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Authorised and notified according to Article 10 of the Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products

MEMBER OF EOTA

European Technical Approval ETA-10/0224

Trade name:	DEKO partition type FG and FG Fire
Holder of approval:	DEKO loft+væg pls Mårkærvej 11 DK-2630 Tåstrup Tel. +45 43 55 77 11 Fax +45 43 55 77 12
Generic type and use of construction product:	Glazed relocatable non-loadbearing internal partition kit
Valid from: to:	2010-09-06 2015-09-06
Manufacturing plant:	DEKO loft+væg pls Mårkærvej 11 DK-2630 Tåstrup
This European Technical Approval contains:	16 pages including 2 Annexes which form an integral part of the document

I LEGAL BASIS AND GENERAL CONDITIONS

1 This European Technical Approval is issued by ETA-Danmark A/S in accordance with:

- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products[1)], as amended by Council Directive 93/68/EEC of 22 July 1993[2)].

- Bekendtgørelse 559 af 27-06-1994 (afløser bekendtgørelse 480 af 25-06-1991) om ikrafttræden af EF direktiv af 21. december 1988 om indbyrdes tilnærmelse af medlemsstaternes love og administrative bestemmelser om byggevarer.

- Common Procedural Rules for Requesting, Preparing and the Granting of European Technical Approvals set out in the Annex to Commission Decision 94/23/EC[3)].

- Guideline for European Technical Approval of Internal Partition Kits, ETAG N^{o} 003, Edition July 1998, amended December 2005.

2 ETA-Danmark A/S is authorized to check whether the provisions of this European Technical Approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European Technical Approval and for their fitness for the intended use remains with the holder of the European Technical Approval.

3 This European Technical Approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European Technical Approval.

4 This European Technical Approval may be withdrawn by ETA-Danmark A/S pursuant to Article 5(1) of Council Directive89/106/EEC.

5 Reproduction of this European Technical Approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of ETA-Danmark A/S. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European Technical Approval.

6 This European Technical Approval is issued by ETA-Danmark A/S in English.
This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

1) Official Journal of the European Communities N^{o} L40, 11 Feb 1989, p 12.
2) Official Journal of the European Communities N^{o} L220, 30 Aug 1993, p 1.
3) Official Journal of the European Communities N^{o} L 17, 20 Jan 1994, p 34.

II SPECIAL CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product and intended use

General
DEKO FG and DEKO FG Fire are glazed partitions, consist 1 layer glass elements and a range of aluminium profiles and jointing tapes. The connections between the glass elements can be made as either open joints or sealed joints with aluminium profiles or jointing tape. The connections to the surrounding structure are established with aluminium profiles and jointing tapes, see Annex 1 for profiles and connection details.

All the DEKO Partition kits can be equipped with doors.

The partition type DEKO FG Fire has fire resistant properties.

The components of the kit appear from the component list in annex 1.

Components of the kit
Glass panes
The following glass panes are used in the glazed partitions

- Type FG with 10 mm toughened glass wall height up to 2500 mm
- Type FG with 12 mm toughened glass wall height up to 3000 mm
- Type FG with 15 mm toughened glass wall height up to 4000 mm
- Type FG with 10,8 mm toughened/toughened laminated glass wall height up to 2100 mm
- Type FG with 12,8 mm toughened/toughened laminated glass wall height up to 2400 mm
- Type FG with 16,8 mm toughened/toughened laminated glass wall height up to 3000 mm
- Type FG Fire with 20 mm Contraflam Structure Lite glass wall height up to 3000 mm
- Type FG Fire with 23 mm Contraflam Structure glass wall height up to 3000 mm
- Type FG Fire with 28 mm Contraflam Structure glass wall height up to 3500 mm
- Type FG Fire with 31 mm Contraflam Structure glass wall height up to 3240 mm
- Type FG Fire with 33 mm Contraflam Structure glass wall height up to 3500 mm

The build-up of the glass panes appear from the component list in annex 1

Aluminium profiles
All visible, connecting profiles are extruded aluminium profiles with powder-coated or natural anodised surfaces. See annex 1 for aluminium profiles

Accessories
Jointing tapes and profiles from other materials are described in annex 1.

Intended use
DEKO partitions type FG and FG Fire are intended to be used as lightweight relocatable partition kits for offices, administration and public buildings, with average air temperature range 5 °C - 35 °C and average relative daily humidity range 20 % RH - 75 % RH.

Assumed working life
The tests and assessment have been based on the assumption that the working life of DEKO partitions FG and FG Fire for the above described intended use is at least 25 years. This cannot be understood as a guarantee given by DEKO loft+væg p|s or ETA-Danmark A/S.

2 Characteristics of product and assessment

ETAG para.	Characteristic	Assessment of characteristic
	2.1 Mechanical resistance and stability	Not relevant.
	2.2 Safety in case of fire	
6.2.1	Reaction to fire*	The aluminium. and steel profiles are classified as **Euroclass A1** The Promatect profiles are classified as **Euroclass A1** All glass panes are classified as **Euroclass A2-s1,d0**
6.2.2	Resistance to fire	**All partitions** Classified as **EW30, EI 30, EW 60** or **EI 60** dependent on type, see Table 1 Annex 2 for classification and field of application.
	2.3 Hygiene, health and the environment	
6.3.1	Influence on air quality	No dangerous materials **)
6.3.2	Water vapour permeability	No performance determined. The designer shall consider the relevant needs for ventilation, heating and insulation to minimise condensation in service.
6.3.3	Water permeability	No performance determined (not relevant).

*The field of application for the reaction to fire is limited to the use described in section 1 of this ETA

**) In accordance with http://europa.eu.int-/comm/enterprise/construction/internal/dangsub/dangmain.htm In addition to the specific clauses relating to dangerous substances contained in this European Technical Approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

ETAG para.	Characteristic	Assessment of characteristic
	2.4 Safety in use	
6.4.1	Resistance to structural damage from impact loads.	Partitions type: Type FG with 10 mm toughened glass wall height up to 2500 mm Type FG with 12 mm toughened glass wall height up to 3000 mm Type FG with 15 mm toughened glass wall height up to 4000 mm Type FG with 10,8 mm toughened/toughened laminated glass wall height up to 2100 mm Type FG with 12,8 mm toughened/toughened laminated glass wall height up to 2400 mm Type FG with 16,8 mm toughened/toughened laminated glass wall height up to 3000 mm Type FG Fire with 20 mm Contraflam Structure Lite glass wall height up to 3000 mm Type FG Fire with 23 mm Contraflam Structure glass wall height up to 3000 mm Type FG Fire with 28 mm Contraflam Structure glass wall height up to 3500 mm Type FG Fire with 31 mm Contraflam Structure glass wall height up to 3240 mm Type FG Fire with 33 mm Contraflam Structure glass wall height up to 3500 mm Satisfactory resistance to **Use category IV b**, described as "Zones readily accessible to public and others with little incentive to exercise care. Risk of accidents occurring and of misuse" and tested with a soft body energy level (up to 1.5 m above pedestrian level) of 500 Nm and a hard body energy level of 10 Nm.
6.4.2	Resistance to structural damage and functional failure from eccentric vertical loads.	No performance determined
6.4.3	Safety against personal injury by contact	When properly installed, the system does not contain sharp or abrasive components liable to cause personal injury.

ETAG para.	Characteristic	Assessment of characteristic
	2.5 Protection against noise	
6.5.1	Sound insulation	**Partition type FG and FG Fire** Dependent on type and number of boards, see Table 2 Annex 2.
6.5.2	Sound absorption	**Partition type FG and FG Fire** See Table 3 Annex 2.
	2.6 Energy economy and heat retention	
6.6.1	Thermal resistance.	No Performance determined
6.6.2	Thermal inertia.	No performance determined.
	2.7 Related aspects of serviceability	
6.7.1	Resistance to functional failure from impact loads.	All partition types: **Use category IV** Maximum deflection with 3×120 Nm: With all glass types: $< 0,5$ mm at 1,5 m
	Resistance to point loads.	No Performance determined
	Rigidity of partitions to be used as a substrate for ceramic tiling.	No performance determined (not relevant).
6.7.2	Protection against deterioration caused by hygrothermal conditions.	No performance determined as the movement caused by differential temperatures on the system within the range indicated under the intended use would be small and insufficient to cause any noticeable bowing or deformation of the surface.
	Protection against deterioration caused by corrosion.	The system has a sufficient protection against corrosion since all profiles are aluminium profiles.
	Protection against deterioration caused by cleaning agents.	The system has a sufficient protection against cleaning agents.
	Protection against deterioration caused by biological agents.	The use of the system does not encourage infestation, as there is no food value in the materials used.

3 Attestation of Conformity and CE marking

3.1 Attestation of Conformity system

The attestation of conformity applied to this product specified by the European Commission in Mandate Construct 97/243 REV.1, Annex 3 is System 3, since there is no improvement of the reaction to fire classification in the production process.

3.2 Tasks for the manufacturer

3.2.1 Factory production control.

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with a control plan relating to this European technical approval, which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with ETA-Danmark

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.2 Initial type testing of the product

For initial type testing the results of the tests performed as part of the assessment for this European Technical Approval shall be used unless there are changes in the production line or plant. In such cases the necessary type testing has to be agreed between ETA-Danmark A/S and the manufacturer.

3.3 CE marking

The CE marking shall be affixed to the packaging and accompanying commercial documents.

The CE marking shall be accompanied by the following information:

Name of product: Commercial trade as indicated in this ETA
Name of manufacturer: DEKO loft+væg p|s
Last two digits of the year in which the CE marking was affixed
Number of the ETA: ETA – 10/0224

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

All materials shall be manufactured by DEKO loft+ væg p|s or by subcontractors using DEKO loft + væg p|s tools under the responsibility of DEKO loft+ væg p|s.

4.2 Installation

Installation details and application details for the man on site are given by DEKO loft + væg p|s in the Manufacturers Installation Guide dated 2007-01-19 for the FG Fire partitions and 2007-03-01 for the FG partitions which forms part of the documentary material for this ETA and which shall always accompany the kit delivered to the site.

In most situations the partition kit will be installed by DEKO loft + væg p|s itself or by another contractor than the dry lining contractor. Mainly, this will be DEKO loft + væg p|s local agents who have obtained careful instruction and training by DEKO loft + væg p|s, either locally or in the DEKO loft + væg p|s main office and training site in Copenhagen.

It is important that all educated and trained contractors are advised as to where and how the service penetrations should be made and maintained.

4.3 Relocation

The partitions are considered capable of being dismantled and reinstalled without loss of properties and without substantial repair other than replacement of ancillary components such as seals and fixings. In general, the process itself requires a certain amount of skill and the use of tools.

4.4 Maintenance and repair

In general, abrasions and minor impact damages are capable of easy repair in a way that will not adversely affect the performance of the system.

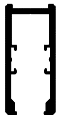
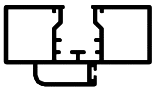
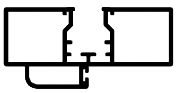
In order to secure a proper and correct daily and yearly cleaning and maintenance of the product, the supplier issues a Cleaning- and Maintenance Guide, covering all components involved. The Guide can be forwarded from the supplier on request.

Thomas Bruun
Manager, ETA-Danmark

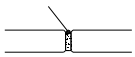
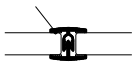
Annex 1
Product specification – component list

DEKO FG aluminium profiles:

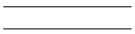
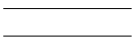
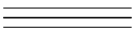
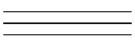
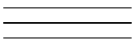
Extruded aluminium profiles

AGGP	Floor/ceiling profile		Length 300 cm	t = 1,60mm
AGGPT	Telescopic ceiling profile		Length 300 cm	t = 2,50-3,00mm
AGVP	Wall starter		Length 300 cm	t = 1,60mm
AGVPA	Wallstarter, open		Length 300 cm	t = 1,60mm
AGVPT	Wallstarter, open		Length 300 cm	t = 1,60mm
AGTT	T-joint profile		Length 300 cm	t = 1,50mm
AGLA	Connection profile, plane surface		Length 300 cm	t = 1,60mm
AGLT	Connection profile, plane surface		Length 300 cm	t = 1,60mm
AGHLA-90	Connection profile, 90° corner		Length 300 cm	t = 1,60mm
AGHLT-90	Connection profile, 90° corner		Length 300 cm	t = 1,60mm
AGHLA-135	Connection profile, 135° corner		Length 300 cm	t = 1,60mm
AGHLT-135	Connection profile, 135° corner		Length 300 cm	t = 1,60mm
80mm FG26 frame	Aluminium frame, glazed door		Length 315 cm	t = 1,75mm
92mm FG40 frame	Aluminium frame, solid door		Length 315 cm	t = 1,75mm

DEKO FG – other materials

Rubber strip for AGGP profile		Different profiles for 10, 12 and 15mm glass and the laminated glas
Silicone joint for glass connection		Thickness 1,5-2-3mm x 9mm for 10+12mm glass Thickness 3mm x 12mm for 15+16,4mm glass
DEKO Tex		1,5x5mm sealing strip 60m pr. roll
Joint for AGVP+AGGP		4,8x19mm sealing strip 30m pr. roll
Endcover for AGGP		26x40mm PVC

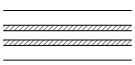
DEKO FG – glass

10mm glass		10mm clear toughened glass
12mm glass		12mm clear toughened glass
15mm glass		12mm clear toughened glass
10,8mm laminated glass		5mm toughened glass + 0,76mm laminate + 5mm toughened glass
12,8mm laminated glass		6mm toughened glass + 0,76mm laminate + 6mm toughened glass
16,8mm laminated glass		8mm toughened glass + 0,76mm laminate + 8mm toughened glass

DEKO FG Fire profiles:

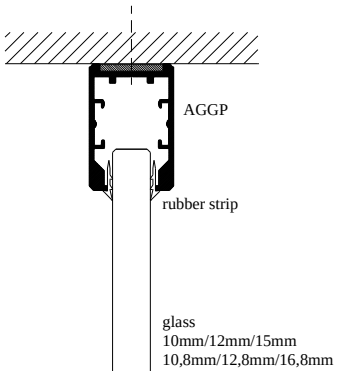
AFG-1	Aluminum cover profile		Length 300 cm	t = 1,20mm
ADFG	Aluminum cover profile for glass joint, 28mm		Length 300 cm	t = 3,00mm
SFG-1	Steel underlaying profile for AFG-1		Length 200 cm	t = 1,00mm
Promatect	Promatect strips, t=25mm		Length 2500 cm w=26mm - 29mm - 34mm - 37mm - 39mm	
Flexpress	Flexpress strips for Promatect, t=2mm		Length 100 cm w=20mm - 30mm	
Palusol-T	Single-side adhesive strip for glass edges, t=2mm		Length 100 cm w=8mm - 13mm - 18mm	
Backstop			Length 5 cm diameter=10mm	
Fire silicone	Black fire silicone		Gluske	
Fire silicone	Fire silicone for glass connection		Dow Corning DC 895	

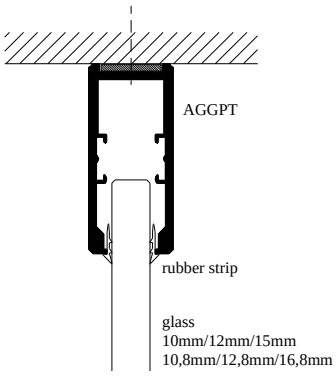
DEKO FG Fire – glass

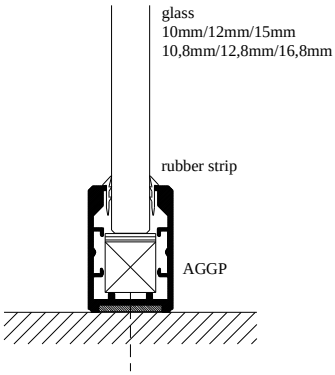
EW 30 glass 20mm Contraflam Light		8mm toughened glass + 4mm Gel + 8mm toughened glass
EI 30/EW 60 glass 23mm Contraflam Structure		6mm toughened glass + 3mm Gel + 5mm toughened glass + 3mm Gel + 6mm toughened glass
EI 60 glass 28mm Contraflam Structure		8mm toughened glass + 3mm Gel + 5mm toughened glass + 3mm Gel + 8mm toughened glass
EI 60 glass 31mm Contraflam Structure		6mm toughened glass + 3mm Gel + 5mm toughened glass + 3mm Gel + 5mm toughened + 3mm Gel + 6mm toughened glass
EI 60 glass 33mm Contraflam Structure		6mm toughened glass + 3mm Gel + 6mm toughened glass + 3mm Gel + 6mm toughened + 3mm Gel + 6mm toughened glass

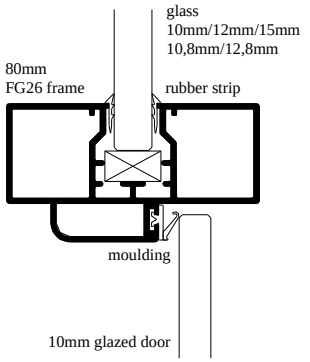
Product specification – kit drawings

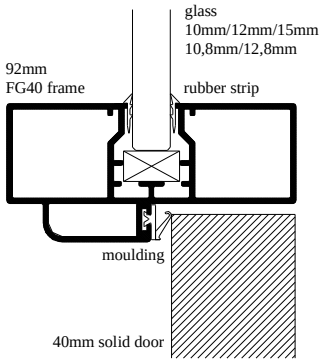
DEKO FG, fully glazed partition – vertical sections



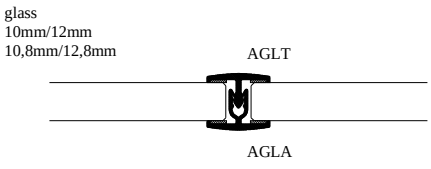


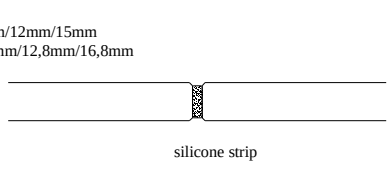


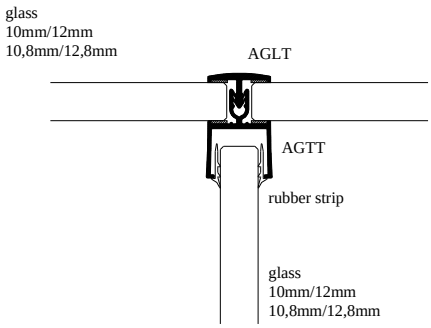


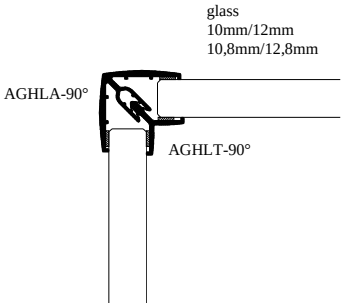


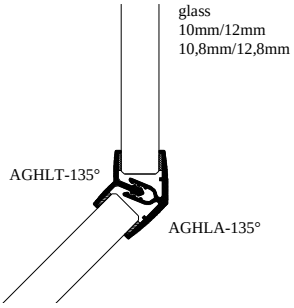
DEKO FG, fully glazed partition – horizontal sections



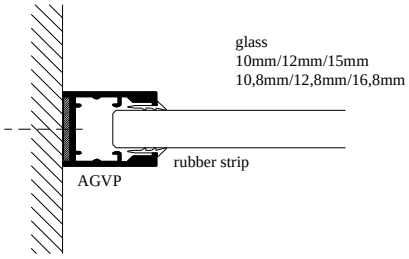


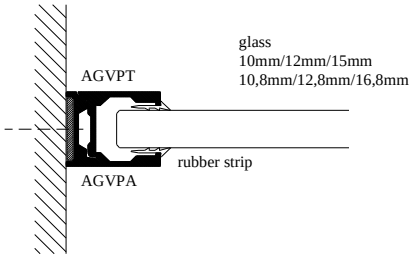


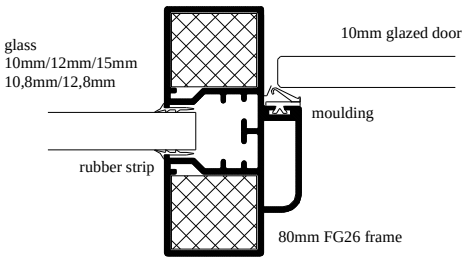


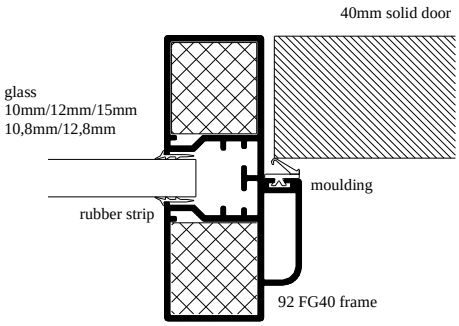


DEKO FG, fully glazed partition – horizontal sections

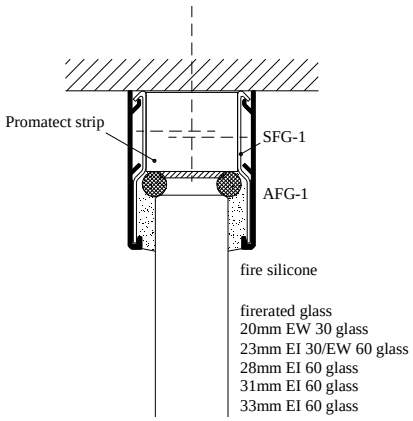


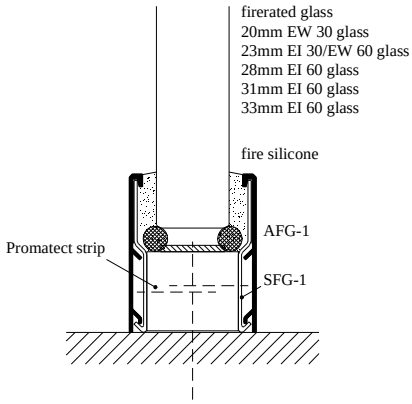




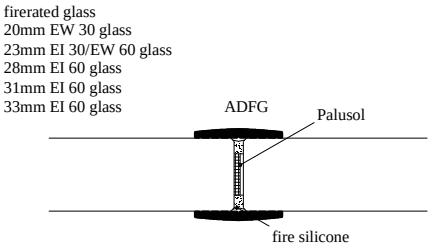


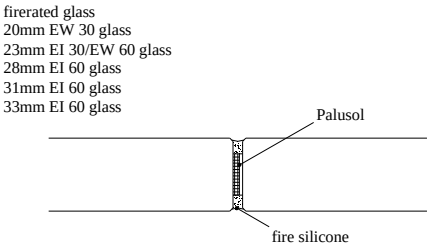
DEKO FG Fire, firerated fully glazed partition – vertical sections

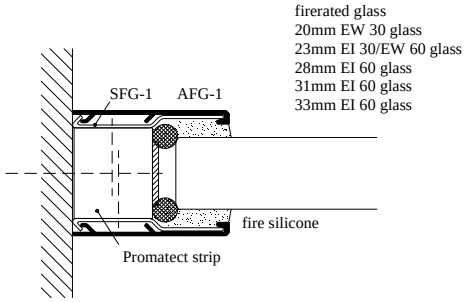




DEKO FG Fire, firerated fully glazed partition – horizontal sections







Annex 2
Characteristics of the assembled kit

Table 1
Indication of fire resistance classes for DEKO partitions type FG Fire.

Partition type	Construction	Nominal overall thickness mm	Approx. weight kg/m^2	Fire resistance Classification
Partition type FG Fire with 20 mm SGG Contraflam Structure Lite glass	Single partition	35	45	EW 30
Partition type FG Fire with 23 mm SGG Contraflam Structure 30	Single partition	39	58	EI 30, EW 60
Partition type FG Fire with 28 mm SGG Contraflam Structure 60	Single partition	44	70	EI 60, EW 60

Field of application for the resistance to fire classification for opaque DEKO partition kits type FG Fire

The above mentioned classification of the Deko partition type FG Fire with glass panes of either 20 mm SGG Contraflam Structure Lite glass, 23 mm SGG Contraflam Structure 30 or 28 mm, 31 mm and 33 mm SGG Contraflam Structure 60 is valid for the following end use conditions of the wall:

- Glass panes as specified in table 1
- With unlimited decrease in the height of the partition (the height of the test specimen was 3,0 m)
- With unlimited decrease or increase in width of the partition
- With unlimited increase in thickness of the partition and/or components of the kit
- With unlimited decrease in the linear dimensions of the glass panes under the condition that the sight height and the sight width of the glass panes are decreased equivalently
- With unlimited decrease of the spacing of the fixings
- With joints of the type tested

Table 2
Indication of expected weighted ratings for the airborne sound insulation:

Wall type	**Expected R_w**
Type FG with 10 mm toughened glass wall	34 dB
Type FG with 12 mm toughened glass wall	35 dB
Type FG with 15 mm toughened glass wall	36 dB
Type FG with 10,8 mm toughened/toughened laminated glass wall	35 dB
Type FG with 12,8 mm toughened/toughened laminated glass wall	36 dB
Type FG with 16,8 mm toughened/toughened laminated glass wall	38 dB
Type FG Fire with 20 mm Contraflam Structure Lite glass wall	39 dB
Type FG Fire with 23 mm Contraflam Structure glass wall	41 dB
Type FG Fire with 28 mm Contraflam Structure glass wall	42 dB
Type FG Fire with 31 mm Contraflam Structure glass wall	42 dB

Table 3
Indication of the expected sound absorption coefficient for all wall types to be:

Frequency	125	250	500	1000	2000	4000
α	0,18	0,06	0,04	0,03	0,02	0,02