

AUTOSTABLE™

SELF-CENTRING BELT AND TROUBLESHOOTING SOLUTION AGAINST OFF-TRACKING

PRODUCT SHEET



Autostable™ allows better tracking, stability and safety for more reliable operations. It is the sole reliable solution against tracking problems.

THE CONCEPT

One of the main problems encountered in the use of conveyor belts is off-centring and therefore mistracking. This phenomenon may be caused by various factors which may lead to clogging, reduction of output, deterioration and/or damaging of the belt edges and a noticeable shortening of the service life of the belt itself.

Sempertrans developed the Autostable belt, which centres itself without additional equipment on the conveyor. It reduces the risks of off-centring and consequently of deterioration of the moulded edges.

AUTOSTABLE IS RECOMMENDED IN CASES OF:

- Reversible installations where standard belts are hard to track
- Installations with a poorly centred load (e.g. bucket wheel excavators)
- Belts running with high speed and short centre distances
- Existing overland conveyors with mistracking problems

AUTOSTABLE INCREASES THE CAPACITY OF YOUR CONVEYOR:

- Higher filling rates possible due to better tracking
- Possibility to use wider conveyor belts on the same conveyor due to less mistracking
- Better use of cross-section due to shape-locking increases the possible volume flow
- Higher troughing angle for higher capacity (max. 60°)
- Better stability in curves and improved ability to travel through tight horizontal curves

HIGHLIGHTS

- Unique self-centring mechanism
- Provides stability along the whole belt length
- Possibility to increase the loading capacity
- Can be adapted to most conveyors, including curved installations
- Centring force 5 to 7 times higher compared to standard conveyor belts
- Available with a steel cord or textile carcass

APPLICATIONS



Open-pit mining
Lignite and hard rock mining



Cement industry



Steel industry



Aggregates
Mineral processing plants
Salt industry



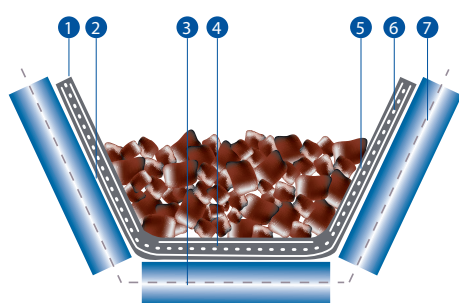
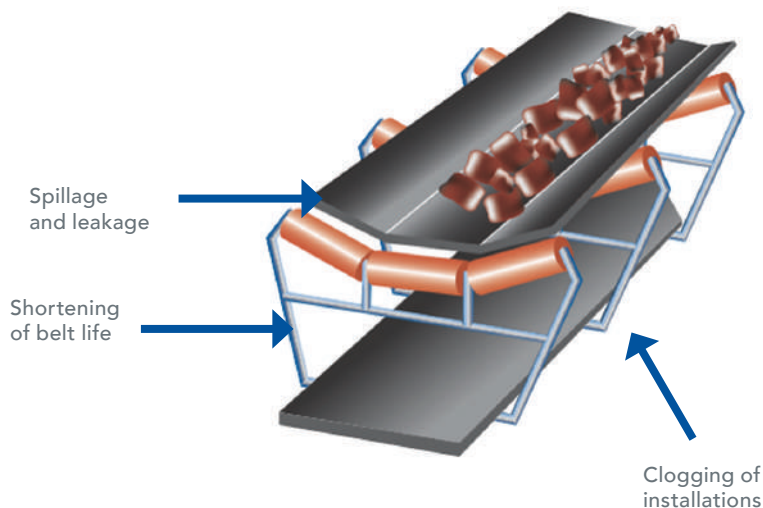
Chemical industry and fertilisers
Port operations
Power and heating plants
Overland conveyors

COVERS

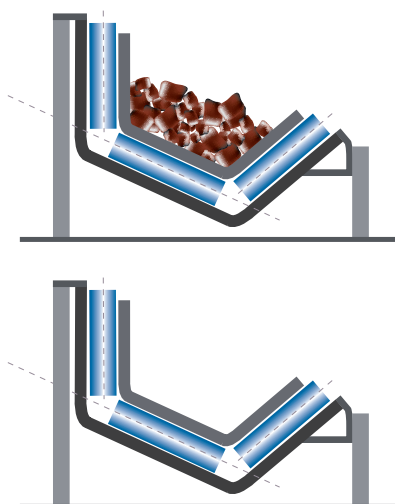
- Transdura (anti-abrasive)
- Transflam (flame retardant)
- Transoil (oil resistant)
- Transtherm (heat resistant)

PRODUCT FEATURES

The special carcass construction of the Auto-stable™ belt provides a self-centring effect without any accessory or modification of the conveyor system. This is enabled by the constructive difference in rigidity between the centre area and the sides. As the more rigid central part cannot adapt to the troughing angle as formed by the idlers, the belt tends to return to its natural troughed position, thus favouring its stability along its entire length. This mechanism also provides a form locking shape which allows no transversal movement of the belt, avoiding all mistracking-related damages to the belt or the conveyor structure. This solves all tracking problems of standard belts.



1. Top cover
2. Bottom cover
3. Centre idler (length to be specified at the time of order)
4. Cross reinforcement
5. Reinforcement
6. Tension member
7. Idler



SPECIAL APPLICATIONS FOR CONVEYORS WITH CURVES IN THE HORIZONTAL PLANE

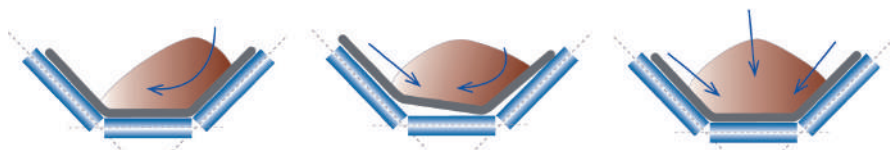
This configuration enables the belt to be kept stable in the curve by opposing the natural movement of the belt in a curve on its support. The acceptable force limits must be calculated on a case-by-case basis in accordance with the outputs and tensions required. Sempertrans' Global Application Engineering team will perform this calculation for you.

Advantages:

- Automatic load centring (elimination of off-centring)
- Elimination of spillage
- Elimination of edge damages
- A wider belt in the standard conveyor construction upgrades the capacity

COMPARISON OF CENTRING FORCES

Depending on the troughing angle, the centring force provided by an Autostable belt is five to eight times higher than the one provided by a normal belt.



Self-centring mechanism

MISTRACKING: A SERIOUS THREAT TO CONVEYOR SYSTEMS

Reasons for belt mistracking

- Misaligned splice
- Off-centred loading
- Excessive material build-up on idlers or/and drums
- Structural alignment issue
- Misalignment of conveyor system components
- Uncleanliness of conveyor system
- Damaged idler and/or pulley
- Uneven thickness of pulley lagging

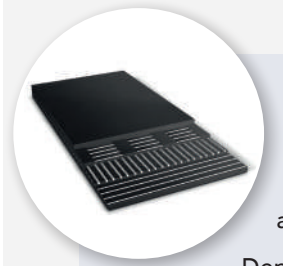
Mistracking indicators

- Edge damages
- Excessive spillage
- Off-centred belt at head or tail pulley

Consequences of mistracking: direct financial costs incurred

- Shortened lifetime of the conveyor belt
- Proper maintenance planning made difficult
- Increased maintenance costs

AUTOSTABLE™ IS AVAILABLE IN TWO VERSIONS



AUTOSTABLE M

Combination of an Autostable belt benefitting from all advantages of a metal carcass

Depending on the application, either special 4x7 or 7x7 steel cords from our Metalcord belt range are used in the longitudinal direction.

For high nominal belt strengths or extreme widths, either 7x7 or 7x19 steel cords from our Sempercord range are used.

Belt width	800 to 3200 mm
Nominal belt strength	500 to 4500 N/mm



AUTOSTABLE T

Textile/steel weft construction

It uses the Multitrans EP carcass as well as two layers of highly rigid steel wefts on the top and bottom side of the textile carcass.

Belt width	800 to 2400 mm
Nominal belt strength	250 N/mm with 2 plies Up to 3500 N/mm with 5 plies

BENEFITS OF AUTOSTABLE

- Fewer edge damages
- Significant extension of belt service life especially for installations with idler adjustment issues
- Possibility to significantly raise the installation output by increasing the troughing angle
- Possibility to increase the installation output by replacing the standard belt with a wider Autostable belt
- Less mistracking allows for tighter tolerances. Thus wider belts are possible on the same conveyor
- Possibility to go around tight horizontal curves as form locking keeps the belt in position
- Excellent tracking for reversible conveyors

AUTOSTABLE M ADVANTAGES:

- High nominal belt strength, flexibility of Metalcord
- Small pulley diameters
- Tight horizontal and vertical curves
- Excellent cord/rubber adhesion

AUTOSTABLE T ADVANTAGES:

- Splicing as easy as standard textile belts
- Warp elongation of a textile belt

BELT REPLACEMENT BENEFITS

REGULAR BELT

Conveyor belt replacement without changes on the conveyor

AUTOSTABLE BELT

BENEFITS

- Instant conveyor capacity increase due to wider Autostable belt possible
- Increasing of belt service life by eliminating tracking problems
- Fewer edge damages
- Less spillage, thus increasing significantly the lifetime of idlers and bearings
- Excellent tracking for reversible conveyors

NEW INSTALLATION BENEFITS

Modifying conveyor design to utilise Autostable features

AUTOSTABLE BELT

BENEFITS

- Increase of belt service life
- Higher volume flow possible due to better utilisation of cross-section
- Savings on equipment (e.g. more narrow pulleys) due to tighter mistracking tolerance
- Excellent tracking for reversible conveyors
- Fewer adjustments for movable conveyors

AUTOSTABLE™ CASE STUDY

Location: Chuquicamata, Chile

Application: Stacker

Conveyor length: 21.3 m



Conveyor behaviour

Off-centring

Idlers clogging

Fast wear of cover

Belt type

1067 EP 1000/4 12+5 X ME
(Competitor)

Lifetime

15 days



Conveyor behaviour

Good tracking

Stability

Safety

Belt type

1067 AUTOSTABLE 1000/4 12+5 D50 ME
(Sempertrans)

Lifetime

45 days

Autostable was the sole solution against the serious mistracking problem the customer was facing. It helped achieve better stability and safety of their conveyor operations, resulting in belt lifetime 3 times longer.



AUTOSTABLE APPLICATIONS

All conveyors with tracking problems

- Reversible installations
- Port installations
- Shuttle conveyors
- Movable installations
- Conveyors on boom lift
- Side loaded conveyors
- Installations with poorly centred load (bucket wheel)



TAILORED TECHNICAL CONSULTANCY

Sempertrans' Global Application Engineering team will support in selecting the right carcass construction in combination with the right cover grade to fulfill the requirements of each application.

These expert technicians and professionals will cater to your needs at all stages of your project. Their mission is to provide the right technical solution

for your specific conveying belting applications – from consulting services such as the tailored design and configuration of your conveyor belts, to local engineering support functions in case of technical conveyor issues. Whether your business requires a brand new conveyor belt or process improvements the Sempertrans Global Application Engineering team is there to support you.

