

STÅLPROFILSYSTEM SP 76500

NOW ALSO IN
STAINLESS!

6

Fire insulated profile system with a core of fire resistant insulation for glazed doors, sliding doors, partition walls and window sections



COMPLETE PARTITIONS
WITH GLASS,
INCLUDING ASSEMBLY!

CONTENTS

SP 76500

SP 79000

SP 711000

Module locks

Calculated U-value

Finger trap proof gasket

Airborne sound reduction

Rounded windows and arches

Bullet proof classes C1 - C5 SF

Fire resistant classes up to EI 90

Sliding door in E 30 / A 30 / EI 30



 **STÅLPROFIL AB**



**STÅLPROFIL ONLINE
AND ON CD**



You can now get the latest updates and news from Stålprofil by visiting our web site at www.stalprofil.se. The site contains the profiles and drawings in downloadable file formats. The catalogues are also available for downloads as PDF files. All of the drawings are in DWG format compatible with AutoCAD and DXF for other technical drawing software. To simplify the construction process our drawings have been created in layers and have insertion points. To further facilitate construction, the drawings are compatible with AutoCAD DesignCenter. There is a CD available containing the catalogues, drawings and profile systems. You can request the catalogue and the accompanying CD by e-mailing us at cd@stalprofil.se or fax to +46 522- 12046.



SYSTEM SUMMARY STÅLPROFILSYSTEM

Item	SP 6000	SP 60000	SP 35000	SP 55000	SP 75000	SP 56500	SP 58000	SP 76500	SP 79000	SP 711000
Stainless	SP 96000		SP 95000	SP 955000	SP 975000	SP 956500	SP 958000	SP 976500	SP 979000	
Height	50/75/120	50/75/120	50	50	50	65	80	65	90	110
Thermal bridge	•	•	-	10	-	25	10	-	-	-
Fire resistance	-	-	-	-	10	-	-	25	50	2 x 25
Wall sections	•	•	E 30/E 60	•	E 30/E 60	•	•	EI 30/E 60	E 60/EI 60	EI 90
Door without midrail	-	-	EI 30/EI 60	•	EI 30/EI 60	•	•	EI 30/A 60/E 60	E 60/EI 60	-
Door with midrail	-	-	A 30	•	A 30	•	•	EI 30/A 60/E 60	E 60/EI 60	-
Window	-	-	E 30/E 60	•	E 30/E 60	•	•	EI 30/E 60	E 60/EI 60	-
Sliding door	-	-	E 30/EI 30/A 30	•	E 30/EI 30/A 30	•	•	EI 30	-	-
Arches	•	-	•	•	•	•	•	EI 30/A 60/E 60	E 60/EI 60	-
Rounded windows	-	-	•	•	•	•	•	EI 30	E 60/EI 60	-
Finger trap gasket	-	-	•	•	•	•	-	•	-	-
Module locks	-	-	•	•	•	•	•	•	•	-
Burglary resistant	-	-	CI 1-3	-	-	-	CI 1-3	-	-	-
Bullet proof	-	-	C1-C5 SF	C1-C5 SF	C1-C5 SF	C1-C5 SF	C1-C5 SF	C1-C5 SF	C1-C5 SF	-
U-value	•	•	-	-	-	•	-	•	•	-
Noise reduction	•	•	-	•	•	•	-	•	•	-

Note: The values for fire resistant and safety classes above are the maximums. Some constructions have lower fire resistant and safety classes. Fire resistant classes above comply with SITAC type approval certificates. Please refer to each systems catalogue for further details.

FIRE RESISTANCE IN STEEL

The demand for steel and stainless steel profile systems for fire safety doors, windows, wall sections and sliding doors has increased dramatically from year to year. Implementing at the start of the project well-planned fire safety precautions can drastically reduce the risks for personal injuries and material damage caused by fires. Stålprofilers systems enable you to comply with fire safety standards and regulations on fire safety doors, windows, wall and sliding door sections. It is vital that regulations laid down by the authorities are adhered to and dispensations from current regulations should be avoided. Steel offers added safety benefits thanks to its tolerance for high temperatures.

The gases and fumes from indoor fires reach high temperatures, sometimes above 900°C, in comparison with steel profiles unalloyed aluminium melts at 650°C. Fire resistant steel sections equipped with fire safety glass windows provide the protection you need. The characteristics of steel provide many exciting variations of smooth interior and exterior surfaces and allow you to create light and pleasant environments while complying with fire safety regulations. Steel is strong, has a high level of durability and resistance to exterior forces that surpasses other materials, effectively lowering the total cost of ownership. It is environment friendly and has infinite possibilities with regard to colour or stainless finish.

This catalogue presents a summary of National Board of Housing, Building and Planning, Sweden, Building Regulations, BBR, BFS 1993:57 with adjustments BFS 1998:38



STÅLPROFILSYSTEM

SP 76500 – SP 79000 – SP 711000

- Glazed intersecting walls
- Interior doors with or without side or ceiling lighting
- Shooting tests performed by SP, The Swedish testing and Research Institute
- Noise reduction tested
- Calculated U-value
- Glazed door, window and wall sections in fire resistant classes E 30/E 60/EI 30/A 60/EI 60
- Glazed sliding door sections with side or ceiling lighting in fire resistant class EI 30
- Glazed wall sections in classes EI 30/EI 60
- Glazed door sections in classes EI 30/A 60/EI 60
- Finger trap proof gasket in fire resistant classes E 30/E 60/EI 30/A 60/EI 60
- Arches in classes E 30/E 60/EI 30/A 60/EI 60
- Rounded windows in classes E 30/E 60/EI 30/EI 60
- Glazed wall sections in fire resistant class EI 90
- Adapted for module locks
- Adapted to BBR99

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CHOOSE SAFETY!

ALL OF OUR FIRE RESISTANT SYSTEMS CARRY WITH THEM A TYPE APPROVAL CERTIFICATE FOR CLASSES E 30 UP TO AND INCLUDING EI 90

ACCEPT NO DISPENSATIONS FROM CURRENT FIRE SAFETY REGULATIONS!

FOR YOUR SAFETY ALL OF OUR MANUFACTURERS UNDERGO REGULAR CONTROL INSPECTIONS CARRIED OUT THE SWEDISH TESTING AND RESEARCH INSTITUTE



Firetest 60 minutes

Firetest 90 minutes

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 1946/89
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire separating walls class EI
Fire doors class EI

SYSTEM SP 76500 - EI 30
Glass wall, window and door partition

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 76500-SP 76500, glass wall, window and door partition of steel for windows and doors, maximum size width-height 2000x2000 mm, maximum size including side- and over panels 2000x2400 mm, EI 30

Intended use: Glass panels used in the partition are to be type approved for class EI 30 or higher

Intended use: Fire separating glass wall, window and door partitions in buildings

Trade name: Stålprofil SYSTEM SP 76500 - EI 30

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 4295/88
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire doors class EI

SYSTEM SP 35000+SP 76500 - EI 30
Glass door partition with side- and over panels

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 35000-SP 76500, glass door partition of steel for windows and doors, maximum size width-height 2000x2000 mm, maximum size including side- and over panels 2000x2400 mm, EI 30

Intended use: Glass panels used in the partition are to be type approved for class EI 30 or higher

Intended use: Fire separating glass door partitions in buildings

Trade name: Stålprofil System SP 35000+SP 76500 - EI 30

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

SITATEF

Stålprofil AB
Box 77
447 22 Vårgårda
Sweden

At: The A-Box Building
Gen. nr.: 10-461
EBC 100000 1476 51 50
app-01-01-01

PROVINGSRAPPORT

Gjort på: 080000 34 76500-8
Forsöksstandard: NS 2007 - Brandteknisk prövning av dörrar, fönster och balkar, Brandbelastning (Brandtest EN1363, EN1364)

Skapad av: 080000 34 76500-8
Förklarad av: 080000 34 76500-8

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 1947/89
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire doors class EI

SYSTEM SP 76500+SP 79000 - A 60/EI 60
Glass door partition with side- and over panels

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 76500-SP 79000, glass door partition of steel for windows and doors, maximum size width-height 2000x2000 mm, maximum size including side- and over panels 2000x2400 mm, A 60/EI 60

Intended use: Glass panels used in the door leaf are to be type approved for class A 60/EI 60 or higher

Intended use: Fire separating glass door partitions in buildings

Trade name: Stålprofil System SP 76500-SP 79000 - A 60/EI 60

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 0297/97
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire doors class EI

SYSTEM SP 35000+SP 76500 - EI 30
Glass, sliding door partition with side- and over panels

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 35000-SP 76500, glass, sliding door partition of steel for windows and doors, maximum size width-height 2000x2000 mm, maximum size including side- and over panels 2000x2400 mm, EI 30

Intended use: Glass panels used in the partition are to be type approved for class EI 30 or higher

Intended use: Fire separating glass door partitions in buildings (except for escape routes)

Trade name: Stålprofil System SP 35000+SP 76500 - EI 30

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

DNV

DET NORSKE VERITAS
TYPE APPROVAL CERTIFICATE

Certificate No. F-12548

THIS IS TO CERTIFY THAT
the class B bulkhead
"B-30 GLASS PARTITION"

manufactured by
Reed Products A/S
Ravnsgovn. 56, 1364 Hvalstad, Norge

is found to comply with
Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units,
Det Norske Veritas' interpretation of SOLAS 1974 Convention as amended.

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 1945/89
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire separating walls class EI
Walls class EI (non-ventilating)

SYSTEM SP 79000 - EI 60
Glass wall and window partition

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 79000, glass wall and window partition of steel for windows and doors, maximum size width-height 2000x2000 mm, EI 60

Intended use: Glass panels used in the partition are to be type approved for class EI 60 or higher

Intended use: Fire separating glass wall partitions in buildings

Trade name: Stålprofil SYSTEM SP 79000 - EI 60

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

SITAC English version 1 (3)
16 April 2006 Reg. No. E14-02006

TYPE APPROVAL CERTIFICATE 1141/95
in accordance with (F 18:21 of the Act (1994:445) on Technical Property Requirements for Construction Works, etc., SFS)

KEY WORDS: FIRE PROTECTION
Fire separating walls class EI
Walls class EI (non-ventilating)

SYSTEM SP 711000 - EI 90
Glass wall partition

Intended to: Stålprofil AB, Box 77, SE-447 22 Vårgårda, SE +46 322 42 31 40, fax +46 322 42 31 49

Product: SYSTEM SP 711000, glass wall partition of steel, maximum size width-height 2000x2000 mm, EI 90

Intended use: Glass panels used in the partition are to be type approved for class EI 90 or higher

Intended use: Fire separating glass wall partitions in buildings

Trade name: Stålprofil SYSTEM SP 711000 - EI 90

Approved: The product satisfies the requirements in 2:2 SFS, in these respects and under

Nemko Certification

Vår dato: 2000-08-23 Vår referens: 001.45-Pyrotec

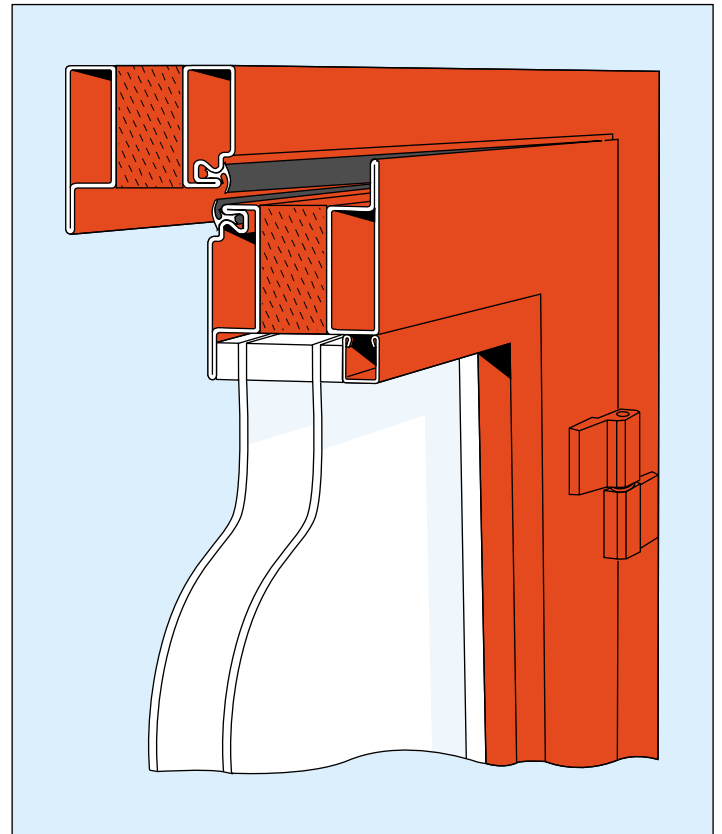
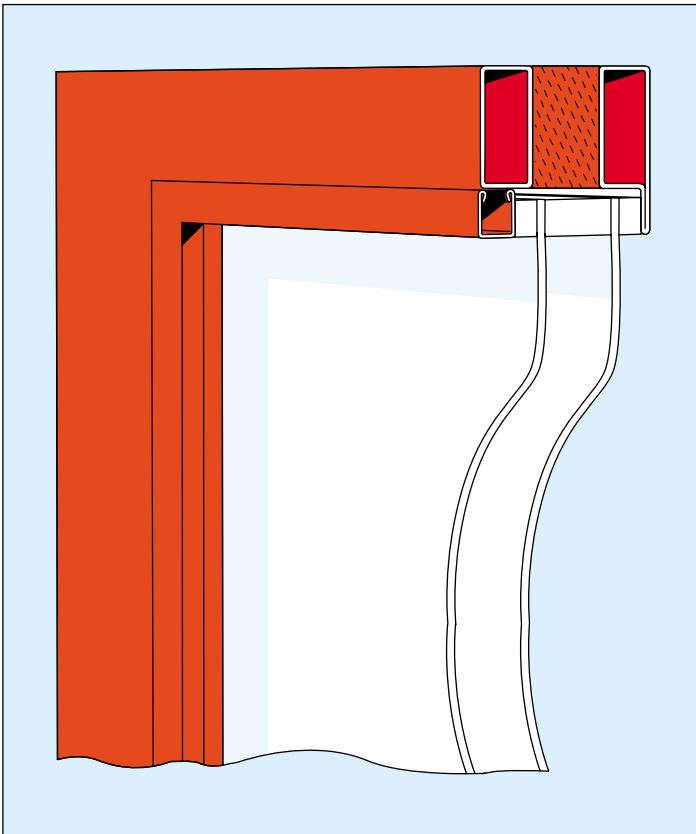
Vedlegg nr. 4 till sertifiseringsföreläsning nr. 462 med utstedelsesdato 1992-03-27 för NS-merking av brandteknisk klassificerade vinduer (Utgave 2)

Produktnamn: Futura brannvindu A 60

Produkttype: Brannteknisk klassifisert, åpningsbart vindu

Klassifisering: A 60

Beskrivelse: Vindu bestående av stålprofilsystemet SP 79000 isolert med 50 mm fiberrullkaplater type Promatek H, tegning nr. 4-1172-A av 1989-04-19.
- Maks jernstål b x h = 1455 x 1360 mm.
- Innsett glass-type: 21 mm Pyrostop 80-10 GB (II), alternativt: 27 mm Pyrostop 80-25 GB (II) 35 mm Pyrostop 80-25 GB (II) 41 mm Pyrostop 80-25 GB (III)
- Produzentens i henhold til tegning 1-4012 B av 1994-01-27 og tegning 3-4015 av 1989-12-03 for innfestingen av alternativ glass-type.
- Blåde på karm og ramme skal det for innvendig bruk monteres Interdens F 10 x 2 mm og for utvendig bruk Exterdens F 10 x 2 mm, tegning 1-4012 B av 1994-01-27.
- For montering: 1 A 60 SP 79000 stålprofil/glass veggssystem, alt. fast mur- eller



STÅLPROFILSYSTEM SP 76500

Glazed door sections with side and ceiling lighting in fire resistant classes EI 30/ A 30. Type approval certificate 4295/88

Glazed wall, window and door sections in fire resistant class EI 30. Type approval certificate 1946/89

Glazed door sections in fire resistant classes EI 60/A 60. Type approval certificate 1947/89

Glazed wall, window and door sections in fire resistant classes E 30/E 60. Type approval certificate 4294/88

Glazed sliding door sections with side and ceiling lighting in fire resistant class EI 30. Type approval certificate 0297/97

STÅLPROFILSYSTEM SP 76500 consists of fire resistant steel profiles for doors, sliding doors, window and wall sections for offices, shopping centres, airports, banks, schools, hospitals and service homes etc.

The modern system offers flexibility, security and stability in a variety of formats. The system is type approved with finger trap proof gasket, rounded windows, arches and wide profiles for module locks.

The innovative design of the system with among other items tracks for rubber sealing creates smooth interior and exterior door and wall surfaces meeting with architectural requirements.

Steel is becoming the material of choice because of its increased stability, resistance to fire and other external forces, compared with other materials. Steel also offers unlimited freedom of choice with regard to colour scheme and is environment friendly. The attractive purchase price and low total cost of ownership are also factors that give steel the edge over other materials.

The system is available in bullet proof quality according to the results of the testing carried out by SP, The Swedish Testing and Research Institute.

SP 76500 is type approved by SITAC, Swedish Institute for Technical Approval in Construction, in several fire resistant classes. The door and wall sections comprise the fire compartments in corridors, main hallways and stairwells, that are used as emergency exits during a fire. The fire resistant profile core effectively reduces heat transfer from the fire to the opposite side of the profile.

SP 76500 offers a variety of possibilities for creation of light and pleasant environments without comprising current fire safety regulations.

Design

The innovative design of the system lends itself to a simpler assembly and construction leading to a reduction in assembly time compared to conventional systems implying more consistent quality and reduced manufacturing costs.

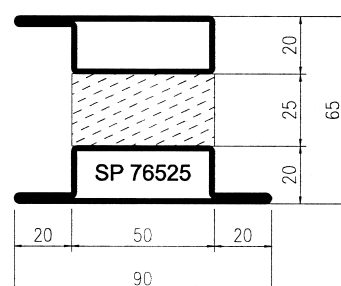
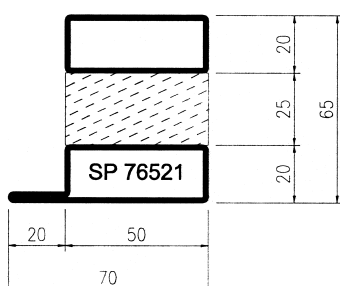
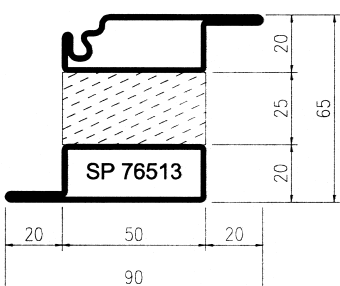
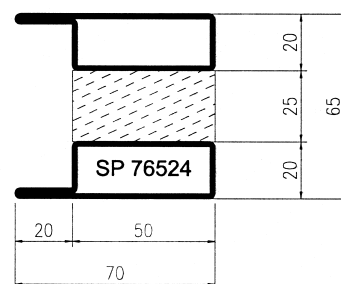
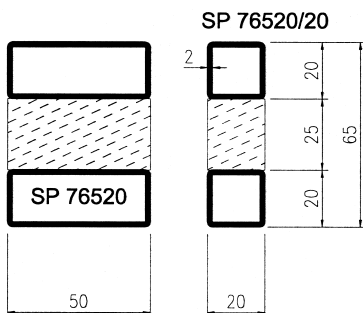
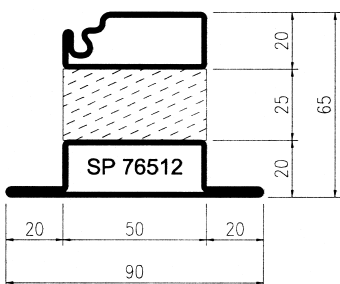
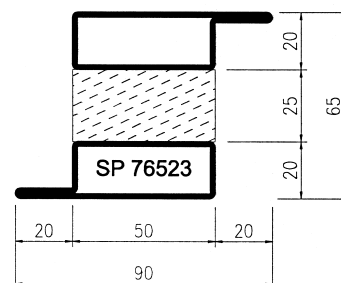
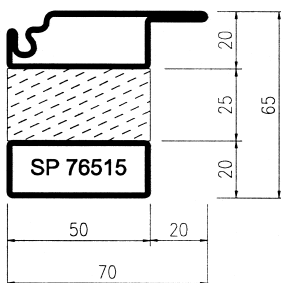
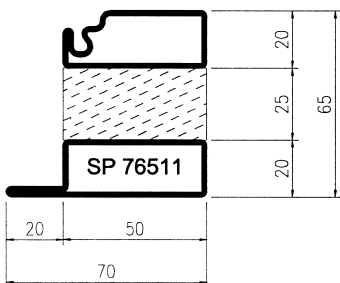
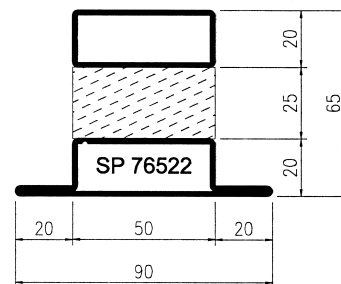
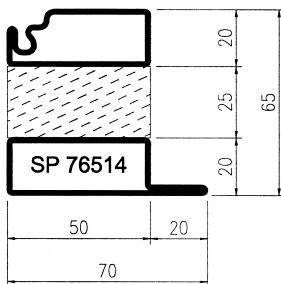
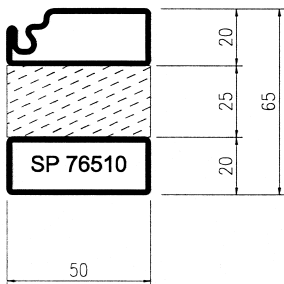
Black, stainless or sendzmir zinc dipped

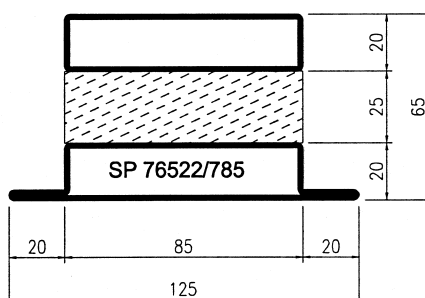
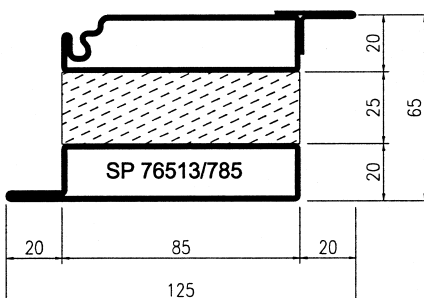
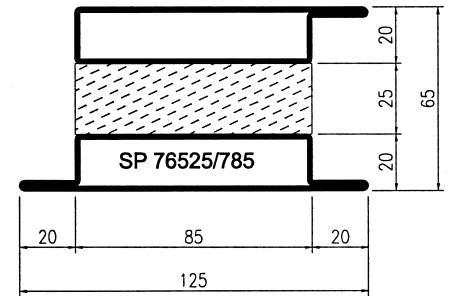
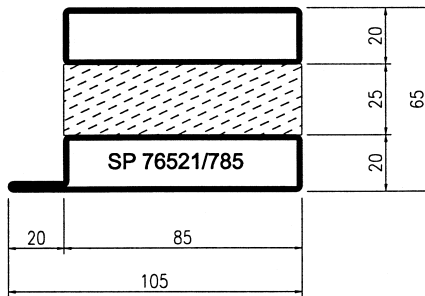
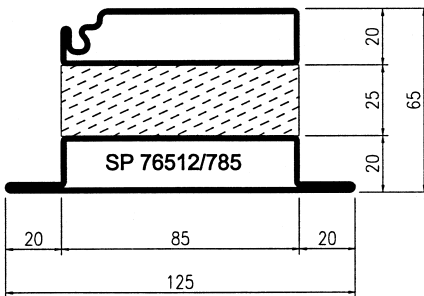
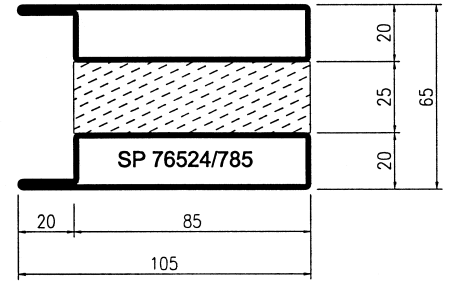
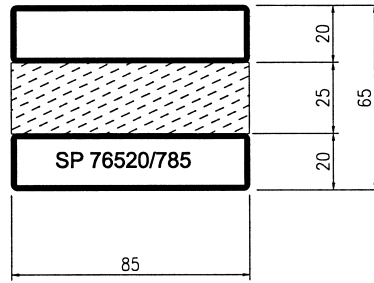
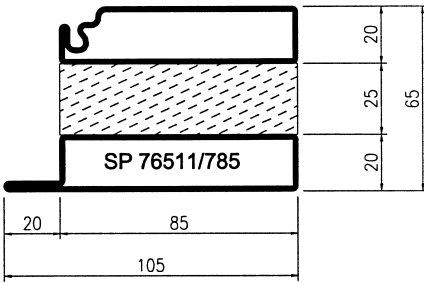
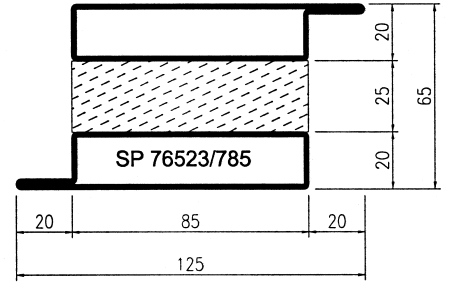
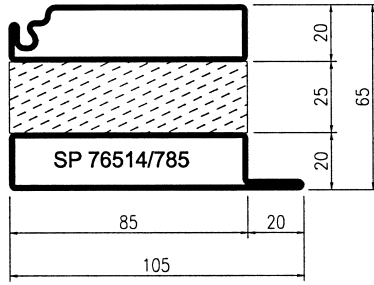
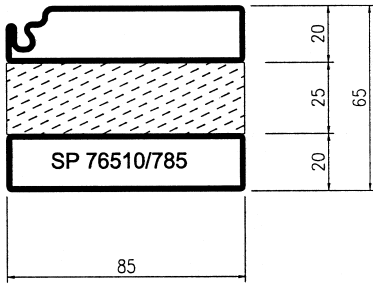
SP 76500 is available for delivery in untreated steel quality SS1312 allowing maximum freedom of surface choice. The system is also available in stainless steel quality 316L, please refer to separate catalogue *STÅLPROFILSYSTEM 90000* for further details. The stainless steel system is delivered untreated or brushed. The system is also available in sendzmir zinc quality. Sendzmir zinc is a type of hot dipped galvanisation where the raw material is dipped into a hot zinc bath. The interior and exterior zinc surface thickness is 20µm equating to 275g/m². Subsequent priming and laquering of the profile after the hot dipped galvanisation effectively eliminates the risk of corrosion. We recommend sand blasting, priming, spray galvanising and wash or powder coating.

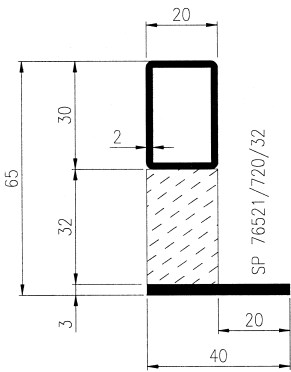
Cost Effective High Quality Solution

The standard glazing beads for the system are delivered in sendzmir zinc quality. They are also available in stainless quality. Laquered profiles with stainless steel glazing beads are an exiting architectural combination. To further maximise flexibility all of our systems use the same type of glazing beads which further reduces costs and simplifies assembly.

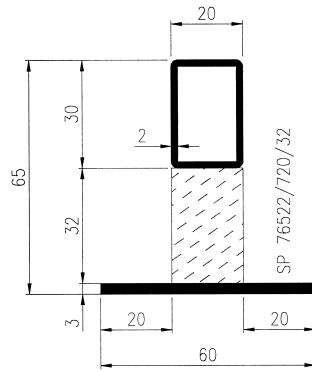
To minimise wastage and reduce costs our profiles are delivered in lengths of 6.6 meters and the glazing beads in lengths of 6.0 metres. Manufacture and assembly are carried out by certified professionals. Our manufacturers undergo regular control carried out by SP, The Swedish testing and Research Institute in Borås.



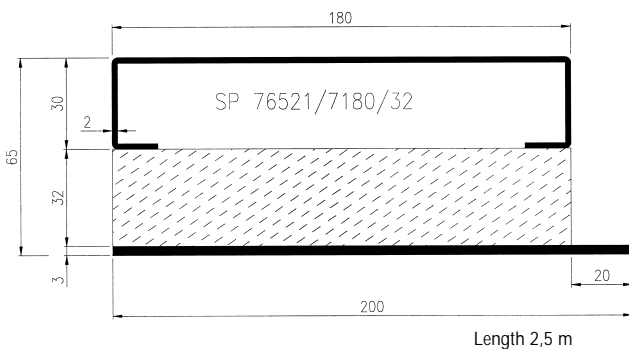




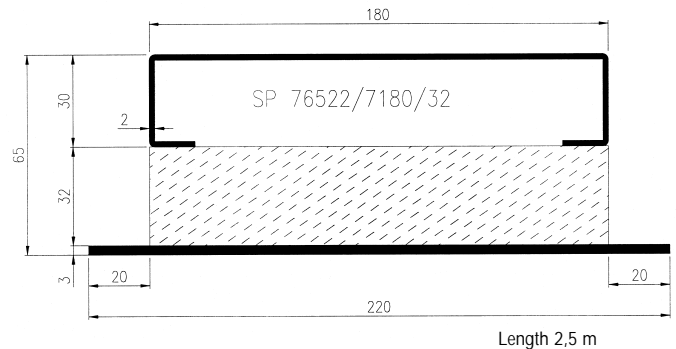
Length 3 m



Length 3 m

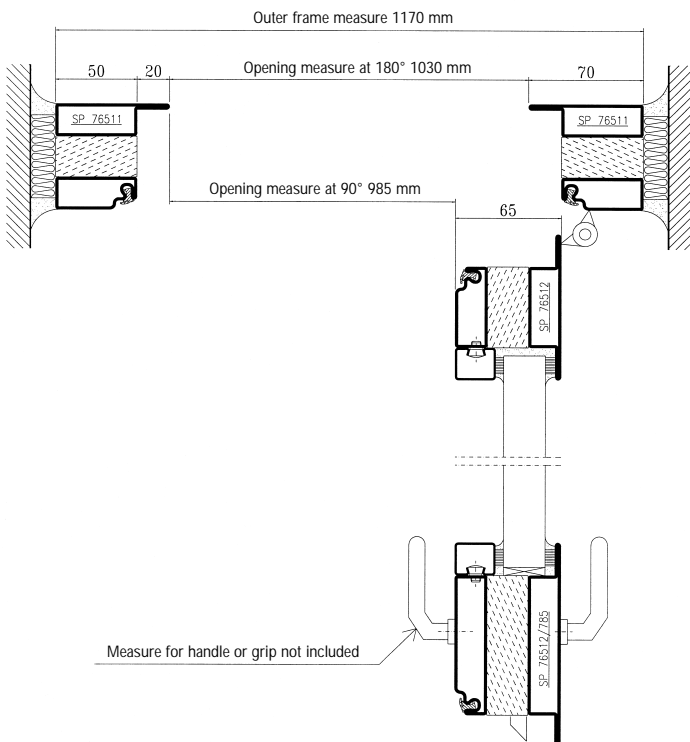


Length 2,5 m



Length 2,5 m

OPENING MEASUREMENT - SINGLE LEAF DOOR

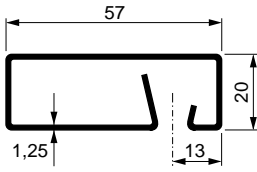


MODULE LOCKS

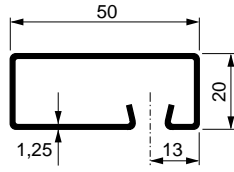


Stålprofilers wide assortment of profiles functionally adapted for module locks offers the following advantages:

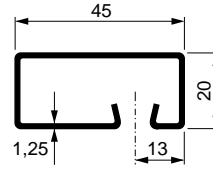
- Ranged by Swedish Standard
- 34 different locking functions for ASSA: s assortment, including narrow profiles
- Easier facilitation of handicap adaptation
- Extensive assortment of accessories, e.g surface treatment and door handles



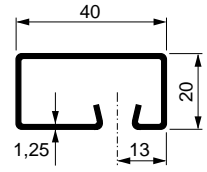
Glazing bead
SP 45720



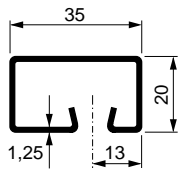
Glazing bead
SP 45020



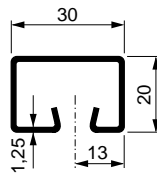
Glazing bead
SP 44520



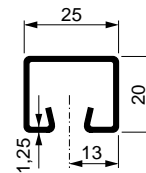
Glazing bead
SP 44020



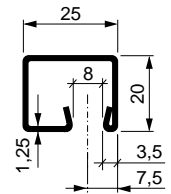
Glazing bead
SP 43520



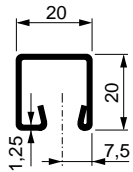
Glazing bead
SP 43020



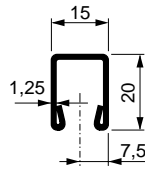
Glazing bead
SP 42520-1



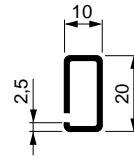
Glazing bead
SP 42520-2



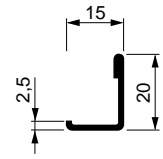
Glazing bead
SP 42020



Glazing bead
SP 41520



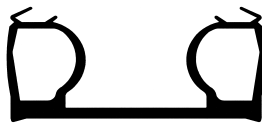
Glazing bead
SP 41020



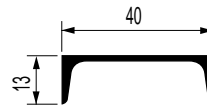
Glazing bead
SP 40520



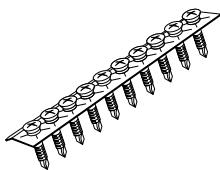
Rubber seal
SP 40010
L = 100 M
Fire classified material



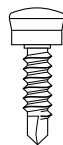
Rubber seal
Finger trap proof gasket
SP 40067
L = 2500 mm
Fire classified material



Rubber sealing threshold
SP 45065
L = 1400 mm
Fire classified material



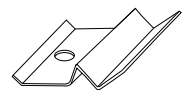
Bead screw
SP 40012 / 500 st



Bead screw
SP 40020 / 500 st



Spring
SP 40500



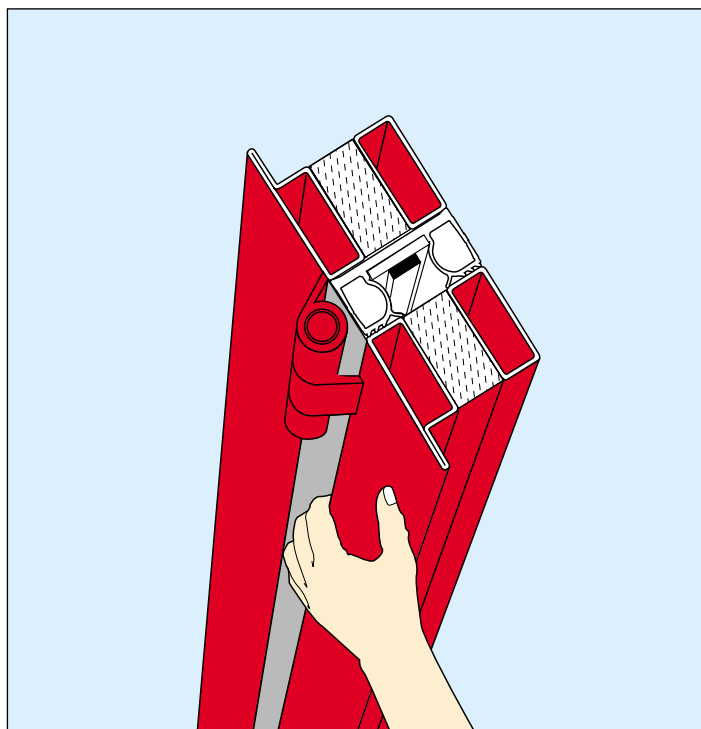
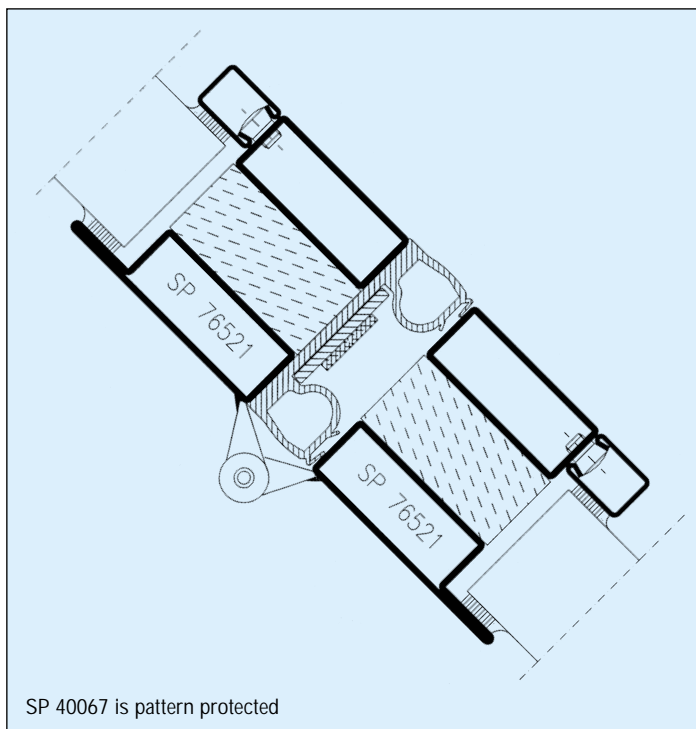
Spring
SP 41000

FINGER TRAP PROOF GASKET

THE FINGER TRAP PROOF GASKET IS AVAILABLE FOR INSULATED AND NON-INSULATED PROFILES IN FIRE RESISTANT CLASSES UP TO AND INCLUDING E 60/EI 60

AVOID PINCH INJURIES!

MAKE SURE YOUR DOOR SECTIONS CONTAINS THE DESIGN PROTECTED FINGER TRAP PROOF GASKET FROM STÅLPROFIL



REPORT FROM THE DOMUS FIRE IN KARLSTAD

TYPE APPROVAL - A GUARANTEE OF QUALITY

During a fire the local temperature increases considerably and leads to a drastic increase in pressure in the immediate vicinity of the fire. There is also smoke production which can be more or less, depending on the kind of material that is burning. It is of vital importance that the fire resistant building materials and construction meet the requirements stipulated and prevent the spread of the fire and fumes to neighbouring areas and floors within the specified time limit.

To be assured that the fire resistant materials and construction are adequate and meet the requirements one should in my opinion only use type approved products.

In Sweden type approving products and materials is a voluntary undertaking that manufacturers can carry out to test the specific characteristics of the product and achieve quality assurance of the manufacturing process

Utilising type approved products during construction is in my opinion an integral part of the manufacturers own control that lays the foundation for quality assessment.

It is important to remember that type approved products must be assembled according to the assembly instructions accompanying the product. The type approval certificate validates the product and the assembly instructions together. Once the product is assembled according to the instructions complete quality assurance is achieved.

Many manufacturers and sales persons try to validate their products with phrases like "this product is manufactured in the same way as type approved products" in an effort to convince the customer that their item is better or just as good as any other, and that it could replace a type approved product. This kind of generalisation is both unethical and often false. There is of course the possibility that the product will do the same job as a type approved one, but how can you, the constructor be really sure without a certificate guaranteeing the fact? Without a type approved certificate it is in my opinion impossible for the constructor to have complete control and quality assurance.

A good example of how a type approved product met the requirements for fire resistance is in the case of the fire at Domus in Karlstad. The product, a glazed section and frame in fire resistant class EI 60 withstood the fire for a far longer time, (420 minutes) than the time specified in the requirements, (60 minutes) and effectively prevented the fire spreading to neighbouring floors.

Lars-Gunnar Strandberg
Brandingenjör
Karlstad



The Domus fire in Karlstad started 27 October 1999 kl. 5.40 pm



The complete streetfloor was destroyed in the fire



The fire resistant window effectively prevented the fire to spread



Type approved section tested in reality

FIRE RESISTANCE CLASSES FOR BUILDINGS

According to BBR94, 5:21, buildings should be constructed to class BR1, BR2 or BR3. In those buildings the most stringent requirements are imposed e.g. surface finishes and on loadbearing sepabuildings the most stringent requirements are imposed e.g. surface finishes and on loadbearing rating structures. A building where a fire may entail a moderate risk of injury to persons shall be constructed to Class BR2. Other buildings may be constructed to Class BR3

Examples*BR1-buildings:*

Buildings with three or more storeys.
Buildings of two storeys intended for hotels or care institutions.
Buildings of two storeys with an assembly hall on the second storey.

BR2-buildings:

Buildings of two storeys with more than two flats, where a living room or a study is fitted up in the attic.
Buildings of two storeys with a larger unsectioned area than 200 m².
Buildings of one or two storeys with an assembly hall on the ground floor or below.

BR3-buildings:

Houses of one or two storeys.
One storey buildings without an assembly hall.

FIRE COMPARTMENTS

Buildings are divided into fire compartments to prevent spreading of a fire and fire gases. Every firecompartment shall extend over one or more rooms in which the activity doesn't have a direct connection with any other activity in the building. A fire compartment must not - excluding dwellings, stair wells, lift shafts and open garages (parking decks) - comprise more than two storeys, unless the premises are protected by an automatic water sprinkler system, which can prove to give enough protection in case of fire.

FIRE RESISTANCE CLASSES FOR ELEMENTS OF STRUCTURE

In BBR94 no distinction is made between combustible materials. Earlier class terms A and B have expired and have been replaced by new class terms where the functions

R - loadbearing capacity

E - integrity (density)

I - insulation

shall be fulfilled during a certain period of time.

The terms can be combined and shall be accompanied by time requirement, e.g. E15, RE30, EI60 and REI60. The time requirements that can be used are 15, 30, 45, 60, 90, 120, 240 or 360 minutes..

From the new terms you can see if wall is bearing and/or separating.

The terms can be extended with:

M- when special consideration must be given to mechanical action and

C - for doors with an automatic closing device.

Examples:

A construction product that complies with the requirements regarding loadbearing for 155 minutes, is dense for 80 minutes and complies with the requirements for insulation for 42 minutes will be classed as R120/RE60/REI30.

A construction product that complies with the requirements regarding loadbearing, insulation and density for 65 minutes will be classed as REI60. A door that complies with the requirements regarding insulation and density for 32 minutes and is equipped with an automatic closing device is classed as EI-C30. A part of a construction, e.g. a wall section that complies with the requirement regarding loadbearing and partition for at least 60 minutes will get the term REI60. It is not certain that this product will comply with the requirement R60, which means a loadbearing capacity for 60 minutes with fire on both sides at the same time, since the product doesn't have to be placed in a wall with a fire separating capacity. The earlier term F for flame - and smoke restricting part of a construction without temperature protection is replaced in BBR94 by the term E, e.g. E30.

TYPE APPROVAL AND PRODUCTION CONTROL

In Swedish Board of Housing provisions and general advisory notes regarding type approval and production control (BFS 1995:6), TYP 1, the general conditions for type approval and production control are stated.

In Swedish Board of Housing general advisory notes regarding production control for fire protection, 1996:2, appropriate production control is stated according to provisions of TYPE 1.

The purpose of the production control is to minimize the risk of hazardous products appearing on the market and to make sure that established product quality is maintained in the manufacturing process. The manufacturer's quality control is what first of all shall ensure this. To verify quality of the manufacturer's own control a supervisory control will be conducted by an accredited inspection body.

Swedish Board of Housing paper, Guidelines for Type Approving, Fire Protection; general advisory notes 1993:2, edition 2, contains the provisions by which construction products are tested regarding fire protection in connection with an application for a type approval. The terms type approved or production controlled materials and products refer to materials, structures or arrangements which have been approved or controlled in accordance with the regulations in 18-20§§ BVL. Construction products that comply with the requirements in 4-5§§ BVL are considered to have equal standing with these products.

GENERAL CONDITIONS IN BBR94 REGARDING FIRE RESISTANCE CLASS OF ELEMENTS OF STRUCTURE SEPARATING FIRE COMPARTMENTS*Building of class BR1:*

Elements of structure shall be constructed to not less than fire resistance class set out in table a below. The fire resistance class in column 1 ($f \leq 200$ MJ/m²) may be applied for dwellings and offices, schools, hotels, garages for cars, shops for the sale of food, residents' store rooms and comparable fire compartments. The class may also be applied for fire load intensities higher than 200 MJ/m² for buildings protected by an automatic water sprinkler installation or if conditions are such that a fire is completely extinguished within 60 minutes from the outbreak of fire. Walls and ceilings in a part of an attic which is converted into a living or office accommodation with no more than one storey above the attic floor, may be constructed to class EI30 adjacent to an attic space which is not utilised.

Tabell a. Prescribed fire resistance class with respect to the separating function in building of class Br 1.

Element of structure	Fire resistance class for a fireload of f (MJ/m ²)		
	$f \leq 200$	$f \leq 400$	$f \leq 400$
Element of structure separating fire compartments in general and a floor above a basement	EI 60	EI 120	EI 240

Building in class Br2 and Br3:

Prescribed fire resistance class with respect to the separating function in a building of class

Table b. Prescribed fire resistance class with respect to the separating function in a building of class Br 2 or Br 3.

Element of structure	Fire resistance class
1. Element of structure separating fire compartments in general	EI 30
2. Element of structure separating flats in a block of flats	EI 60

FIRE RESISTANCE ALTERNATIVES

Fire resistance class EI may be replaced by class E if the distance to travel route for escape and to combustible material is sufficient to ensure that safety of escape is not reduced or the risk of fire spread is not increased.

FIRE RESISTANCE CLASS FOR DOORS

Besides the general conditions above there are special conditions in Sweden regarding doors. Before BBR94 was in force, doors were classed according to Regulations for New Buildings, NR, in classes A, AE and B followed by a requirement in minutes. Class A meant - beside the requirement regarding noncombustible construction - that the requirement regarding limited rise of temperature group 2 (280/330°C) on the side away from the fire was not stringent as for class AE and B, group 1 (140/180°C). The new EI-class has the same requirement regarding limited rise of temperature that was valid for class AE and B. THIS MEANT THAT - doors could not comply with the new requirements in class EI regarding limitation of temperature with unchanged requirement regarding time. In the amendments to BBR94 (BFS 1995:17) it has now been accepted that doors or the like of A - class (with requirements regarding insulation in group 2) can be used as an alternative to doors of EI - class for the following purposes:

- Between stair wells and, - cellar or attic, - fire - or airlock and - shops, storage, warehouse, or industrial premises.
- Between lift shafts that represents a fire compartment of its own and airlock or corridor.
- Between a culvert and hospital wards.
- In a fire compartment.
- As a door to a flat.

SOME ADVICE FOR PLANNING OF FIRE RESISTANT SECTIONS

- Always ask for a type approval certificate with accompanying documents so that the sections can be fixed and mounted according to the recommendations in the certificate
- Check what the Type approval certificate allows
 - We have Type approvals certificates in classes from E 30 to EI 90
- Note the maximum measurements for each specific system. The measurements can vary in different fire resistant classes
 - We have doors in classes E 30/EI 30 BxH 2500x2645mm and fixed sections with maximum height 3450mm
- Locking functions for module or small profile locks electronic locking bolt mechanism, automatic door opening and closing mechanisms.
 - Always carry out a control of functions and combinations
- Is your choice of glass approved for usage with the system? Is the maximum size allowed?
 - Never exceed the maximum measurements
- The usage of type approved sliding doors
 - May not be used in emergency exit passageways
 - Automatic functions according to the Type approval certificate

TYPE-APPROVED SLIDING DOOR - Patented

TYPE-APPROVED IN FIRE RESISTANT CLASSES E 30/EI 30/A 30
 Stålprofil's type-approved sliding door in fire resistant classes E 30/ EI 30/ A 30. The entire construction has been tested and approved according to Type approval certificate 0297/97. The door has been tested with automatic sliding door function Besam Unislide. The door may not be placed in emergency exits. For maximum allowed height and width measurements and montage instructions please refer to pages 22-23.

¹⁾ May not be replaced with other automatic sliding door mechanism



Sliding Door - unexposed side prior to testing

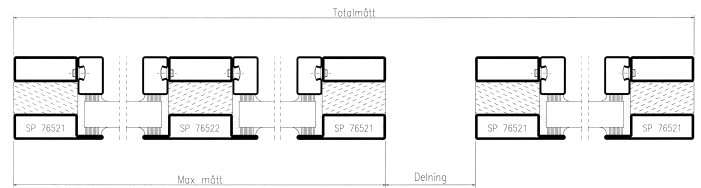


Sliding Door - exposed side after 60 minutes test



DIVISION OF FIRE SECTIONS

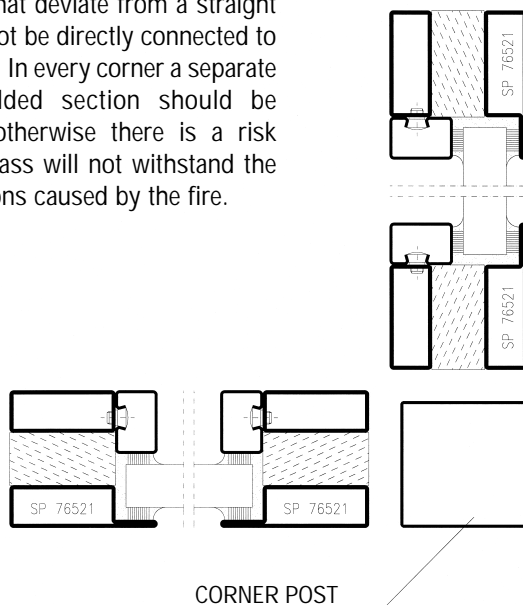
The procedure at division of fire rated sections when the total measure exceeds the Type approved max measure.



"The division must have the same durability as the surrounded wall and be constructed in such a way that it will be unaffected within the time stated for the fire class."

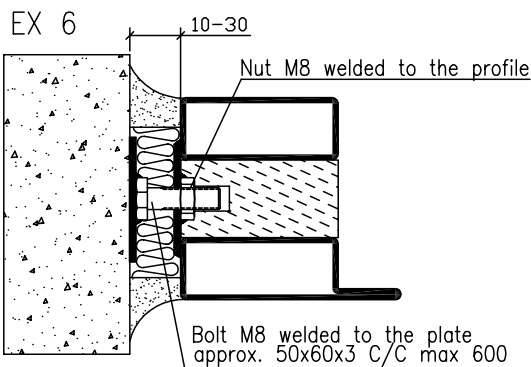
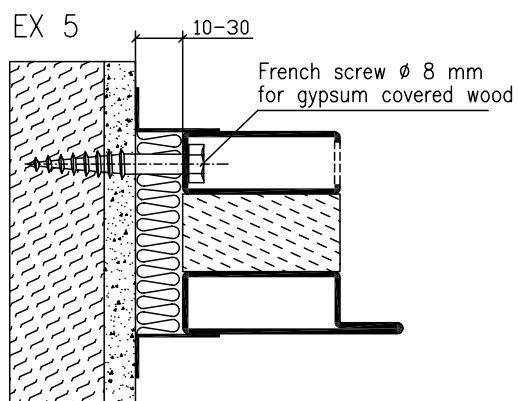
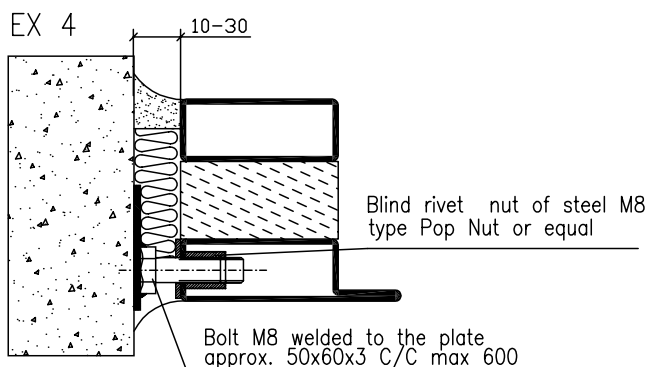
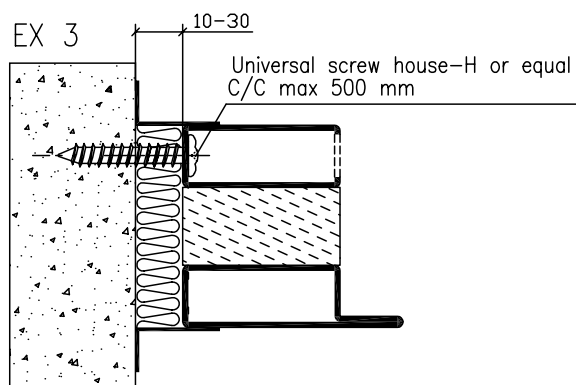
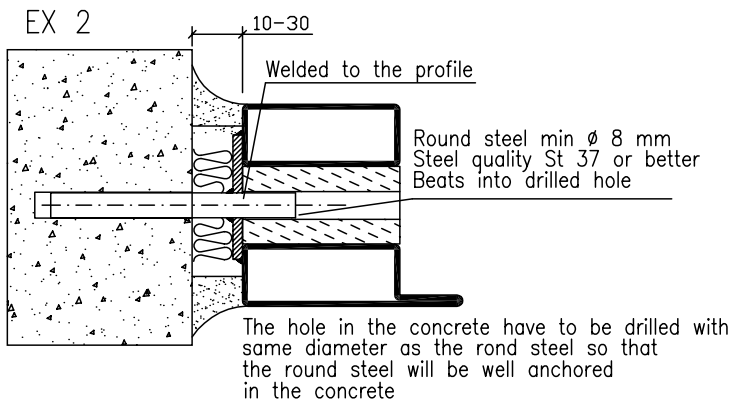
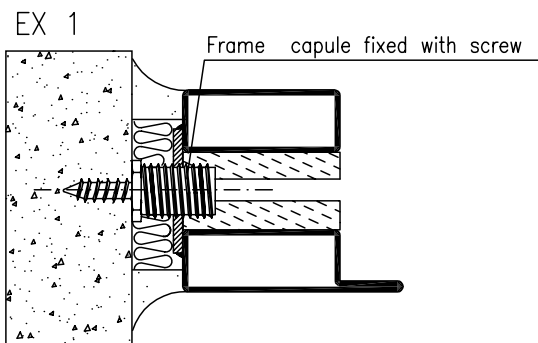
CONNECTING ANGLED SECTIONS

Sections that deviate from a straight line may not be directly connected to each other. In every corner a separate heat shielded section should be inserted, otherwise there is a risk that the glass will not withstand the deformations caused by the fire.




 STÅLPROFIL AB

SIDE FIXINGS PRINCIPLE SUGGESTION SP 76500/SP 976500
 SIDE FIXINGS PRINCIPLE SUGGESTION SP 79000/SP 979000
 FIRE RESISTANCE CLASS E-30/E-60/A-30/A-60/EI-30/EI-60



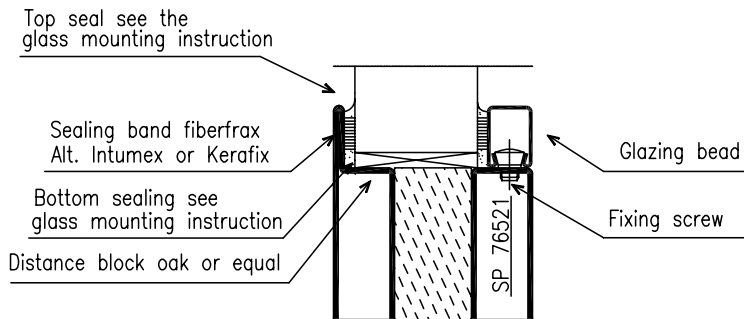
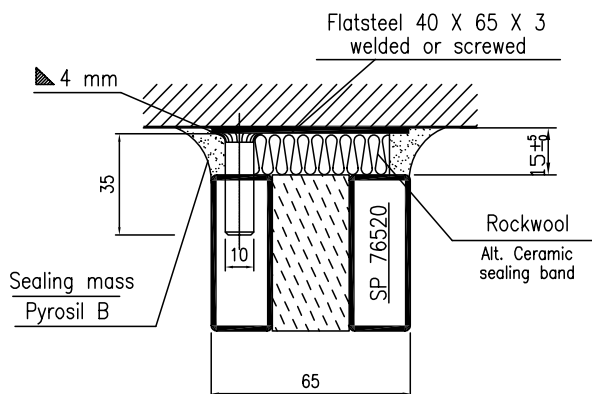
Distance max C/C 600 mm there nothing are specified
 Fixings concerns only the sides of the doors or partions
 Plate angles or fire sealing mass can be optional various

Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala	Ersätter	Ersatt av
Firma  STÅLPROFIL AB						Titel FIXING FOR THE SIDES SUGGESTIONS SP 76500/SP 976500/SP 79000/ SP 979000		Regist.nr Dat. 001229
							Ritn.-nr 4-2603	

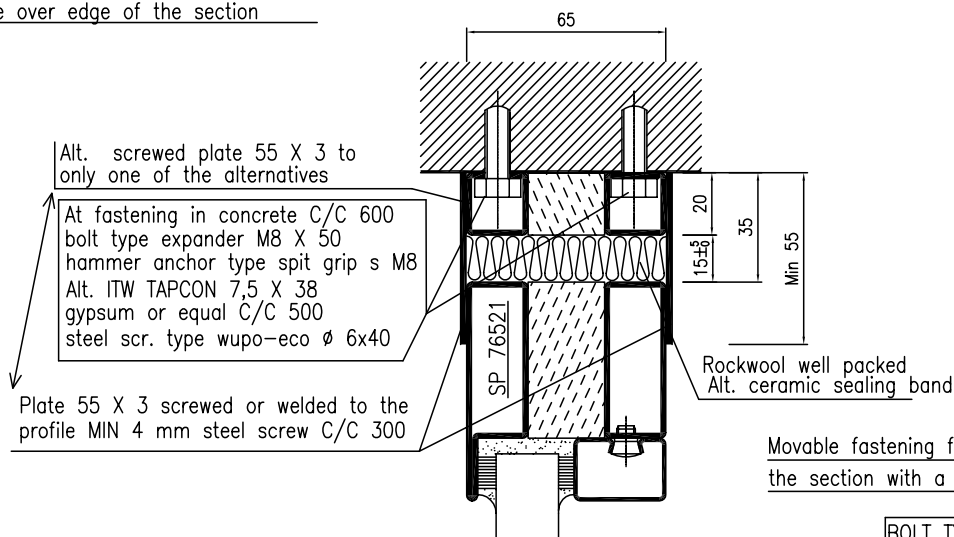


MOUNTINGSINSTRUCTIONS SP 76500 A60/EI-30/E-60/E-30

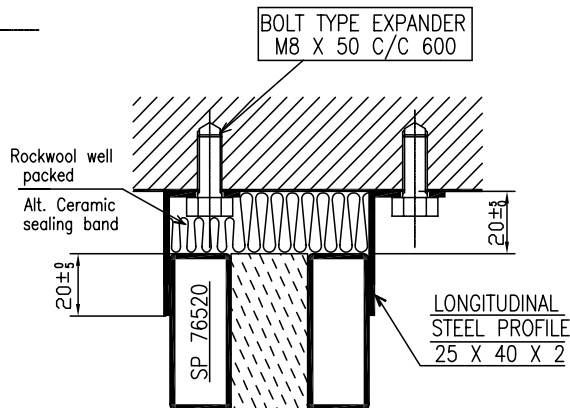
Movable fastening with welded steel pivot
for the sections over edge C/C 600



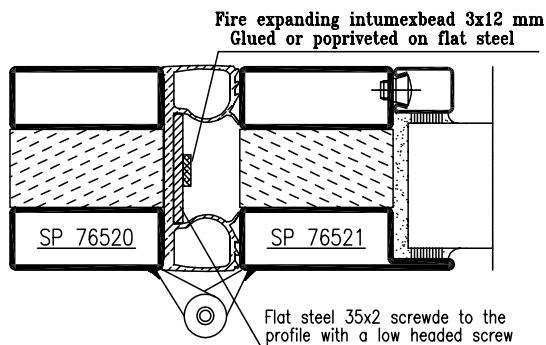
Movable fastening with insulated profile
for the over edge of the section



Movable fastening for the over edge of
the section with a longitudinal steelprofile



Finger trap proof SP 40067



REV B NEW FIXING 990301

Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala	Ersätter	Ersatt av
Firma STÅLPROFIL AB	Titel SP 76500 Mounting instructions fire rated in A60/EI30/E60/E30						Regist.nr	Dat. 970212
							Ritn.-nr	4-2357-B



STATEMENT

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 451 55 UDDEVALLA

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 Hans Jonasson, hj
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 Email: Hans.Jonasson@sp.se

Datum/Date 2001-06-19
 Beteckning/Reference P103159E
 Sida/Page 1 (3)

Sound insulation of facades

Assignment

To present sound insulation data in such a way that the sound insulation of a complete facade is given as a function of the sound insulation of the different building elements of the facade.

Presumptions

The starting point has been measured values as reported in our test report P102460. We have further assumed that the area of the steel profile part of the facade is 20% of the total area of the facade.

Result

See the following figures:

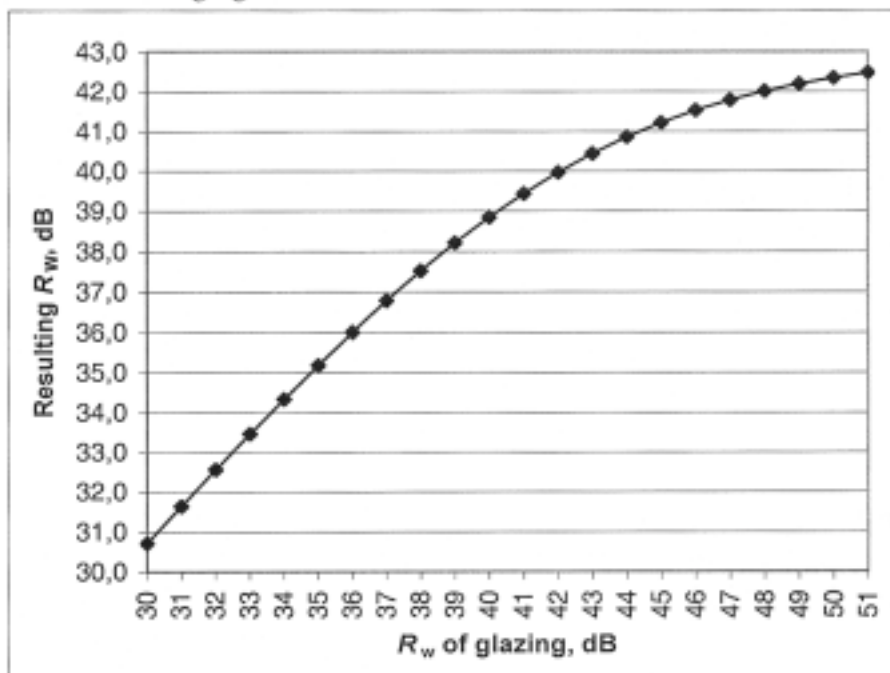


Figure 1 Resulting R_w of the complete facade as a function of R_w of the glazing units mounted in the facade. The steel profile has $R_w = 34$ dB, a value achieved by the profiles SP 76500/SP 976500.

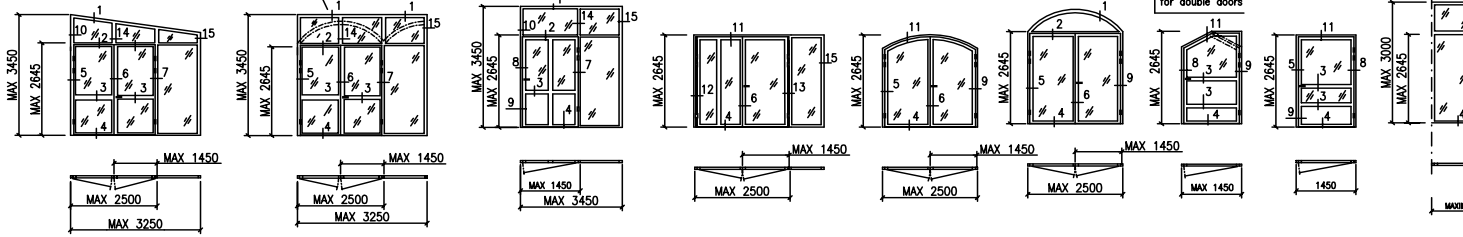
SP, Sveriges Provning- och Forskningsinstitut, Box 857, 501 15 BORÅS, Tel 033-16 50 00, Telefax 033-13 55 02, E-mail info@sp.se, Org.nr 558464-6874
 SP, Swedish National Testing and Research Institute, Box 857, S-501 15 BORÅS, SWEDEN, Telephone + 46 33 16 50 00, Telefax + 46 33 13 55 02, E-mail info@sp.se, Reg.No 558464-6874

Akrediterat laboratorium utses av Styrelsen för teknisk ackreditering och teknisk kontroll (SWEDAC) enligt lag. Verksamheten vid de svenska ackrediterade laboratorierna uppfyller kraven enligt SS-EN 45001 (1993), SS-EN 45002 (1993) och ISO/IEC Guide 25 (1990:E). Denna rapport får endast åläggas i sin helhet, om inte SWEDAC och SP i förväg skriftligen godkänt annat.

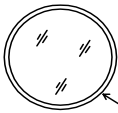
The designs also apply for single doors

Alt. placing curve profiles

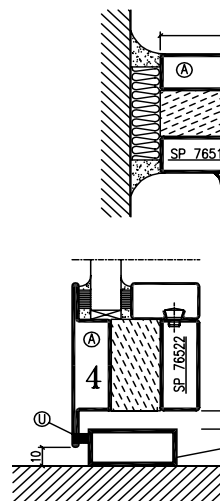
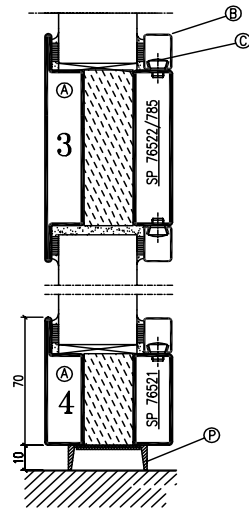
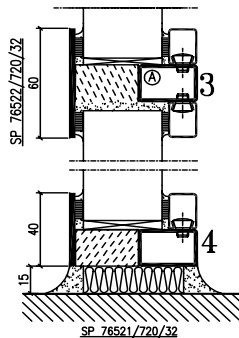
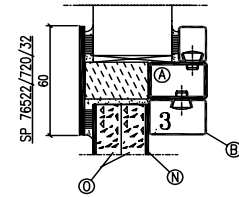
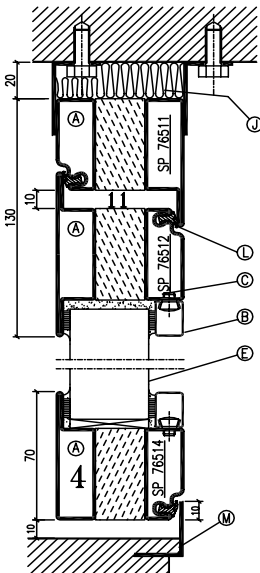
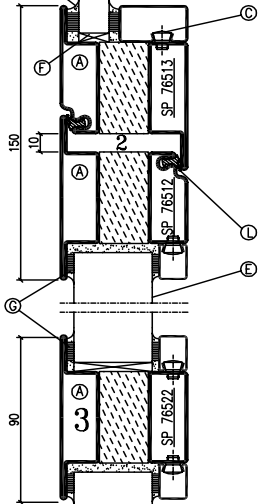
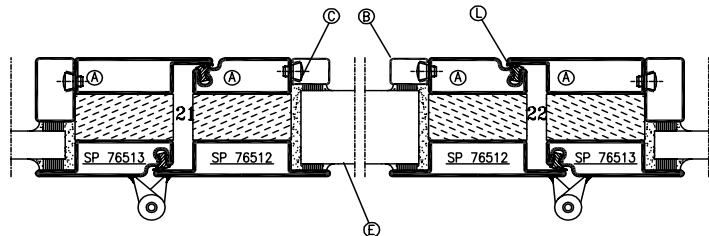
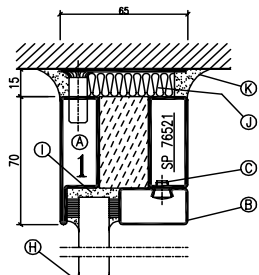
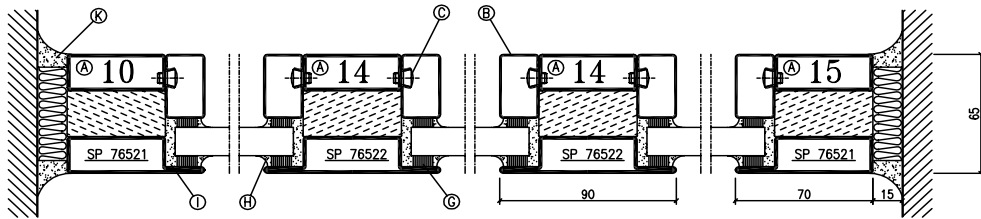
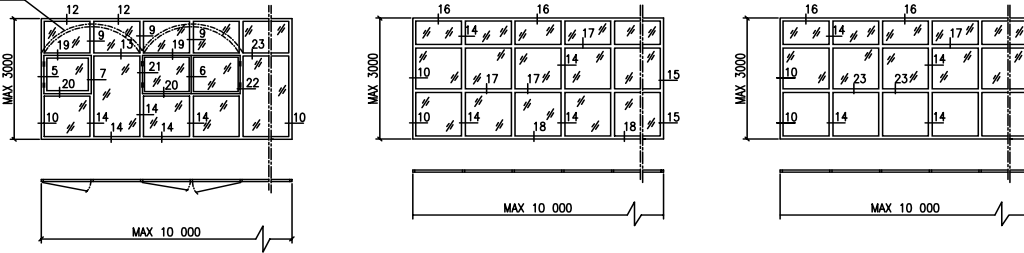
The designs also apply for double doors

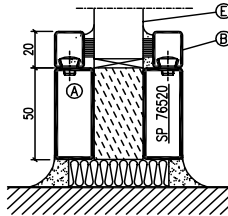
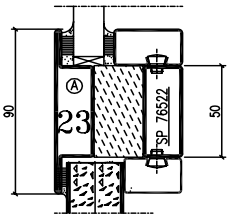
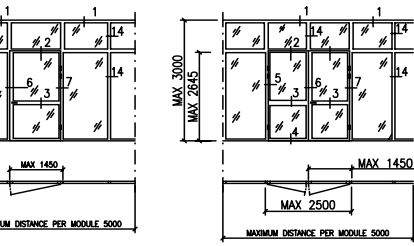


Alt. placing curve profiles

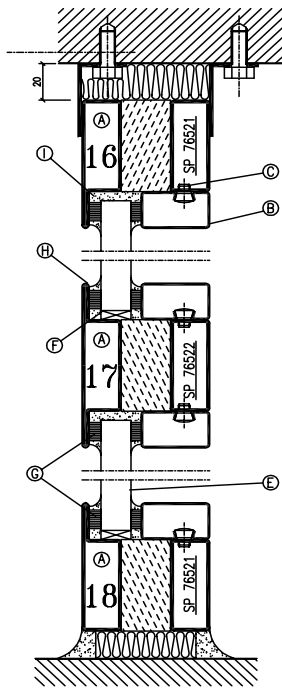


All approved profiles are suitable for circular windows





Alt. solution with profile SP 76520 or 76520/20



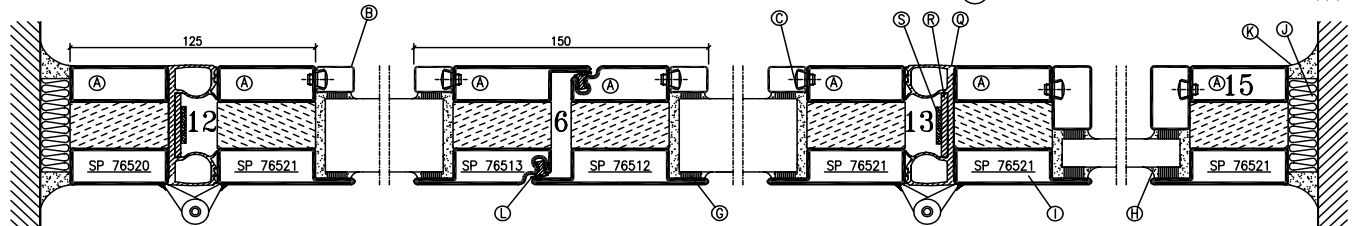
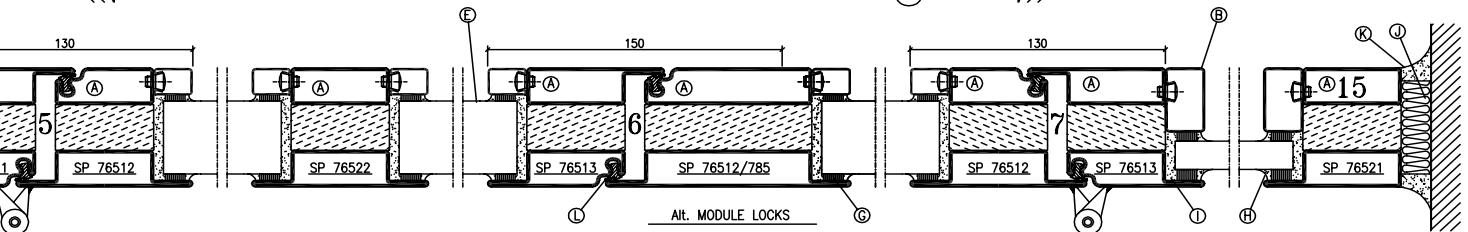
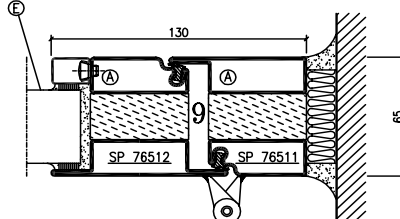
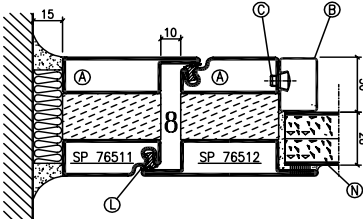
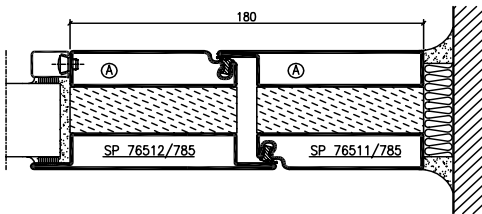
SYSTEM SP 76500 DOOR SECTIONS
SPECIFICATION OF MATERIAL FIRE RESISTANCE CLASS EI 30

NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP76500	Cold formed steel Wall-Thickness 1,8 mm	Bright steel surface suitable for laquering
	Alt. Stainless design SP 970000	Stainless steel Wall-Thickness 1,75 mm	
B	Glass beads Serie 40000	Sheet metal ST 0,2 Senzimband Z 275 Wall-Thickness 1,25 mm	Glazing beads can if required screw into the profiles ex. curve profiles and circular windows. Alt. may rectangular tube be in use.
	Alt. Glass beads Serie 90000	Stainless steel Wall-Thickness 1,25 mm	
C	Bead studs	Steel	C/C 300 mm
D	Threshold seal	Rubber bead EPDM	
E	Panes:	Thickness, weight and max measurements	Mounting:
	Pyrostop EI30	Type Approval Certificate 3673/83	Drawing no. 4-2513
	Swissflam EI30	Type Approval Certificate 0711/94	Drawing no. 4-2492
	Contraflam EI30	Type Approval Certificate 3935/82	Drawing no. 4-2494
F	Distance block	Oak	
G	Glazing band	Fiberfrax or equivalent	
H	Top seal	Pyrosil B	
I	Bottom seal	Pyrosil B	Alt. ceramic jointing band
J	Insulation	Rockwool	
K	Edge sealant	Pyrosil B	
L	Stop seal Sp 40010	Chloroprene	
M	Stop bolt	Angle steel	
N	Plate		Thickness 1,5 mm
O	Gypsum board	2 x 13 mm	Standard approval as fireprotected facing
P	Threshold SP 45065	Chloroprene	
Q	SP 40067	Chloroprene	Finger-trap-proof-gasket
R	Flat steel 35x2	Steel	Fastener SP 40067
S	Intumesc bead	Fire expanding 12X3	
T	Tube	Steel 45x20x2	
U	Rubber seal		Stop bolt

DETAILED DRAWINGS:

Frame profiles drawing no. 4-2292-B, 4-2293-B, 4-2374, 4-1172-C.
Glass beads and accessories drawing no. 4-2346-A, 4-2183.
Electric installation field, center glazed drawing no. 4-2485, 4-2503

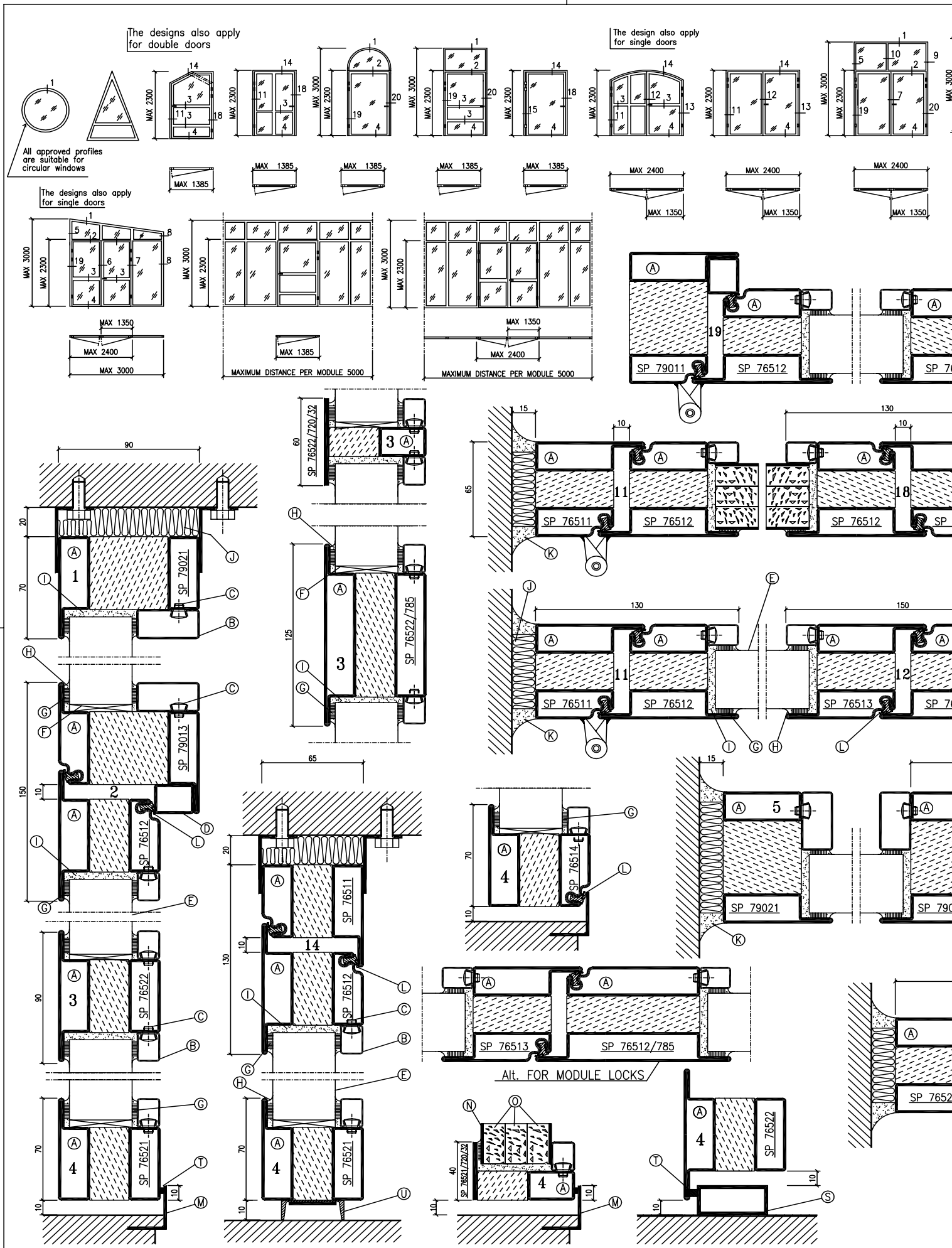
Fixings and mounting instructions and general directions see drawing no 4-2357-B and 4-2511



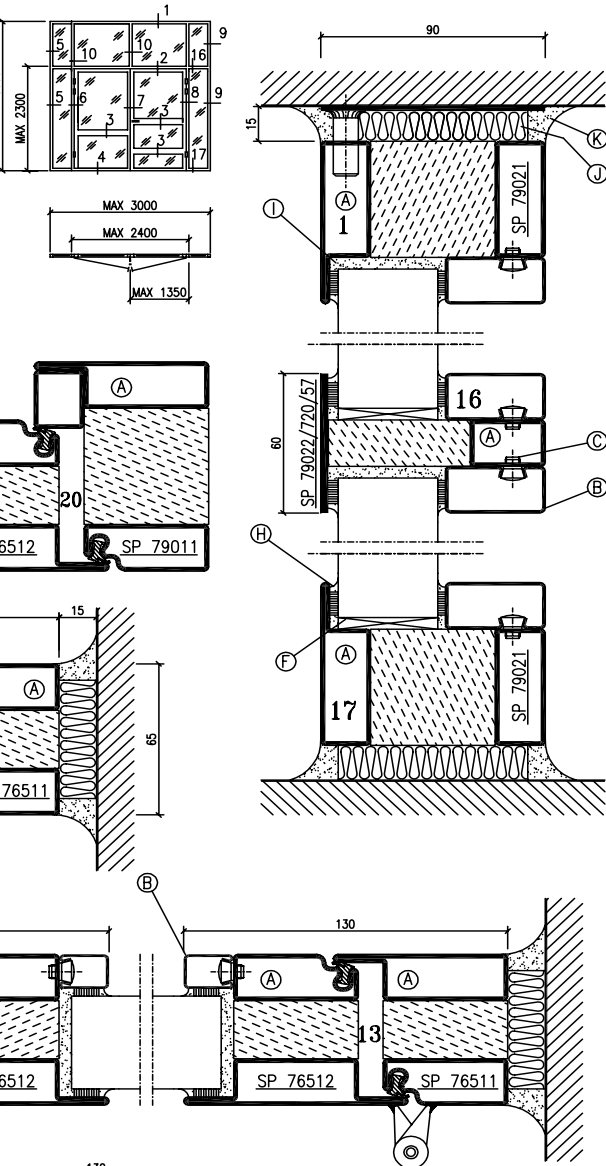
REV A : GLASS MOUNTING 99-03-06

Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala 1:4 1:200	Ersätter	Ersatt av
Firma STÅLPROFIL AB			Titel SYSTEM SP 76500 EI30 DOOR, WALL AND WINDOWS SECTIONS			Regist.nr	Dat. 970107	
						Ritn.-nr	3-4115-A	

*ALLOWED AS AN ALTERNATIVE DOOR IN EI 60



*ALLOWED AS AN ALTERNATIVE DOOR IN EI 60



SYSTEM SP 76500 AND SP 79000 DOOR SECTIONS
SPECIFICATION OF MATERIAL FIRE RESISTANCE CLASS A-60 (DOOR) EI-60 (WALL)

NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP 76500 Steel profiles, SP 79000 Alt. Stainless design SP 970000	Cold formed steel Wall-Thickness 1,8 mm Stainless steel Wall-Thickness 1.75 mm	Bright steel surface suitable for laquering
B	Glass beads Serie 40000 Alt. Glass beads Serie 90000	Sheet metal ST 0,2 Senzimirband Z 275 Wall-Thickness 1,25 mm Stainless steel Wall-Thickness 1,25 mm	Glazing beads can if required screw into the profiles ex. curve profiles and circular windows. Alt. may rectangular tube be in use.
C	Bead studs	Steel	C/C 300 mm
D	Tube	Steel 25x20x2	
E	Panels: Standard approved panes in fire resistance class A 60 or EI60 (DOOR) and EI 60 (WALL) *Contraflam 60-41	Thickness, weight and max measurements see standard approval cert. see approval cert.	Mounting: According to standard approval certificate Can be mounted in system
F	Distance block	Oak	
G	Glazing band	Fiberfrax	Alt. Intumex bead
H	Top seal	Pyrosil B	
I	Bottom seal	Pyrosil B	
J	Insulation	Rockwool	Alt. Ceramic jointing band
K	Edge sealant	Pyrosil B	
L	Stop seal SP 40010	Chloroprene	
M	Stop bolt	Angle steel	
N	Plate	Thickness 1,5 mm	
O	Gypsum board	3 x 13 mm	Approved as fireprotecting clo'thing
P	SP 40067	Chloroprene	Finger-trap-proof-gasket
Q	Intumex bead	Fire expanding 12x3	
R	Flat steel	Steel 35x2	Fastener SP 40067
S	Tube	Steel 45x20x2	Stop bolt
T	Rubber seal	Kloropren	
U	Threshold SP 45065		

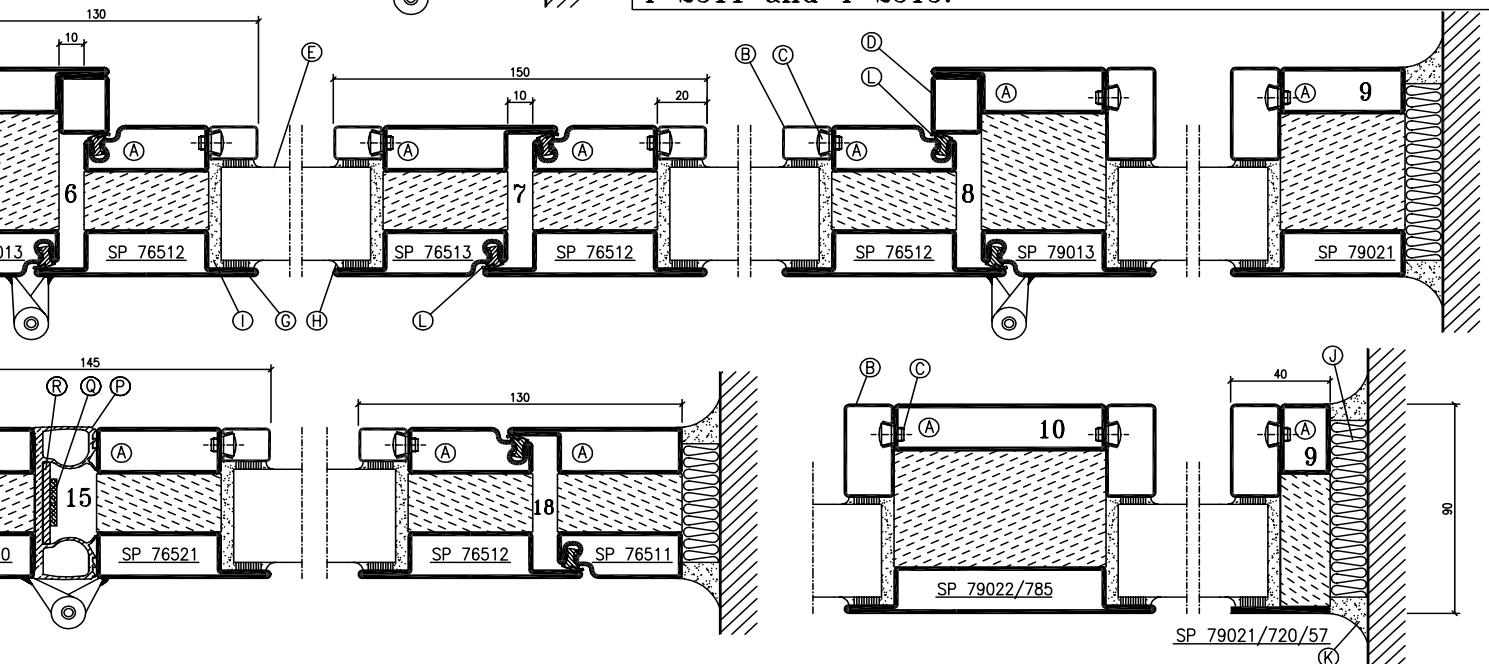
DETAILED DRAWINGS:

Frame profiles drawing no. 4-2290-B, 4-2291-B, 4-2292-B, 4-2293-B, 4-1172-C, 4-2374, 4-2375

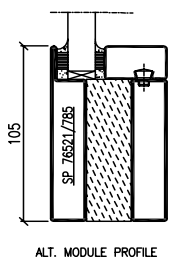
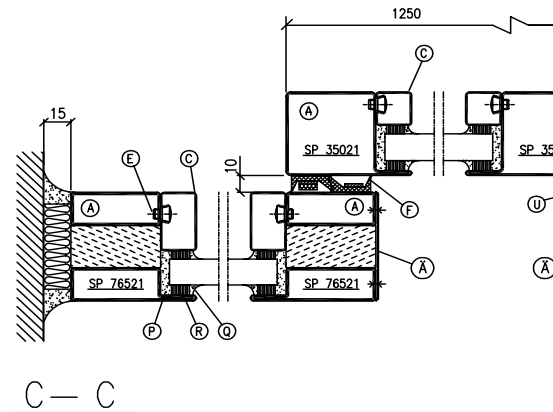
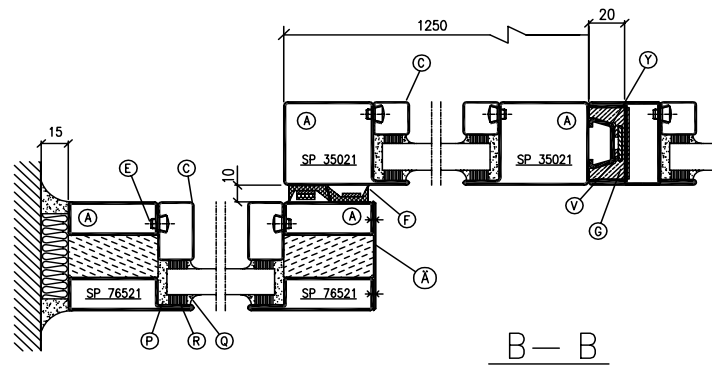
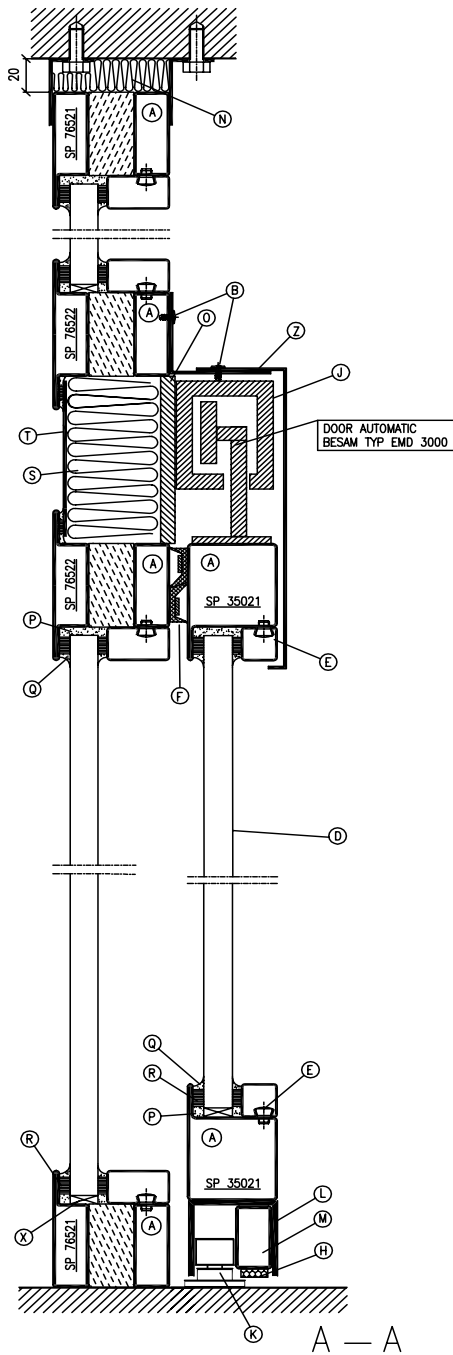
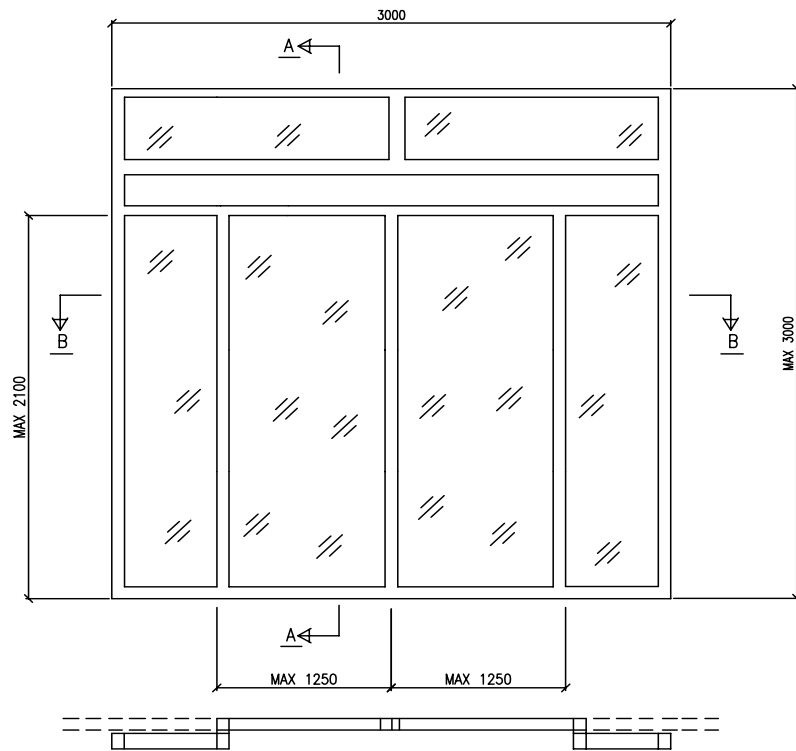
Glass beads and accessories drawing no. 4-2346-A, 4-2183

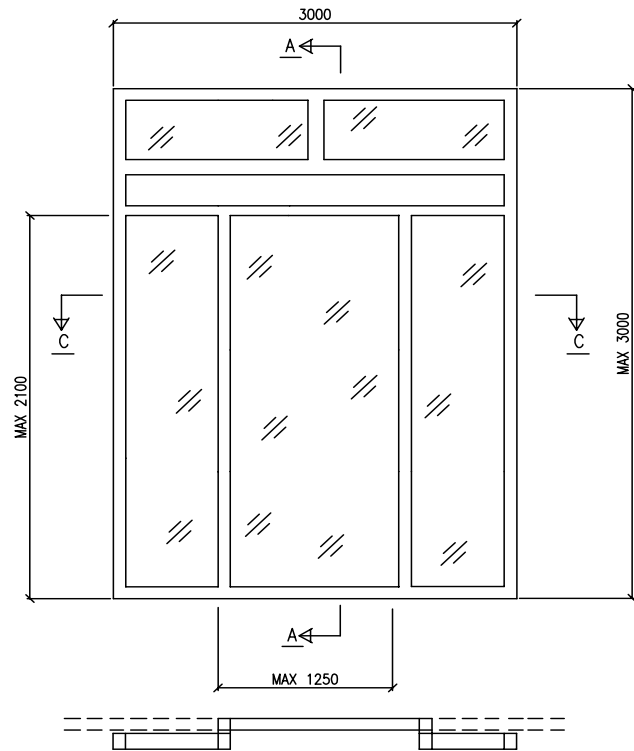
Electric installation field, center glazed drawing no. 4-2486, 4-2505

Fixings and mounting instructions and general directions see drawing no. 4-2357-B, 4-2358-A 4-2511 and 4-2515.



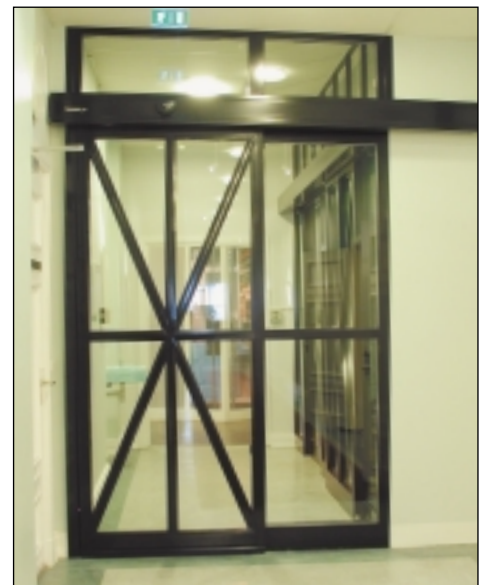
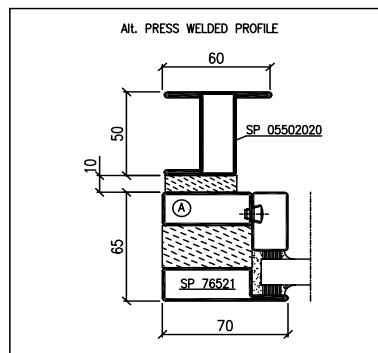
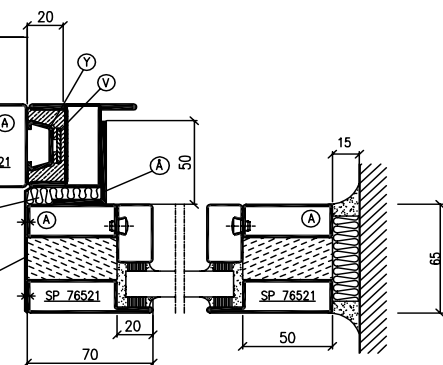
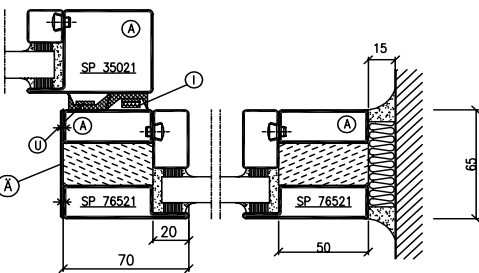
Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala 1:3 1:150	Ersätter	Ersatt av
Firma STÅLPROFIL AB			Titel SYSTEM SP 76500 A60 DOOR ABOVE AND SIDE LIGHTS EI60				Regist.nr	Dat. 970112
REV. E: NEW GLASS MOUNTING 990226							Ritn.-nr	3-4031-E





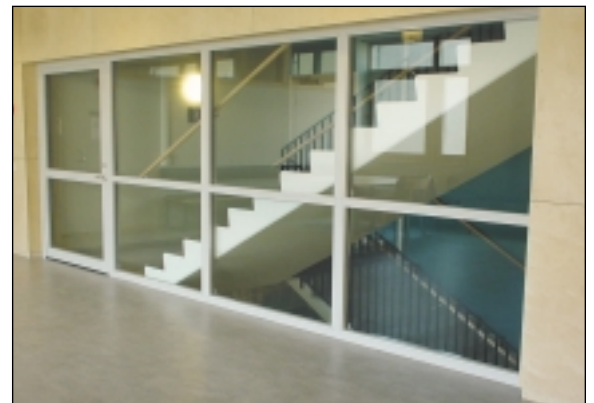
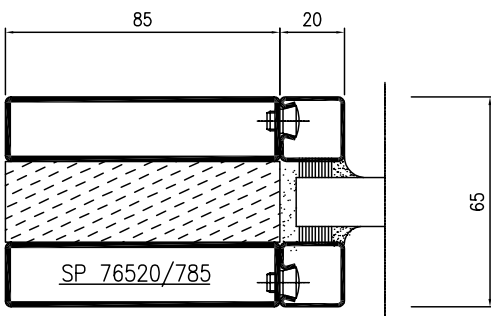
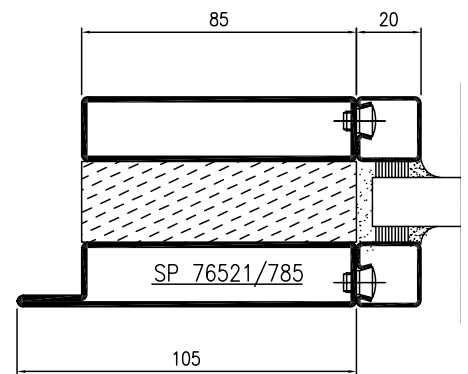
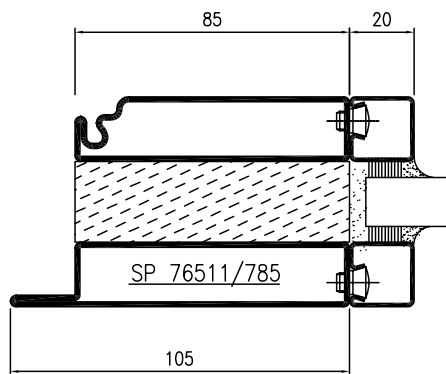
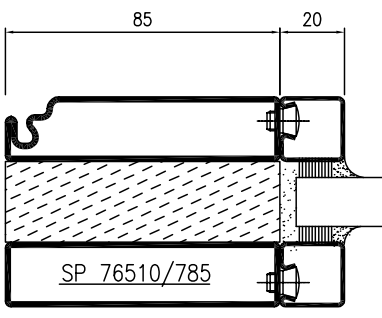
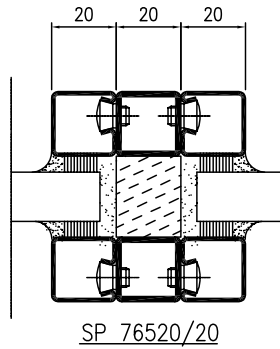
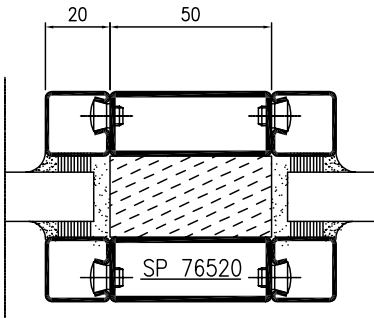
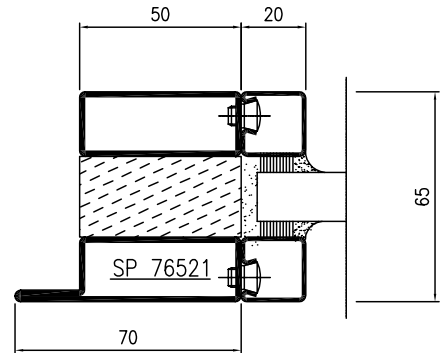
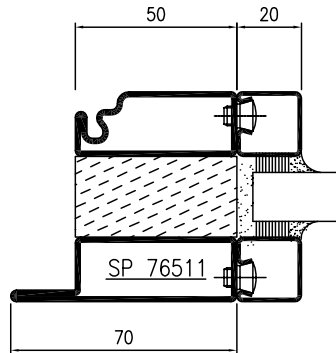
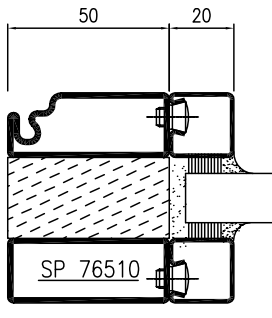
SYSTEM SP 35000/SLIDING DOORS FIRE RESISTANCE CLASS A30 ABOVE AND SIDE LIGHTS SP 76500 FIRE RESISTANCE CLASS EI30 SPECIFICATION OF MATERIAL			
NO.	DESCRIPTION	MATERIAL	REMARKS
A	Steel Profiles SP 35000 Steel profiles SP 76500 Alt. Stainless design SP 95000 SP 970000	Wall-Thickness 1,5 mm Wall-Thickness 1,8 mm Stainless steel Wall-Thickness 1,5 mm Wall-Thickness 1,75 mm	
B	Fixing screw 6x20	Steel	For cover plate
C	Glass beads Serie 40000 Alt. Glass beads Serie 90000	Senzimir Z 275 Stainless steel Wall-Thickness 1,25 mm	
D	Panels: Swissflam EI30 Swissflam EI30 Contraflam EI30 Pyrostop EI30	Thickness, weight and max measurements Type Approval Certificate 0711/94 Type Approval Certificate 0711/94 Type Approval Certificate 3935/82 Type Approval Certificate 3673/83	Mounting: Drawing no. 4-2492 Drawing no. 4-2493 Drawing no. 4-2494 Drawing no. 4-2513
E	Bead studs	Steel	
F	Rubber seal SP 20001	Chloroprene	
G	Rubber seal SP 20002	Chloroprene	
H	Intumex bead		Fire expanding
I	Intumex bead		Fire expanding
J	Door automatic	Type BESAM EMD 3000	
K	Besam floor steering		
L	U-Profile	Steel 50x40x2	
M	Tube	Steel 35x20x2	
N	Ceramic jointing band		Alt. Rockwool
O	Strengthenings plate	Steel 180x8	Firm Besamrail
P	Bottom seal	Pyrosil or equivalent	Not at Intumex bead
Q	Top seal	Pyrosil or equivalent	
R	Glazing band	Fiberfrax	Alt. Intumex bead
S	Insulation	Rockwool	125 kg/m ³
T	Plate	Steel =1,5 mm	
U	Flat steel	Steel 10x2	Pop-Rivets C/C 200
V	Flat steel	Steel 20x2	Pop-Rivets C/C 200
X	Distance block	Oak or Promatek	
Y	Tracking section	Steel	
Z	Cover plate	Steel =2 mm	
Å	L-Profile	Steel 50x30x3	
Ä	Cover plate	Steel =ca 1mm	Pop-Rivets

GENERAL INSTRUCTIONS: Frame profiles are jointed by welding.
 Frame profiles drawing no: 4-2388-A, 4-2336-B, 4-2412, 4-1172-C
 Glazing beads and accessories drawing no: 4-2387
 Fixing details and instructions drawing no: 4-2392
 Rubber gaskets to be mounted in a way that perfect tightness is obtained.
Besides, check the mounting instructions drawing no: 4-2389-A

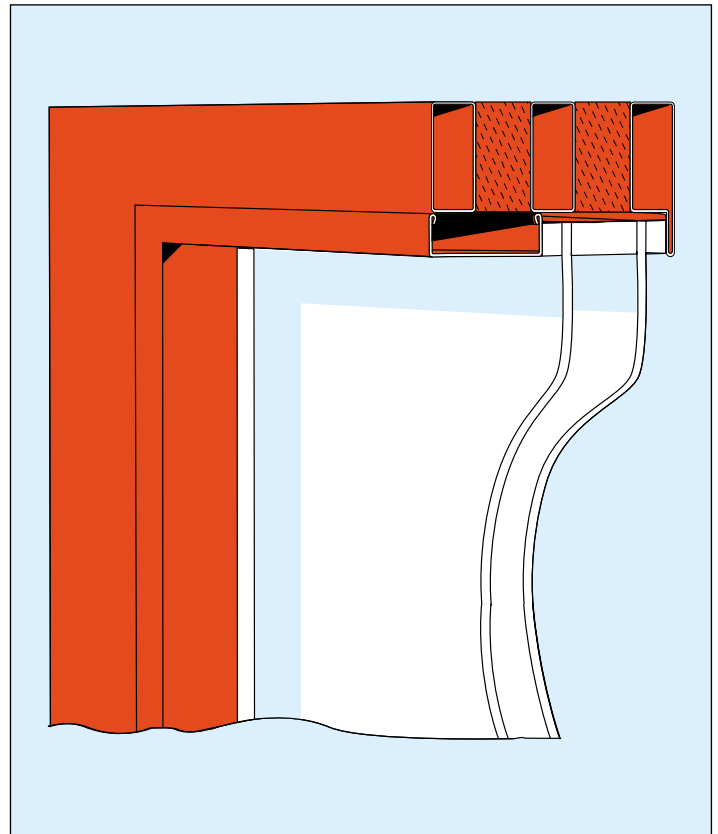
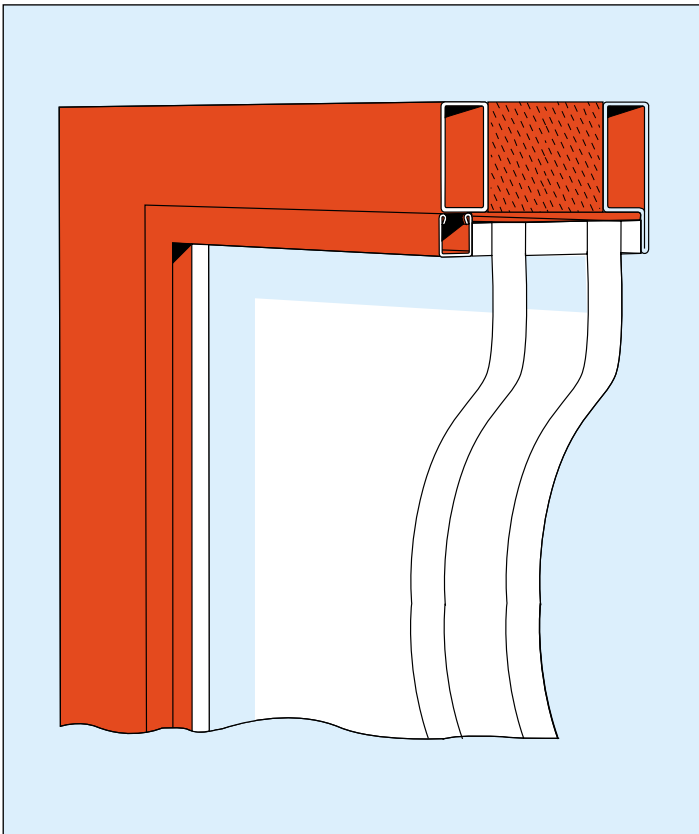


Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala 1;4, 1;40	Ersätter	Ersatt av
Firma STÅLPROFIL AB			Titel SLIDING DOOR SP 35000 EI30 ABOVE AND SIDE LIGHTS EI30				Regist.nr	Dat. 1999-12-28
							Ritn.-nr 3-4154	

PROFILES WITH ONE GLASSBEAD ON EACH SIDE ON THE GLASS CENTERED PLACED, SP 40000 OR SP 90000.
 COULD BE SECURED WITH TYPE FIXING SCREW FOR EXTERN PARTIONS.
 ALLOWED FOR REPLACE NORMAL GLAZING ACCORDING TO THE SAMPLES DRAWING



* MAY ALSO USE STAINLESS PROFILES AND GLAZING BEADS



STÅLPROFILSYSTEM SP 79000 – SP 711000

Glazed doors, windows and wall sections fire resistant classes EI 60 Type approval certificate 1945/89

STÅLPROFILSYSTEM SP 711000

Glazed wall sections in fire resistant class EI 90 Type approval certificate 1141/95

Fire resistant profile systems designed for door, sliding door, wall and window sections in offices, places of business, blocks of flats, schools, hotels, sports arenas, hospitals, service homes etc.

The systems are modern and provide maximum flexibility, safety and stability. They offer a variety of choices for interior design and are also type approved for wide profiles for module locks, rounded windows and arches. The tested and approved systems are available with extensive height and width measurements.

The systems innovative design with tracks for rubber sealing creates smooth interior and exterior surfaces on doors and intersecting wall partitions complying with architectural requirements.

The increased stability, resistance to fire and other external forces that steel offers compared to other materials is making it the material of choice. Steel has also unlimited choices with regard to colour and is environment friendly. The low purchase price combined with its other advantages reduces the total cost of ownership drastically compared to other materials.

Fire safety and Bulletproofing

The systems are available in bullet resistant quality complying with the tests performed by SP the Swedish Testing and Research Institute.

Steel profile systems SP 79000 and 711000 are type approved by SITAC, Swedish Institute for Technical Approval in Construction, in several fire resistant classes. Door and wall sections function as fire barriers in corridors, hallways and stairwells.

The fire resistant insulating core between the steel profiles effectively reduces heat transfer between the side facing the fire and the opposite side.

SP 79000 and SP 711000 allow the creation of light and pleasant interiors and provide many opportunities for variation whilst still complying with current fire safety requirements.

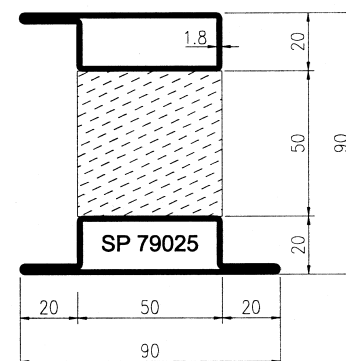
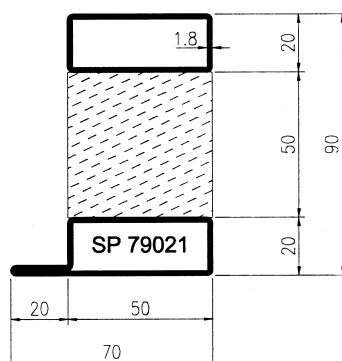
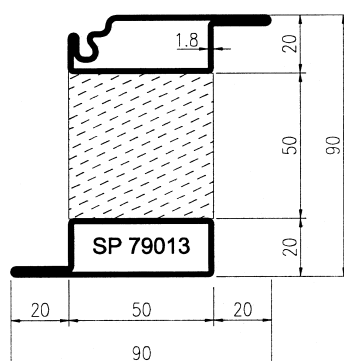
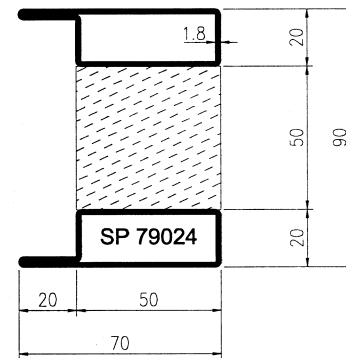
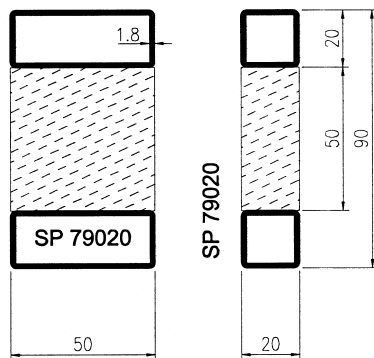
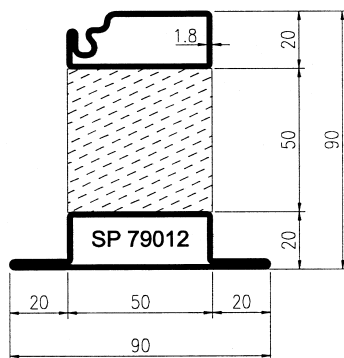
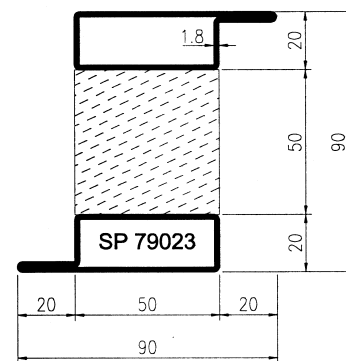
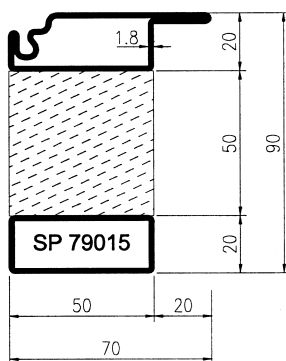
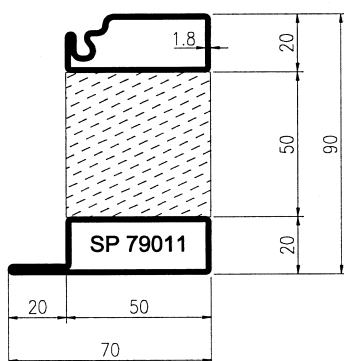
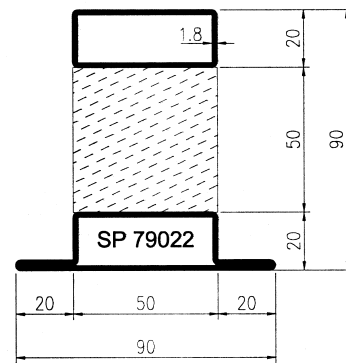
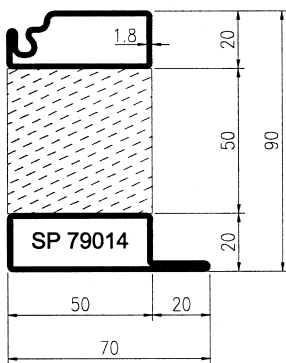
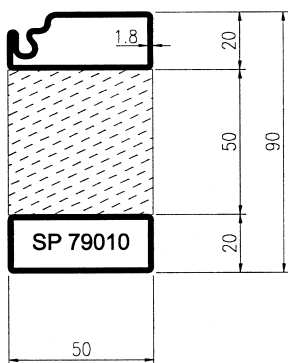
Design

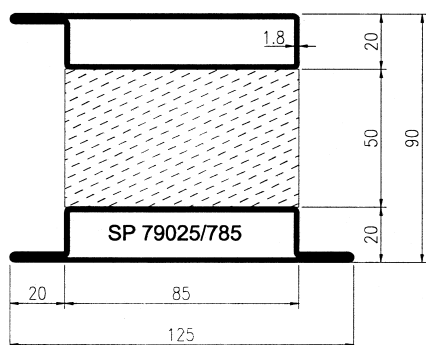
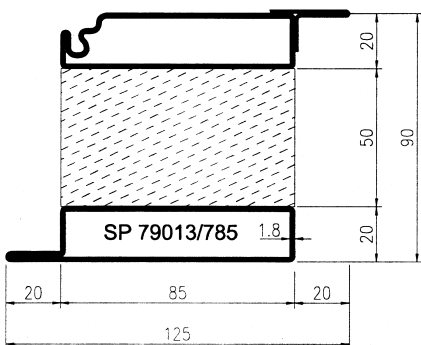
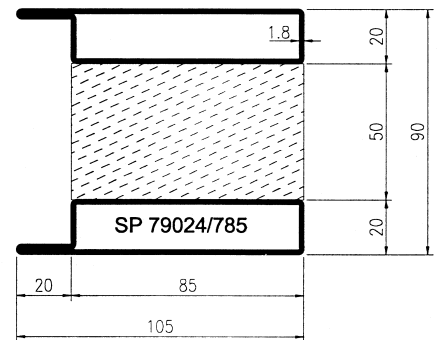
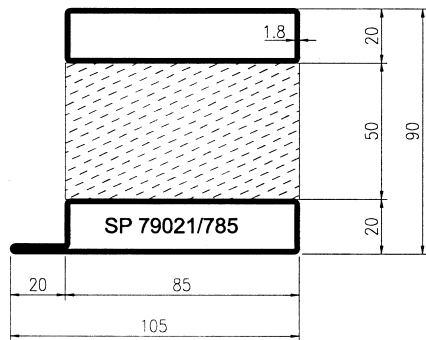
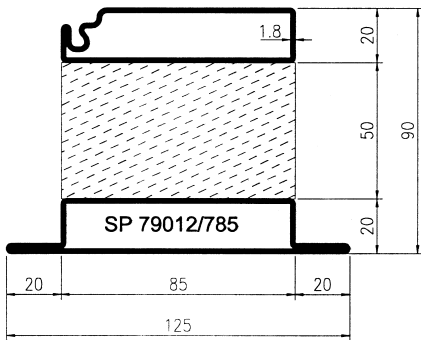
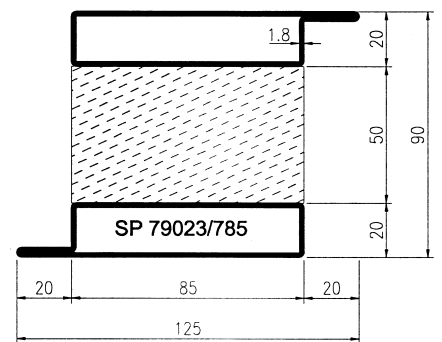
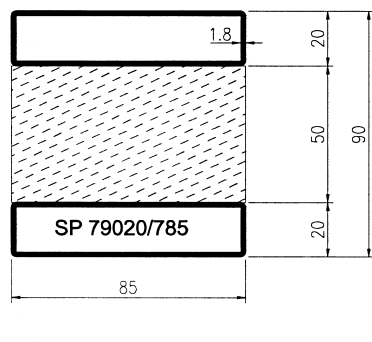
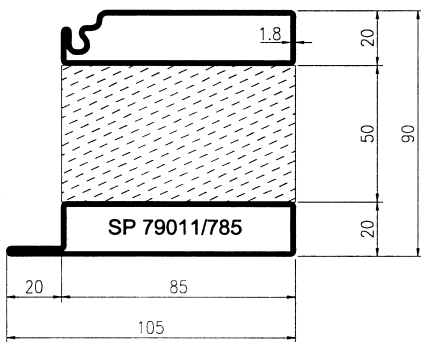
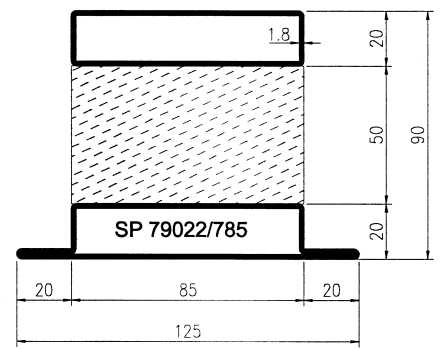
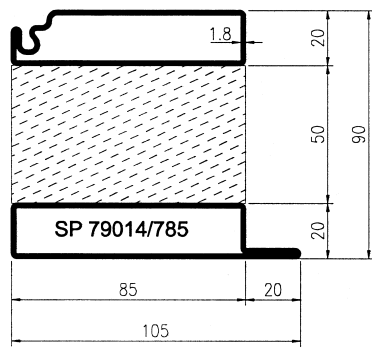
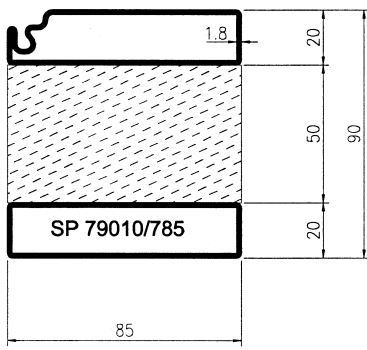
The systems innovative design lend themselves to simple assembly and reduced construction time compared to conventional systems, implying higher and more consistent quality and reduced manufacturing costs.

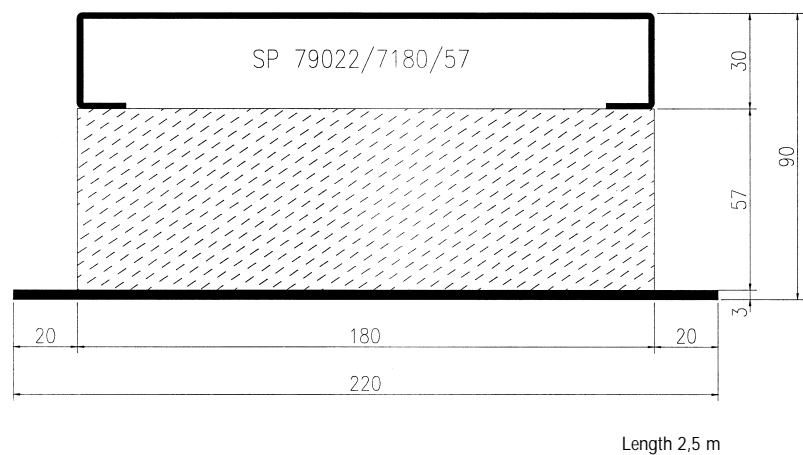
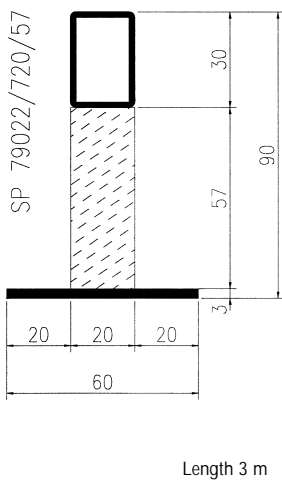
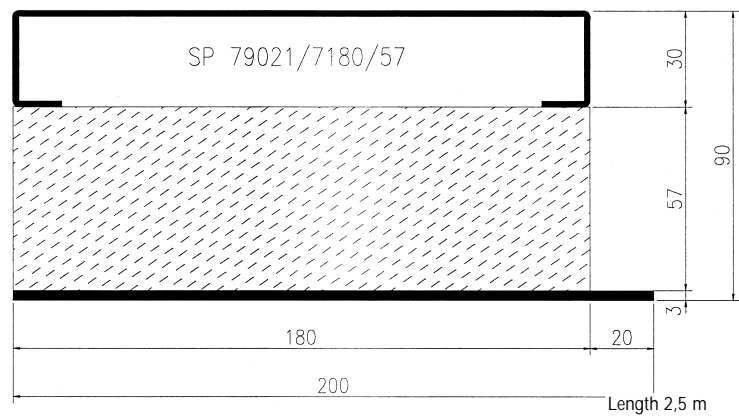
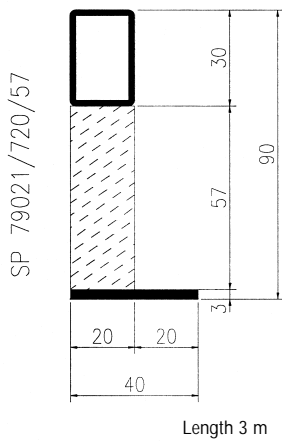
A high quality cost effective solution

The standard glazing beads for each system are pre-treated with sendzimir zinc. The beads are also available in stainless steel. Laquered profiles with stainless steel glazing beads offer an exciting architectural combination. The glazing beads for SP 711000 are comprised of rectangular tubes that are screwed onto the profile. Manufacture and assembly is carried out by certified professionals, who undergo frequent controls and inspections by The Swedish Testing and Research Institute.





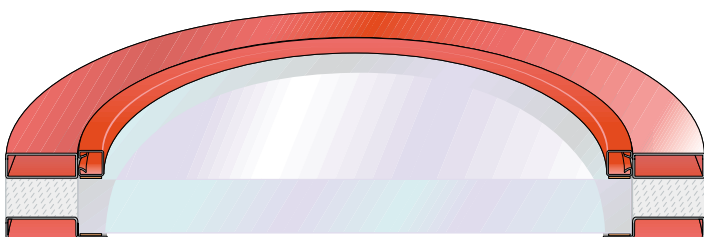
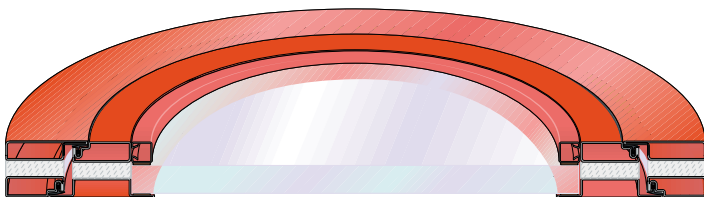
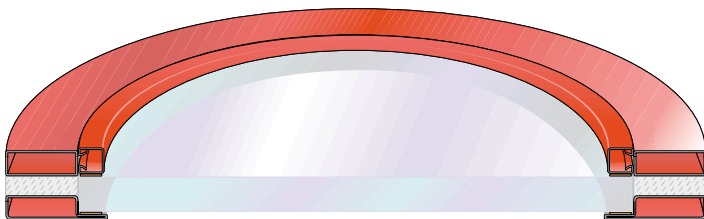


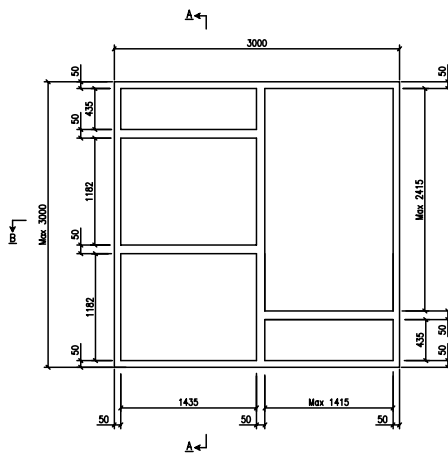
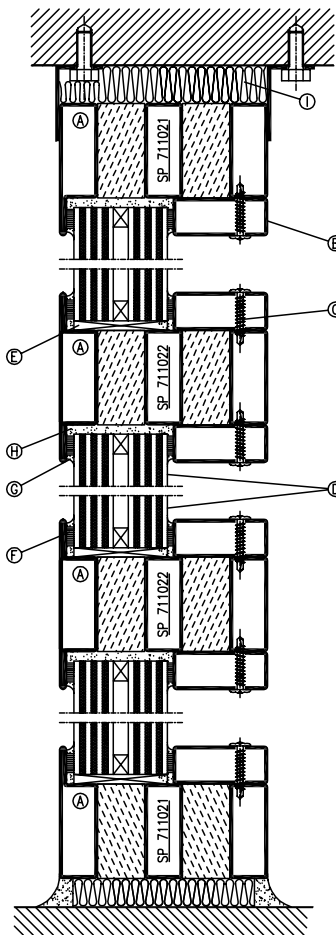
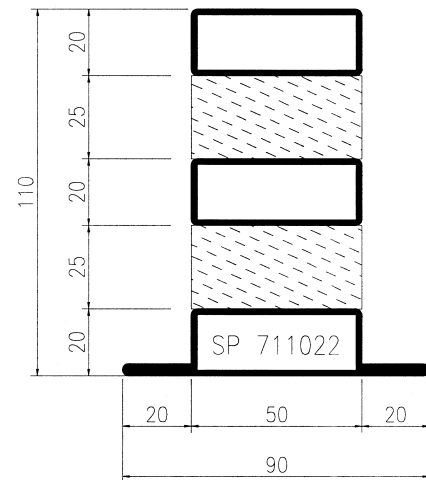
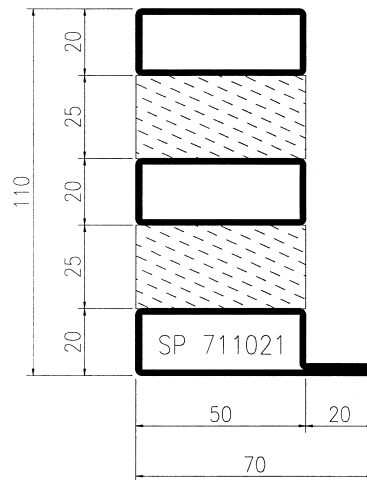
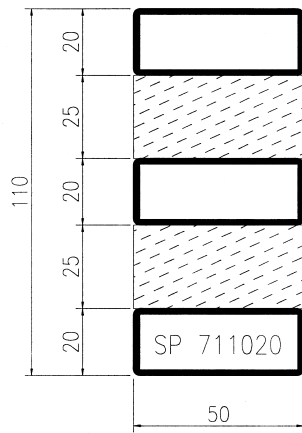


ARCHES AND ROUNDED WINDOWS IN EI 30/ EI 60

Stålprofilsystem SP 76500 are SP 79000 available with arches, rounded windows and arched doors. The round profiles have the same characteristics as other system parts. Finger trap proof gasket can be applied to arched doors and windows. All of the arches, arched doors and rounded windows are tested and type approved by SITAC. Minimal size for exterior diameter

- Profile width 50 mm = 500 mm
- Profile width 70 mm = 700 mm
- Profile width 90 mm = 1100 mm





SYSTEM SP 711000 WALL SECTIONS
SPECIFICATION OF MATERIAL FIRE RESISTANCE CLASS EI 90

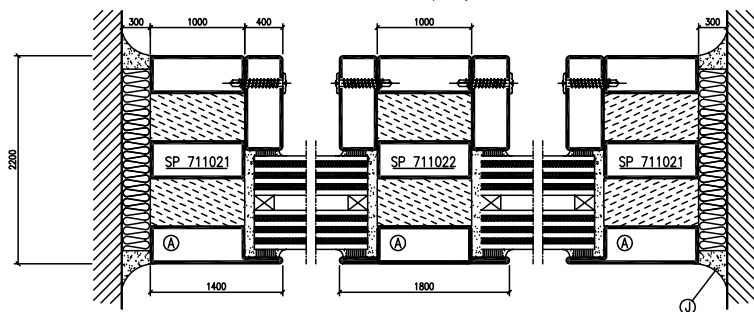
NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP 711000	Cold formed steel Wall-Thickness 1,8 mm Insulation Promatec H	Bright steel surface suitable for laquering
B	Glass beads SP 60X20X2 50X20X2	RHS Profile Wall-Thickness 2 mm	
C	Bead studs	Steel	C/C 200 mm
D	Panels: Pyrostop E90	Thickness, weight and max temperature as per standard approval cert.	Mounting: Drawing no. 4-2496
E	Distance block	Oak	
F	Glazing band	Fiberfrax or equivalent	
G	Top seal	Pyrosil	Alt. Neutral silicone
H	Bottom seal	Pyrosil	Alt. Neutral silicone
I	Insulation	Rockwool	Alt. ceramic sealing band
J	Edge sealant	Pyrosil	

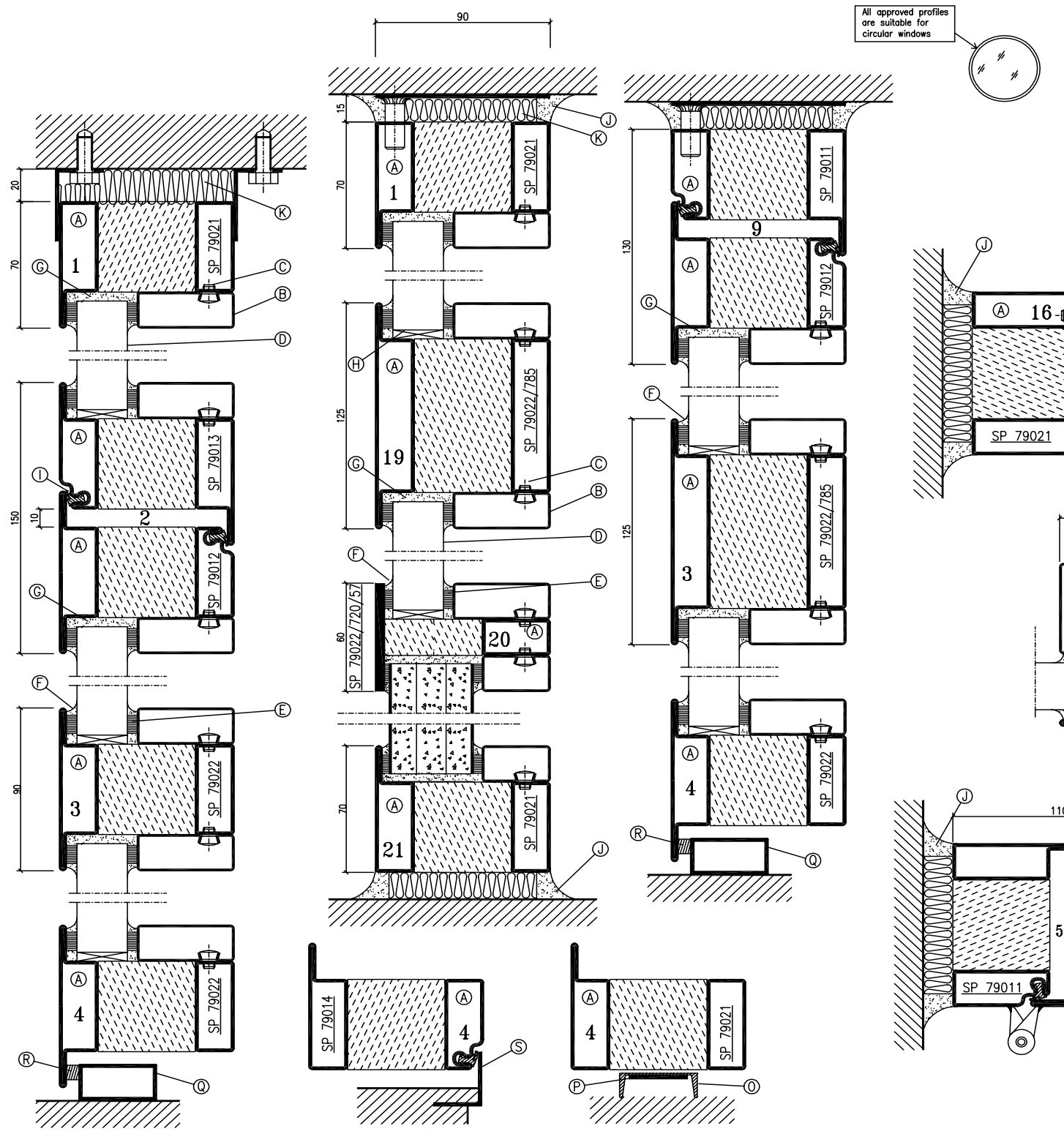
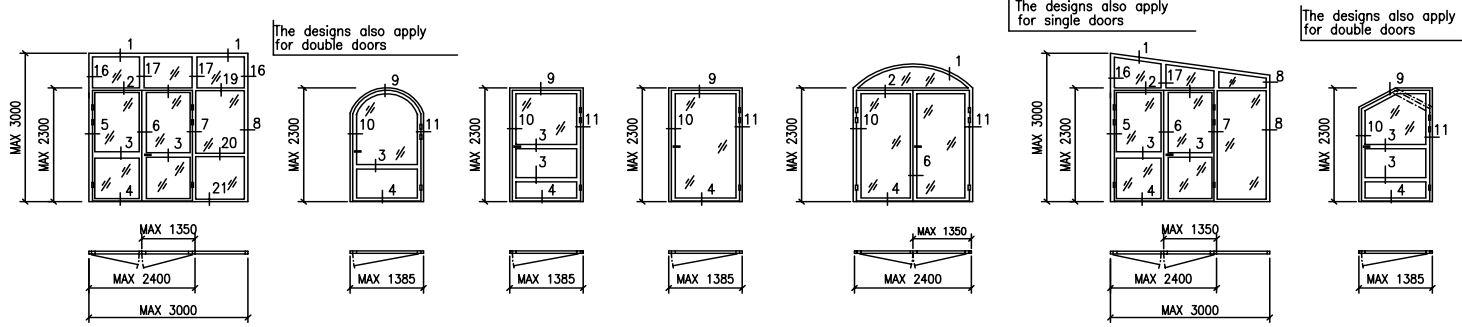
DETAIL DRAWINGS:
 Frame profiles, drawing no. 4-2217-A, 4-2218-A
 Glazing bead/astening, drawing no. 4-2221
 Movable fixing, drawing no. 4-2363-A
 Drill picture, drawing no. 4-1172-C
 Glass mounting instruction, drawing no. 4-2429

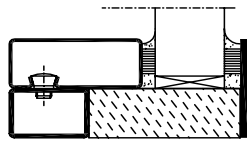
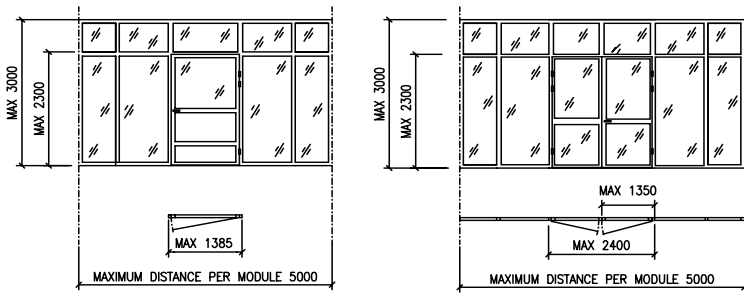
GENERAL INSTRUCTIONS:
 Frame profiles are jointed by welding. Sections are jointed
 with a flat steel or square tubes that are welded or screwed.

FIXING TO THE FRAME OF THE BUILDING:
 The side and the lower edge of the section are welded or screwed.
 Movable fixing for the upper edge see drawing no. 4-2363-A

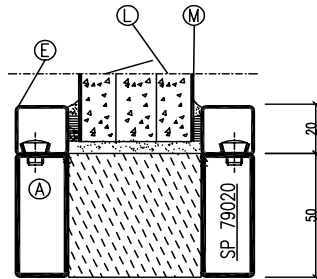
MEASURES:
 Division of glazed and filled sections and number of mullions can be
 optionally varied, if the maximum measurements are not exceeded.



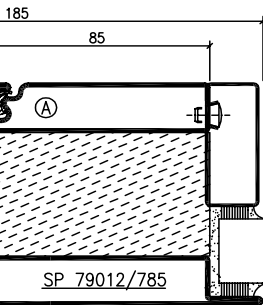
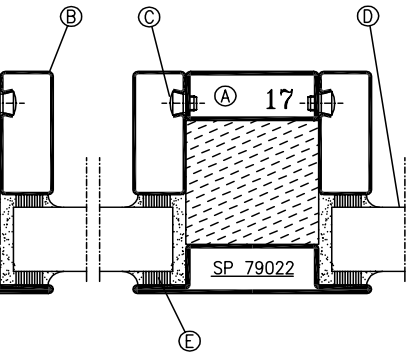




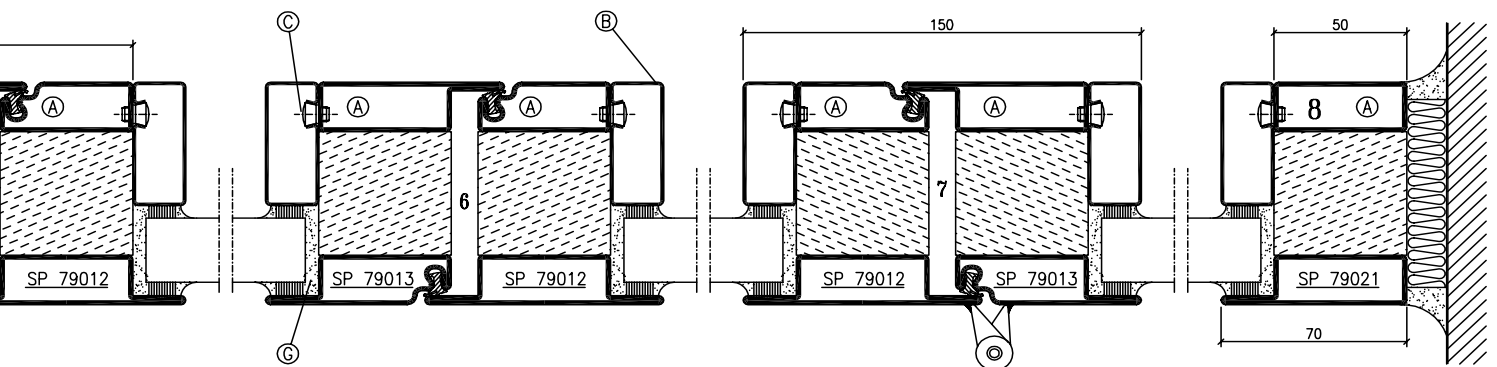
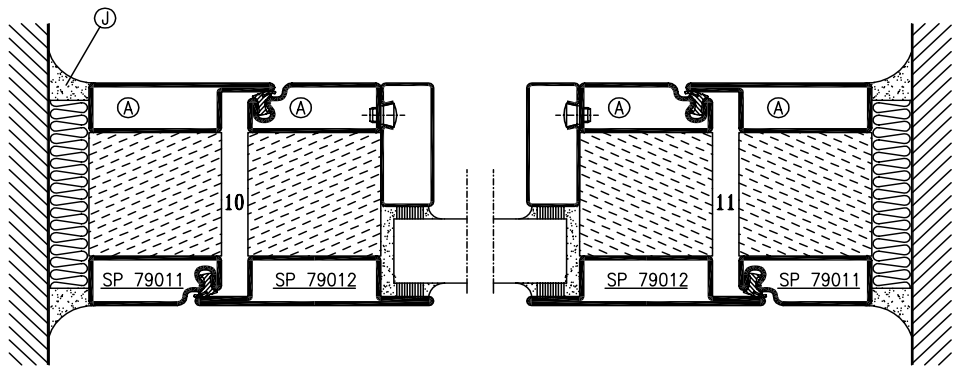
SP 79021/720/57



Alt. SOLUTION WITH
PROFILE SP79020 OR
PROFILE SP79020/20



Alt. MODUL PROFILE

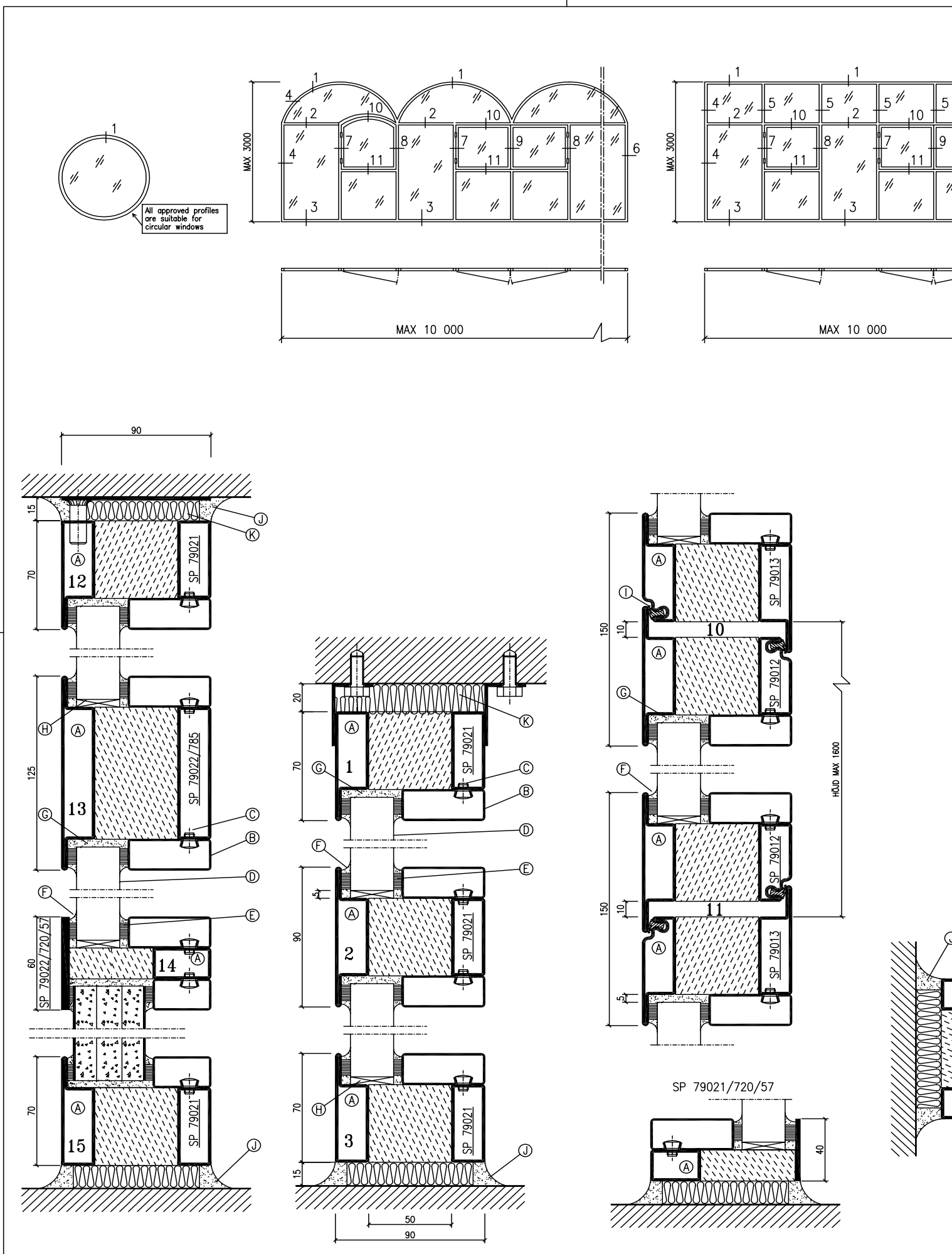


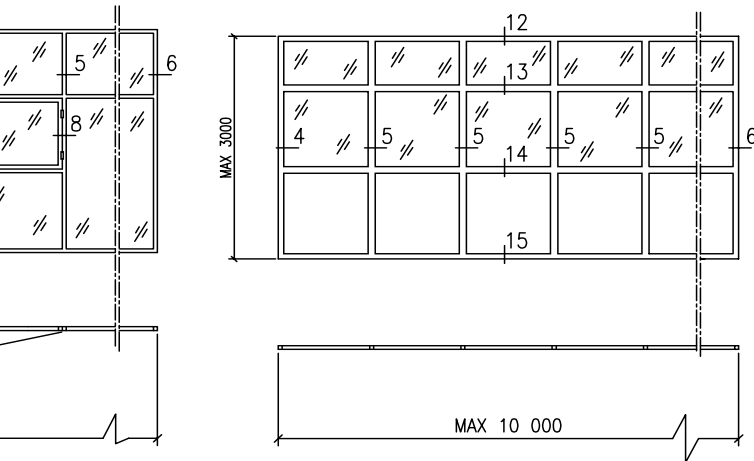
SYSTEM SP 79000 WINDOW SECTIONS
SPECIFICATION OF MATERIAL FIRE RESISTANCE CLASS EI 60

NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP 79000	Cold formed steel Wall-Thickness 1,8 mm	Bright steel surface suitable for laquering
	Alt. Stainless design SP 970000	Stainless steel Wall-Thickness 1,75 mm	
B	Glass beads Serie 40000	Sheet metal ST 0,2 Senzimirband Z 275 Wall-Thickness 1,25 mm	Glazing beads can if required screw into the profiles ex, curve profiles and circular windows. Alt. may rectangular tubes be in use.
	Alt. Glass beads Serie 90000	Stainless steel Wall-Thickness 1,25 mm	
C	Bead studs	Steel L 15 \varnothing 4,8	C/C 300 mm
D	Panes:	Thickness, weight and max measurements	Mounting:
	Pyrostop EI60	Type Approval Certificate 3673/83	Drawing no. 4-2480
	Contrafram 60-41	Type Approval Certificate 3935/82	Drawing no. 4-2507
E	Glazing band	Fiberfrax	Alt. Intumex bead
F	Top seal	Pyrosil B	
G	Bottom seal	Pyrosil B	Not when Intumex seal are used
H	Distance block	Oak	
I	Stop seal	Chloroprene	
J	Edge sealant	Pyrosil B	
K	Insulation	Rockwool	Alt. Ceramic jointing band
L	Gypsum board	3x13 mm	Standard approved and manufacturer controlled
M	Plate	Thickness 1-1,5 mm	
O	Threshold SP45065	Chloroprene	
P	Flat steel 30x2		Fastener SP 40065
Q	Stop bolt	Tube 45x20x2	
R	Rubber seal		
S	Stop bolt	Angle steel	

DETAILED DRAWINGS:
Frame profiles drawing no4-2290-B, 4-2291-B,4-1172-C, 4-2375
Glass beads and accessories drawing no 4-2346-A, 4-2518
Electric installation field, center glazed drawing no. 4-2514, 4-2505
Fixings and mounting instructions and general directions see drawing no 4-2358 and 4-2515

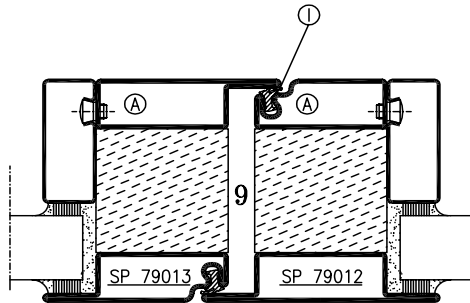
Konstr.	Ritad R.O	Kop.	Konstr.	Stand.	Godk.	Skala 1:3 1:150	Ersätter	Ersatt av
Firma STÅLPROFIL AB			Titel SYSTEM SP 79000 DOOR SECTIONS FIRE RESISTANCE CLASS EI60			Regist.nr	Dat. 990225	
							Ritn.-nr	3-4147





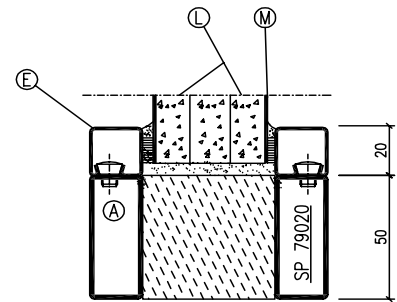
SYSTEM SP 79000 WINDOW SECTIONS
SPECIFICATION OF MATERIAL FIRE RESISTANCE CLASS EI 60

NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP 79000	Cold formed steel Wall-Thickness 1,8 mm	Bright steel surface suitable for laquering
	Alt. Stainless design SP 979000	Stainless steel Wall-Thickness 1,75 mm	
B	Glass beads Serie 40000	Sheet metal ST 0,2 Senzimirband Z 275 Wall-Thickness 1,25 mm	Glazing beads can if required screw into the profiles ex, curve profiles and circular windows. Alt. may rectangular tubes be in use.
	Alt. Glass beads Serie 90000	Stainless steel Wall-Thickness 1,25 mm	
C	Bead studs	Steel L 15 \varnothing 4,8	C/C 300 mm
D	Panes: Pyrostop EI60 Contraflam 60-41	Thickness, weight and max measurements: Type Approval Certificate 3673/83 Type Approval Certificate 3935/82	Mounting: Drawing no. 4-2480 Drawing no. 4-2507
E	Glazing band	Fiberfrax	Alt. Intumex bead
F	Top seal	Pyrosil B	
G	Bottom seal	Pyrosil B	Not when Intumex seal are used
H	Distance block	Oak	
I	Stop seal	Chloroprene	
J	Edge sealant	Pyrosil B	
K	Insulation	Rockwool	Alt. Ceramic jointing band
L	Gypsum board	3x13 mm	Standard approved and manufacturer controlled
M	Plate	Thickness 1-1,5 mm	

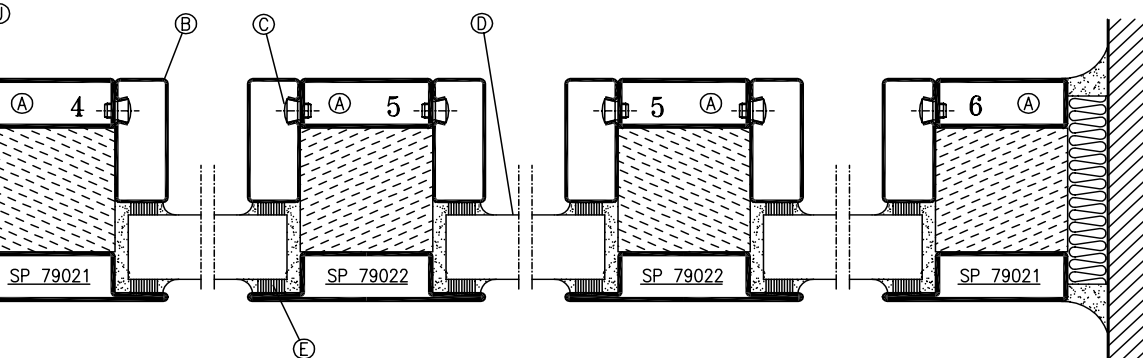
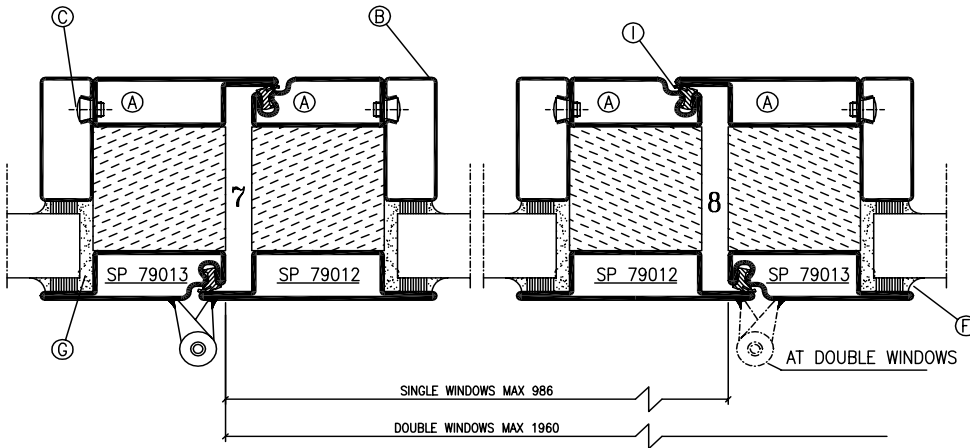


DETAILED DRAWINGS:
Frame profiles drawing no 4-2290-B, 4-2291-B, 4-1172-C, 4-2375
Glass beads and accessories drawing no 4-2346-A
Electric installation field, center glazed drawing no. 4-2514, 4-2505

Fixings and mounting instructions and general directions see drawing no 4-2358 and 4-2515



Alt. solution with
Profile SP 79020



REV E	GLASS MOUNTING DRAWINGS	990308 RO	Firma STÅLPROFIL AB	Titel SYSTEM SP 79000 EI60 WINDOWS AND WALL SECTIONS	Skala 1:3 1:100	Ersätter	Ersatt av		
REV D	ARCHES AND CIRCULAR WINDOWS	970114 RO						Regist.nr	Dat.
REV C	NEW MARKS	961030 RO						Ritn.-nr	961007
							1-4009-E		

BULLET RESISTANCE TESTING

Test protocol REV 1993-04-21 Building Construction Techniques, Swedish Testing and Research Centre, Borås

1. Introduction

On behalf of Stålprofil, bullet resistance testing was performed in March and April 1993 on steel profiles. SP report number 92B1.4092. The testing was carried out in Uddevalla.

2. Scope and Performance

The different steel profiles were called 350xx, 565xx, 765xx and 900xx (stainless steel). Reinforcements for each profile type are presented in table 1. Profile descriptions can be found in the appendix to SP report number 92B1.4092.

Table 1: Profile type with reinforcement of metal plate (mm)

Profil nr	Class C1	Class C2	Class C3	Class C4	Class C5
350xx	4	5	8	12	12
565xx	-	-	-	8	8
765xx	-	-	-	8	8
900xx ¹⁾	-	3	3	6+4	6+4

¹⁾ Reinforced with stainless steel metal plate

The tests were performed according to the appropriate sections of Swedish Standard SS 22 44 29 "Construction Glass - Safety Windows - Classification". These particular standards address glass, but were used as the starting point for the tests. The profiles were fixed in a steel frame and shots were fired from 3, 10 and 25 metres. Each profile was subjected to at least 3 shots with approximately 25mm spacing. The measurements taken at the testing site are not exact measurements, but the difference is marginal in relation to the distribution between the tested objects. The weapons and ammunition used is presented in table 2.

Table 2: Weapon and ammunition type

Class	Weapon	Ammunition
C1	Army machine gun	9 mm standard
C2	357 Magnum Marlin model 1894 CS	Hornady XTP 158 grain Norma R1 23 150 grain
C3	44 Magnum Ruger Super Red Hawk 9"	Norma fabrics Nr 11103 240 grain 15 gram
C4	.308 Winchester Remington	7.62 x 51 mm 9.7 gram
C5	.308 Winchester Remington	7.62 x 51 mm 9.7 gram

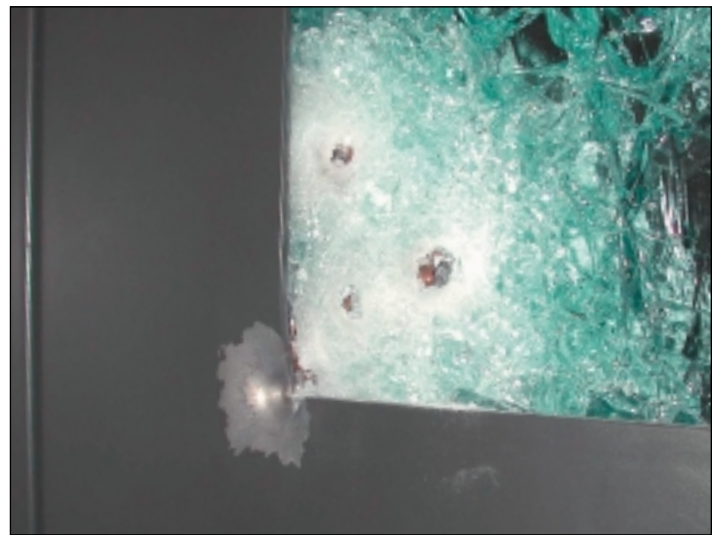
3. Result


None of the profiles in the test showed any sign of interior damage. The projectiles had in other words remained embedded in the profiles. On the basis of the result the reinforced profiles are judged to be in compliance with the requirements for classes C1-SF to C5-SF according to SS 22 44 25. SF refers to the fact that the profiles were splinterproof on the inside.

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Swedish Testing and Research Institute
 Kent Gylltoft
 Prof. Dr.
 Head of Division

Sven-Agne Nilsson
 Engineer





SP
SVAOK
SVAOK-FOKORP

1(2)

Enhet/Department: Building Technology
 Handläggare/Handled by: Sven-Agne Nilsson, lg

STATEMENT
 Datum/Date: 27 April 1993
 Ers. datum/Issued date:

Beteckning/Reference: 92B1.4092 A
 För referens/Sear reference:

Stålprofil AB
 Box 37
 447 00 Vårgårda

This is a translation of our statement 92B1.4092 dated 15 March 1993, revised 21 April 1993.

Bullet resistance testing of steel sections
 (1 Appendix)

1 Introduction

On behalf of Stålprofil AB, Vårgårda, steel sections have been bullet resistance tested at the shooting range at Uddevalla. The test were carried out 1 March and 15 April 1993.

2 Scope and test procedure

The different types of sections are designated 350xx, 565xx, 765xx and 965xx (stainless). The reinforcement is shown in Appendix 1.

Table 1 Sections with different types of reinforcement

Section No	Class C1	Class C2	Class C3	Class C4	Class C5
350 xx	4 mm PL	5 mm PL	8 mm PL	12 mm PL	12 mm PL
565 xx	-	-	-	8 mm PL	8 mm PL
765 xx	-	-	-	8 mm PL	8 mm PL
965 xx	-	3 mm	3 mm	6+4 mm	6+4 mm

PL= Flat bar
 The reinforcement of section 965 xx (stainless) is made of stainless material.

The test was carried out in accordance with parts of the Swedish Standards SS 22 44 29 "Building glass - Safety glazing - Bullet resistance testing" and SS 22 44 25 "Building glass - Safety glazing - Classification". These standards apply to glazing, but have in applicable parts been used in this testing.

The test sections were fixed to a support. Bullets were fired at the test object at a distance of 3 m, 10 m and 25 m respectively. At least 3 shots were fired at each sample and with a distance of approximately 25 mm from each other. The types of weapon and ammunition in the different classes are shown in Table 2.

Swedish National Testing and Research Institute
 Staatliche Materialprüfungs- und Forschungsanstalt • Institut national d'essai des matériaux et de recherches • Statens Provningsinstitut

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