

Conveyor system closures

for conveyor techniques

ECClos-S
ECClos-Q
ECClos-flex
ECClos-RS
ECClos-EH
RGT-K
ECClos-flex-K
Universal-B
Omniconcompact
Universal-S
ECClos-flex-S
Isogate
Sleeve
Turbocoil



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STÖBICH
FIRE PROTECTION

Innovation for your Protection!

A conveyor system closure must fulfil many additional requirements compared with a fire protection gate.

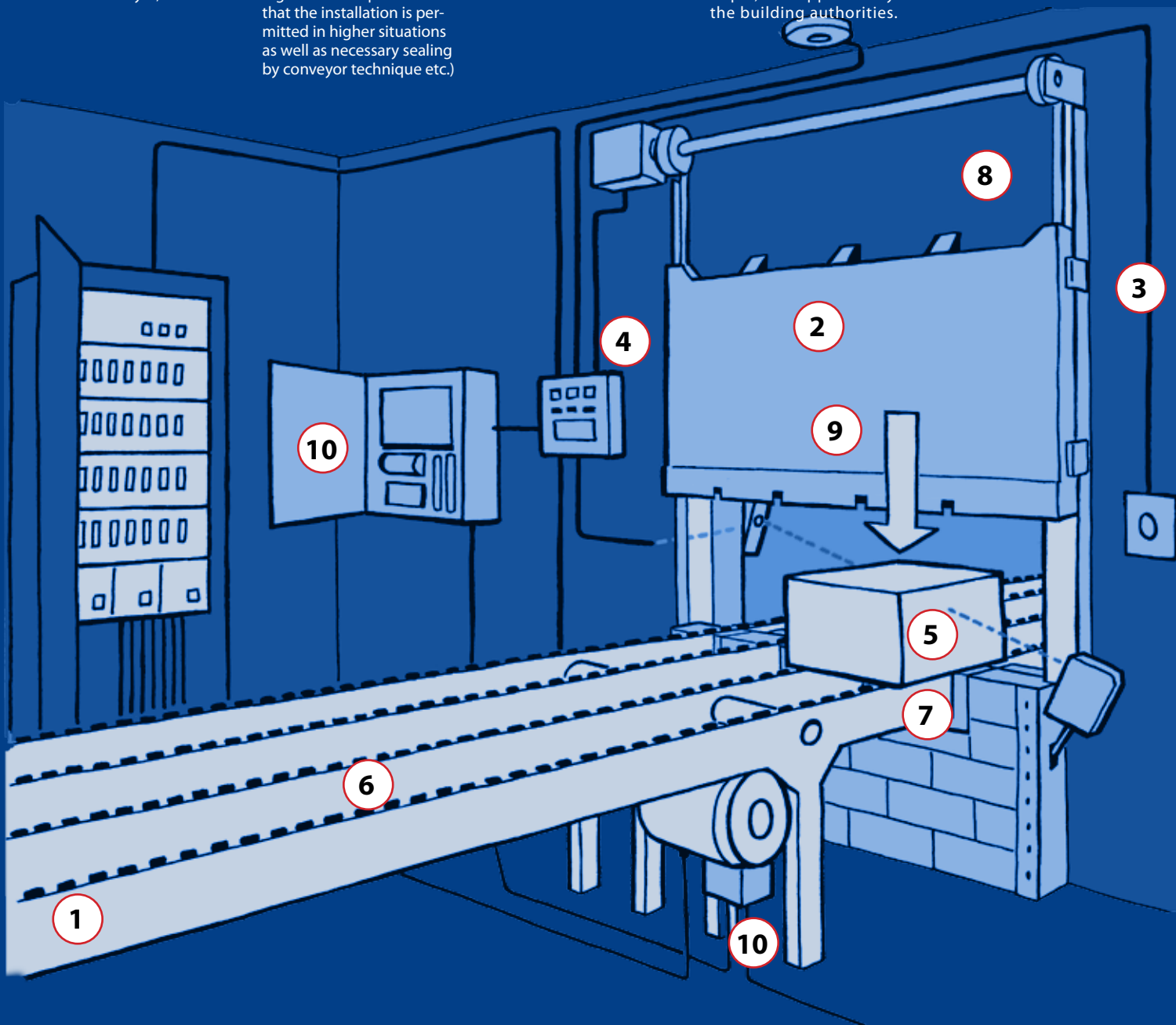
1. Conveyor system closure for 22 different conveyor technique designs (interrupted or continuous)e.g. roller conveyor, belt conveyor, carrying chain conveyor, circular conveyor, etc.

2. Closure tested according to a special standard DIN EN 1366-7 with substantially higher requirements in relation to the test standard for gates, DIN EN 1634-1 (e.g. higher furnace pressures so that the installation is permitted in higher situations as well as necessary sealing by conveyor technique etc.)

3. Tested for the different kinds of wall qualities, from massive design up to lightweight construction stand walls

4. Control systems (hold open devices) specially tested and designed for conveyor system closures (e.g. signal exchange with the conveyor technique) and approved by the building authorities.

5. In case of release, the closing area will be cleared by monitoring the closing area or clearing systems.



6. Ensurance of a trouble-free conveying process hence no effects due to the conveyor system closure.

7. Safe sealing of continuous conveyor technique even with complicated construction.

8. Various closing directions because of limitations in space.

9. Also designed for high cycles of up to 200.000 and also more if required.

10. Decentralized emergency power supply to clear the closing area also in case of power failure.

Stöbich Fire Protection - the world leader *) has already developed and established in the market 11 world novelties. Since 30 years, Stöbich successfully completed 60 fire tests alone for conveyor system closures in many countries.

***) by „German Standards: Encyclopedia of German world market leaders“ - see last page**

References from A to Z: Airbus, Airport Bratislava, apetito convenience GmbH & Co KG, Audi, BASF Coating AG, Bauerngut Bückeberg, BMW AG, Böklunder Plumrose GmbH + Co KG, C&A, Coca-Cola Erfrischungsgetränke AG, Coppenrath & Wiese GmbH, Cornelsen Verlagskontor GmbH & Co. KG, Daimler AG, Demag Cranes & Components GmbH, DHL Fulfilment GmbH, Edeka, Eisbär Eis GmbH, Euryza Reis GmbH, Farnacell GmbH, Ferrero, Ford, Fraport AG, Geflügelhof Middendorf, Globetrotter, Görtz Logistik GmbH, Goodyear Dunlop Tires Germany GmbH, Henkel AG & Co.KGaA, Hessischer Rundfunk, Holsten Brauerei AG, Humana Milchunion Recke, IGS Roderbruch, Ihr Platz, Ikea, Isis GmbH, Jägermeister, Johannes Hospital Duisburg, Jungheinrich AG, Kaba, Kappa, Klinikum Duisburg, Krambacher Brauerei, Langnese, Lübecker Nachrichten, Lyreco, Mars, Meica Fleischwaren, Milford Tea GmbH & Co KG, Motorola GmbH, Nestle Deutschland AG, Nobilia Werke, Nolte Küchen, Nordzucker, Opheis GmbH Stahlhochbau, Organic Waste Recycling Stade GmbH, OTTO, Papierfabrik Buchmann, Peek und Cloppenburg, Pfeiderer AG, Pirelli Deutschland GmbH, Rack + Rührer Remondis GmbH & Co. KG, Rotkäppchen-Mumm Sektkellereien GmbH, Rügenwalder Carl Müller GmbH, Sanacorp Pharmahandel GmbH, Schinken Einhaus GmbH & Co KG, Siemens AG, Schwab Versand, Tesa Hamburg, ThyssenKrupp Steel AG, TU Braunschweig, Uniklinik Düsseldorf, Unilever Deutschland Holding GmbH, Uniklinik Düsseldorf, Veltnis Brauerei Grevenstein, Viastore Systems GmbH, Vilsa Brunnen Bruchhausen, Volkswagen AG, Warsteiner Brauerei, Wella Manufacturing GmbH, Westfalia Storage Systems GmbH & Co. KG, Wiesenhof, X-Box GmbH, Zentis, Zilg-Brauneis GmbH, etc.

ECClos-S Robust slider in sheet metal design

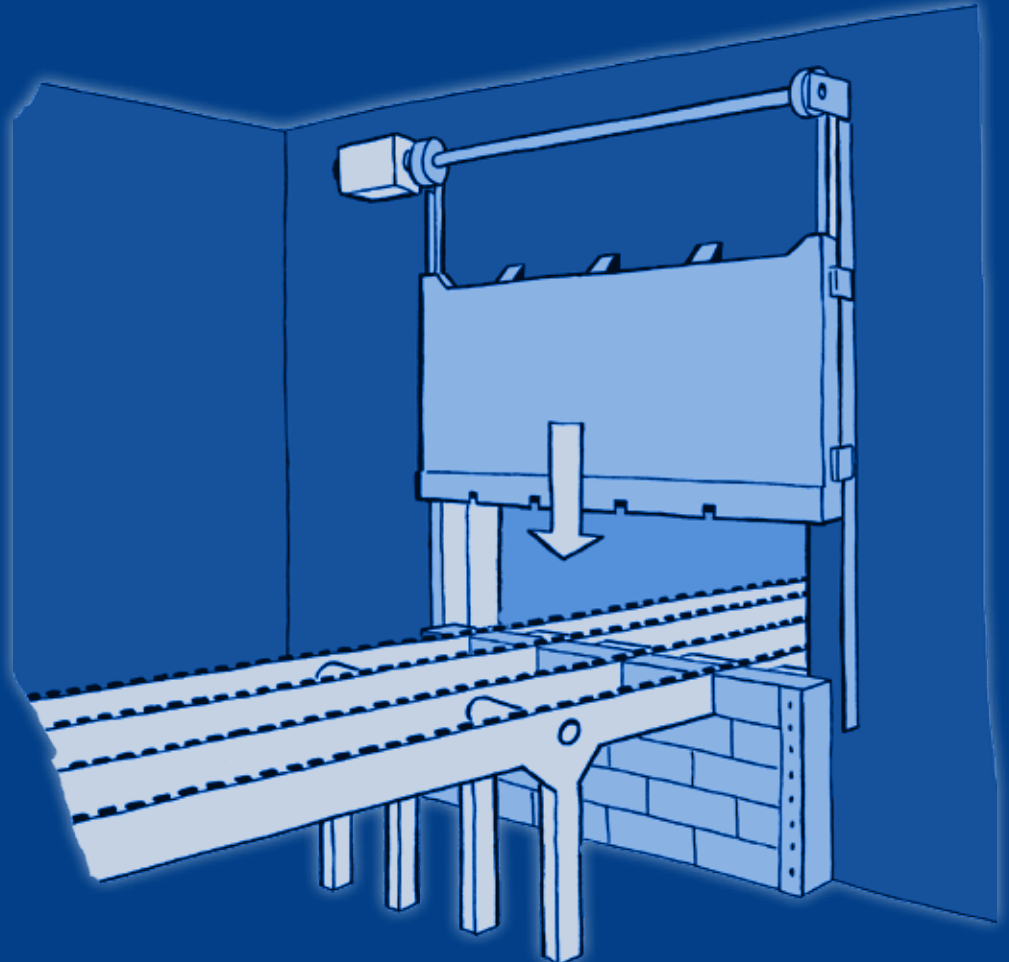
Fire resistance: Tested according to DIN EN 1366-7

Class: E 120, EW 120, EI 30 up to EI 120

Permanent function test: Tested according to DIN EN 14600

Class: C5

Proof of usability: CE European Approval (ETA)



Conveyor systems

- Interrupted conveyor systems
- Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor
- Continuous travelling carriages

Customer benefits

- Robust surface of the slider by sheet metal construction
- Tested according to the high class european test method DIN EN 1366-7
- Classification EI 30 – EI 120
- European approval expected for sizes up to 4.5 x 5.0 m

Design characteristics

- Slider design
- Sandwich construction of the slider, cover sheet on all sides
- Segment design optimized for transport and installation

Closing direction



Two continuous chain conveyors



Continuous roller conveyor running in a lift shaft



Continuous belt conveyor with 400 V emergency power system

ECClos-Q *Space saving robust flap in sheet metal design*

Fire resistance: Tested according to DIN EN 1366-7

Class: E 240, EW 240, EI 30 up to EI 120

Permanent function test: Tested according to DIN EN 14600

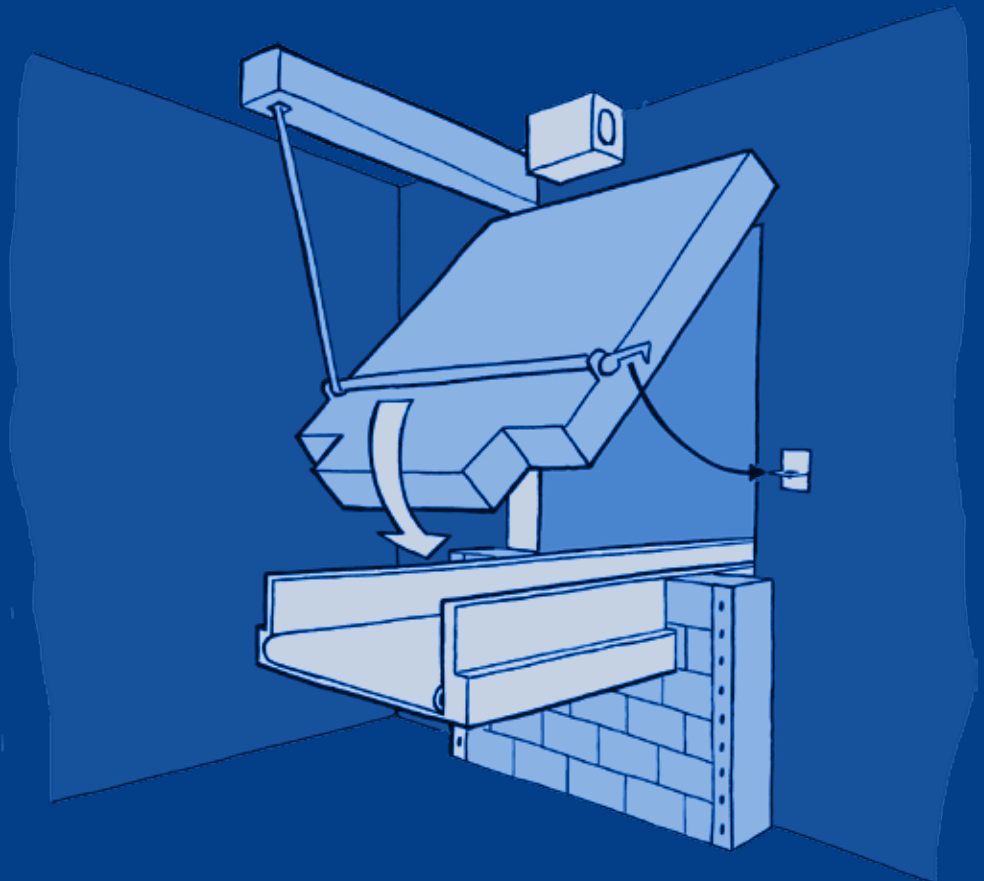
Class: C5

Proof of usability: CE European technical approval (ETA) submitted

Classification report: FIRES-CR-164-10-AUPE

Conveyor systems

- Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor



Customer benefits

- Robust surface of the flap due to sheet metal construction
- Tested according to the high class european test method DIN EN 1366-7
- Classification EI 30 - EI 120 as well as EW 240 (aerated concrete)
- Tested up to EW 240
- Very small place requirement in the lintel area

Design characteristics

- Flap design turnable around horizontal axis
- Flap blade in sandwich construction, all around cover sheet

Closing direction



Continuous belt conveyor



Continuous baggage conveyor



Continuous special conveyor (5 m width)

ECClos-flex *Space-saving winding closure*

Fire resistance: Tested according to DIN EN 1366-7

Class: E 90, EW 60

Permanent function test: tested according to DIN EN 14600

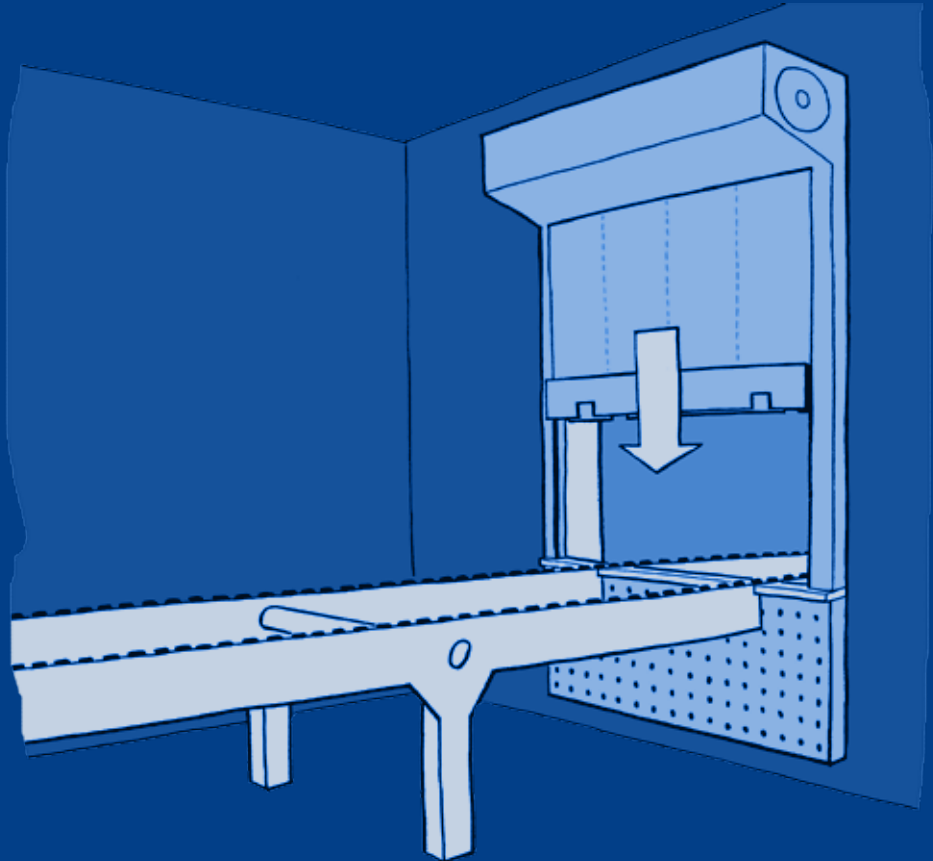
Class: C2

Proof of usability: CE European Technical Approval (ETA) submitted

Test report: 3278/228/08

Conveyor systems

- Interrupted conveyor systems
 - Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor
- Continuous travelling carriages



Customer benefits

- Tested according to european standard DIN EN 1366-7 with classification E90, EW 60
- Small space requirement due to winding sealing element
- Appropriate for very large openings
- Protection target EI 90 is possible with sprinklers provided from site

Design characteristics

- Textile, winding conveyor system closure
- Vertical closing direction from top to bottom
- Appropriate for separated and continuous conveyor systems
- No heat insulation properties

Closing direction



Interrupted baggage conveyors



Continuous chain conveyor



Interrupted roller conveyors

ECClos-RS Robust steel door

Fire resistance: Tested according to CSN EN 1634-1

Class: E 120, EW 90

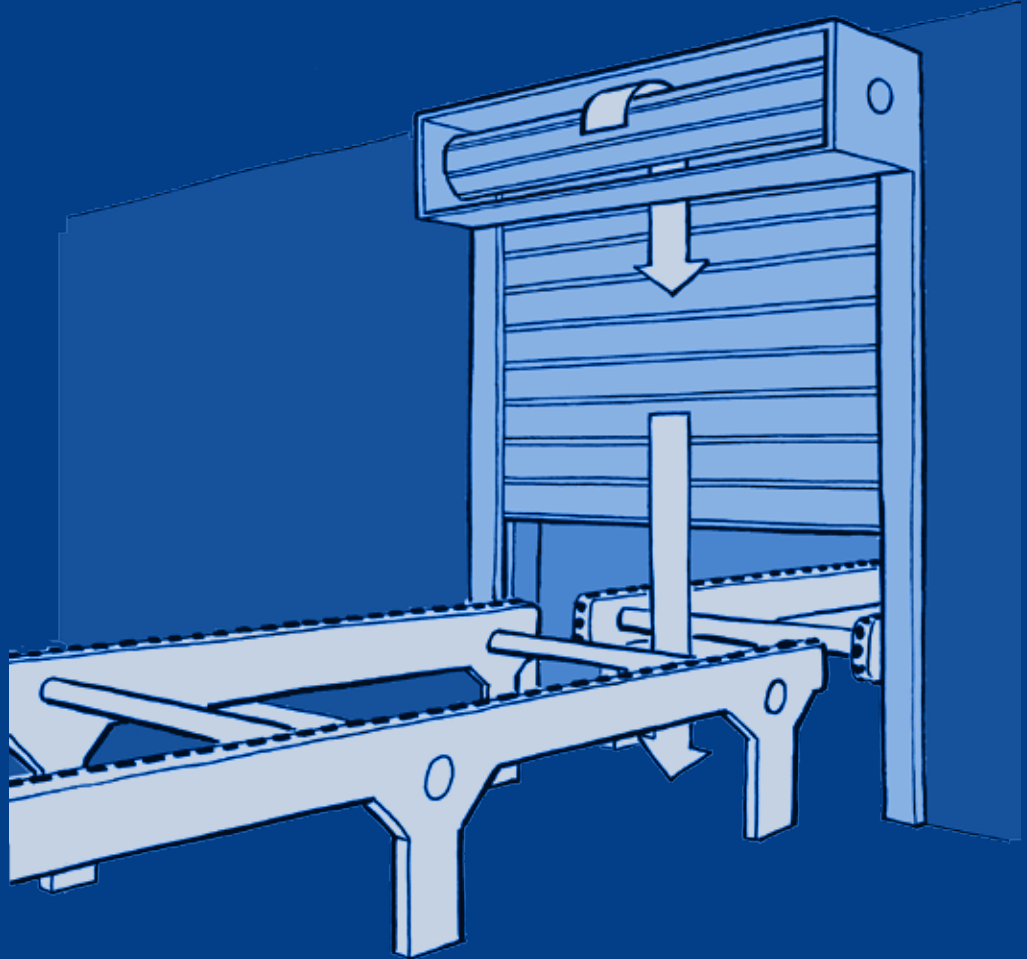
Permanent function test: tested according to DIN EN 14600

Class: C1

Proof of usability: 2007-Efectis-R0421

Conveyor systems

- Interrupted conveyor systems
 - Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor
- Continuous travelling carriages



Customer benefits

- Tested according to CSN EN 1634-1
- Classification EW 90
- Robust construction
- Small space requirement in the lintel area
- Appropriate for big openings: EW 30: 12 m x 6.5 m, EW 60: 12 m x 4,6 m, EW 90: 12 m x 2,9 m

Design characteristics

- Winding lamella profiles on a coil
- Closing direction from top to bottom
- Plate thickness is approx. 30 mm, therefore reduced gap width necessary with interrupted conveyors

Closing direction



Baggage conveyor with belt conveyor



Floor conveyor system



Interrupted belt conveyor

ECClos-EH *Economic combination of sleeve and door*

Fire resistance: Tested according DIN 4102-5

Class: T 90

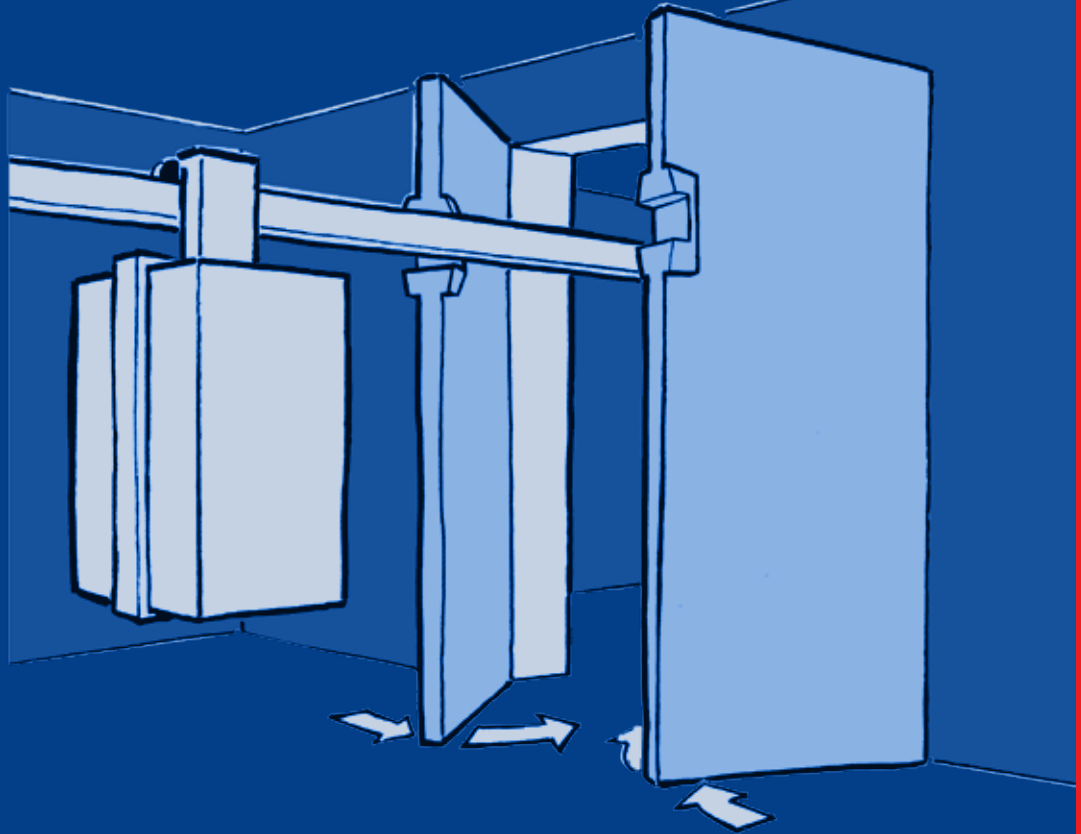
Permanent function test: Tested according to DIN 4102-18

Class: 200.000 (meets C5)

Proof of usability: General building approval
Z-6.6-1147

Conveyor system

• Monorail conveyor



Customer benefits

- Sealing of continuous aluminium or steel rails incl. power rail
- No moving rail parts
- No restriction around the conveying rail

Design characteristics

- Double-leaf revolving door
- Alternatively two part sliding door
- Two semi-circular sleeves encapsulate the conveyor system
- Manual or motorized re-opening

Closing direction



Two rail aluminum sliding door



Two rail aluminum revolving door



Two rail steel revolving door

RGT-K *Combination of sleeve and door for complex conveyor techniques*

Fire resistance: Tested according DIN EN 1366-7

Class: T 90

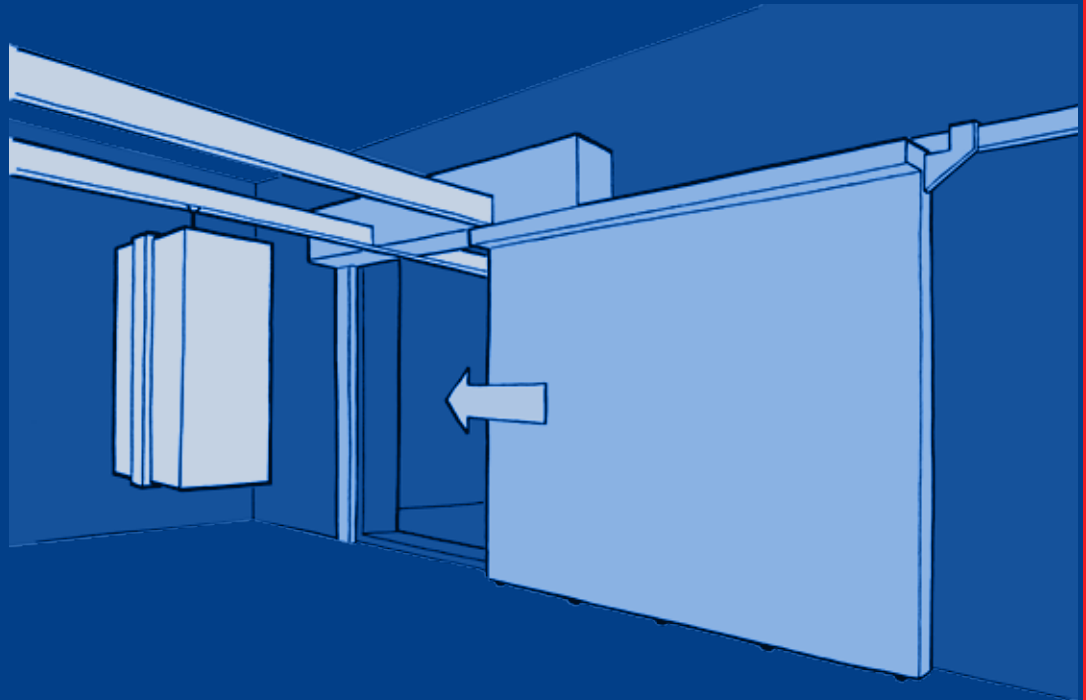
Permanent function test: Tested according to DIN 4102-18

Class: 200.000 (meets C5)

Proof of usability: General building approval
Z-6.6-1522

Conveyor system

- Circular Conveyor
- Power & Free System



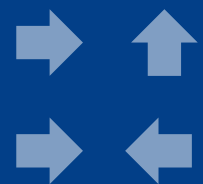
Customer benefits

- Tested and approved for construction for continuous circular conveyor, Power & Free, cross chain conveyor and similar
- The rail is integrable with horizontal closing direction, therefore free floor area
- For passage of multiple conveyor tracks

Design characteristics

- Sandwich construction, calcium silicate boards all around
- Horizontal closing direction or vertical from bottom
- Sealing of continuous circle conveyor with intumescent sleeves

Closing direction



Power & Free conveyor with lift gate



Power & free with single parts sliding door

ECClos-flex-K *Space saving roller closure closing from bottom*

Fire resistance: Tested according to DIN EN 1366-7

Class: E 90, EW 60

Permanent function test: Tested according to DIN EN 14600

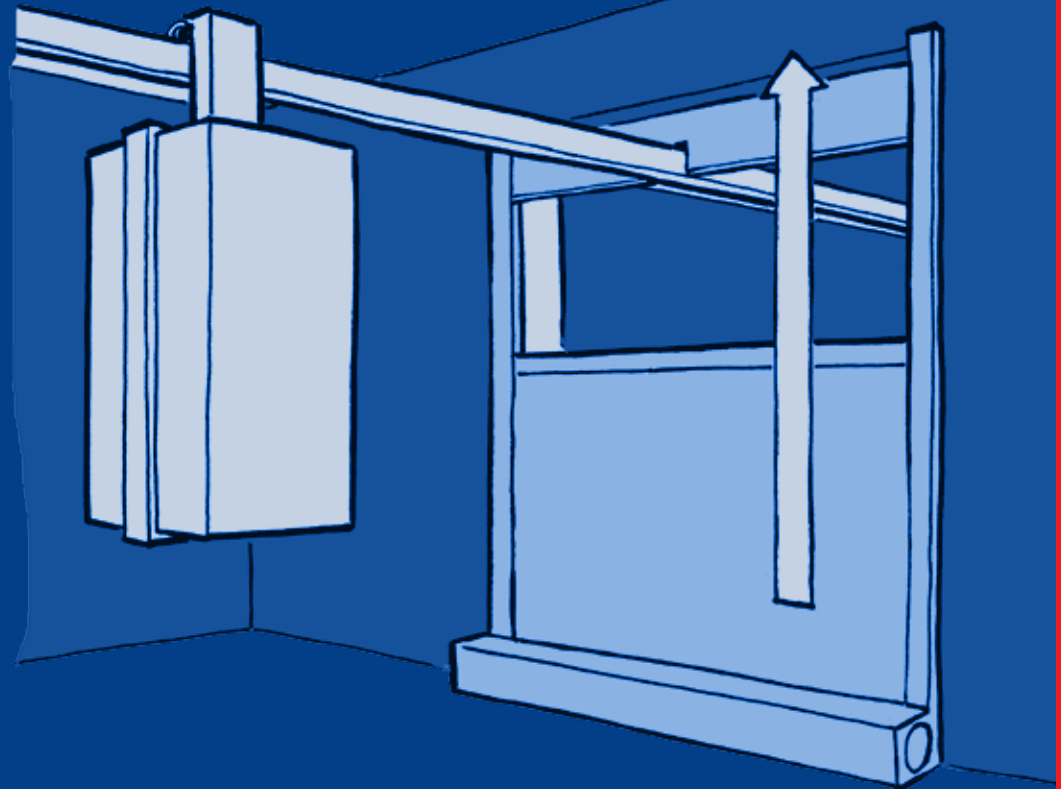
Class: C2

Proof of usability: CE European Technical Approval (ETA) submitted

Test report: 3278/228/08

Conveyor systems

- Interrupted conveyor systems
- Separable conveyor systems
- Appropriate for continuous circular conveyor systems



Customer benefits

- Tested according to European Standard DIN EN 1366-7 with the classification EW 60 (CD from bottom)
- Small space requirement due to winding sealing element
- Appropriate for very large openings
- Protection target EI 90 is possible with sprinklers provided from site

Design characteristics

- Textile, winding conveyor system closure
- Conveyor rail is encapsulated by a sleeve that foams with increasing temperature and closes so free spaces
- Vertical closing from the bottom to top
- No heat insulating properties

Closing direction



Monorail in the lift shaft



Overhead conveyor

Universal-B *Encapsulated versatile slider closure*

Fire resistance: Tested according to DIN 4102-5

Class: T 90

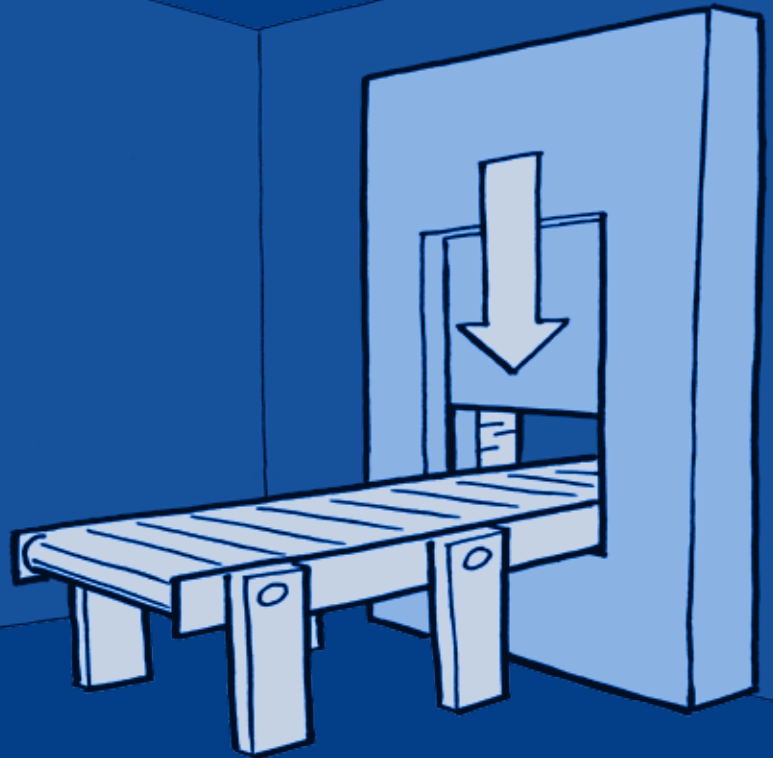
Permanent function test: Tested according to DIN 4102-18

Class: 200.000 (meets C5)

Proof of usability: General building approval
Z-6.6-469

Conveyor systems

- Interrupted conveyor systems
- Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor
- Continuous travelling carriages
 - Sorter
 - Newspaper conveyor



Customer benefits

- High sophisticated demands are met by smooth surfaces due to casings
- Walls can be replaced by ceiling-high elements
- Tested according to DIN 4102

Design characteristics

- Slider construction
- Supporting steel construction planked with Promatect H plates
- Closed construction (slider parks in the casing)

Closing direction



Integrated in stainless steel planked hood



Newspaper conveyor



Conveyor system forms ceiling-high wall



With a protective cage, as conveyed goods are shattered

Omnicomcompact *Space saving stackable closure*

Fire resistance: Tested according to DIN EN 1634-1

Class: EI 30 to EI 120

Permanent function test: Tested according to DIN 4102-18

Class: 10.000 (meets C2)

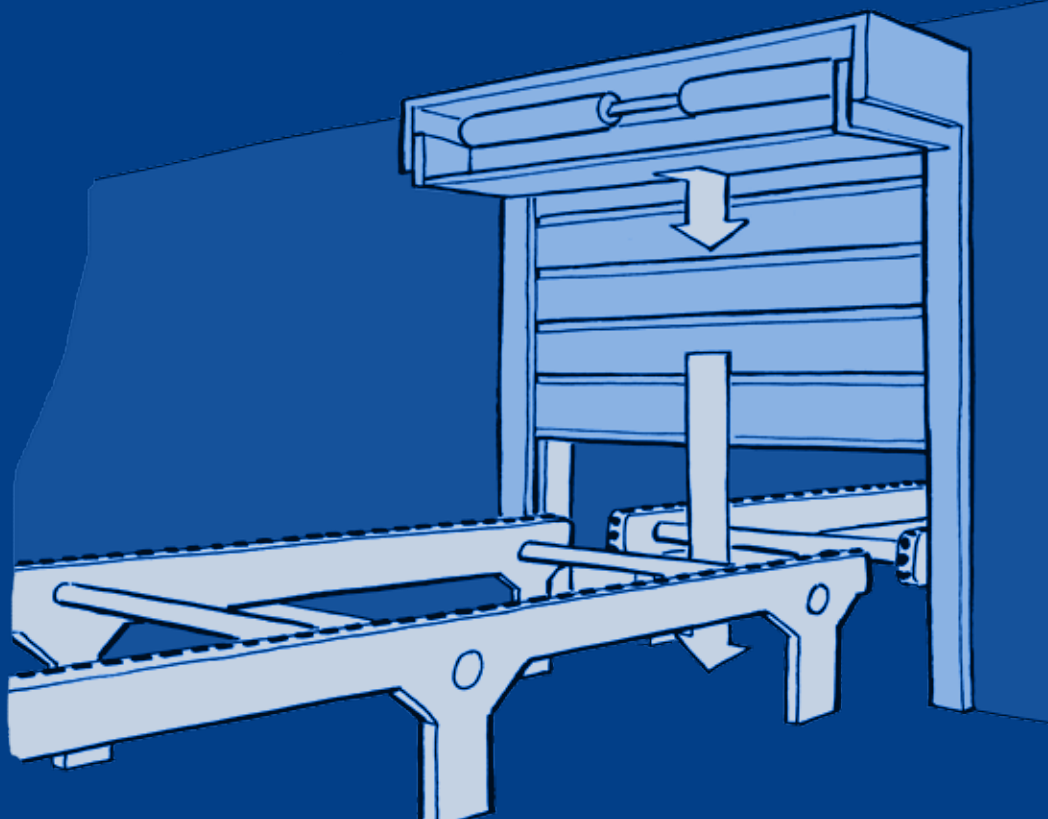
Proof of usability: General building approval (ABZ)
as gate

No: Z-6.20-1886 (T 90), Z-6.20-1887 (T 30)

Classification report: FIRES-CR-041-11-AUPE (EI 120)

Conveyor systems

- Interrupted conveyor systems
- Separable conveyor systems
 - Continuous belt conveyor
 - Continuous roller conveyor
 - Continuous chain conveyor
- Continuous travelling carriages



Customer benefits

- Tested according to DIN EN 1634-1 with classification up to EI 120
- Small space requirement in the lintel area
- Robust surface due to sheet metal construction
- Appropriate for very large openings
- Also low lintel version (place requirement approx. 500 mm)

Design characteristics

- Segmented slider that is stacked in the lintel area
- Sandwich construction, sheet metal on both sides
- Bottom bar designed for interrupted or continuous conveyor systems

Closing direction



Separated roller conveyors



Continuous chain conveyor
Closed position



Continuous chain conveyor
Open position

Universal-S Universal ceiling closure

Fire resistance: Tested according to DIN 4102-5

Class: T 90

Permanent function test: Tested according to DIN 4102-18

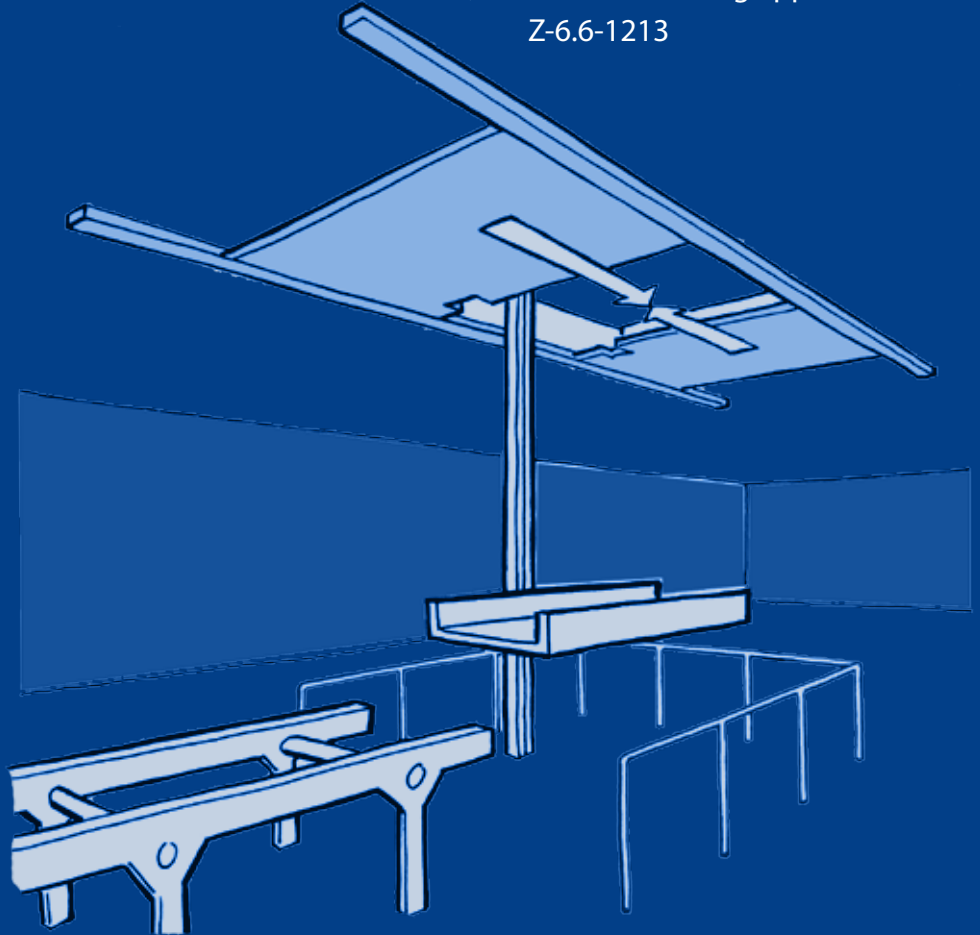
Class: 200.000 (meets C5)

Proof of usability: General building approval

Z-6.6-1213

Conveyor systems

- Floor lift
- Dropping shaft



Customer benefits

- Installation without significant space limitations
- Sealing of passing supports and carrier with sleeves
- No lift shaft cladding necessary
- Feasibility depending on the number and positioning of the continuous components

Design characteristics

- Slide construction for ceiling and floor installation
- One piece or multiple piece
- With the passing constructions, sleeves at the closing edge of the slider

Closing direction



Dropping shaft



Floor conveyor



Floor conveyor

ECClos-flex-S Revolutionary replacement for lift shaft walls

Fire resistance: Tested according to DIN EN 1366-7

Class: E 90, E 120, EW 90, EW 120

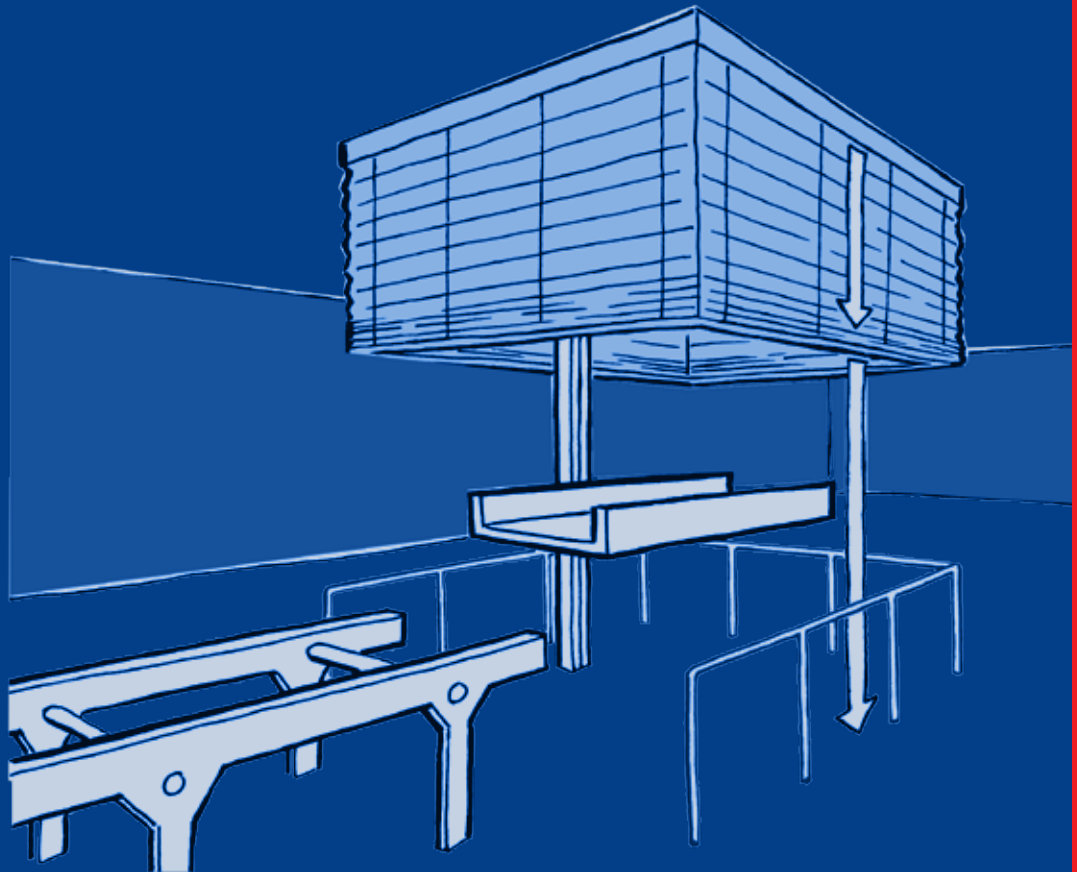
Permanent function test: Tested according to DIN EN 14600

Class: C2

Proof of usability: FIRES-FR-136-11-AUNE
UB 3.3/10-018-D

Conveyor systems

• Floor conveyor



Customer benefits

- Room creating sealing systems, such as lifts without visible restrictions (no columns)
- For large dimensions, diameter 30 m and height up to 8 m
- Unrestricted view on the conveying process
- Good access for maintenance of the lift etc.
- Tested according to European standard DIN EN 1366-7 with classification E 90/120, EW 90/120

Design characteristics

- Textile, room creating closure, especially for floor conveyors
- Folded special fabric that is positioned in operational condition in a casing
- Bottom bar designed for interrupted or continuous conveyor systems
- High degree of freedom in the surface; rectangular or polygonal (open polygons with side guide at the ends)

Closing direction



Operational open closure



Self-closing closure



Closed closure

Isogate *Hygienic closure for cooling and freezing rooms*

Fire resistance: Tested according to DIN EN 1634-1

Class: EI 90

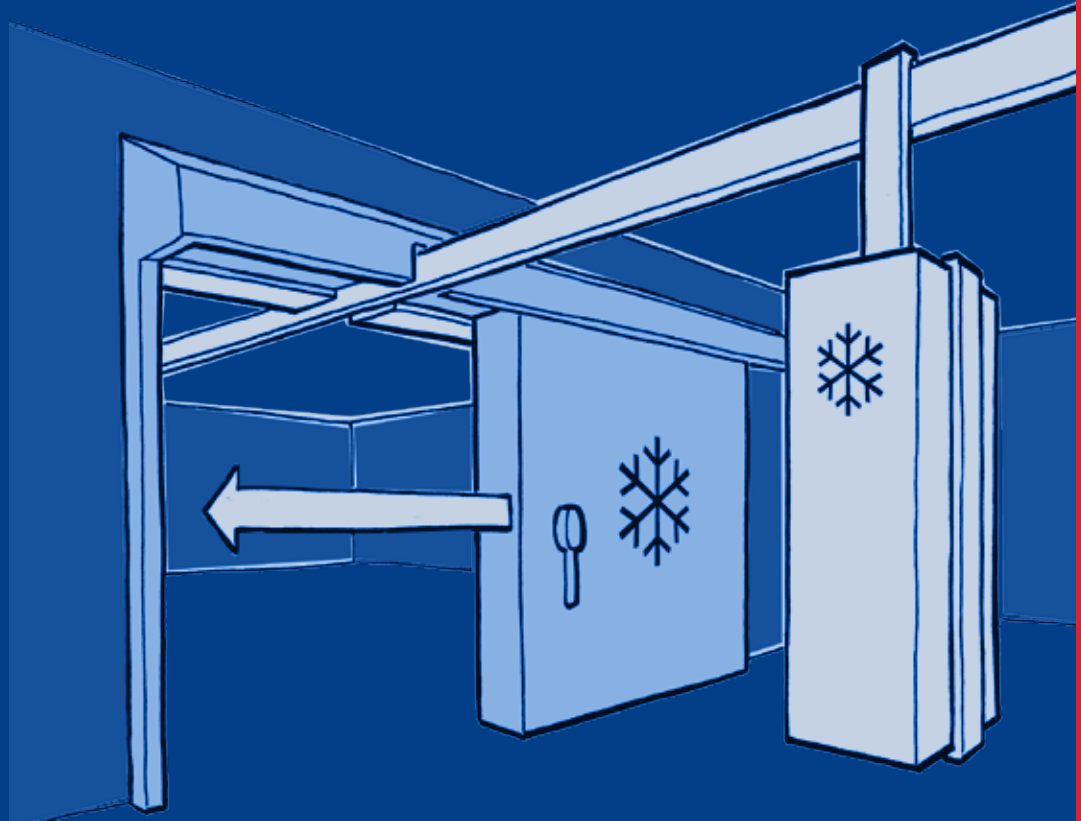
Permanent function test: Tested according to DIN 14600

Class: C5

Proof of usability: General building approval
Z-6.20-1991 (T 90)

Conveyor systems

- Continuous overhead conveyor
- Interrupted conveyor systems
- Seperable conveyor systems
- Continuous roller conveyor
- Continuous chain conveyor



Customer benefits

- Fire resistance class T 30 / T 90 according to DIN 4102, EI 30 / EI 90 according to DIN EN 1634-1
- Average opening velocity of up to 0.5 m/s
- High numbers of cycles up to 1000/day
- Veterinary compliant version

Design characteristics

- Excellent insulation properties ($K = 0.0184$)
- Surface stainless steel / coating
- Wear-free self regulating heating system with continuous conveyor systems
- Manual or motorized re-opening

Closing direction



Chain conveyors



Three continuous conveyor



Continuous overhead conveyor



Interrupted roller conveyor

Sleeve Foamed fire retarding sealing system

Fire resistance : Tested according to DIN 1634-1

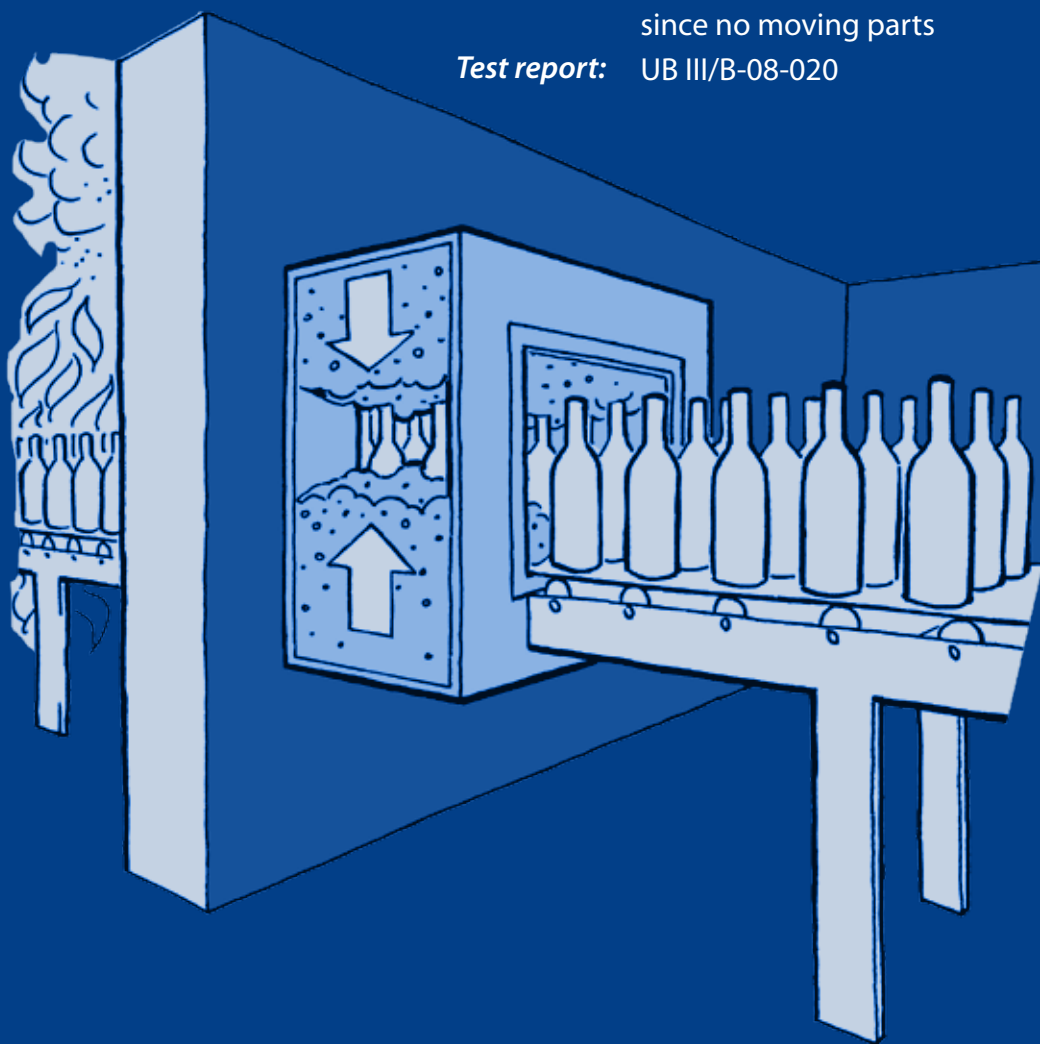
Class: EI 90

Permanent function test: not necessary
since no moving parts

Test report: UB III/B-08-020

Conveyor systems

- Continuous belt conveyor
- Continuous roller conveyor
- Continuous chain conveyor
- Circular conveyor



Customer benefits

- No clearing of the closing area for non-combustible conveyed goods necessary
- No moving sealing elements
- Small space requirement on the wall plate
- Tested according to DIN EN 1634-1 EI 90 with conveyed goods "Totally filled bottle conveyor"

Design characteristics

- Fire resistant steel construction encapsulates the conveyor
- Intumescent (i.e. foams in case of fire)
- Sealing blocks in several different sealing depths
- Integrated initiators to accelerate foaming
- Sealing depth depends on the clear conveyor cross-section
- Sealing cross section adapted to the conveyed goods

Closing direction



Round belt conveyor for
bottles / cans



Hinge chain conveyor through ceiling openings



Hinge chain conveyor for bottles



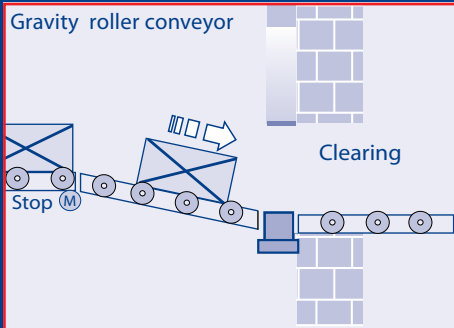
Overhead conveyor for
e.g. chicken

Retaining and clearing

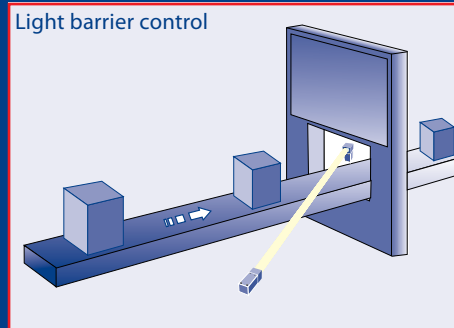
Problem-oriented clearing of the closing area.

For stopped conveyor systems

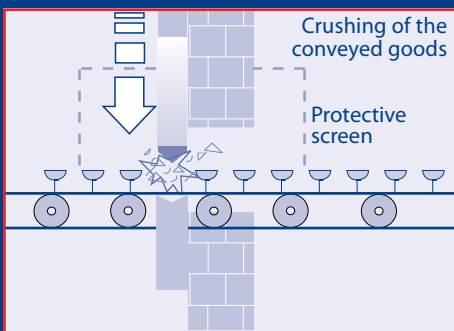
For conveyor systems which continue conveying an emergency power system is necessary



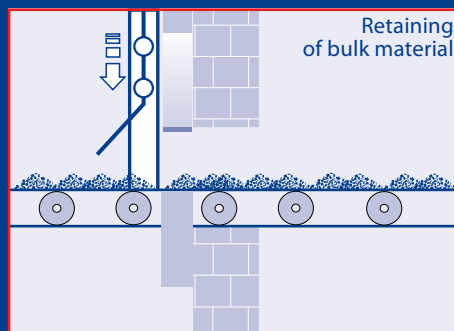
When roller conveyor systems run through the closure with an inclination, the delay of the closing process is adequate. Precondition is that it may not lead to a back draught of the goods to the closure level.



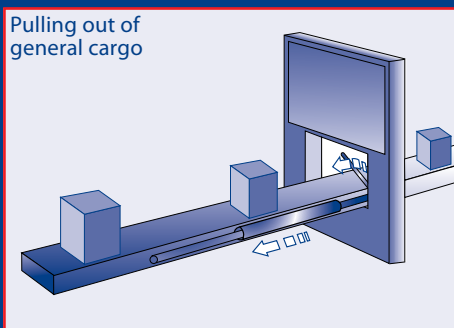
One or more transversally arranged light barriers control the closing level. In case of a detected gap the conveyor system stops.



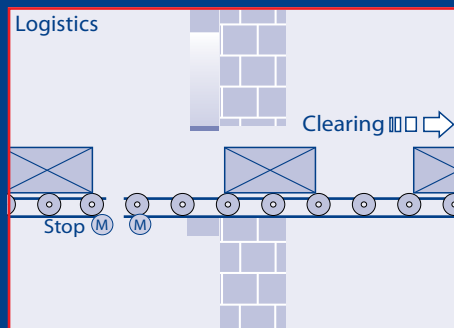
For conveyed goods, which can be crushed or displaced by kinetic energy because of their properties, the clearing system "A-Y1 type" offers an economic possibility.



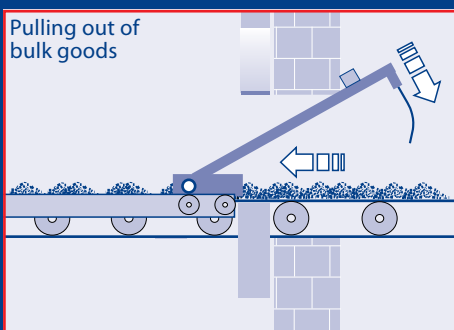
Bulk goods can be retained by means of a slider. The arrangement of the slider can be rectangular, diagonal or according to the snowplough principle. Only after the clearing the conveyor system is stopped.



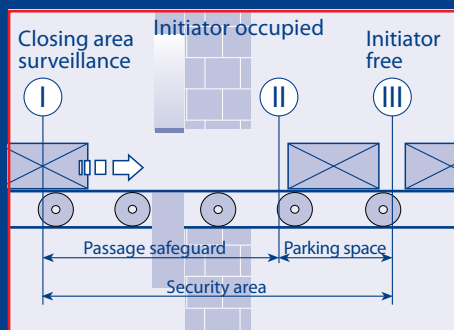
General cargo, which move on the conveyor system with gaps between one to the other, can be pulled out of the closing area via swivelling return motion lever with stored pneumatic energy.



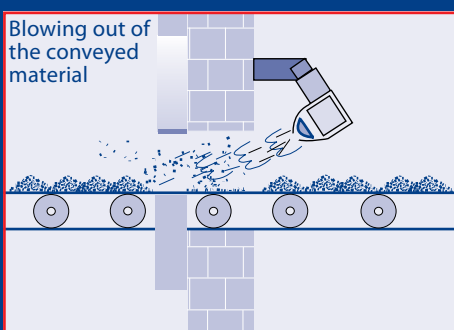
When several separated conveyor systems are used for the conveyor process, the closing range can be cleared by switching-off of the incoming conveyor route and continued running of the outgoing conveyor route.



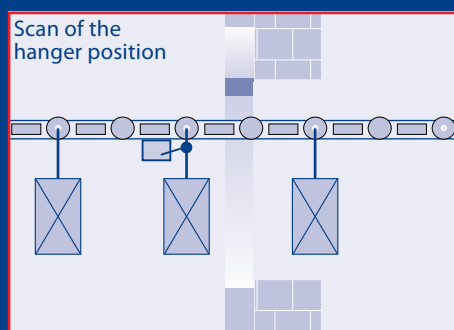
A rake, driven by stored energy, swivels into the conveyor process and pulls out the conveyed material.



The closing area surveillance is defined for the distance that is necessary to guarantee the closing range to be free of conveyed goods. Usually in front of and behind this closing area surveillance, proximity switches (initiators) are placed.



Light conveyed goods can be blown out of the closing range by means of stored compressed air.



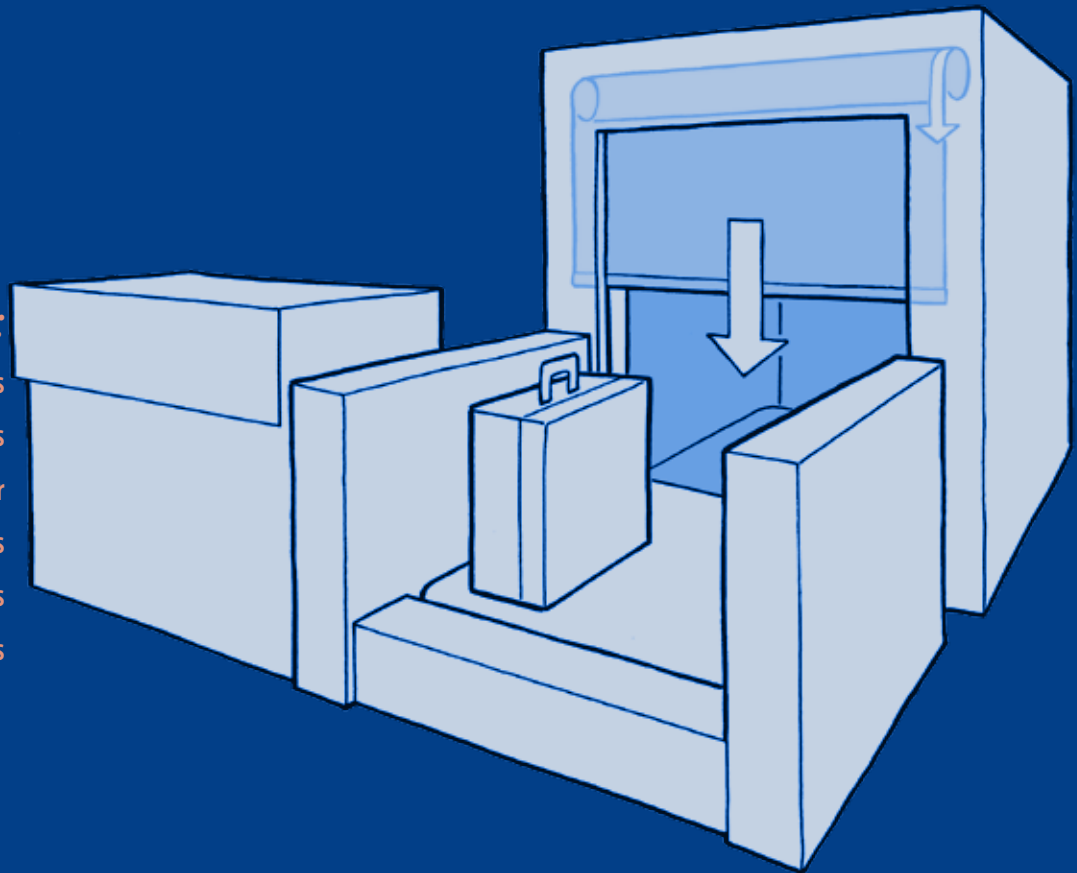
With this system it has to be guaranteed that all openings are free simultaneously during the closing period. In dependence on the uniformity of the hanger distances as well as of the hangers itself, control elements have to be installed.

Turbocoil High-speed protection closure

High-speed function:	1,4 m/s
Smoke and fire resistance:	Tested according to DIN EN 12101-1
Class:	DH 120
DPermanent function test:	Tested according to DIN EN 14600
Class:	C5
Proof of usability:	CE according to DIN EN 12101-1

Conveyor systems:

- Interrupted conveyor systems
- Separable conveyor systems
- Continuous belt conveyor
- Continuous roller conveyors
- Continuous chain conveyors
- Continuous travelling carriages



Customer benefits

- High velocity approx. 1.4 m/s
- CE according to DIN EN 12101-1
- Smoke density DH 120 (STTC)
- High number of cycles
- Preassembled and tested, ready for screwing to the cover on site

Design characteristics

- Self-supporting construction
- Winding glass filament fabric coated on both side
- Industrial drive with absolute value encoder 3 x 230 V
- Optional: Coating of the fabric with scratch-resistant and dirt repellent top coat

Closing direction



Operational open closure



Self-closing closure



Closed closure

Stöbich – Innovation for your protection

Since 1980, Stöbich Fire Protection is not only the worldwide leader for conveyor system closures but also an international trendsetter in the field of textile fire protection.

The grown know-how due to the immense number of executed projects and fire tests and the proven expertise in design makes Stöbich Fire Protection to a specialist with a broad product range and comprehensive services.

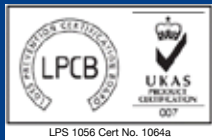
Ten world novelties and numerous awards are an expression for innovative and customer-oriented product design and efficient process control.

Four branches and a large number of national and international agencies allow immediate presence and customer proximity in any state of the project.

Tested quality



Intertek



Further information
(Please see Video,
CD or Internet)



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Honours and innovation awards



„Civil engineering in existing buildings“ from the Federal Ministry



1st prize in the series „einfach genial“: MDR



„Fire protection of the year 2011“ from Feuer-TRUTZ



„Encyclopedia of German world market leaders“



German Award of Innovation „Architektur + Bauwesen“

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| • Bulgaria | • Hungary | • Norway | • Spain |
| • Canada | • India | • Paraguay | • The Netherlands |
| • Chile | • Ireland | • Poland | • Turkey |
| • China | • Iceland | • Portugal | • UAE |
| • Colombia | • Israel | • Qatar | • Ukraine |
| • Croatia | • Italy | • Romania | • Uruguay |
| | • Kazakhstan | | • United Kingdom |
| | | | • USA |