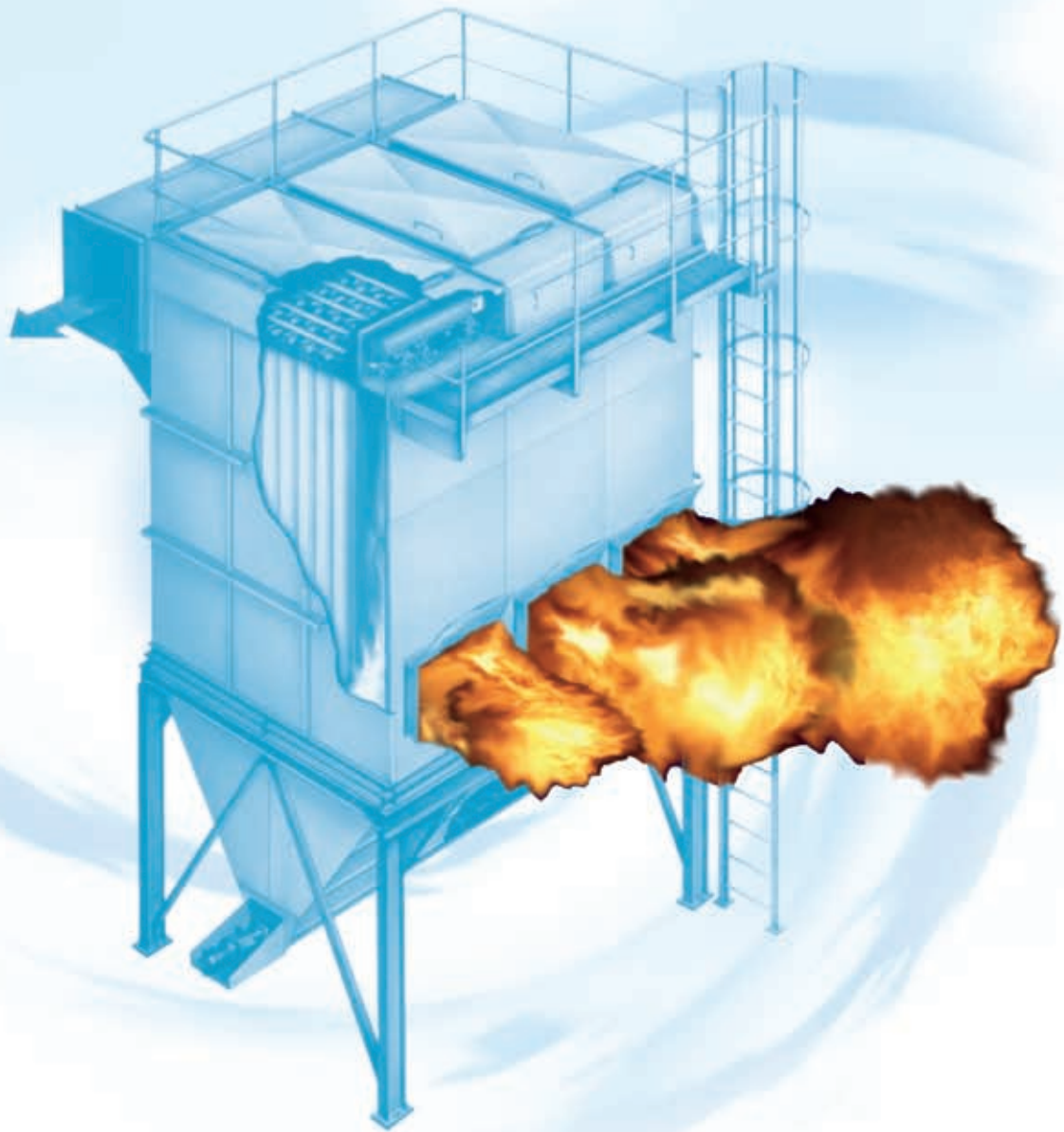


# FIRE AND EXPLOSION PROTECTION

FOR STATIONARY EXTRACTION PLANTS



CONFIDENT AND SAFE  
WITH SCHEUCH!

**scheuch**  
TECHNOLOGY FOR CLEAN AIR

## REAL SAFETY THROUGH PRACTICE-ORIENTED VERIFICATION OF OVERALL COMPLIANCE

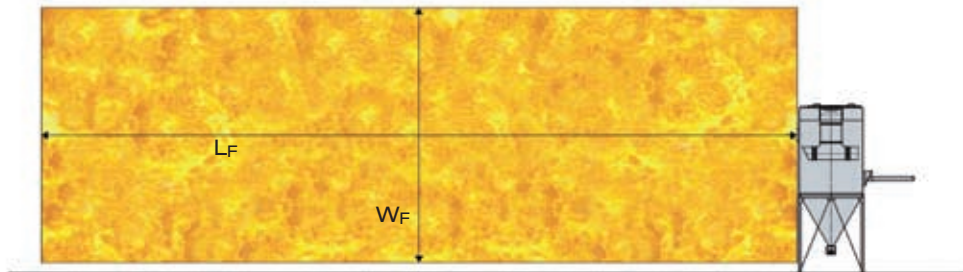
Safety certification issued by an independent, recognized institute is required for equipment with an elevated hazard potential. Self-evaluation and a CE Declaration of Conformity by the manufacturer are no longer sufficient.

The effectiveness of our explosion protection concepts with respect to pressure venting, decoupling and risks in external areas were verified and con-

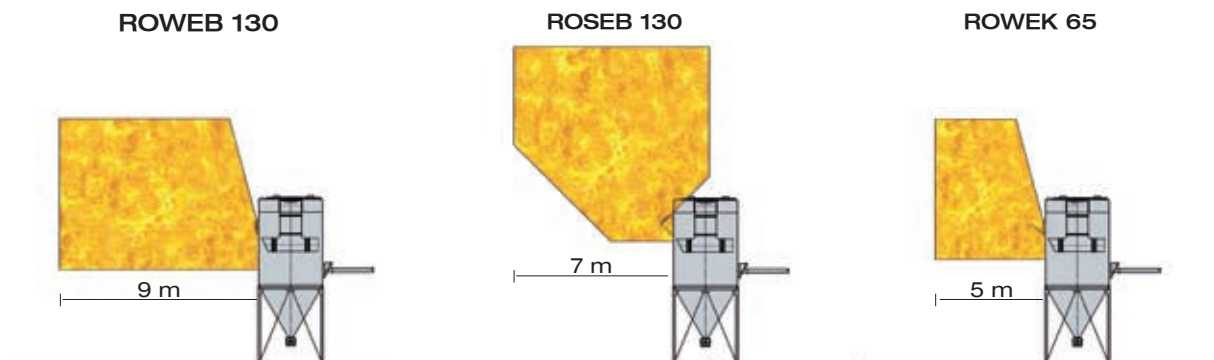
firmed for the first time for an overall system under practical operating conditions by FSA, a recognized German testing authority.

It includes the ATEX-compliant, certified implementation by Scheuch as well as low flame ranges. More than 30 real-world tests provide the assurance of "real safety" in the case of an explosive event.

Residual risk - Filter with a standard flame profile according to EN 14491



Residual risk - Scheuch's explosion protection concepts



### The right concept for every application

Based on many practice-oriented tests of the entire system, Scheuch is able to offer the appropriate concept for every application.

For example, the explosion protection concept ROWEK 65 guarantees a flame propagation range of less than five meters in the event of an emergency. This makes possible the practical installation of fil-

tration plants, even in cases where space is limited. Because the design incorporates an extremely low explosion pressure, the filtration plant can be re-used in the event of an explosion after replacing the filter bags. For the operator, this results in short interruptions in operation and low maintenance costs.

### Maximum Security – Minimal Restrictions

Scheuch's explosion concepts offer:

- Minimal danger areas as the result of pressure and flames
- Rapid return of plant availability after the explosion (ROWEK 65)
- "Real safety" as the result of more than 30 real-world tests of the entire system
- Legal security as the result of the FSA proof-of-safety verification and the INBUREX expert opinion
- Intended for use - independent of the quantity of dust - for all wood and related dust types ( $K_{ST} \leq 200$ ,  $p_{max} \leq 9$ )



## SCHEUCH GIVES THE PLANT OPERATOR CERTAINTY

Based on the existing residual risk, every plant operator must create an appropriate environment around the plant, perform a risk analysis and record the result in the explosion protection document. Scheuch handles this task for you. We have commissioned an expert opinion in respect of our explosion concept from INBUREX, a recognized European expert based in Hamm, Germany.

It describes the marginal impact in the remaining danger area. Driveways and pedestrian paths, as well as storage areas or a property border in the near vicinity of a Scheuch filtration plant, are permissible.

### Expert opinions replace risk analysis

Reference can be made to the expert opinion in the explosion protection document. Complying with the easy to implement guidelines, which are essentially organizational measures, gives the plant operator **legal certainty!**

### Easy to use in actual practice

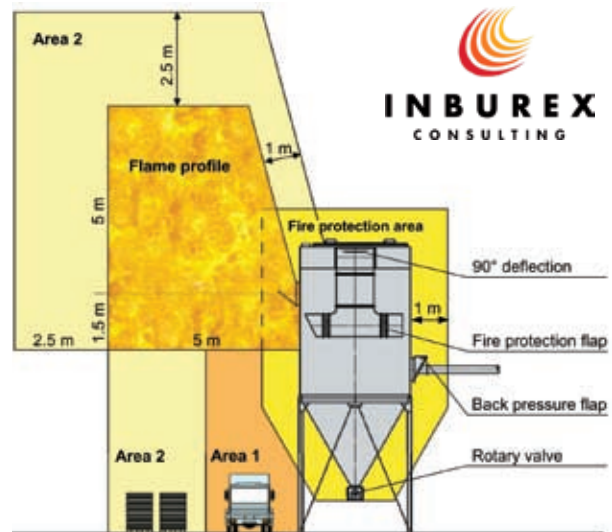
Excerpts from the INBUREX expert opinion

#### Flame Profile - Explosion

- May not cross the property line
- No work, only inspection and maintenance access
- No driveways or pedestrian paths
- Safeguarding against unauthorized access
- No influencing of the explosion by obstacles

#### Area 1

- Not a work area
- Driveways and pedestrian paths (used only for brief periods)
- Parking or stopping forbidden
- Walls and building must be at least fire-resistant
- Construction materials must be at least flame resistant, also applies to stored materials



Scheuch Protection Concept ROWEK 65 + BRANA 120

Based on these certifications, the German Holz-Berufsgenossenschaft, a wood industry trade association, awarded for the first time to the entire LIGNO filter series the GS Certification Mark for a stationary filtration plant.

#### Fire protection area

- May not cross the property line
- Not a work area
- Driveways and pedestrian paths (used only for brief periods)
- Construction materials must be non-flammable or flame resistant, also applies to stored materials
- Possible for weight-bearing elements and facades in adjacent areas to be made of wood

#### Area 2

- Not a permanent work area
- Driveways and pedestrian paths permitted
- Escape route and emergency route permitted
- Walls and building must be at least fire-resistant
- Flammable hazardous substances not permitted
- Roofs resistant to flying sparks

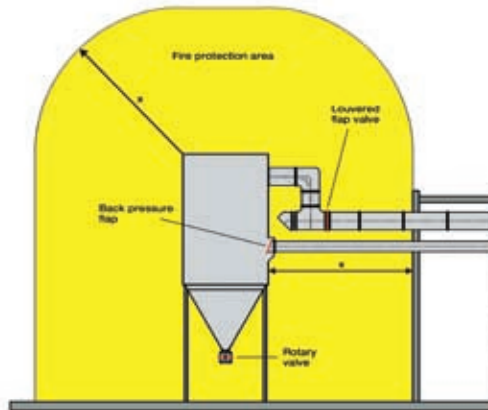
**THESE SAFETY CONCEPTS FROM SCHEUCH ARE THE  
ONLY PRACTICE-ORIENTED ALTERNATIVE!**

## SAFETY WITHOUT ADDITIONAL EXPENSE

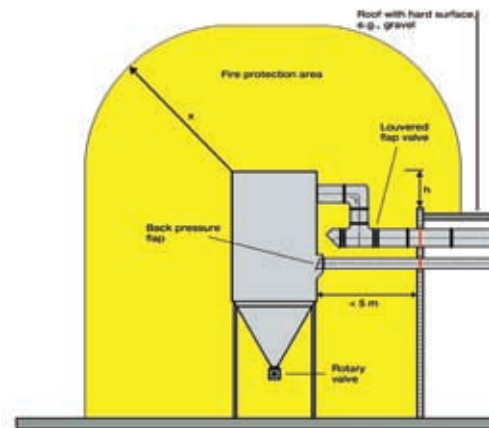
The spread of a fire from the filtration plant to another building must be prevented. The transmission of radiated heat can be prevented either by a fire-resistant separator or by appropriate spatial separation.

In the case of the connecting lines, fire-safe separators are required regardless of the distance between the filtration plant and the factory.

### Standard designs:



Filtration plant with sufficient spatial separation  
 $\geq 10$  m from exterior walls made of flammable building materials  
 $\geq 5$  m from exterior walls made of non-flammable building materials



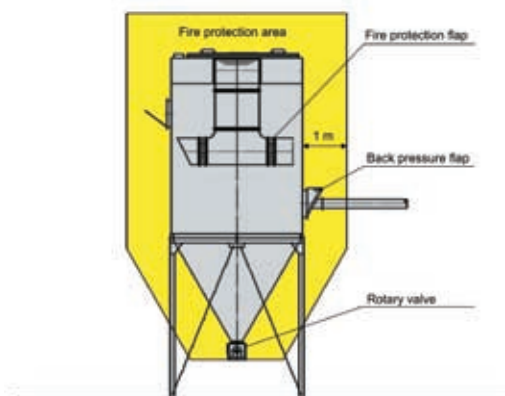
Filtration plant with insufficient spatial separation  
 $< 5$  m with fire-resistant exterior walls

## Practice-oriented alternative solutions from Scheuch

### Scheuch fire protection concept BRANA 120

Since it is well known that a large distance to the exterior wall between the filter and factory building is often difficult to implement in many companies, and because the costs for a fire protection wall are not insignificant, we developed an alternative solution, which is equivalent from a fire protection point of view – a solution that requires little space and no fire protection walls:

As the result of tests conducted by the recognized testing institute IBS, the filter housing and the separators between the filter and the factory building were given the Fire Resistance classification “EW 120”. Thus, Scheuch filtration plants require a protection area of only one meter.



## Maximum Safety – Minimal Restrictions

Scheuch’s BRANA 120 fire protection concept offers

- Minimal danger area resulting from radiated heat of only one meter
- Compact solution – reduced space requirements
- Fire-safe separation through existing components
- No additional construction measures required
- Legal certainty through IBS certification and INBUREX expert opinion
- Intended for use - independent of the quantity of material - for all wood and similar types of materials (Brennzahl – Combustion number – BZ 4/5)



## SMALLER VENT AREAS, REDUCED FLAME RANGE

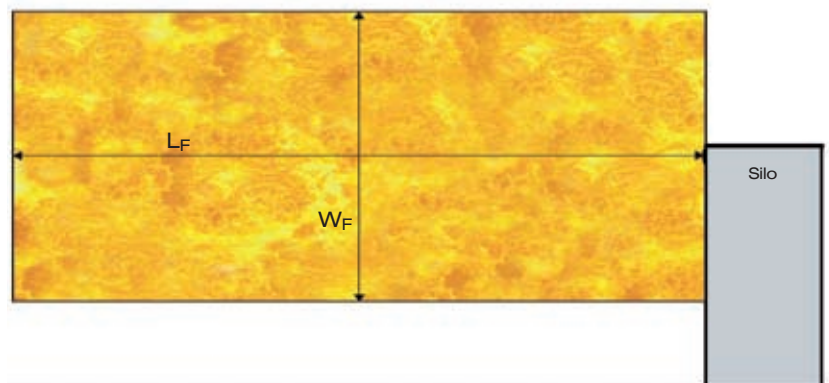
In comparison to filtration plants, silos have a much larger crude gas volume. The hazard potential in the event of an explosion is therefore correspondingly greater: high pressure levels occur, flames extend for up to 60 meters. It would be necessary to locate the silo on its own piece of property to provide secure protection against explosion. In tackling

this problem, Scheuch has also demonstrated its competency in finding solutions: More than 40 individual tests performed under practical conditions using wood dust and using different Scheuch filling variants were able to substantiate the undisputed improvements.

Residual risk - Silo with standard flame profile according to EN 14491

Crude gas volume (m <sup>3</sup> )	Flame length L <sub>F</sub> (m)	Flame width W <sub>F</sub> (m)
25	29	8
50	36	10
100	46	13
250	60	17
1000	60	27
5000	60	46

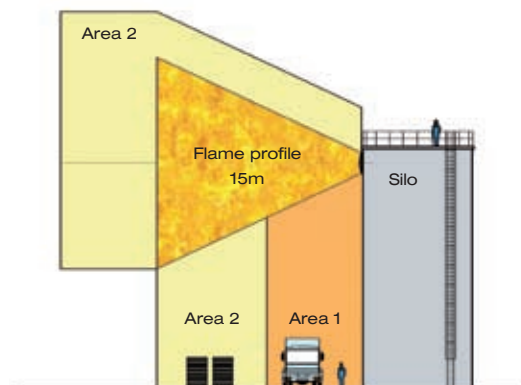
Table: Flame profile  
(applies to the silo and filter plants)



## Maximum Safety Through Scheuch's Silo Filling System

The number of rupture disks can be reduced by 30 to 60 percent depending on the silo volume and type of filling process. This makes targeted side venting possible. As a result of the significantly reduced flame ranges and the correspondingly smaller danger areas, additional space is made available for other commercial uses. In the case of new silos, future plans will require less space. As a result of the practical testing, operators have "real safety" in the event of an incident.

Operators also benefit from an addition plus: Reference can be made to the expert opinion in the explosion protection document. Complying with the easy to implement guidelines, which are essentially organizational measures, gives the plant operator legal certainty!



E.g., Scheuch's SIWEB 300  
explosion protection concept

## The benefits of Scheuch's concept

- Low-turbulence introduction of the material
- Reduction in the required pressure venting areas
- Reduction of the flame range
- "Real safety" in the event of an incident as the result of proof-of-safety under real-world conditions
- Legal certainty through FSA certification and INBUREX expert assessment
- Intended for use with all wood and related dust types ( $K_{ST} \leq 200$ ,  $p_{max} \leq 9$ )

## COMPETENT AND COMPLETE

### Wood Based Panel Industry

Proven technology for extraction, dedusting and conveyor systems.



### SEGAS-Plus

This group extraction system meets the high demands of multi-shift operation.



### SEPAS-Plus

The extraction system with the maximum efficiency level guarantees minimal use of energy.



### SELAS-Plus

The extraction system for the perfect surface coating: spray – dry – polish – store.



### Flue Gas Cleaning

A complete program for dedusting flue gases generated by boiler plants and for heat recovery rounds out our program for the wood processing and wood based panel industries.

