

Smoke Barriers

Flexible Smoke Barriers

Automatic smoke barriers

- **Supercoil**
- **Moducoil**
- **Stripecoil**
- **Smokeshield-S**

Fixed smoke barriers

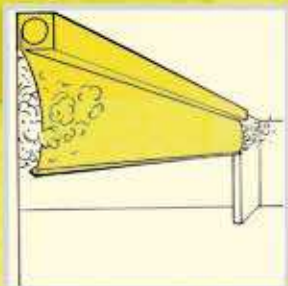
- **Supercoil fix**
- **Moducoil fix**



Overview

Supercoil

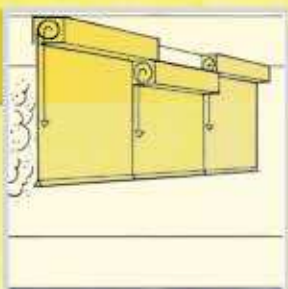
4/5



Classical, first class, automatic smoke barrier

Moducoil

6/7



Modular automatic smoke barrier

Stripecoil

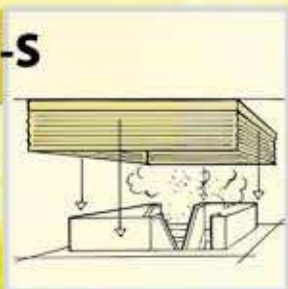
8/9



Automatic smoke barrier with the feasibility to pass through

Smokeshield-S

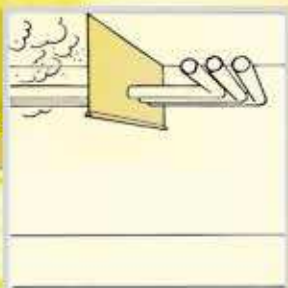
10/11



Automatic smoke barrier to create rooms

Supercoil/Moducoil fix

12/13



Static smoke barrier

Certificate for the usability

CE-label:

A certificate for the usability according to the EN 12101-1 is required.

Classical, first class, automatic smoke barrier:

Approval according to the Building Supervision for the characteristics of the complete smoke barrier in case of fire: Provided that basic demands from the valid product standard are missing, additional certificates become necessary. Smoke barriers always ask for an official approval document.

According to the test standard EN 12101-1 the following tests are necessary: Fire test, cycle test and a test for the tightness of the fabric

Classification according to EN 12101-1: Temperature/time-classifications

Class	Temp. (°C)	time (minutes)
D 30	600	30
D 60	600	60
D 90	600	90
D 120	600	120
DA	600	> 120 achieved time

class	Temp. (°C)	time (minutes)
DH 30	STTC	30
DH 60	STTC	60
DH 90	STTC	90
DH 120	STTC	120
DHA	STTC	> 120 achieved time

Application with higher temperatures
STTC = Standard-Time-Temperature
- Curve according to EN 1363-1

Different drive units for a secure closing:

Typ	Gravity Fail System	Motorized closing (with batteries and fire resistant cables)	Alarm position ≤ 2,5 m from floor V = 0,06–0,15 m/sec.	Alarm position > 2,5 m from floor V = 0,06–0,3 m/sec.
ASB 1				
ASB 2				
ASB 3				
ASB 4				

Required quality surveillance to achieve the “CE”-label according to the product standard EN 12101-1:

Internal surveillance of the production according to the standard

External surveillance by the MPA-BS (certificate ÜZ-3/358/97)

9001:2000 by the VdS (certificate S 896002)

Additional performance features due to 30 years of experience by Stöbich – the specialist:

Innovation leader:

- many patents, e.g. Gravigen drive unit
- many awards, e.g. Award for Architectural Product Innovations
- large variety of control units

Long time experience:

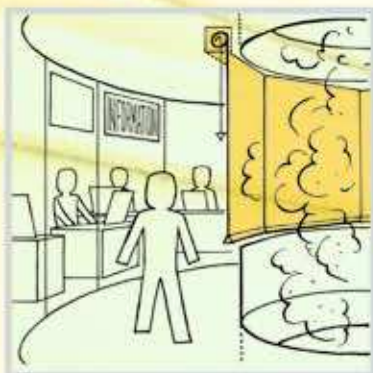
- more than 1500 projects have been settled

Premium quality:

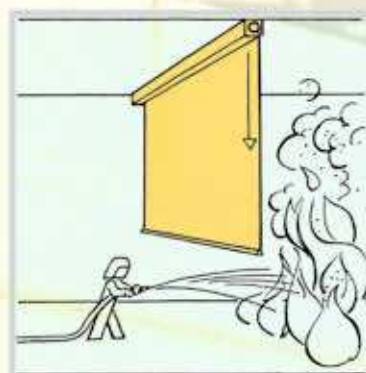
- STTC 9001 – certification since 1996
- Highest expertise for the fabrics
- In-house development, in-house production of the fabrics, in-house coating and handling of the fabrics

Challenges & protection targets

- **90% of all victims die from smoke**
- **70% of physical damages are caused by smoke**
- **The source of the fire as well as further sources of danger can not be detected by the fire brigade**



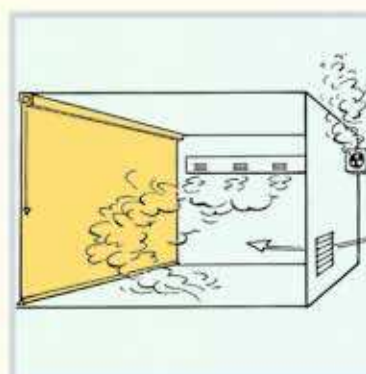
Safe escape routes due to adapted smoke protection classifications according to leakages, temperature loads and time classifications.



Extinction of the fire by the fire brigade becomes easier as they can detect the origin of the fire. This is possible due to the smoke compartments avoid a **spread of smoke** to the complete room.



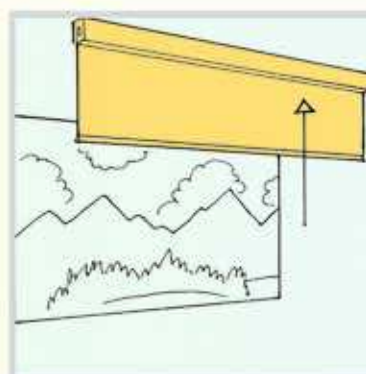
Smoke barriers can increase the effectiveness of SHEV systems, i.e. the higher the smoke layer, the smaller the openings for exhaust air as well as for the fresh air intake openings.



Smoke barriers serve to **separate rooms for the mechanical smoke exhaust**. Therefore the rating and the linked investment for exhaust fans can be reduced.



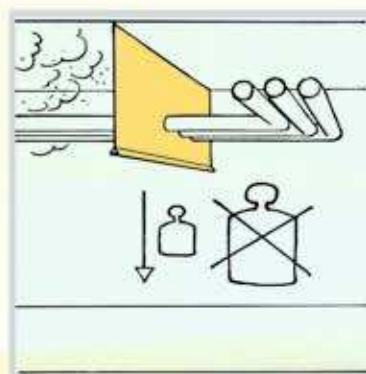
A **controlled flow** of the smoke can be achieved by smoke barriers even with cross streams which may have a negative influence on the entrainment of the smoke – especially in high rooms.



Invisible smoke barriers do not only comply with highest architectural demands, but do also **not limit the view**.



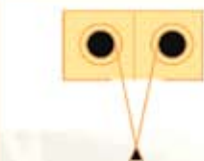
The Stripecoil system offers corresponding characteristics in case that in disadvantageous building structures **escape routes** have to be combined with smoke barriers. Even large numbers of persons (depending on the width of the system up to approx. 200 persons) can pass through the system.



Fixed smoke barriers have the advantage of being **very light weighted** – approx. 1kg/m² and offer an easy sealing of continuing pipes, ducts or cable trays.

Definition of the smoke exhaust concept and the linked requirements to the smoke barrier can be done according to the DIN 18232-2 and -5, calculation or a small scale test

Remaining opening within the overlapping area



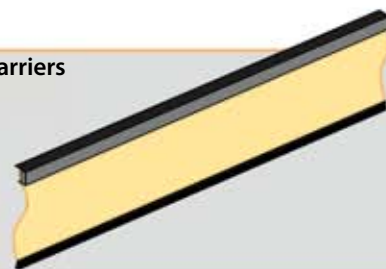
Do you have to avoid any remaining opening?



Supercoil offers smoke barriers with 50 m in one piece - therefore

0 %

leakage within the overlapping area



Remaining openings within the boundary area

Do you have to avoid remaining openings caused by pressure load in boundary areas?



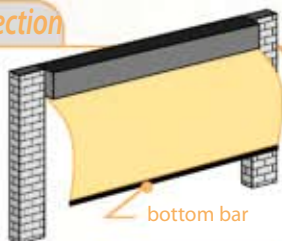
Special side guides with rods guarantee for a positive fitting in the boundary area for the complete height - therefore

0 % leakage in the boundary area even in case of a pressure load.

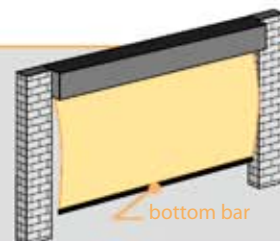


Remaining opening caused by deflection

Is the deflection and the involved leakage a problem (a weight of the bottom bar of approximately 2 kg/m is common).

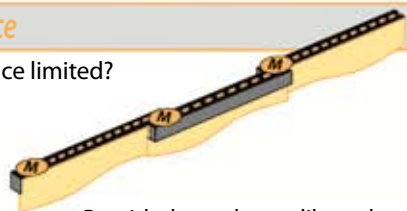


Stöbich System Supercoil offers a remarkably lower deflection due to the high weight of the bottom bars between 4,6 to 13,5 kg.



Demand for space

Is the available space limited?



Provided you do not like to have a drive unit for each element ...

+ number of drive units

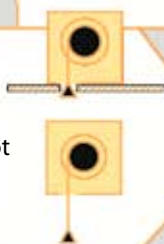
... choose the **Stöbich Supercoil system** with corresponding control unit and large drive capacity - independent from the drop length and up to 30 m widths.



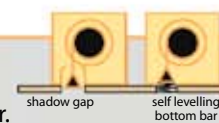
Closing of a ceiling and closing direction

Do you require a clean sealing of a ceiling even for large dimensions?

Do you have a fire protection concept which can not be achieved by using vertical smoke barriers?



Stöbich Supercoil system offers an optical more significant design e.g. by the self levelling bottom bar. Supercoil offers various closing directions and adjusts to your protection concept.

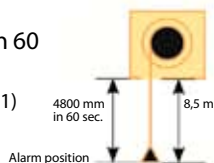


Reaction time and drop length

Which drop length has to be achieved within 60 seconds?

(standard is 4.800mm/60sec. according to EN 12101-1)

Do you require an extreme drop length? (standard is 8,5 meters)



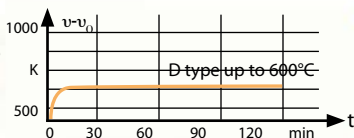
Stöbich Supercoil system offers closing velocities to achieve a drop length of 8.500 mm within 60 seconds.

Stöbich System Supercoil offers drop length of up to 20 meters.

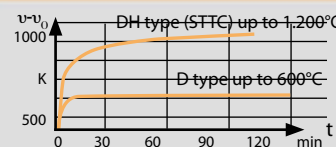


Temperature classification

Is your protection concept asking for a higher temperature classification?



Stöbich Supercoil system can be supplied in different temperature classifications.

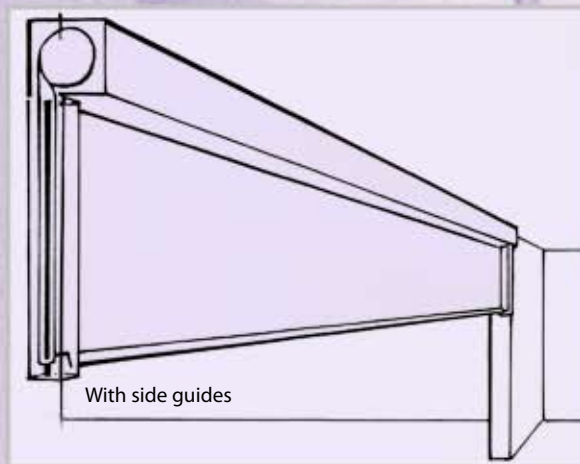
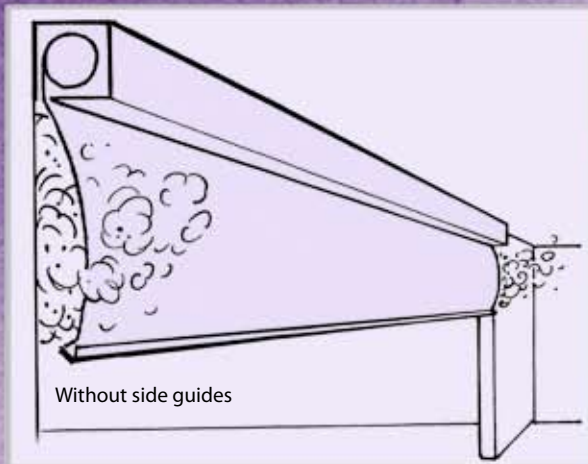


Supercoil

CE-label 0761 - CPD 0060

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z-PA-III 4.935

The traditional automatic smoke barrier to match highest demands and large dimensions

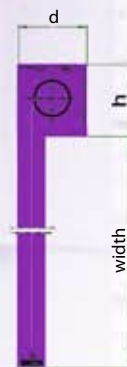
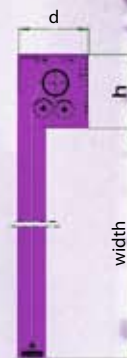
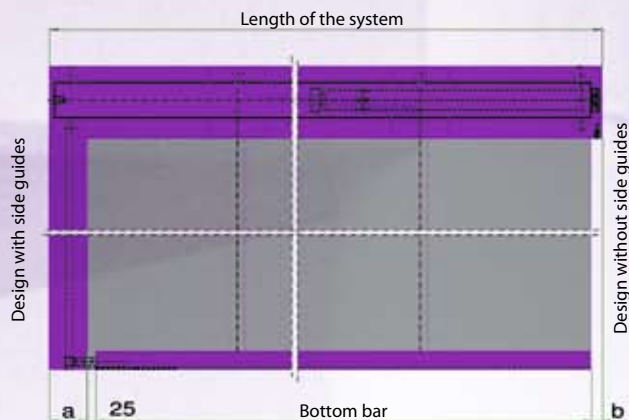
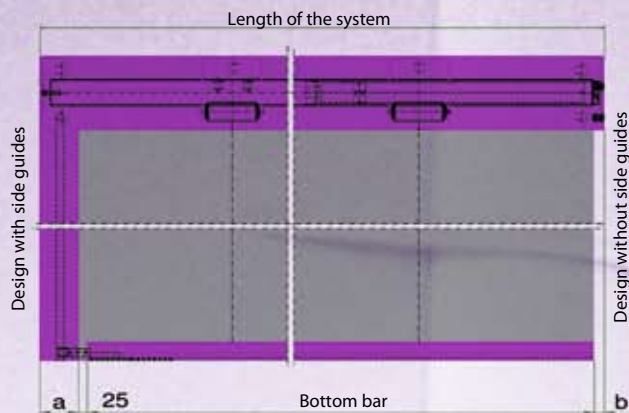


Smoke barrier Supercoil

- made of one piece up to 50 m width and 9,5 m drop
- for highest time classifications in case of fire load D = up to 600°C and DH (STTC)
- no remaining openings within the casing area
- only 1 drive unit is necessary, therefore reduced complexity for the installation

- using side guides achieves 0% leakage in reference to the total smoke barrier
- highest variability concerning engineering and design
- standard drive system "Gravigen", that is closing without auxiliary energy, no fire resistant cables are necessary
- high number of cycles of the motor = 10.000

Dimensions



a = side guide
b = gap without side guide

Length of the system	Drop length	d (mm)	h (mm)
< 50 m	< 3,5 m	190	200
< 50 m	> 3,5 m – ≤ 6 m	190	250
< 50 m	> 6 m – ≤ 9 m	235	290
*	> 9 m – ≤ 12 m	255	320

* Dimensions of the area which has to be sealed shall not be larger than 475 m².



Range of casings



Standard –
fixed bearing



Standard –
floating bearing



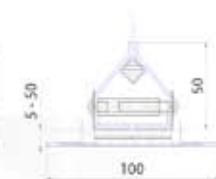
Range of special constructions



Standard
bottom bar
4,6 type



Heavy
bottom bar
9,6 type



Self levelling
bottom bar

Range of side guides

Side guide
105 R type

80 S type

105 R type

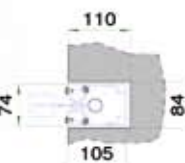
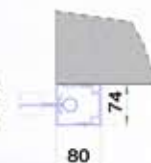
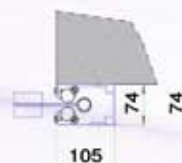
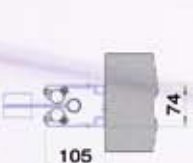
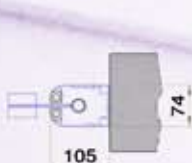
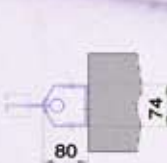
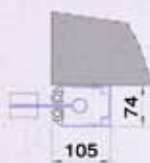
105 E type

105 E type

80 N type

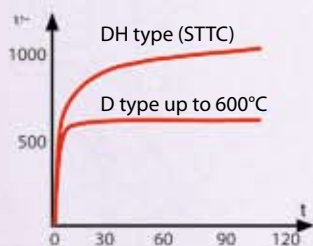
80 E type

105 N type



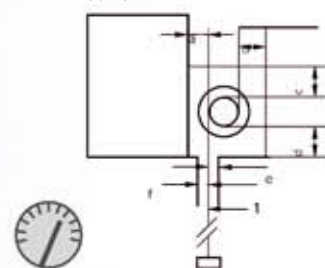
CE-classification

Patented tubular motor with
Gravity Fail Safe technology

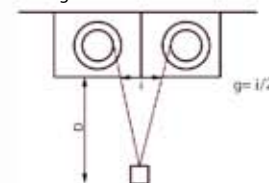


Labelling EN 12101-1	Stöbich Supercoil system
Automatic smoke barrier	ASB1 / ASB 3 type, closing without electric power
Temperature classification	D60 (600°C / 60 min.) DH120 (1.100 °C / 120 min.)
Closing speed (depends on the drive)	from 0,15 m/sec. to 0,30 m/sec. e.g. drop length 9 m = within 60s in the closed position
Gap – casing (a-f)	0 mm g = 0 mm with side guides g = 15 mm + 30 mm for fixed bearing without side guide
Gap – edges (g) embrasure	g = 30 mm + 30 mm for floating bearing without side guide
Gap – joint (h)	0 mm (standard ceiling installation)
Max. permeability of the smoke barrier fabric (max. 25m³/m²/h)	< 1m³/m²/h
Test temperature	at ambient temperature and at 200 °C
Free area – casing	= length of the casing x gap casing = Lx0= 0 mm²
Free area – edges	= D x gap edges
Free area – joints	= D x gap joint x number of joints
EC conformity certificate	= 0761 – CPD – 0060
General approval from the Building Authority for the fabric	Z-56.429 - 916
D = Drop length of the smoke barrier	

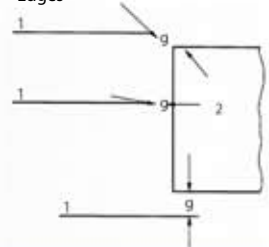
Joint



Casing



Edges

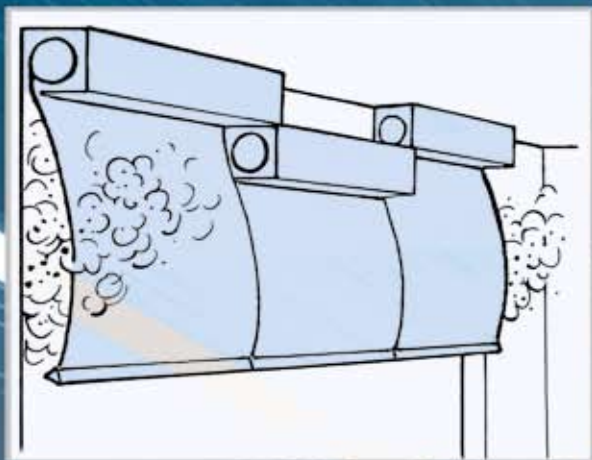


Moducoil

CE-label no. 0761 – CPD - 0076

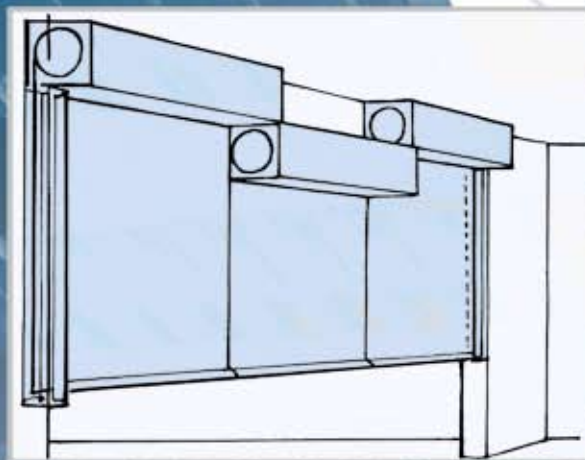
Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z-PA-III 4.936

The standard smoke barrier in a modular design

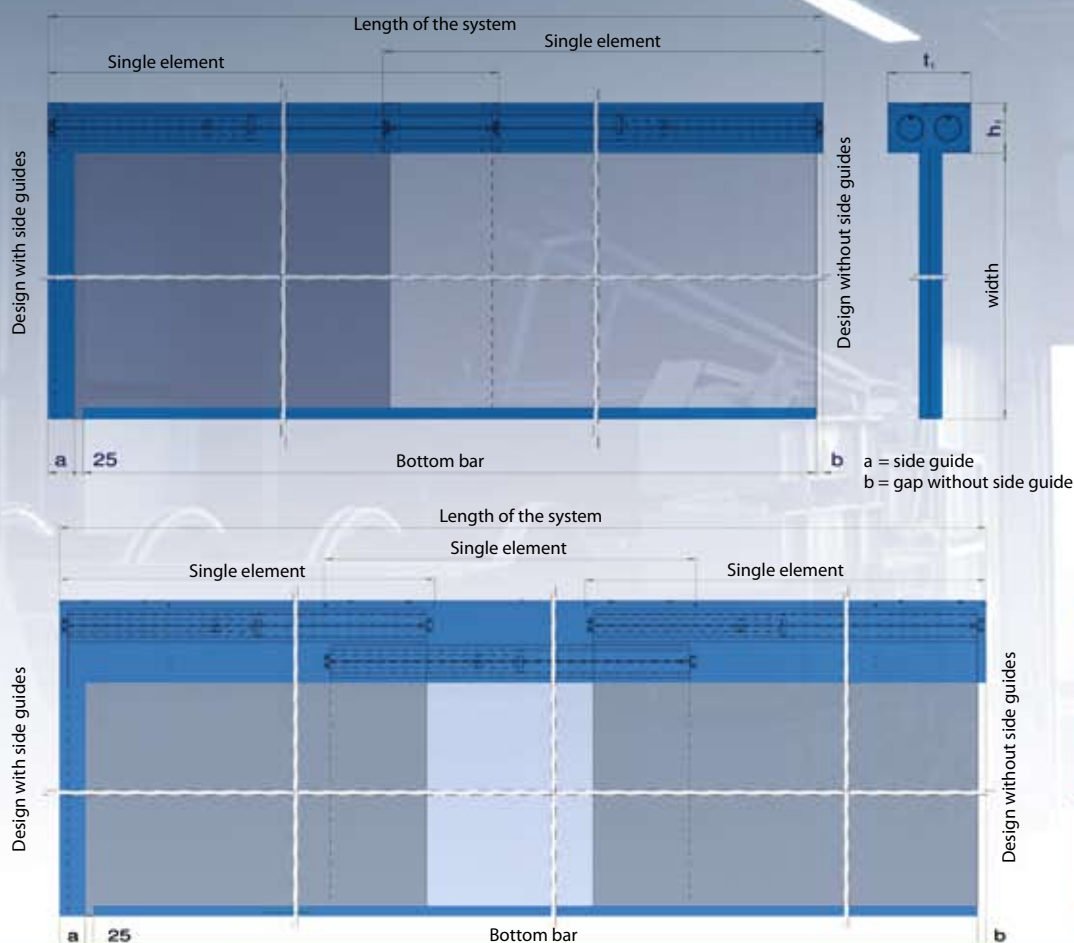


Automatic smoke barrier Moducoil

- pre-manufactured single elements will be assembled to create one complete unit up to any width standard drop length of up to 8,65 m
- designed for the time classification and temperature loads D = 600°C
- standard drive system "Gravigen", that is closing without auxiliary energy, therefore no fire resistant cables are necessary

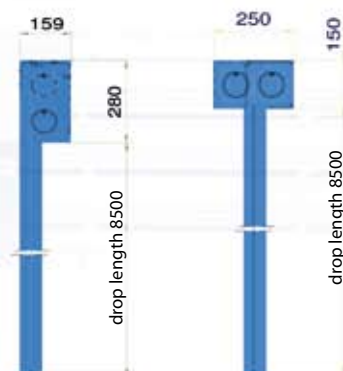


- robust drive unit, applicable for a high number of cycles (up to 10.000 cycles), with approved hold open unit
- modular installation of the casings side by side or on top of each other
- connected bottom bar across all elements
- can be combined with a self levelling bottom bar
- alternatively with side guides

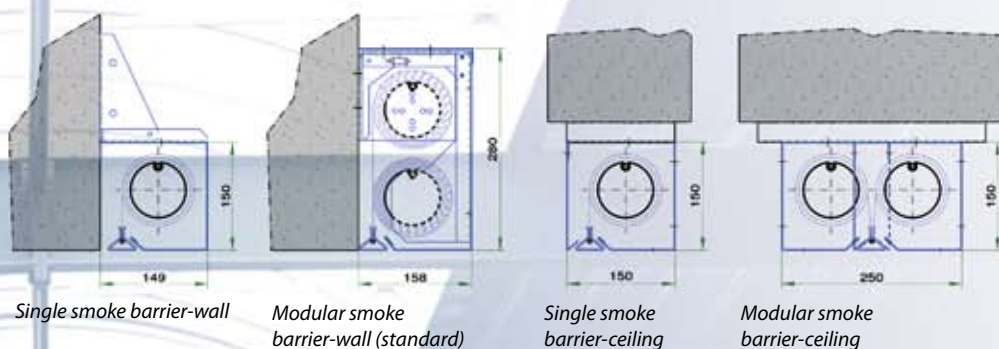


Drop length Single elements up to 6m width

Drop length	d ₁ (mm)	h ₁ (mm)	t ₁ (mm)	h ₂ (mm)
≤ 4,5	250	150	150	150
> 4,8 - ≤ 8,5 m	290	165	165	165



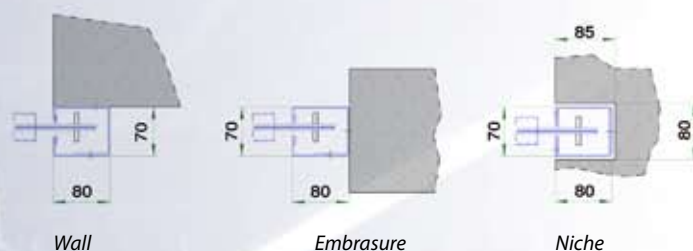
Range of casings



Bottom bar

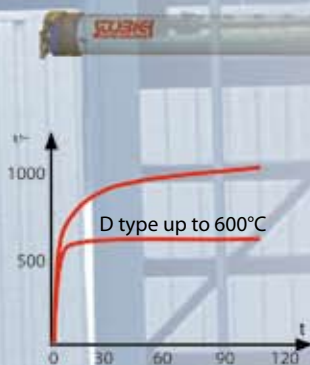


Range of side guides



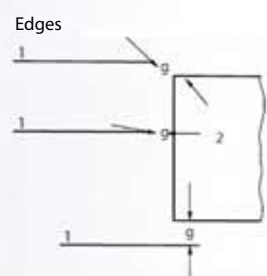
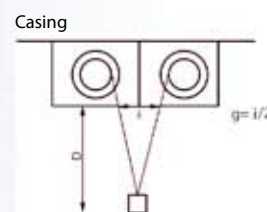
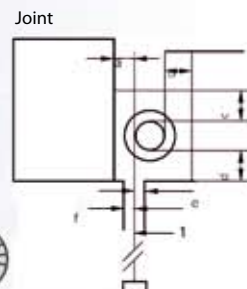
CE-classification

Patented tubular motor with Gravity Fail Safe technology



Labelling EN 12101-1	Stöbich Moducoil system
Automatic smoke barrier	ASB1 / ASB 3 type, closing without electric power
Temperature classification	D120 (600°C / 120 min.) DH90 (1.100 °C / 90 min.)
Closing speed (depends on the drive)	approx 0,15m/sec. – e.g. drop length 9 m = within 60s in the closed position
Gap – casing (a-f)	0 mm
Gap – edges (g) embrasure	g = 0 mm with side guides g = 20 mm + 20 mm without side guides
Gap – joint (h)	17 mm (standard ceiling installation) 0 mm (standard wall installation)
Max. permeability of the smoke barrier fabric (max. 25m³/m²/h)	< 1m³/m²/h
Test temperature	at ambient temperature and at 200 °C
Free area – casing	= length of the casing x gap casing = Lx0= 0 mm²
Free area – edges	= D x gap edges
Free area – joints	= D x gap joint x number of joints
EC conformity certificate	= 0761 – CPD – 0076
General approval from the Building Authority for the fabric	Z-56.429 - 916

D = Drop length of the smoke barrier

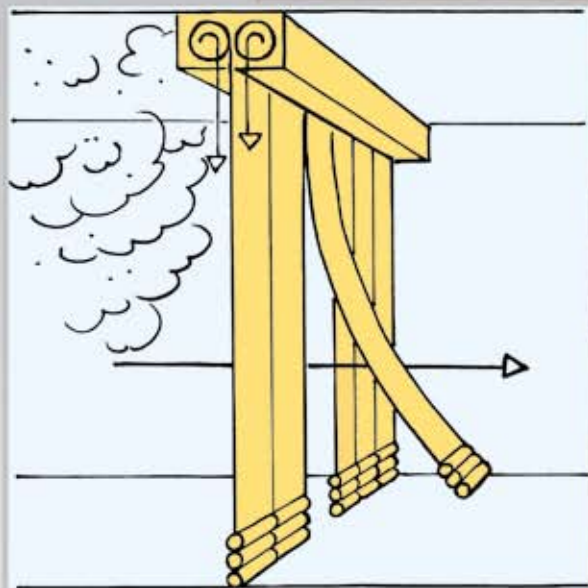


Stripecoil

CE-label no. 0761 – CPD - 0077

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z-PA - III 4.937

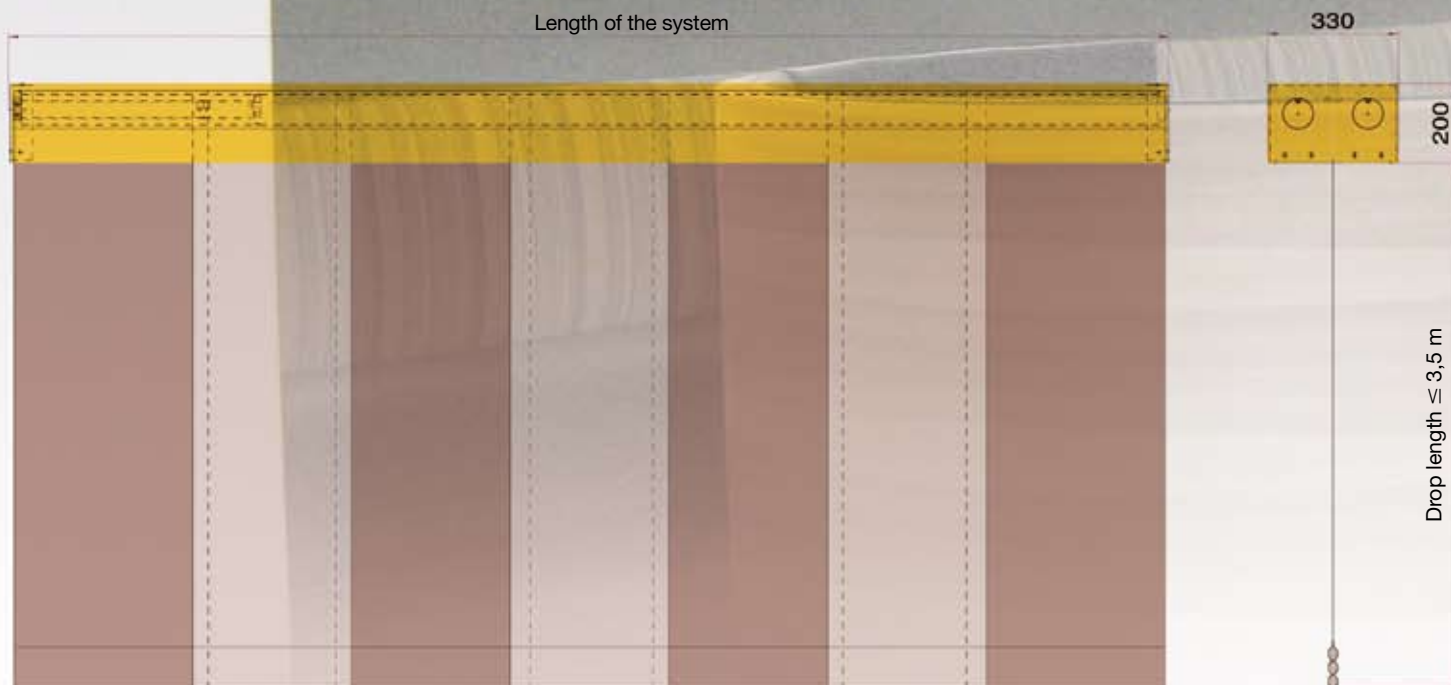
Automatic smoke barrier Stripecoil



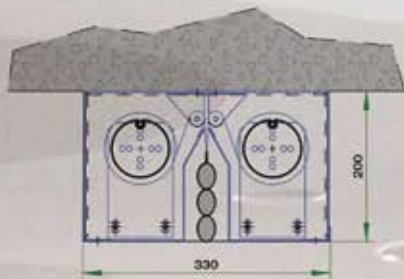
Smoke barrier with the feasibility to walk through although closing to the floor level

- creation of smoke compartments in alleyways respectively in escape routes with a passage of persons
- double-coil system with unlimited width
- drop length up to 3,5 m
- designed for the time classification and temperature load D = 600°C and DH up to 30 minutes
- passage of up to 300 persons per minute at a width of 3 m is possible
- standard drive system "Gravigen", that is closing without auxiliary energy, no fire resistant cables are necessary
- translucent fabric to optimize the visibility in the area of the passage
- little demand for space for the casing, therefore no limitations in the height of the passage
- soft, elastic and interrupted bottom bar to avoid any injuries
- protected bottom bar against damages and vandalism

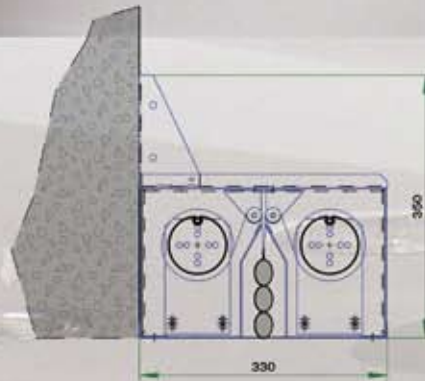
Dimensions



Range of casings



Installation to the ceiling



Installation to the wall

Bottom bar

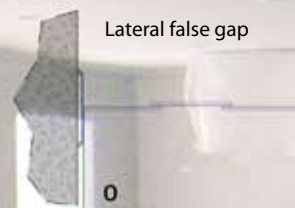


Elastic bottom bar with a tear proof fabric

Lateral gaps



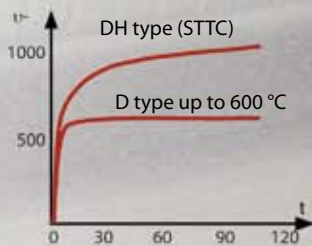
Lateral gap – standard



Lateral false gap

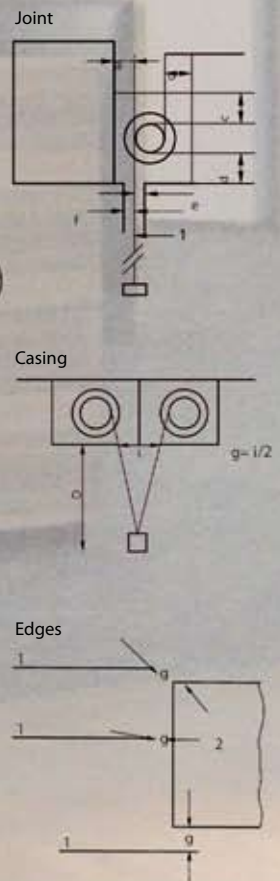
CE-classification

Patented tubular motor with Gravity Fail Safe technology



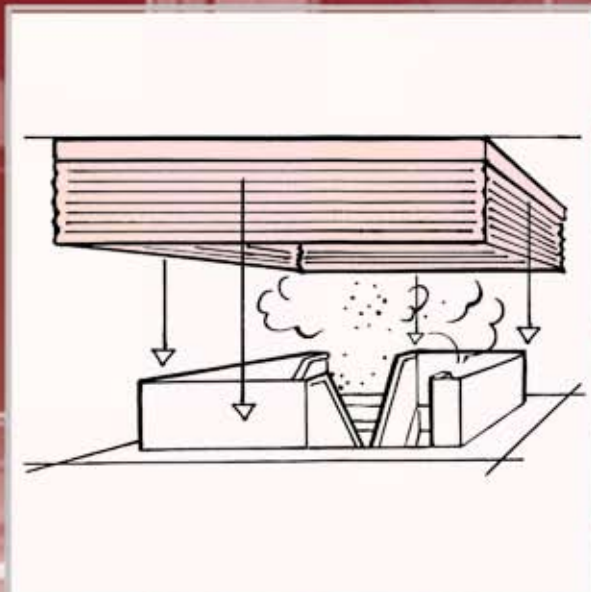
Labelling EN 12101-1	Stöbich Stripecoil system
Automatic smoke barrier	ASB1 / ASB 3 type, closing without electric power
Temperature classification	D60 DH30 (600°C / 60 min.) (1.100 °C / 30 min.)
Closing speed (depends on the drive)	approx 0,15m/sec. – e.g. drop length 3,5 m = within 24s in the closed position
Gap – casing (a-f)	0 mm
Gap – edges (g) embrasure	g = 0 mm g = 10 mm + 10mm
Gap – joint (h)	10 mm
Max. permeability of the smoke barrier fabric (max. 25m³/m²/h)	< 1m³/m²/h
Test temperature	at ambient temperature and at 200 °C
Free area – casing	= length of the casing x gap casing = Lx0= 0mm²
Free area – edges	= D x gap edges
Free area – joints	= D x gap joint x number of joints
EC conformity certificate	0761 - CPD - 0077
General approval from the Building Authority for the fabric	Z-56.429 - 916

D = Drop length of the smoke barrier



SmokeShield-S

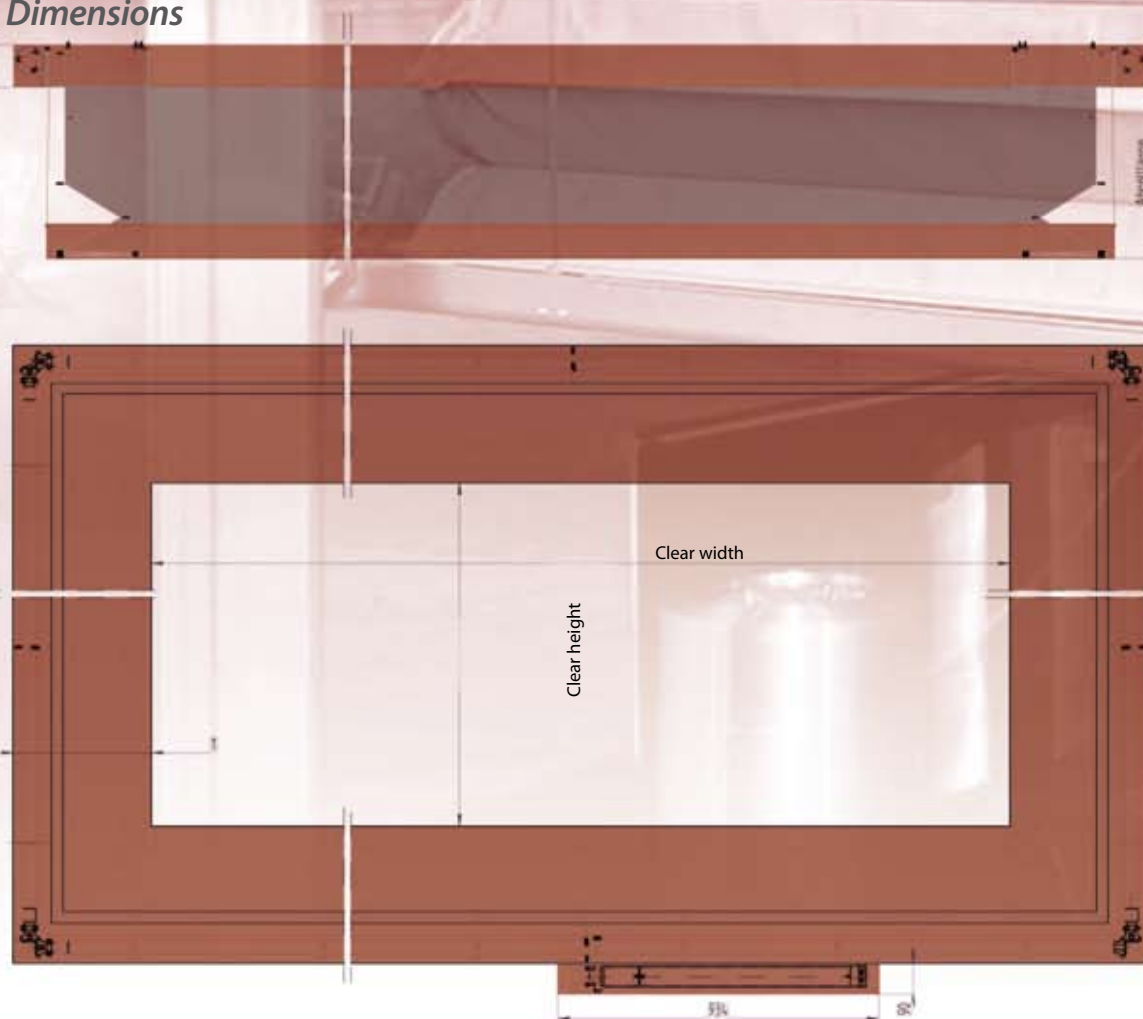
Automatic smoke barrier SmokeShield-S



The automatic smoke barrier which creates sections and matches highest demands:

- rectangular or polygon shaped base area of the smoke barrier
- outer dimensions up to 16m and drop lengths of up to 6 m
- designed for a high time classification and temperature load D = 600°C and DH (STTC)
- no remaining openings – neither in the upper area nor at the corners
- pillars are not necessary, although complete tightness even in case of high pressure
- small height of the casing – approx. 150 mm
- standard drive system "Gravigen", that is closing without auxiliary energy, no fire resistant cables are necessary
- redundant drive system as crash protection

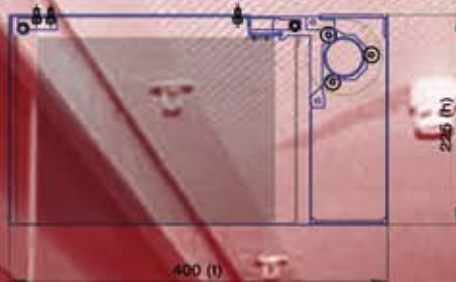
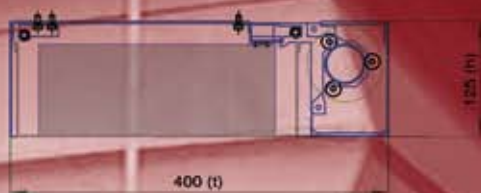
Dimensions



Range of different runs of the smoke barrier



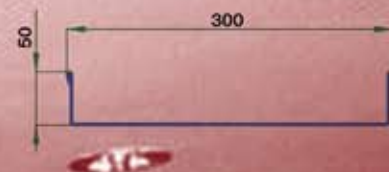
Range of casings



Circumference of the system	Drop length	D mm	H mm
< 50 m	< 3,5 m	400	125
< 50 m	> 3,5 m – < 6 m	400	225

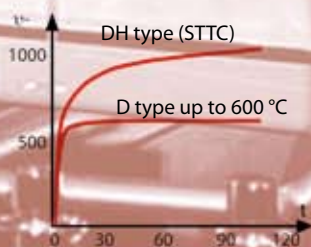
At least 2 drive units and one additional drive unit for each 10 m over 20 m circumference

Bottom bar



CE-classification

Patented tubular motor with Gravity Fail Safe technology



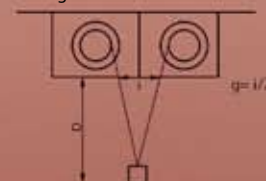
Labelling EN 12101-1	Stöbich Smokeshield-S system
Automatic smoke barrier	ASB1 / ASB 3 type, closing without electric power
Temperature classification	D60 (600°C / 60min.) DH120 (1.100 °C / 120 min.)
Closing speed (depends on the drive)	from 0,15m/sec. up to approx 0,30s/m e.g. drop length 9 m = within 60s in the closed position
Gap – casing (a-f)	0 mm
Gap – edges (g) embrasure	g = 0 mm
Gap – joint (h)	0 mm
Max. permeability of the smoke barrier fabric (max. 25m³/m²/h)	< 1m³/m²/h
Test temperature	at ambient temperature and at 200 °C
Free area – casing	= length of the casing x gap casing = Lx0= 0 mm²
Free area – edges	= D x gap edges
Free area – joints	= D x gap joint x number of joints
EC conformity certificate	is applied for
General approval from the Building Authority for the fabric	Z-56.429 - 916

D = Drop length of the smoke barrier

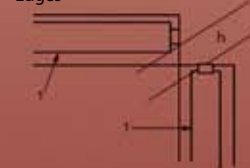
Joint



Casing



Edges

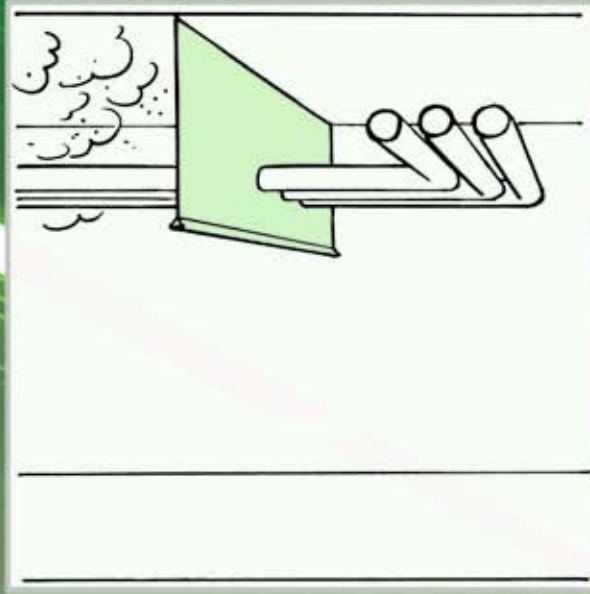


Moducoil/Supercoil-fix

Fixed smoke barriers

CE-no. 0761 - CPD - 0076 / -0060

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z-PA-III 4.935 / Z-PA-III 4.936



- The fixed smoke barrier is a cost saving solution provided that an automatic smoke barrier is not necessary.
- large dimensions are possible, unlimited widths
- heights depend on the wind pressure which may occur
- pending fixing or fixing at the lateral and lower area
- designed for the time classification and temperature load D = 600°C and DH (STTC)
- extremely small static load to the building structure, weight of the fabric between 0,4 and 0,7 kg/m²
- very easy sealing of systems which pass through the fixed barrier, e.g. pipes, ventilation lines, ducts, cable trays

Dimensions

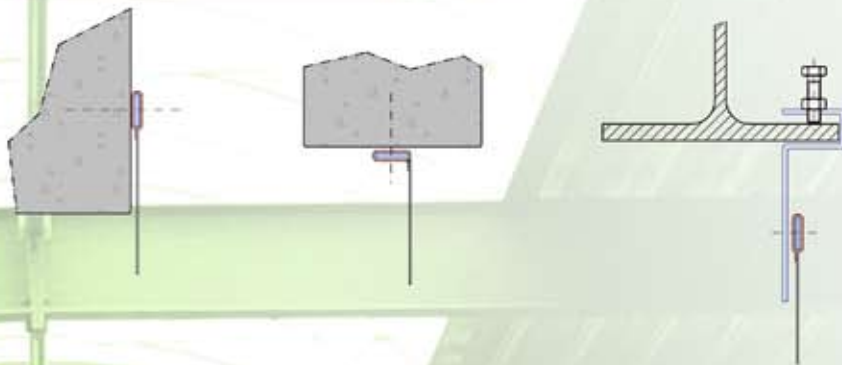
Width of the fixed smoke barrier



Height of the fixed smoke barrier



Range of fixings



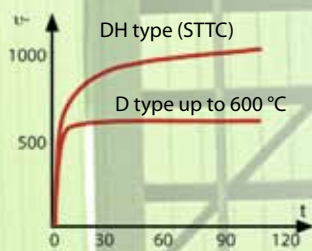
Bottom bar



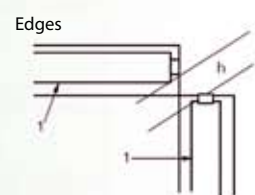
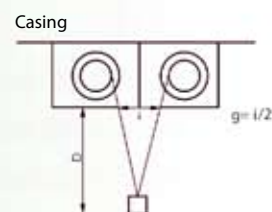
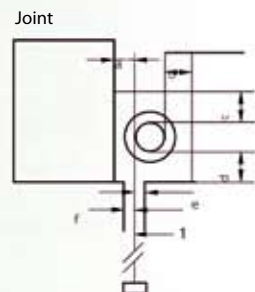
Range of lateral fixings



CE-classification

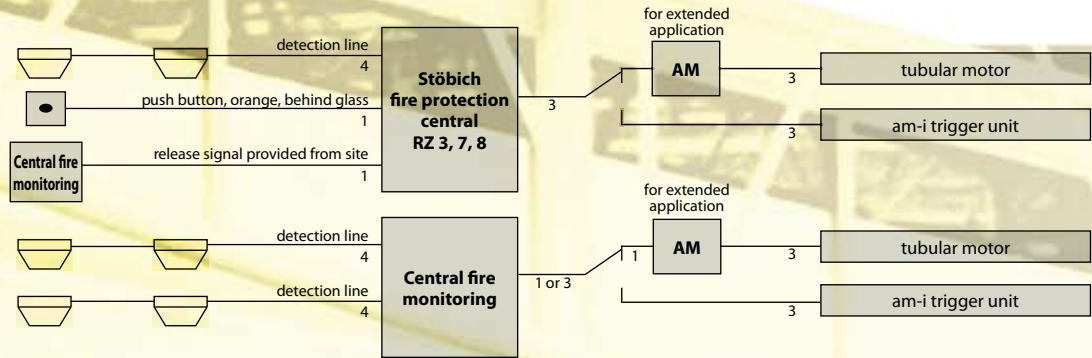


Labelling EN 12101-1	Stöbich Moducoil fix / Supercoil fix	
Fixed smoke barrier	elastic material	
Temperature classification	D60 (600°C / 60 min.)	DH120 (1.100 °C / 120 min.)
Gap – edges (g) embrasure	0 mm	
Gap – joint (h)	0 mm	
Max. permeability of the smoke barrier fabric (max. 25m³/m²/h)	g = 0 mm	
Test temperature	at ambient temperature and at 200 °C	
Free area – edges	= D x gap edges	
Free area – joints	= D x gap joint x number of joints	
EC conformity certificate	0761 - CPD - 0076/-0060	
General approval from the Building Authority for the fabric	Z-56.429 - 916 / Z-PA-III 4.935 / Z-PA-III 4.936	
D = Drop length of the smoke barrier		

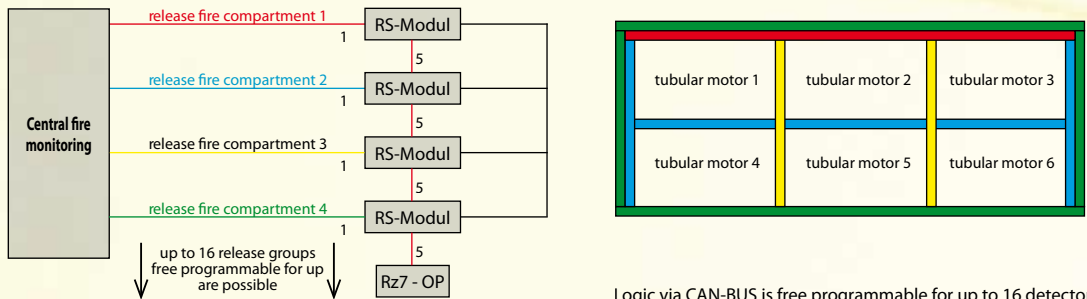
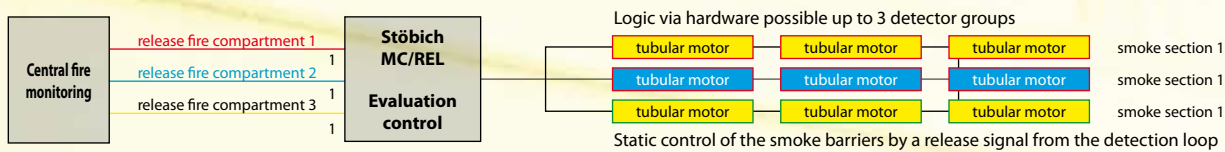


Control units

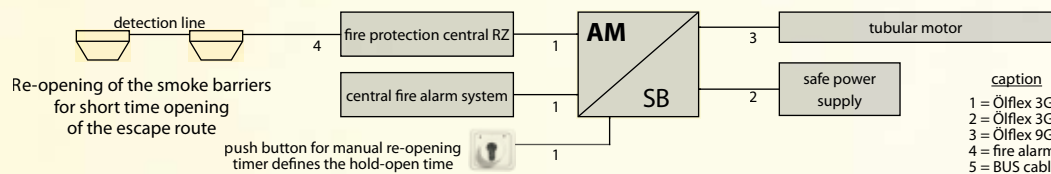
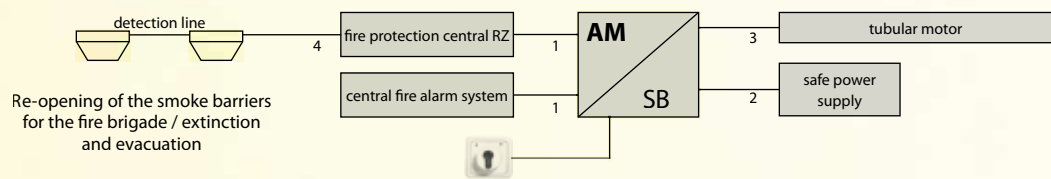
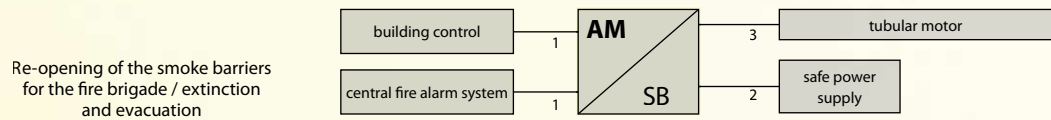
Static control of the smoke barriers by release of the detection loop



Static control of the smoke barriers by release of the detection loop

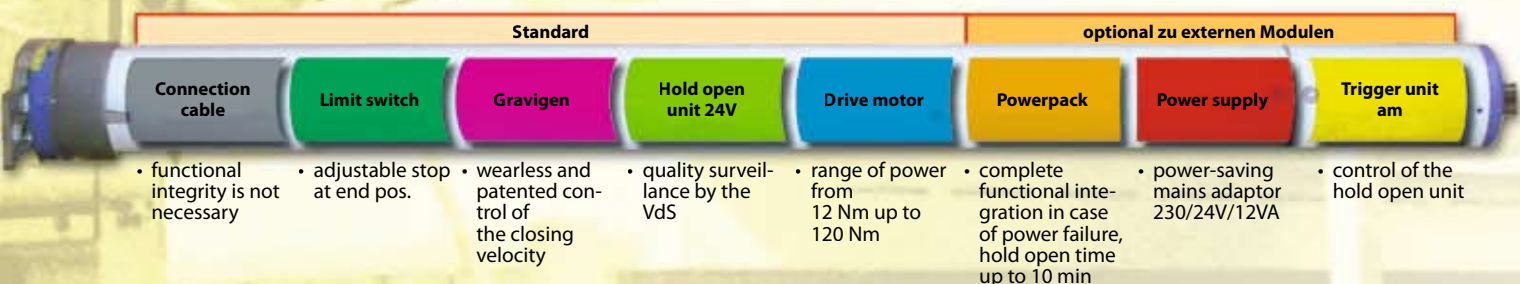


Controlled, motor-driven re-opening despite of fire alarm

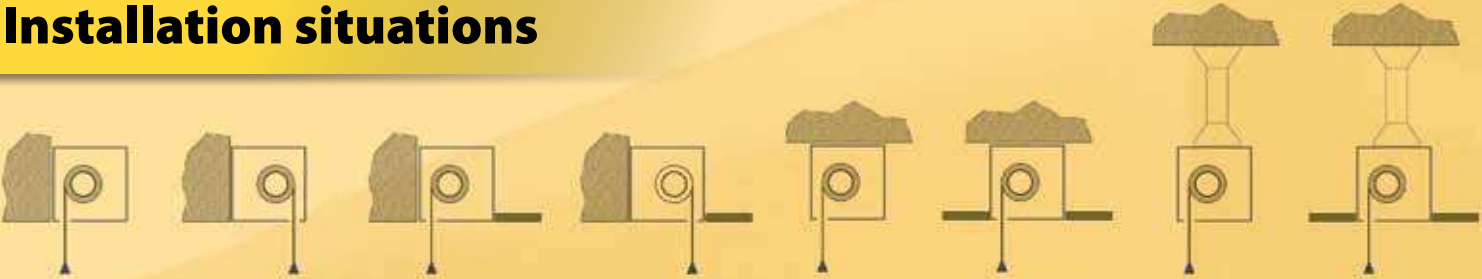


caption
1 = Ölflex 3G-0,75 mm²
2 = Ölflex 3G-1,5 mm²
3 = Ölflex 9G-1,5 mm²
4 = fire alarm cable J-Y(St)Y-BMK-2x2,0x0,8 mm²
5 = BUS cable J-Y(St)Y-2x2,0x0,8 mm²

Tubular motor Stöbich Gravigen type



Installation situations



Design for the steel components

Fabric – reaction to fire



The Stöbich Supercoil system offers various options in reference to colours, surfaces and individual shapes.

Germany:
A2 classification approval no:
Z-56.429-916

For fabrics: Protex 600.1 A2
Protex 1700.1 A2
Modutex 600 A2
Ecotex 1100 A2

B1 classification approval no:
PZ-05366-3

For fabrics: Protex 600 P
Protex 1700 P
Modutex 600 P
Ecotex 1100 P

Europe:
Test standard:

DIN EN ISO 13823 + 14716
Classification norm: EN 13501-1
Test report:
no. KB - 07112 A2 - s1, d0

For fabrics: Protex 600.1 A2
Protex 600 2S A2
Protex 1100.1 A2
Modutex 600 A2
Ecotex 1100 A2
Ecotex 1100 SA2

Selection of fabrics for smoke barriers

Temperature classification “D” = 600°C

Temperature classification “DH” = STTC

PROTEX 600 A2

PROTEX 1100 A2

History of the Hidden Champion

Simply Stöbich – world market leader in the sector of “invisible” fire protection

For more than 25 years we - Stöbich Brandschutz GmbH - actively work on developing fire protection engineering. We know: 90 % of all fire victims die from smoke and 70 % of all property damages are caused by smoke. Smoke barriers are one of our core competences. We, as a medium-sized-family business from Goslar, Germany are very proud on having achieved the position of the world market leader of different segments within the fire protection market.

In recent decades we have invested an extensive amount of capital into research and development. Numerous national and international awards for innovations as well as patents proof the high level of our developments and of our products “Made in Germany”.

We went in various directions for our R&D. Our primary vision was, to create smoke barriers which are adjustable to multiple architectural shapes and situations. Therefore we offer modular systems, which adapt almost to any protection concept.

Through the complete value added chain Weaving – Coating – Processing of the fabrics within the Stöbich Group of Companies we have intensively analysed the use of new materials and we introduced successfully new product lines to the market.

Those are once more the proof for our integral way of thinking. “From practice, for practice, for our customer all over the world.”

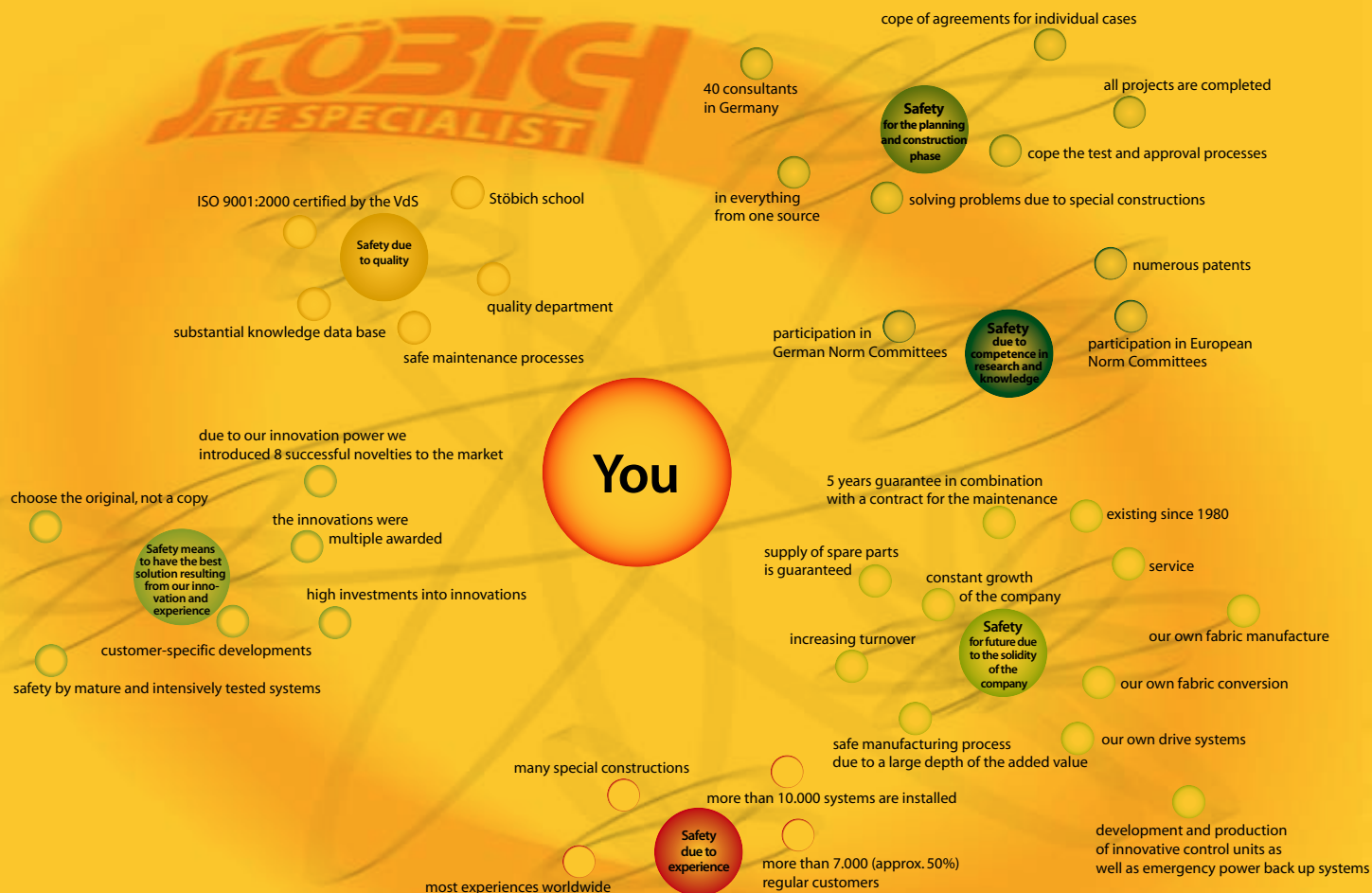
This brochure gives you detailed information about protection concepts, protection targets and finally which solution respectively which product we offer correspondingly.

Temperature classification “DH” = STTC

Temperature classification “D” = 600°C

PROTEX 1100 A2

PROTEX 600 A2



Award for innovations

"Invisible fire protection!"



"Bauen im Bestand"
from the Federal Ministry



MDR 1 award for the TV series
"simply ingenious"



Certificate mips 2005,
Moscow



German Award of Innovation

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Switzerland
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Slovenia
Spain
Turkey
Ukraine
UAE
USA