ 5 kg/meters	– slider bed material: any

Amp Miser doesn't require you to adapt the conveyor. Just fit the belt and you can start saving immediately.

What are the best arguments in favor of fitting Amp Miser?
End users reap the biggest benefits from installing Amp Miser belts. They operate their conveyors for many years and directly and sustainably save energy and running costs.

The benefit to OEMs lies in lower system costs due to design changes. Amp Miser belts that require up to 50% less energy entail the following benefits:

- smaller motors are possible if the conveyor's length is the same;
- longer conveyors can be built and the drive power is identical;
- by using one long instead of two short conveyors, the number of motors and frequency converters can be reduced;
- total energy consumption is decreased, cutting complexity and costs.

Low coefficients of friction against slider beds are good. But what happens in the drive drum?
Drive power always depends on the effective pull that the motor has to transmit.
$F_u = m \times g \times \mu$ (mass x acceleration of gravity x coefficient of friction). We can't influence mass and acceleration of gravity. Reducing the coefficient of friction by 60% on a steel slider bed also decreases the effective pull F_u by 60%.
When elongation at fitting is the same, the grip on the drive drum is sufficient to ensure the belt is driven without creep. No changes are required on the conveyor.

How do I measure energy savings?
A proper comparative measurement can only be made by looking at consumption with a traditional electricity meter (effective efficiency in the three phases). All Forbo Siegling measurement results are based on this method.

What exactly did the TÜV certify?
Independent German inspection body TÜV Rheinland examined the characteristics of Amp Miser on a range of belt types used as examples. The accuracy of the online calculator, absolute carbon dioxide savings and savings potential were confirmed and certified in the process.





Product range AmpMiser

	Article number	Total thickness approx. [mm]	Weight approx. [kg/m²]	Effective pull at 1% elongation ($k_{1\%}$ relaxed) [N/mm width]*	d_{min} approx. [mm] **	Permissible operating temperature [°C]	Horizontal conveying	Inclined conveying	Accumulation conveying	Flame retardant SE according to EN340	Flame retardant FR according to ASTM D-378	Energy savings certified by TÜV Rheinland
E 10/2 TX0/V5H MT-AMP black	906807	1.9	2.1	9.0	40	–10/+50	●					●
E 10/2 TX0/V15 LG-AMP black	906808	2.7	2.9	9.0	40	–10/+50		●				●
E 10/2 TX0/V5H MT-SE-AMP black	906809	2.2	2.5	9.0	40	–10/+50	●			●		●
E 10/2 TX0/V15 LG-SE-AMP black	906810	2.7	2.9	9.0	40	–10/+50		●		●		●
E 12/3 TX0/TX0 FR-AMP gray	907206	3.8	4.6	9.0	60	–10/+50	●		●		●	
E 12/2 TX0/V2 MT-M-FR-AMP black	907224	3.0	3.6	6.0	60	–10/+70	●				●	
E 12/2 TX0/V1 M-FR-AMP black	907230	2.95	3.3	6.0	60	–10/+70		●			●	
E 12/2 TX0/V10 LG-M-FR-AMP black	907229	3.9	4.5	6.0	60	–10/+70	●				●	
RE 10/2 TX0/V5H MT-SE-AMP black	901015	2.2	2.6	8.5	36	–10/+50	●			●		●
RE 10/2 TX0/V15 LG-SE-AMP black	901016	2.7	2.9	8.5	36	–10/+50		●		●		●

Supplied as

– endless
– prepared for endless splicing on site
– with mechanical fasteners

Splice types

Z-splice
Fulfils stringent requirements for equal thickness. Very flexible splice. Standard splice for double-layer belt types.

Mechanical fasteners
For quick fitting and removal of the belt without dismantling parts of the conveyor.

Legend

AMP	=	Amp Miser
E	=	Polyester
FR	=	Flame retardant, ASTM D-378
LG	=	Longitudinal groove
MT	=	Matte
RE	=	Recycled polyester
SE	=	Flame retardant, EN340
TX	=	Texglide
V	=	Polyvinyl chloride
V…H	=	Polyvinyl chloride hard

* Established in line with ISO 21181:2005

** Minimum drum diameter was determined at room temperature and does not apply to conveyor belts with mechanical fasteners. Lower temperatures require larger drum diameters.

Type designation for Siegling Transilon

E 10 / 2 TX0 / V15 LG-AMP black

- Color
- Belt property/ pattern
- Top-face coating [mm/10]
- Underside coating [mm/10]
- Number of layers or special fabric
- Type class
- Fabric material

Siegling – total belting solutions

Committed staff, quality oriented organization and production processes ensure the constantly high standards of our products and services.

Forbo Movement Systems complies with total quality management principles. Our quality management system has ISO 9001 certification at all production and fabrication sites. What's more, many sites have ISO 14001 environmental management certification.



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Our service – anytime, anywhere

Forbo Movement Systems employs around 2,500 people in its group of companies. Our products are manufactured in ten production facilities across the world.
You can find companies and agencies with warehouses and workshops in over 80 countries.
Service points are located in more than 300 places worldwide.

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MOVEMENT SYSTEMS