

ESPECIFICACIONES  
TÉCNICAS  
CORTINAS CORTAHUMOS  
**NSC D120**

# **1. MAIN PART**

## **1.1. Scope of documentation**

The scope of this documentation is technical description of solid & automatic smoke curtains EF NSC (solid) & NSCA (automatic).

## **1.2. Scope of elaboration**

This elaboration contains technical description of both types of smoke curtains, divided on mechanical and electrical sections like also presents proper operations and exploitation conditions.

Curtains have been designed according to valid norms and directives like also acc. to instructions from devices producers.

## **1.3. Regulations and related documents**

- Statute dated 24 August 1991 Fire protection (Legal journal from 2002 no. 147, pos. 1229 with further updates : Legal journal from year 2003, No. 52, pos. 452, from 2004, No. 96, pos. 959)
- Decree by the Minister of Infrastructure dated 12 April 2002, concerning technical conditions for building and its location (Legal journal no. 75, pos.690 with further updates: Legal journal from 2003, No. 33, pos. 270, from 2004, No. 109, pos.1156).
- Decree by the Minister of Internal Affairs and Administration dated 16 June 2003 concerning fireproof protection for buildings, other construction objects and areas (Legal journal no. 121, pos. 1138).
- Decree by the Minister of Internal Affairs and Administration dated 5 August 1998 concerning Approvals and technical criteria like also one-time usage of construction elements (Legal journal no. 107, pos. 679 with further updates :Legal journal from 2002, No. 8, pos. 71, No. 25, pos. 256)
- Norm PN-EN 12101-1 „Smoke and heat control systems”  
Part1: „Smoke curtains regulations”
- Internal instructions from devices producers



## 2. TECHNICAL CHARACTERISTICS OF SMOKE CURTAINS EF NSC & EF NSCA

### 2.1 Assignments & purposes of using the smoke curtains EF NSC & NSCA

The main task for EF NSC & NSCA smoke curtains is to limit spreading of the smoke caused by fire on huge areas. As an effect, it will limit cooling down the smoke, then its dropping towards the floor and filling the whole area with smoke and making the fire rescue action very hard. All curtains produced by EF Polska have been designed according to PN-EN 12101-1 requirements. Curtains are manufactured of the fabric, tested to one-time exposure of smoke temperature up to 600°C for the period of minimum 30 minutes.

Because of its construction and used materials, smoke curtains can be exposed to such high temperature only once.

Curtains manufacturer:

**EF POLSKA Sp. z o.o.**

ul. Zielonogórska 8

62-065 Grodzisk Wielkopolski, Poland

Curtains are produced in workshop:

**NGR TECHNOLOGIE Sp. z o.o.**

ul. Zielonogórska 8

62-065 Grodzisk Wielkopolski, Poland

### 2.2 General characteristics of EF NSC & NSCA smoke curtains

#### 2.2.1 Product description

Solid smoke curtains EF NSC :

- Upper supporting profile manufactured of two screwed together modular elements 2500mm long, fixed directly to building's supporting elements
- Solid smoke shutter manufactured of fiberglass fabric, 600°C high temperature resistant, coated with polyurethane on both sides – type AP, thickness 0,40mm, weight 455g/m<sup>2</sup>, shutter manufactured of vertical pieces tightly sewed together with non flammable glass thread,
- Bottom profile as additional weight for curtain, manufactured of two screwed together modular elements 2500mm long, fixed directly to building's supporting elements

EF NSC solid smoke curtains permanently hang under the roof.

EF NSCA automatic smoke curtains consist of:

- Curtain's shaft manufactured of primed steel pipe, hidden in modular cassette made of steel galvanized plates. Depending on curtain's width, the cassette is prepared in one or more pieces (repeatable modules) in few different options fitted to building conditions. Casing's constructions allows to connect all modules easily and manufacture big sized curtains,



- Supporting consoles closing cassette endings, made of steel galvanized plates – also support for shaft's bearings,
- Electric drive for automatic opening,
- Shutter manufactured of fiberglass fabric, 600°C high temperature resistant, coated with polyetherane on both sides – type AP, thickness 0,40mm, weight 455g/m<sup>2</sup>, shutter manufactured of vertical pieces tightly sewed together with non flammable glass thread, winded onto the shaft,
- Bottom profile as additional weight for curtain, manufactured of two screwed together modular elements 2500mm long, fixed directly to building's supporting elements

EF NSCA smoke curtains are winded onto the shaft in normal operation mode. In case of fire alarm, electro-holder releases which causes free curtain drop (non voltage closing) under its own weight, stops at required height above the floor level.

EF NSCA smoke curtains are equipped with emergency feeding system to avoid uncontrolled curtain's drop in case of power decay for the period of max. 2 hours ( depending on curtain dimension and batteries level).

These curtains can be easily connected to the building's fire surveillance system, where the curtains have been installed. Can be also equipped with own smoke sensors system.

*If curtains are manufactured of few modules, connection is made by overlap. Gaps do not exceed 1% of total curtain's surface.*

### **2.2.2 The fabric used for EF NSC & NSCA smoke curtains**

The fabric used for smoke curtains is produced according to EN 13501, DIN 4102-A2 norms (describing the fire reaction class – non flammable fabric) and PN-EN 12101-1 (describing smoke tightness)

#### **General technical data of the fabric used for smoke curtains:**

Curtain's marking	AP
Fabric	Fiberglass fabric coated with polyetherane both sides
Fabric thickness	0,4 mm
Nominal weight	455 g/m <sup>2</sup>
Work temperature range	-10°C ...+60°C
Fire resistance	600°C for 120 minutes

All requirements meet below norms:

- EN 12101-1 („Smoke and heat control systems”)
- EN 13501-1 and DIN 4102 A2 ( Reaction to fire classification )



### **2.2.3 Smoke curtains application**

Smoke curtains, no matter what type (solid and automatic) can be used in every kind of buildings where smoke spreading risk might occur as an effect of fire.

Smoke curtains are designed mostly for production workshops, warehouses, shops, shopping malls, multi-level parking, airports, etc.

EF NSC & NSCA smoke curtains can be used inside buildings with environment temperature from 0°C to 60°C and relative humidity up to 80%.

### **2.2.4 Usage limitations**

EF NSC & NSCA smoke curtains are designed with prediction of 2000 cycles in normal conditions.

EF NSC & NSCA smoke curtains in normal environment temperatures (0 to +60°C) can be one-time exposed on 600°C temperature for minimum 30 minutes.

EF NSCA smoke curtain requires 230V AC 50 Hz electric power feeding with security on fuse max. C16A value.

### **2.2.5 Test and certificates**

EF NSC & NSCA smoke curtains are manufactured in accordance of harmonized European norm PN-EN 12101-1.

Related documents:

- Test report no. 904 162 000/Re/Ei, issued by MPA Materialprüfungsanstalt, Otto-Graf-Institut, Universität Stuttgart,
- Reaction to fire report no. PK-04-071, issued by Centrum Stavebního Inženýrství a.s., Fire Research Laboratory, Prague, Czech Republic,
- Admission no. Z-56.429-930 issued by Deutsches Institut Für Bautechnik, Berlin, Germany.

According to above documents, the fabric used for production of EF NSC & NSCA smoke curtains , indicates the 600°C high temperature resistance for the period longer than 30 minutes, all according to EN 13501-1 & DIN 4102 A2 ( definition of fire reaction degree ) like also smoke tightness according to harmonized European norm EN 12101-1 (“Smoke and heat control systems”).

EF NSC & NSCA smoke curtains achieved CE mark.



### **2.2.6 Periodical service activities**

EF NSC & NSCA curtains do not require any special service Works but, in case of NSC solid smoke curtains, the periodical review shall consist of :

- Checking the fixing elements,
- Checking the fabric's condition, threads, bottom and upper fixings,
- Cleaning of any dust or similar dirtiness

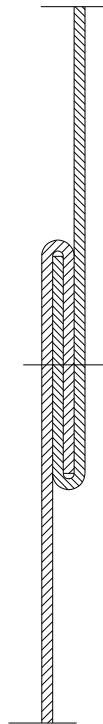
Regarding the periodical service inspection for EF NSCA smoke curtains, the review shall take place every 6 months to confirm as below :

- Main & emergency power supply of smoke curtain,
- Wiring condition, fuses, insulators, contacts for each connection,
- The drive's technical condition,
- Fabric's condition, threads, bottom profile's fixing,
- Functionality of drivers and buttons,
- Visual control of casing and fixing elements

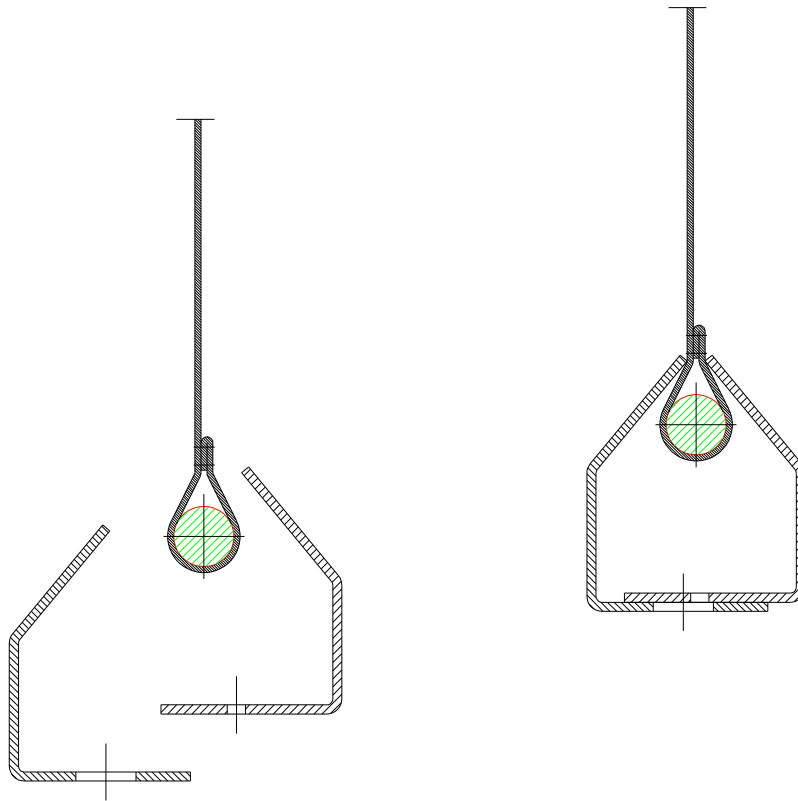
In case of lack o periodical maintenance & service inspections, making any changes to curtain's construction is against the warranty conditions and will cause its immediate termination. There are no sharp tools and chemical cleaning detergents allowed to clean the curtain's surface.

## **2.3 Technical details (drawings)**

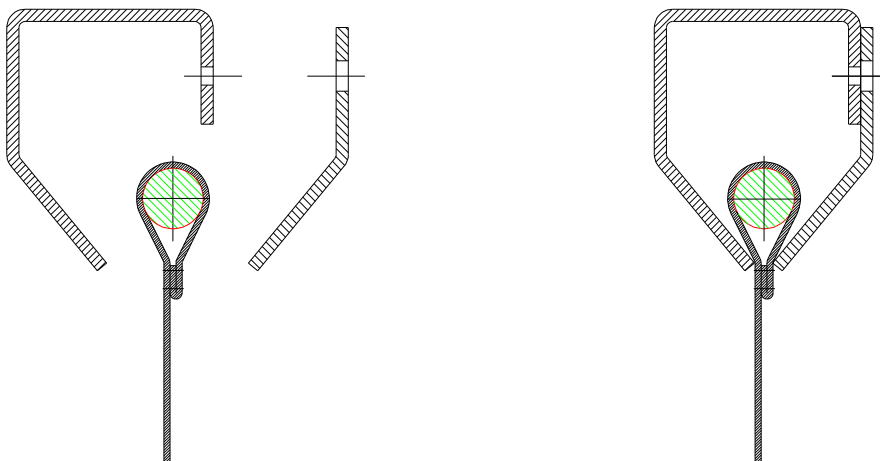
### **2.3.1 The method of connecting each curtain's modules**



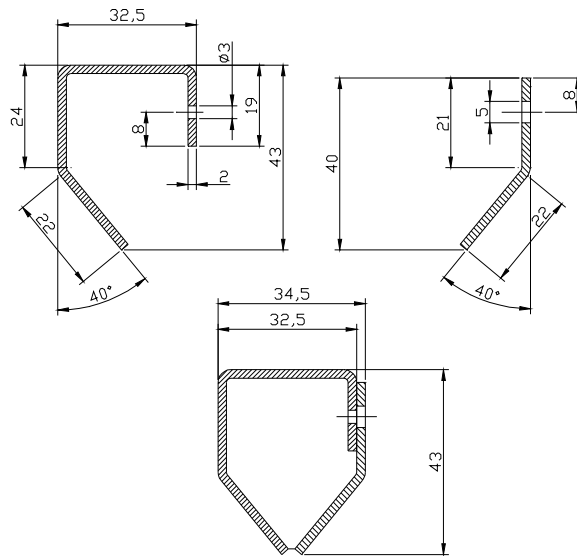
### 2.3.2 Bottom shutter's finishing & bottom profile



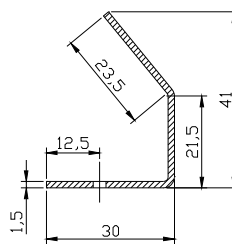
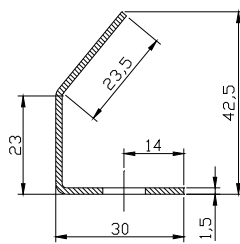
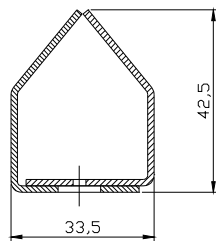
### 2.3.3 Upper shutter's finishing (Only NSC curtain)



**2.3.4 Profiles setting for EF smoke curtains NSC & NSCA.**



\*\*\*Upper fitting\*\*\*  
 (only EF NSC curtain)  
 Steel plate 2,0 mm

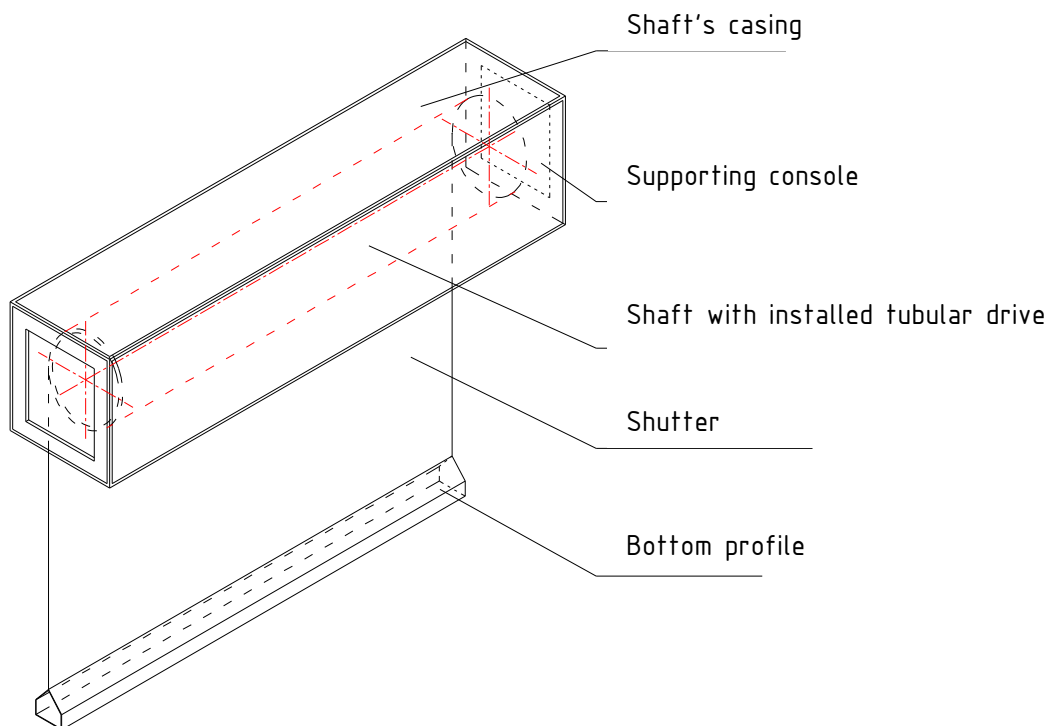
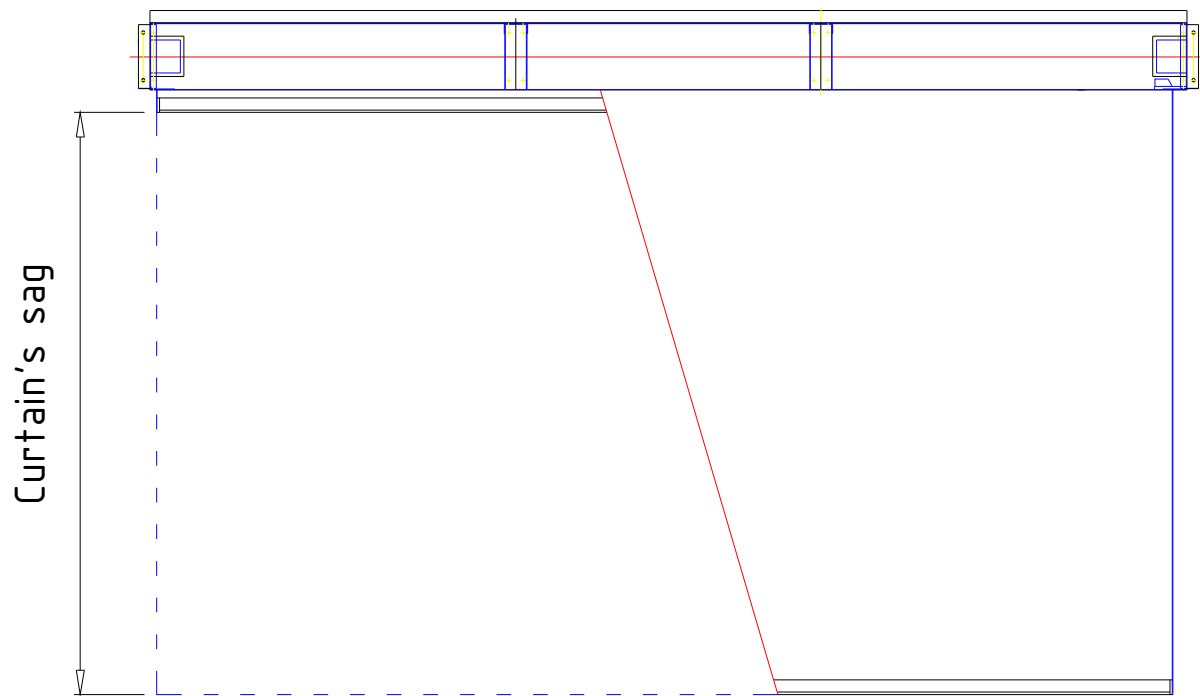


\*\*\*Bottom fitting\*\*\*  
 (for EF NSC & NSCA curtains)  
 Steel plate 1,5 mm



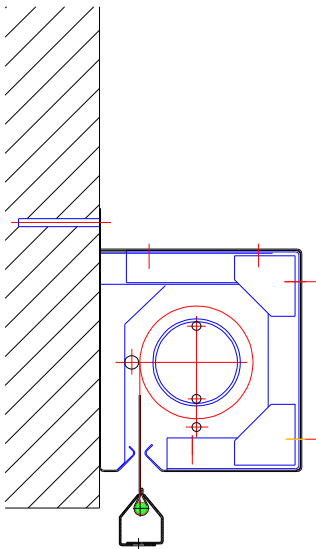


### 2.3.5 Automatic smoke curtain EF NSCA – main view – single module curtain

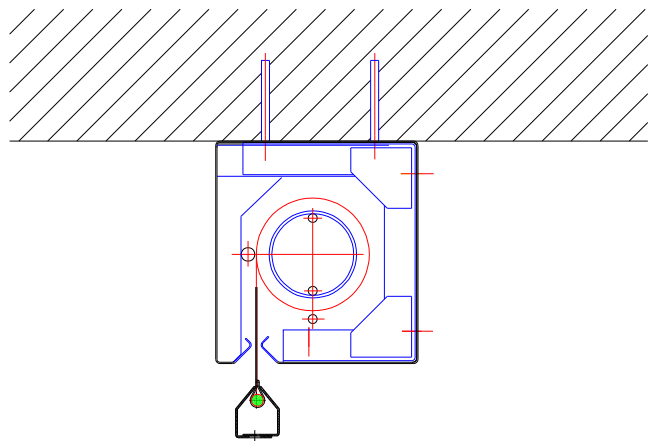


**2.3.6 Automatic smoke curtain EF NSCA - sectional view and chosen system for casing and mounting (single-module curtain).**

A



B

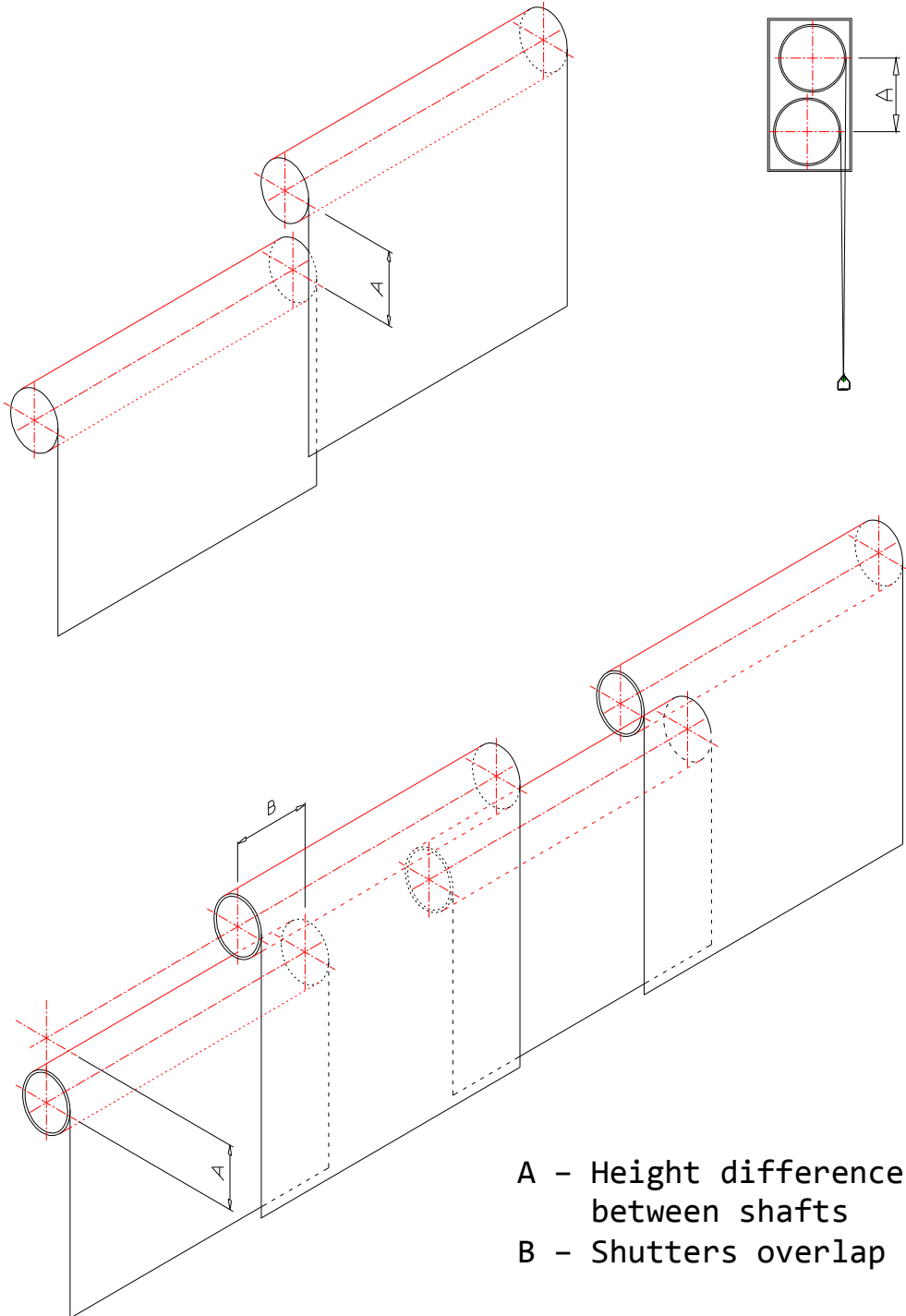


- A - Mounting to the wall
- B - Mounting to the ceiling

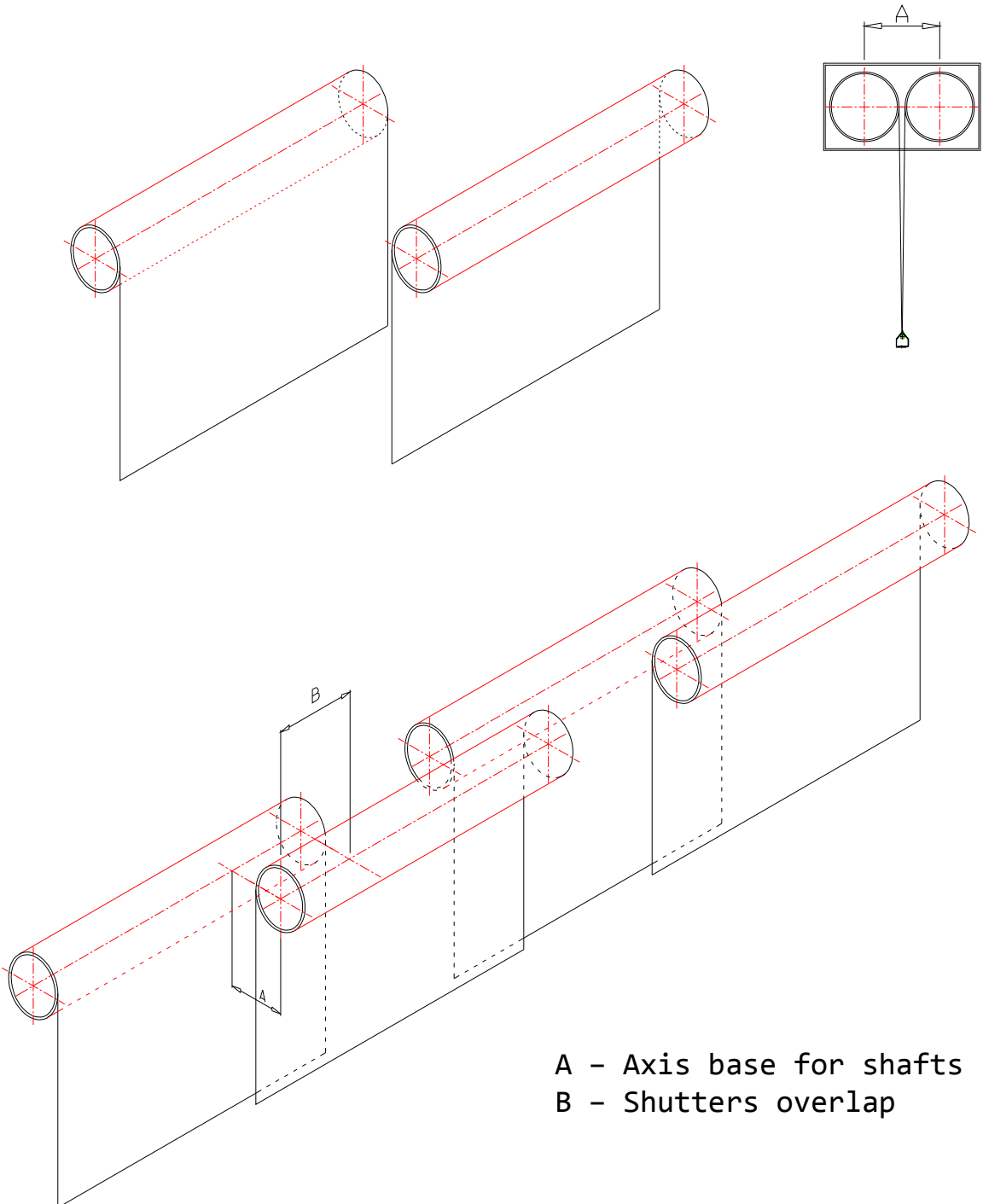


**2.3.7 Multi-modular curtains – the principle of connecting all casing's modules depends on chosen casing system.**

**2.3.7.1 Concurrent shafts, one placed above other**



**2.3.7.2 Backward shafts, placed in direct neighborhood**



# CE CERTIFICADO

Organismo Notificado N° 0370

No.

0370-CPR-5475

## CERTIFICADO DE CONSTANCIA DE LAS PRESTACIONES

En cumplimiento con el Reglamento *305/2011/EU* del Parlamento Europeo y del Consejo de 9 de marzo de 2011 (Reglamento de Productos de Construcción o CPR), este certificado aplica al producto de construcción:

**SISTEMAS PARA EL CONTROL DE HUMO Y DE CALOR. BARRERAS PARA CONTROL DE HUMO. CORTINA CORTAHUMOS D120**

Puesto en el mercado por:

**METALOCONSTRUCCIONES MECOSA, S.L.**

AV. DEL PROGRÉS, 10 - POL. IND. CAN CALDERÓN  
08840 VILADECANS (BARCELONA) ESPAÑA

Y fabricado en la planta de producción:

**21/32300884**

Este certificado indica que se han aplicado todas las disposiciones relativas a la evaluación y verificación de la constancia de las prestaciones descritas en el Anexo ZA de la norma

**EN 12101-1:2005; EN 12101-1:2005/A1:2006**

bajo el sistema 1, y que **el producto cumple todos los requisitos mencionados anteriormente.**

Este certificado fue emitido por primera vez el 26 de mayo de 2021 y su validez permanece mientras los requisitos de los métodos de ensayo y/o del control de producción en fábrica, incluidos en la norma armonizada, empleados para evaluar las prestaciones de las características declaradas no cambien, y no se modifique significativamente el producto y las condiciones de producción en fábrica.

**El seguimiento se realizará antes de 31 de mayo de 2022**

Bellaterra, 26 de mayo de 2021

  
**Applus<sup>+</sup>**  
LGAI Technological Center, S.A.

Xavier Ruiz Peña  
Managing Director, Product Conformity B.U.

*Este documento carece de validez sin su anexo técnico, cuyo número coincide con el del certificado.*

*Puede comprobarse la validez de este certificado en nuestra página web: [www.appluslaboratories.com/certified\\_products](http://www.appluslaboratories.com/certified_products)*



**0370-CPR-5475**

Anexo según norma **EN 12101-1:2005; EN 12101-1:2005/A1:2006**

**SISTEMAS PARA EL CONTROL DE HUMO Y DE CALOR. PARTE 1: ESPECIFICACIONES PARA BARRERAS PARA CONTROL DE HUMO.**

### PRESTACIONES CERTIFICADAS

CARACTERÍSTICAS ESENCIALES	CAPÍTULO Y APARTADOS EN ESTA NORMA EUROPEA	NIVELES Y/O CLASES MANDATADAS
Fuga de humo	5.5	PASA
Resistencia mecánica	5.2	D120
Fiabilidad y durabilidad	5.3	PASA
Tiempo de reacción	5.4	NA
Permeabilidad del material	5.5.5	PASA

PASA; PND = Prestación No Determinada, NA = No Aplica

### PRODUCTO

- Características del revestimiento de cortinas:
  - Tipo de material: Fibra de vidrio recubierta de poliuretano de dos caras
  - Tipo de material: Alpha Maritex 05258-2 — SP (HP)
  - Espesor:  $0.4 \pm 5\%$  mm
  - Densidad superficial:  $455 \pm 5\%$  g/m<sup>2</sup>
  - Permeabilidad:  $< 25$  m<sup>3</sup>/m<sup>2</sup>/h at 20°C or 200°C
  - Construcción: Revestimiento formado por rayas con un máx. ancho de 2500 mm, cosidos con hilo de vidrio no inflamable.
- Elementos de construcción de la cortina:
  - Perfil portante superior: Consta de dos elementos modulares atornillados entre sí de chapa de acero de 1,5 mm de espesor y 2.500 mm de largo, montados directamente sobre los elementos portantes del edificio.
  - Perfil inferior: Consta de dos elementos modulares atornillados entre sí, fabricados en chapa de acero de 1,5 mm de espesor y 2.500 mm de longitud, constituye la carga de la cortina.

Los datos técnicos completos de la gama certificada **CORTINA CORTAHUMOS D120** se detallan en el dossier técnico y en el informe de clasificación nº NP-982/A/08/PG