

# Smoke Barriers

## Flexible Smoke Barriers

### Automatic smoke barriers

- Supercoil
- Moducoil
- Stripecoil
- Smokeshield-S

### Fixed smoke barriers

- Supercoil fix
- Moducoil fix



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**STÖBICH**  
FIRE PROTECTION

*Innovation for your Protection!*

# Overview

## Certificate for the usability

### Supercoil

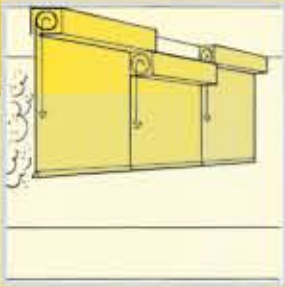
4/5



Classical, first class, automatic smoke barrier

### Moducoil

6/7



Modular automatic smoke barrier

### Stripecoil

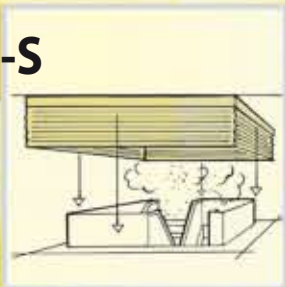
8/9



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

#### 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 standards 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 tests for the tightness of the fabric.

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

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

Application with higher temperature

STTC = Standard-Time-Temperature-Curve according to EN 12101-11

#### 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 = 0,06-0,3m/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:

##### Innovation leader:

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

##### Large time experience:

- more then 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



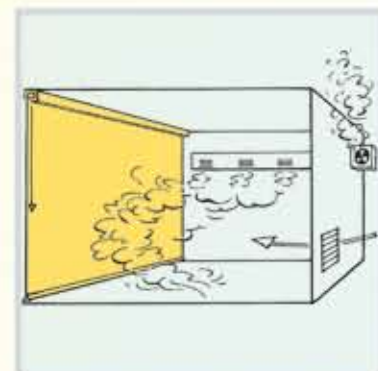
**Safe escape** routes due to adapted smoke protection classifications according to leakages, temperature loads and time classifications.



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.



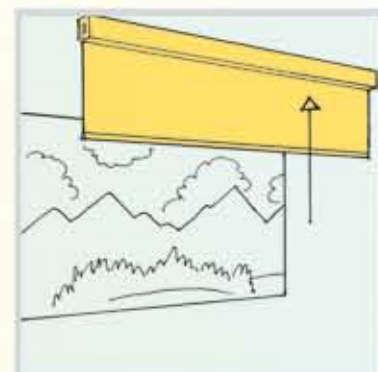
**Smoke barriers** can increase the effectiveness of SHEV systems, i.e. the higher the smoke layer, the smaller the openings for exhaust air as well as for the fresh air intake openings



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



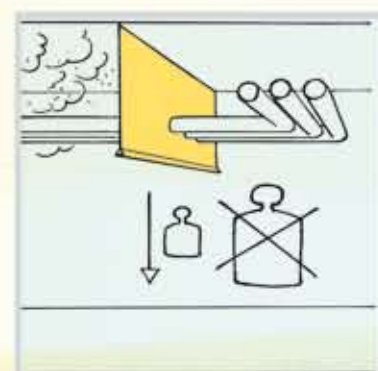
A **controlled flow** of the smoke can be achieved by smoke barriers even with cross streams which may have a negative influence on the entrainment of the smoke - especially in high rooms.



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



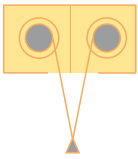
The Stripecoil system offers corresponding characteristics in case that in disadvantageous building structures **escape routes** have to be combined with smoke barriers. Even large numbers of persons (depending on the width of the system up to approx. 200 persons) can pass through the system.



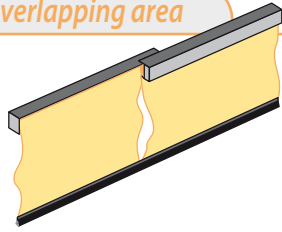
Fixed smoke barriers have the advantage of being **very light weighted** - approx 1 kg/m<sup>2</sup> and offer an easy sealing of continuing pipes, ducts or cable trays.

# 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

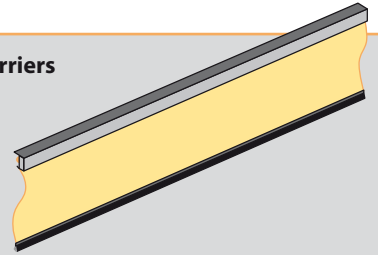


Do you have to avoid any remaining opening?



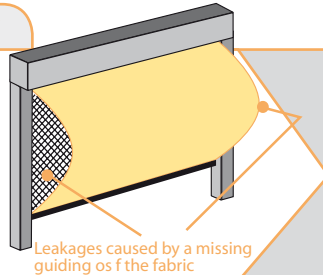
**Supercoil offers smoke barriers with 50 m in one piece - therefore**

**0%** leakage within the overlapping area .



## Remaining opening within the boundary area

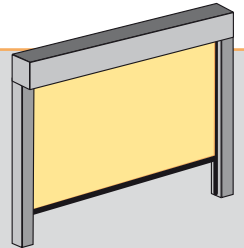
Do you have to avoid remaining openings caused by pressure load in boundary areas?



Leakages caused by a missing guiding of the fabric

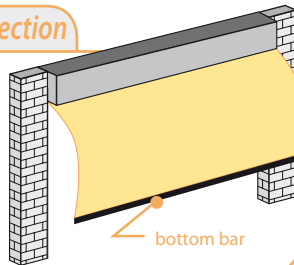
Special side guides with rods guarantee a positive fitting in the boundary area for the complete height - therefore

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



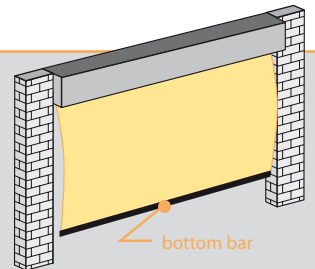
## Remaining opening caused by deflection

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



bottom bar

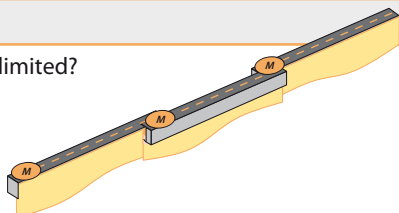
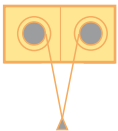
**Stöbich Supercoil system** offers a remarkably lower deflection due to the high weight of the bottom bars between 4,6 to 13,5 kg.



bottom bar

## Demand for space

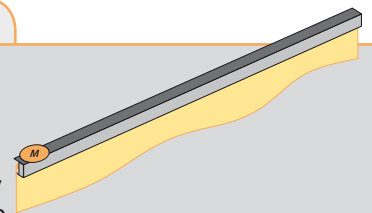
Is the available space limited?



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

## + number of drive units

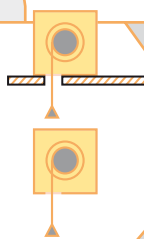
... chose the **Stöbich Supercoil system** with corresponding control unit and large drive capacity - independent from the drop length and up to 30 m widths.



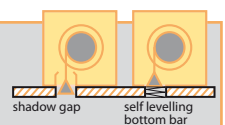
## Closing of a ceiling and closing direction

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?

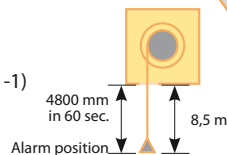


**Stöbich Supercoil system** offers an optical more significant design e.g. by the self levelling bottom bar. Supercoil offers various closing directions and adjusts to your protection concept.



## Reaction time and drop length

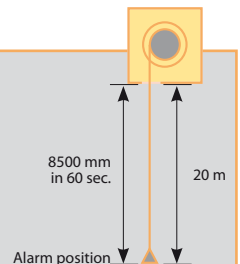
Which drop length has to be achieved within 60 seconds? (standard is 4800 mm/60 sec. according to EN12101-1)



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

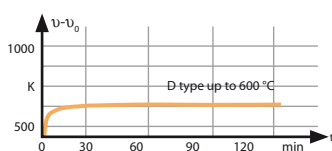
**Stöbich Supercoil system** offers closing velocities to achieve a drop length of 8500 mm within 60 seconds.

**Stöbich Supercoil system** offers drop length of up to 20 meters.

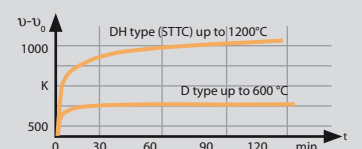


## Temperature classification

Is your protection concept asking for a higher temperature classification?



**Stöbich Supercoil system** can be supplied in different temperature classifications.

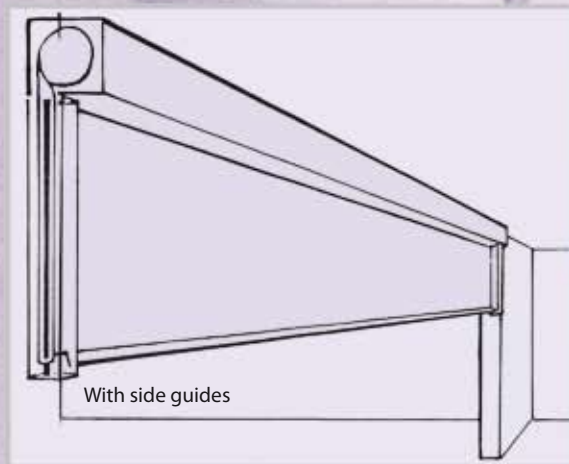
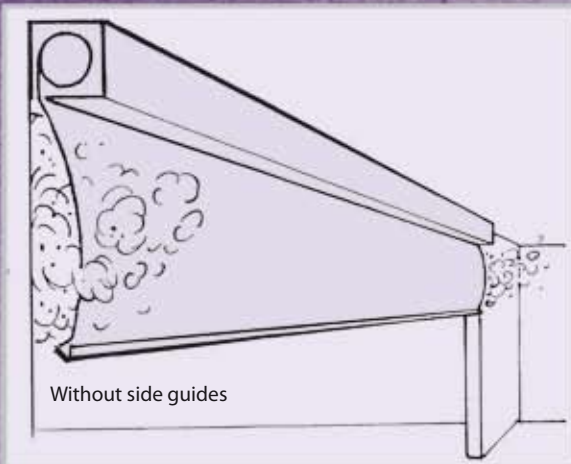


# Supercoil

CE-label No. 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

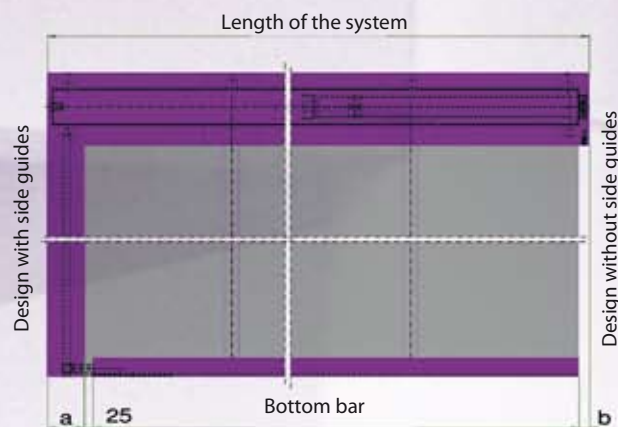
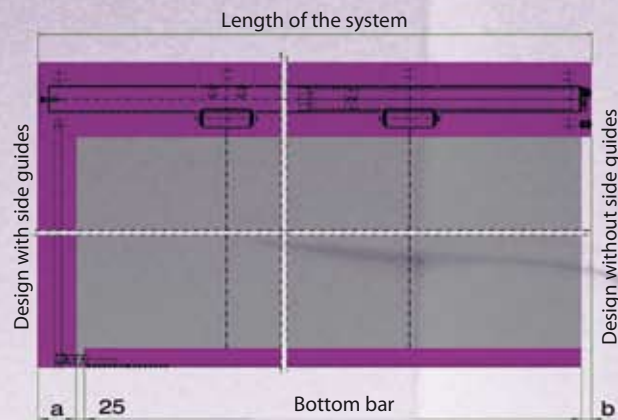


## System Description

- 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



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 m<sup>2</sup>.

a = side guide  
b = gap without side guide



## Range of casings



Standard - fixed bearing



Standard - floating bearing



Range of special constructions



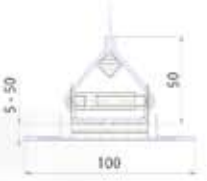
## Bottom bars



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

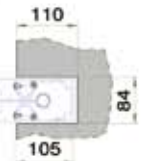
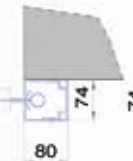
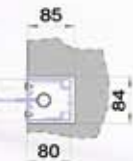
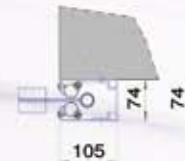
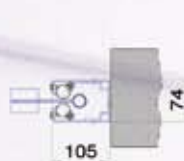
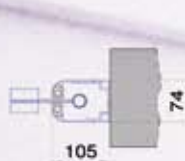
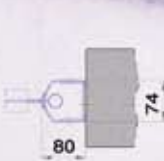
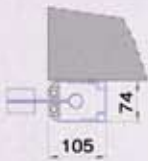
105 E type

105 E type

80 N type

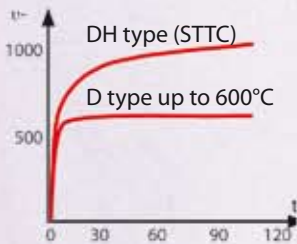
80 E type

105 N type



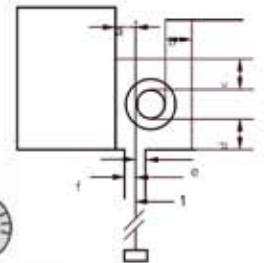
## CE-classification

Patented tubular motor with Gravity Fail Safe technology

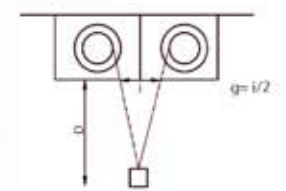


Labelling EN 12101-1	Stöbich Supercoil system
Automatic smoke barrier	ASB 1 / ASB 3 type closing without electric power
Temperature classification	D60 (600°C/60 min.) DH120 (1.100°C/120 min.)
Closing speed (depends on the drive)	from 0,15 m/sec. to 0,30 m/sec. e.g. drop length 9 m = within 60 s in the closed position
Gap - casing (a-f)	0 mm
Gap - edges (g) ambrasure	g = 0 mm with side guide g = 15 mm + 30 mm for fixed bearing without side guide 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. 25 m³/m²/h)	< 1 m³/m²/h
Test temperature	At ambient temperature and at 200°C
Free area - casing	= Length of the casing x gap casing = L x 0 = 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 / Z - PA - 56.412 - 935
D = Drop length of the smoke barrier	

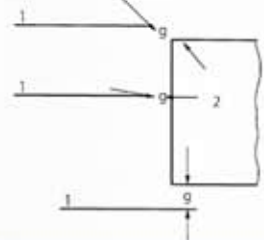
Joint



Casing



Edges

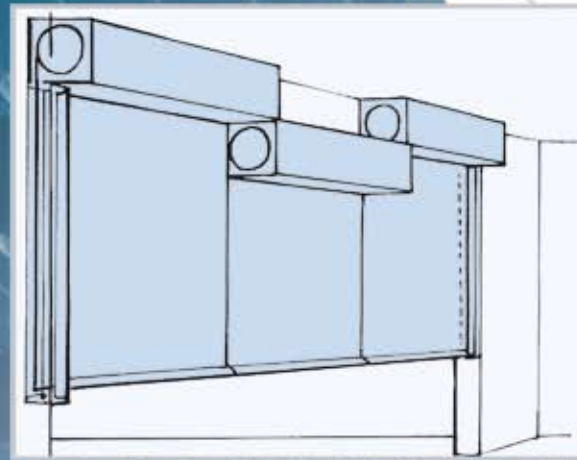
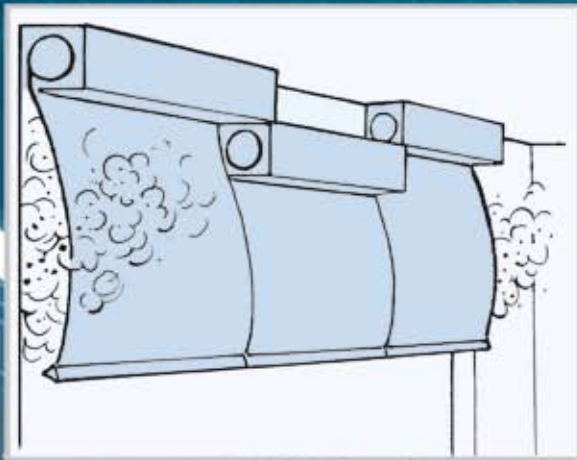


# Moducoil

CE-label- No. 0761 - CPD - 0076

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z - 56.412 - 936

## The standard smoke barrier in a modular design

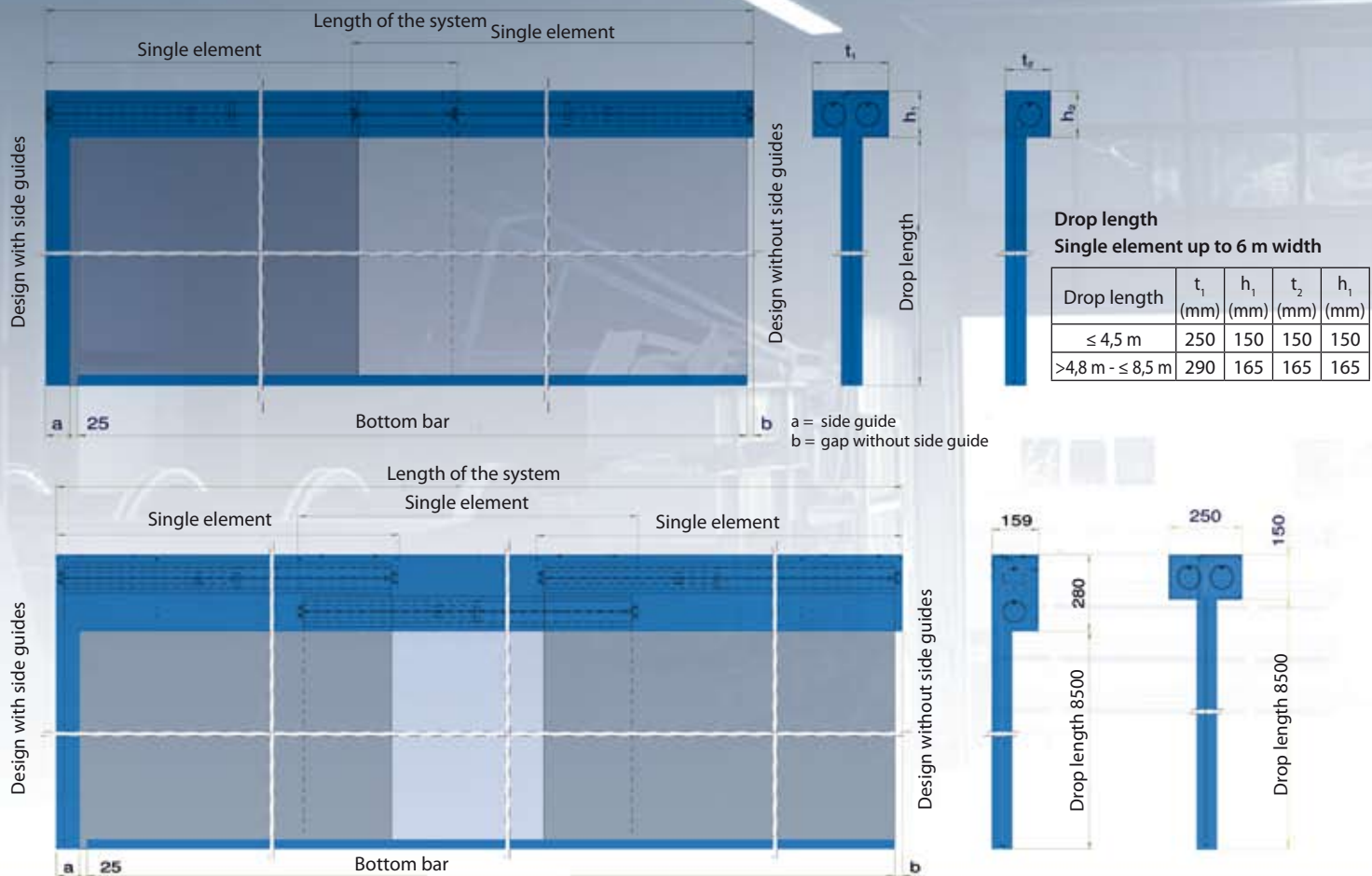


### System Description

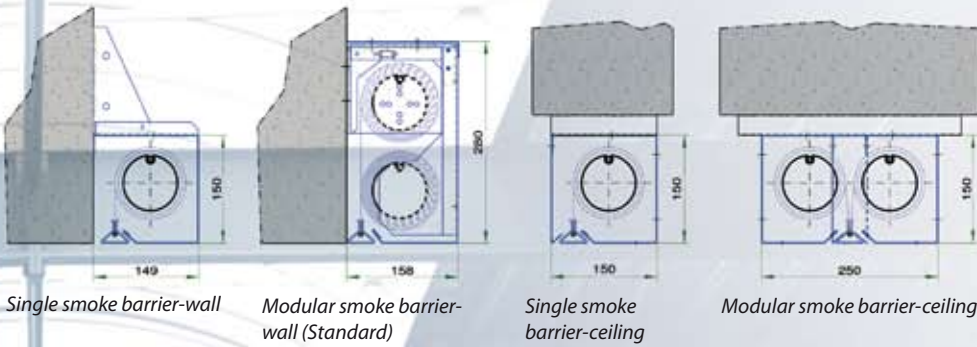
- pre-manufactured single elements will be assembled to create one complete unit up to any width standard drop length of up to 8,65 m
- designed for the time classification and temperature loads  $D = 600^{\circ}\text{C}$
- standard drive system "Gravigen", that is closing without auxiliary energy, therefore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

- robust drive unit, applicable for a high number of cycles (up to 10.000 cycles), with approval 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

### Dimensions



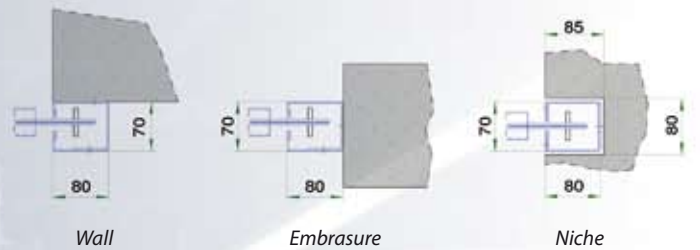
## Range of casings



## Bottom bar

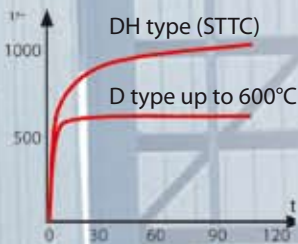


## Range of side guides



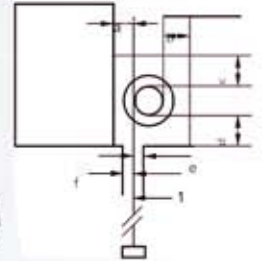
## CE-classification

Patented tubular motor with Gravity Fail Safe technology

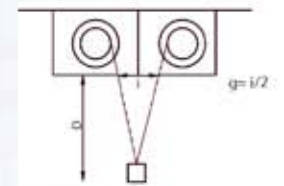


Labelling EN 12101-1	Stöbich Moducoil system
Automatic smoke barrier	ASB 1 / ASB 3 type Closing without electric power
Temperature classification	D120 (600°C/120 min.)    DH90 (1.100°C/90 min.)
Closing speed (depends on the drive)	approx 0,15 m/sec e.g. drop length 9 m = 60 s in the closed position
Gap - casing (a-f)	0 mm
Gap - edges (g) embrasure	g = 0 mm with side guide 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. 25 m <sup>3</sup> /m <sup>2</sup> /h)	< 1 m <sup>3</sup> /m <sup>2</sup> /h
Test temperature	At ambient temperature and at 200°C
Free area - casing	= Length of the casing x gap casing = L x 0 = 0 mm <sup>2</sup>
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 / Z - 56.412 - 936
D = Drop length of the smoke barrier	

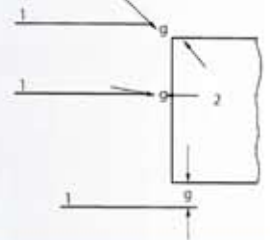
Joint



Casing



Edges

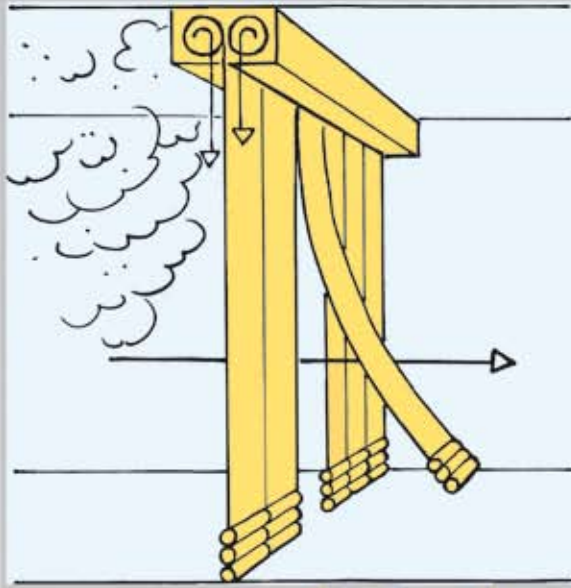


# Stripecoil

CE-label - No. 0761 - CPD - 0077

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no. Z-PA - 56.412 - 937

## Automatic smoke barrier Stripecoil



### System Description

- 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

Length of the system

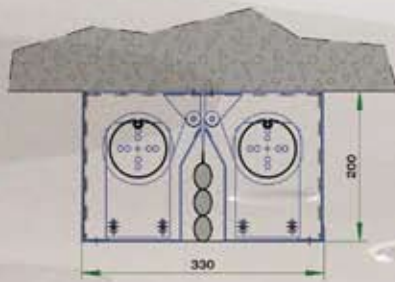
330

200

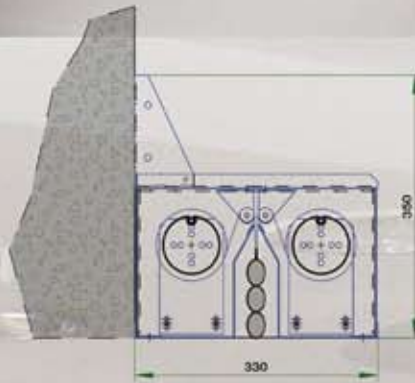
Drop length ≤ 3,5 m



## Range of casings



Installation to the ceiling



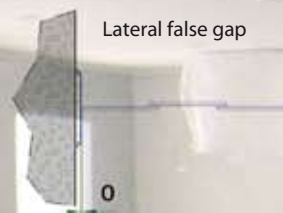
Installation to the wall

## Bottom bar



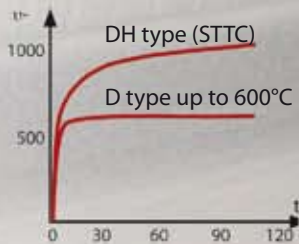
Elastic bottom bar with a tear proof fabric

## Lateral gaps



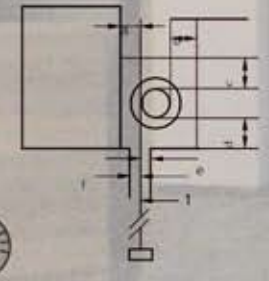
## CE-classification

Patented tubular motor with Gravity Fail Safe technology

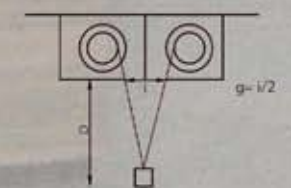


Labelling	Stöbich
EN 12101-1	<b>Stripecoil system</b>
Automatic smoke barrier	ASB 1 / ASB 3 type closing without electric power
Temperature classification	D60 (600°C/60 min.) DH30 (1.100°C/30 min.)
Closing speed (depends on the drive)	approx 0,15 m/sec - e.g. drop length 3,5 m = within 24 s in the closed position
Gap - casing (a-f)	0 mm
Gap - edges (g) embrasure	g = 10 mm + 10 mm
Gap - joint (h)	10 mm
Max. permeability of the smoke barrier fabric (max. 25 m <sup>3</sup> /m <sup>2</sup> /h)	< 1 m <sup>3</sup> /m <sup>2</sup> /h
Test temperature	At ambient temperature and at 200°C
Free area - casing	= Length of the casing x gap casing = L x 0 = 0 mm <sup>2</sup>
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 / Z - 56412 - 937
D = Drop length of the smoke barrier	

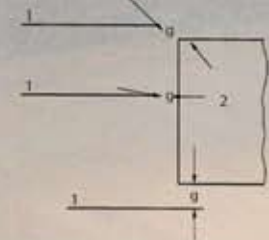
Joint



Casing



Edges



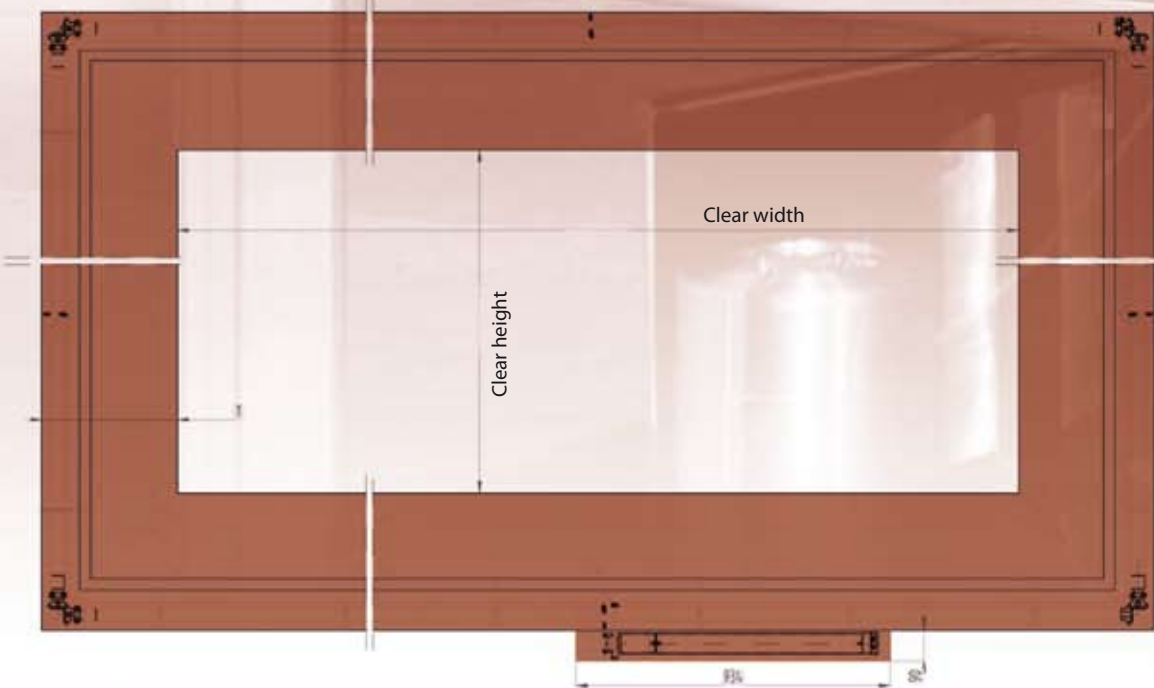
# Smokeshield-S

## Automatic smoke barrier Smokeshield-S

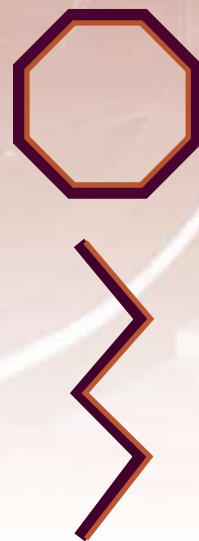
### System Description

- rectangular or polygon shaped base area of the smoke barrier
- outer dimensions up to 16 m and drop length of up to 6 m
- designed for a high time classification and temperature load  $D = 600^{\circ}\text{C}$  and DH (STTC)
- no remaining openings - neither in the upper area or not 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

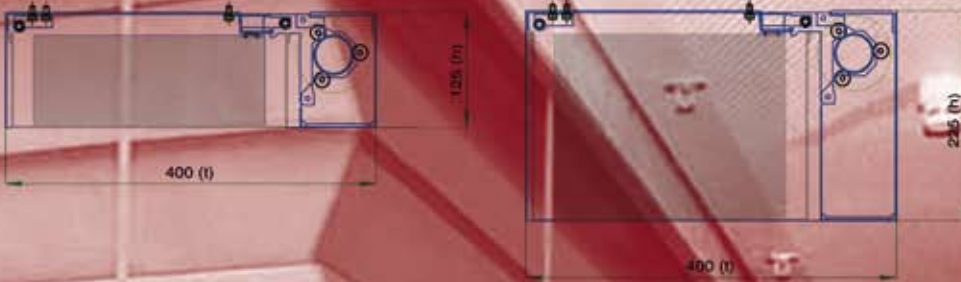
### Dimensions



### Range of different runs of the smoke barrier



## Range of casings



Circumference of the system	Drop length	t (mm)	h (mm)
< 50 m	< 3,5 m	400	125
< 50 m	> 3,5 m - < 6 m	400	225

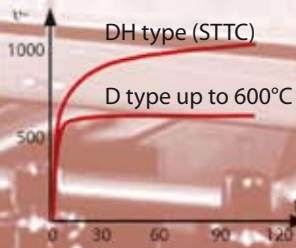
At least 2 drive units and one additional drive unit for each 10 m over 20 m circumference

## Bottom bar



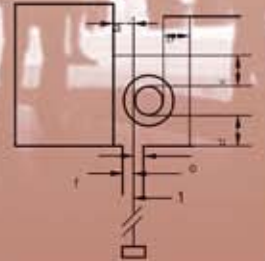
## CE-classification

Patented tubular motor with Gravity Fail Safe technology

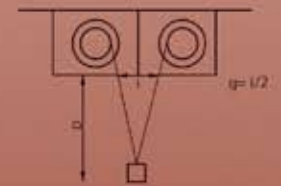


Labelling EN 12101-1	Stöbich Smokeshield-S system
Automatic smoke barrier	ASB 1 / ASB 3 type Closing without electric power
Temperature classification	D60 (600°C/60 min.)      DH120 (1100°C/120 min.)
Closing speed (depends on the drive)	from 0,15 m/sec. up to approx 0,30 m/sec. e.g. drop length 9 m = 60s in the closed position
Gap - casing (a-f)	0 mm
Gap - edges (g) embrasure	0 mm
Gap - joint (h)	0 mm
Max. permeability of the smoke barrier fabric (max. 25 m <sup>3</sup> /m <sup>2</sup> /h)	< 1 m <sup>3</sup> /m <sup>2</sup> /h
Test temperature	At ambient temperature and at 200°C
Free area - casing	= Length of the casing x gap casing = L x 0 = 0 mm <sup>2</sup>
Free area - edges	= D x gap - edges
Free area - joint	= D x gap - joint x number of joints
EC conformity certificate	N. N.
General approval from the Building Authority for the fabric	Z - 56.429 - 916
D = Drop length of the smoke barrier	

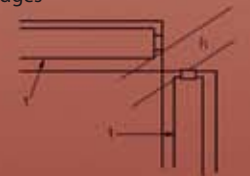
Joint



Casing



Edges



# Moducoil/Supercoil-fix

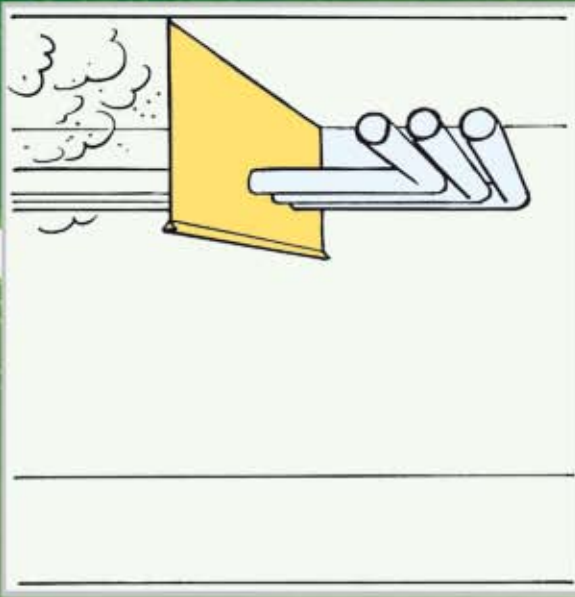
## Fixed smoke barriers

**CE-label** No. 0761 - CPD - 0076 / -0060

Characteristics of the complete smoke barrier during a fire are corresponding to the approval no Z - 56.412 - 936/935

### System Description

- The fixed smoke barrier is a cost saving provided that an automatic smoke barrier is not necessary
- large dimensions are possible, unlimited widths
- height depend on the wind pressure which may occur
- pending fixing on 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/m<sup>2</sup>
- very easy sealing of systems which pass through the fixed barrier, e.g. pipes, ventilation lines, ducts, cable trays



### Dimensions

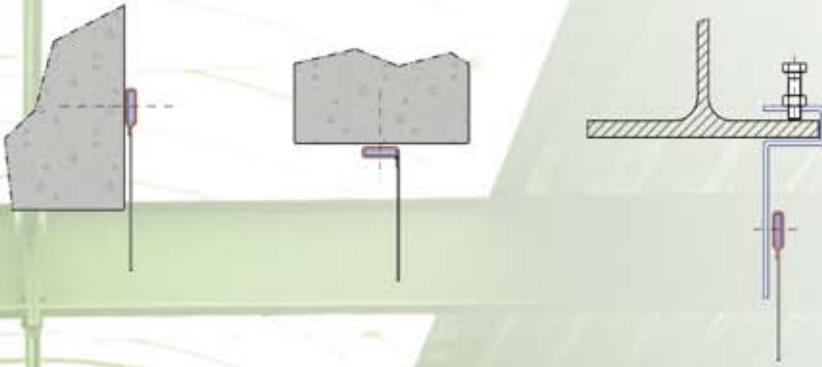
Width of the fixed smoke barrier



Height of the fixed smoke barrier



## Range of fixings



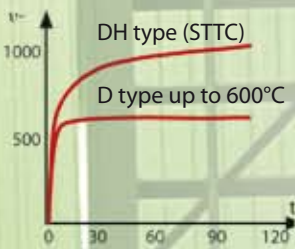
## Bottom bar



## Range of lateral fixings

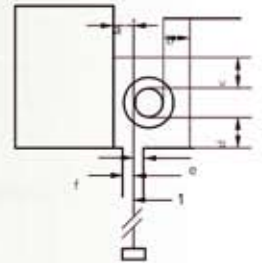


## CE-classification

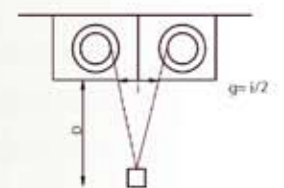


Labelling EN 12101-1	Stöbich Moducoil/Supercoil fix system	
Fixed smoke barrier	elastic material	
Temperature classification	D60 (600°C/60 min.)	DH120 (1.100°C/120 min.)
Gap - edges (g) embrasure	0 mm	
Gap - joint (h)	0 mm	
Max. permeability of the smoke barrier fabric (max. 25 m <sup>3</sup> /m <sup>2</sup> /h)	< 1 m <sup>3</sup> /m <sup>2</sup> /h	
Test temperature	At ambient temperature and at 200°C	
Free area - edges	= D x gap - edges	
Free area - joint	= D x gap - joint x number of joints	
EC conformity certificate	0761 - CPD - 0076/ -0066	
General approval from the Building Authority for the fabric	Z - 56.429 - 916 / Z - 56.412 - 936 / Z - 56.412 - 935	
D = Drop length of the smoke barrier		

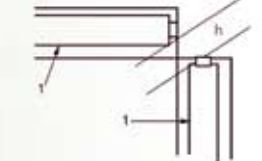
Joint



Casing

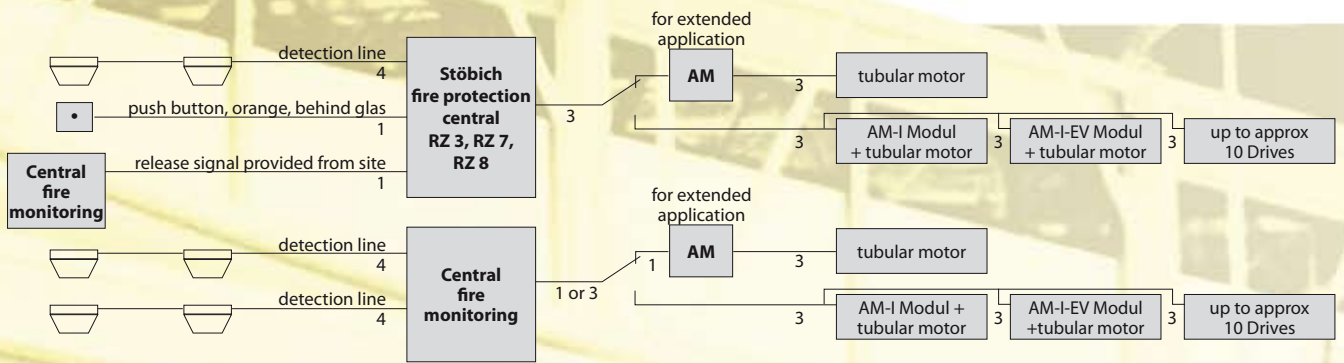


Edges

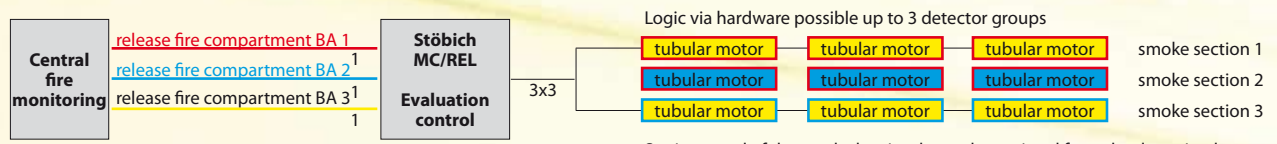


# Control units

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

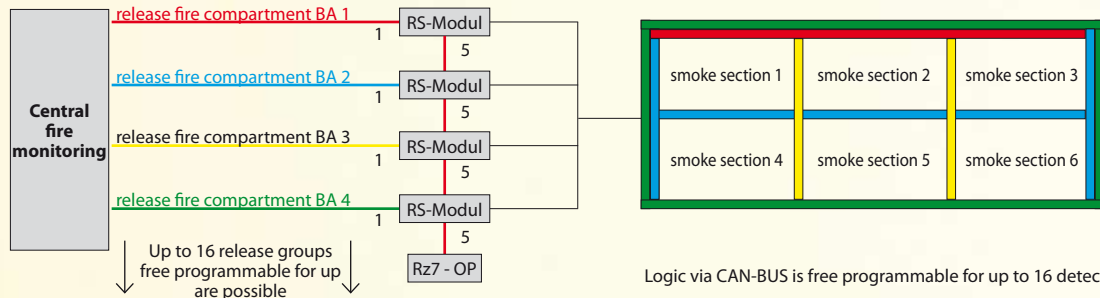


## Static control of the smoke barriers by release of the detection loop



Logic via hardware possible up to 3 detector groups

Static control of the smoke barriers by a release signal from the detection loop



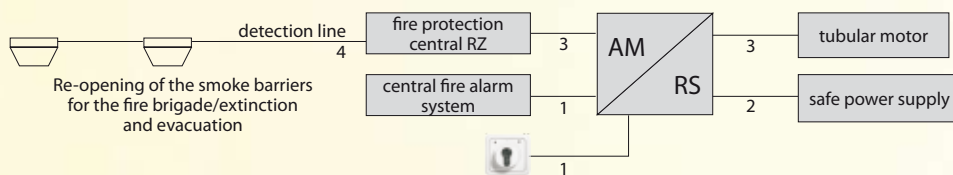
Up to 16 release groups free programmable for up are possible

Logic via CAN-BUS is free programmable for up to 16 detector groups

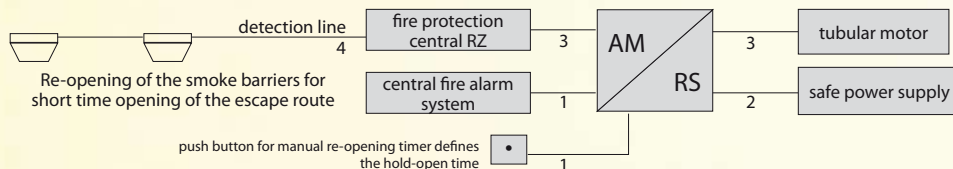
## Controlled, motor-driven re-opening despite of fire alarm



Re-opening of the smoke barriers for the fire brigade/extinction and evacuation



Re-opening of the smoke barriers for the fire brigade/extinction and evacuation

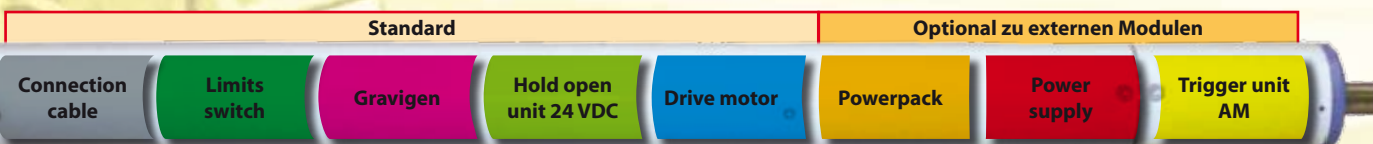


Re-opening of the smoke barriers for short time opening of the escape route

push button for manual re-opening timer defines the hold-open time

caption:  
 1 = Ölflex 3G0,75mm<sup>2</sup>  
 2 = NHXH-J E90 3x1,5mm<sup>2</sup> RE  
 3 = Ölflex 9G1,5mm<sup>2</sup>  
 4 = fire alarm cable J-Y(ST)Y-BMK-2x2x0,8mm<sup>2</sup>  
 5 = BUS cable J-Y(ST)Y-2x2x0,8mm<sup>2</sup>

# Tubular motor Gravigen Stöbich



functional integrity is not necessary

adjustable stop at end pos.

wearless and patented control of the closing velocity

quality surveillance by the VdS

range of power from 12 Nm up to 120 Nm

complete functional integration in case of power failure, hold open time up to 10 min.

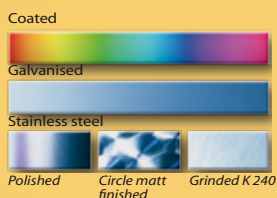
power-saving mains adaptor 230/24V/12VA

control of the hold open unit

## 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 1100.1 A2  
 Modutex 600 A2  
 Ecotex 1100 A2

**B1 classification approval no:**  
**PZ-05366-3**

For Fabrics: Protex 600 P  
 Protex 1100 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 – global 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 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.

These are once more proof for our integral way of thinking. “From practise, for practise, for our customers all over the world”.

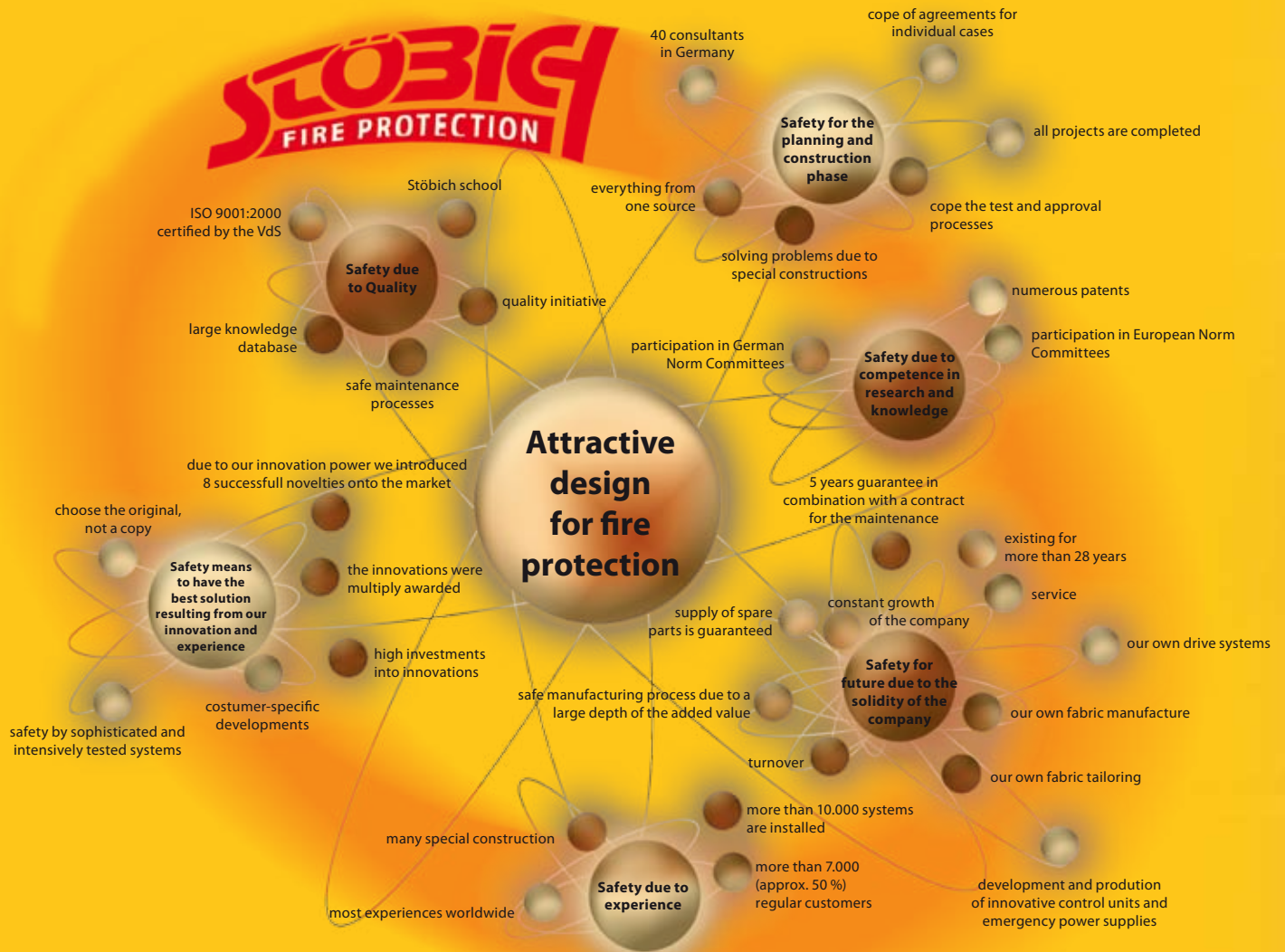
This brochure gives you detailed information about protection concepts, protection targets and finally which solution respectively which product we offer correspondingly.

Temperature classification „DH“ = STTC

Temperature classification „D“ = 600 °C

**PROTEX 1100 A2**

**PROTEX 600 A2**



## Awards for innovations

# "Invisible fire protection!"



"Civil engineering in existing buildings" from the Federal Ministry



MDR 1 award for the TV series "simply ingenious"



Certificate mips April 2005, Moscow



German Award of Innovation

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### International sales partners respectively subsidiaries

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- Bosnia and Herzegovina
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- Croatia
- Cyprus
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- Denmark
- Estonia
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- Greece
- Hong Kong
- Hungary
- Ireland
- Italy
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Macedonia
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- Poland
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- Singapore
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