NOW ALSO IN STAINLESS!

STÅLPROFILSYSTEM SP 56500

Profile system with a broken thermal bridge for doors- and entrance sections, exhibition window partitions and curtain walling

COMPLETE PARTITIONS WITH GLASS, INCLUDING MOUNTING!

CONTENTS

- Module locks
- Calculated U-value
- Finger trap proof gasket
- Burglar proof classes 1–3
- Airborne sound reduction
- Rounded windows and arches
- Bullet proof classes C1 – C5 SF

INDEX

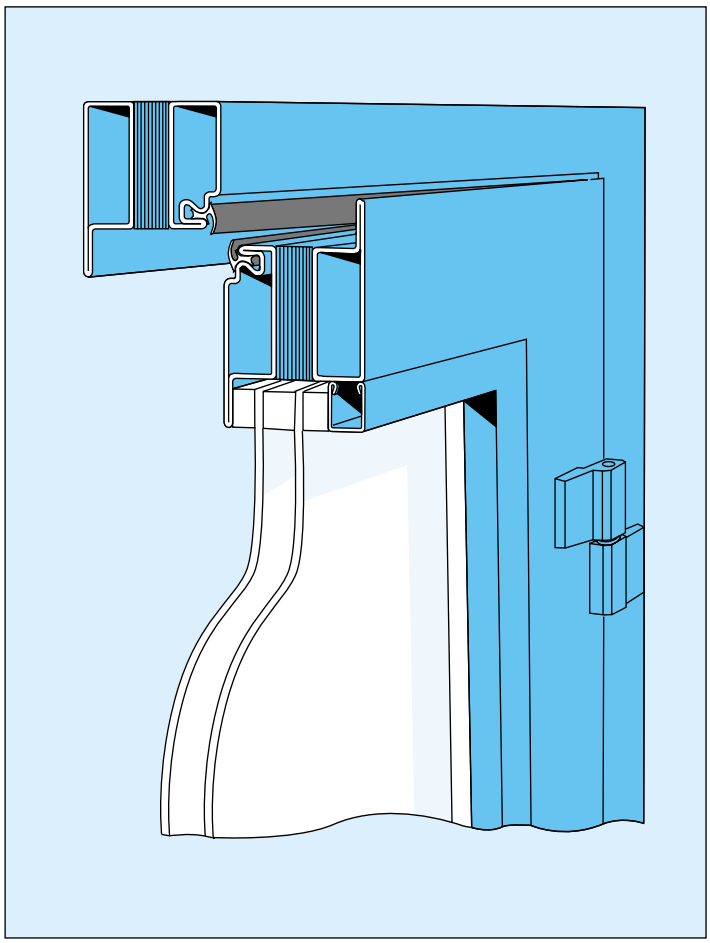
STÅLPROFIL ONLINE AND ON CD

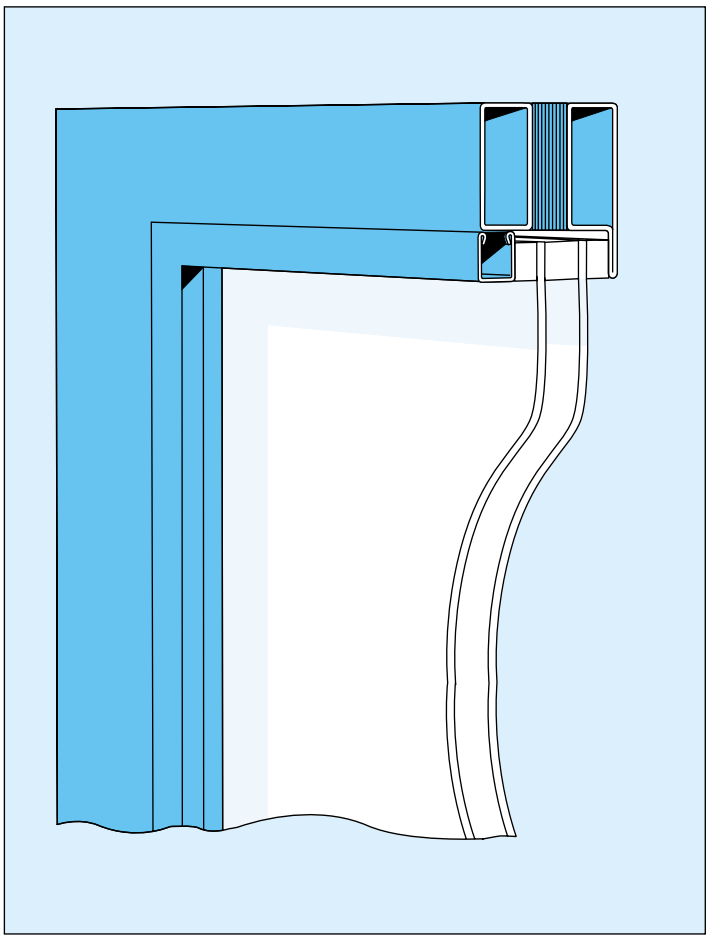
You can now get the latest updates and news from Stålprofil by visiting our web site at *www.stalprofil.se* The site contains profiles and drawings from Stålprofil in downloadable file formats. Our latest catalogue is also available for download as PDF files. All of the drawings are in DWG format compatible 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 we have also created a library of symbols that are compatible with AutoCAD and can be easily used with the software. There is a CD available containing the drawings and profile systems. You can request the catalogue and receive the accompanying CD by e–mailing us at *cd@stalprofil.se* or fax to *+46 522–120 46*.

SYSTEM SUMMARY STÅLPROFILSYSTEM

Item Stainless	SP 6000 SP 96000	SP 60000	SP 35000 SP 95000	SP 55000 SP 955000	SP 75000 SP 975000	SP 56500 SP 956500	SP 58000 SP 958000	SP 76500 SP 976500	SP 79000 SP 979000	SP 711000
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.





STÅLPROFILSYSTEM SP 56500 WITH BREACHED THERMAL BRIDGE

Glazed door, window and wall sections with breached thermal bridge – U-value calculated and tested for airborne noise reduction

STÅLPROFILSYSTEM SP 58000 BURGLARY RESISTANT acc. SS 81 73 45

Burglary resistant door, window and wall sections with breached thermal bridge tested according to SS 81 73 45

Profile systems designed for door, wall and window sections in offices, business premises, schools, hotels, airports, sports arenas, hospitals and service homes etc.

The systems are modern and offer maximum flexibility, safety and stability. The systems offer a variety of choices for interior design. Each system offers finger trap proof gasket, rounded windows and arches and are available in wide profiles for module locks.

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

Steel offers unlimited choices with regard to colour and is environment friendly. The increased stability, and resistance to other external forces compared to other materials combined with an attractive purchase price and low total cost of ownership are factors contributing to steel being the material of choice.

Bulletproofing, Burglary Resistance and Noise Reduction

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

SP 58000 was tested according to SS 81 73 45 and is available in burglary resistant classes 1, 2 and 3.

SP 56500 was tested for noise reduction with various types of glass according to SS-EN ISO 140/3:95 by SP in Borås. Please refer to the diagram on page 18.

SP 56500 and SP 58000 allow the creation of light and pleasant interiors and provide many opportunities for variation.

Design

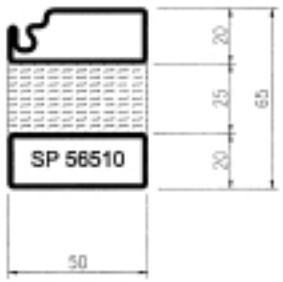
The innovative design of the systems lend themselves to simple assembly and reduced construction time compared to conventional systems, implying higher and more consistant quality and reduced manufacturing costs.

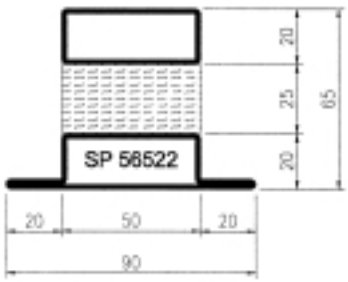
Black, stainless or sendzimir zinc galvanised steel

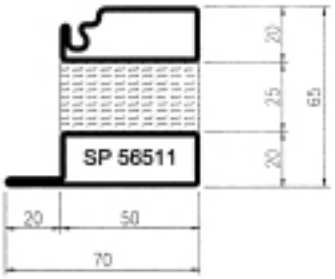
SP 56500 and SP 58000 are available in untreated steel quality SS 1312 allowing maximum flexibility in choice of surface. The systems are also available in stainless steel quality 316L, please refer to separate catalogue *STÅLPROFILSYSTEM SP 90000* for further details. The stainless steel profile is delivered brushed or untreated. The third quality available is sendzimir zinc galvanised. Sendzimir zinc galvanisation is a form of hot dipped galvanisation. After the treatment the interior and exterior zinc surfaces are 20µm equating to 275g/m^2. The pre-treatment in combination with the subsequent laquering eliminates the risk of corrosion. Our recommendations are sandblasting, spray galvanising, primer, wash or powder coating.

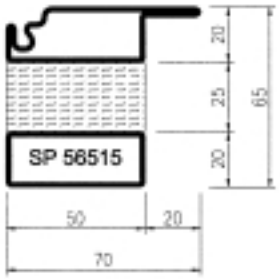
A high quality cost effective solution

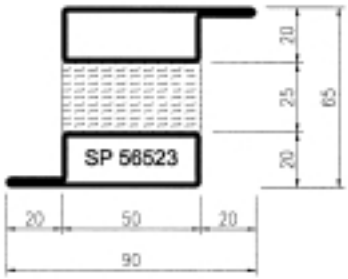
The standard glazing beads for each system are galvanised as the profiles themselves, but are also available in stainless steel quality. Laquered steel profiles with stainless steel glazing beads is an exciting combination. To maximise effectivity, simplify manufacture and reduce costs, the glazing beads are compatible in every system. To further minimise manufacturing costs and wastage each profile is delivered from our warehouse in 6.6 metre lengths and glazing beads in 6.0 metre lengths.

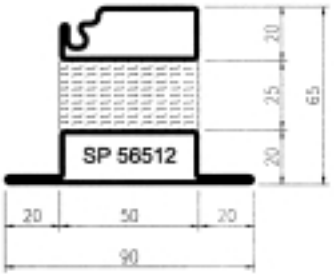


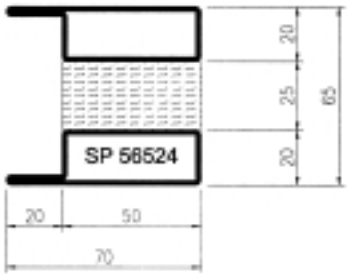


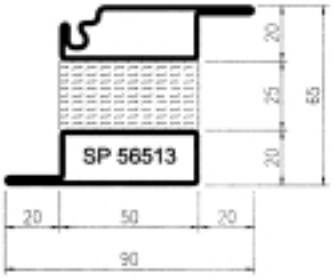


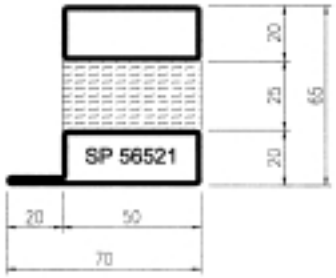


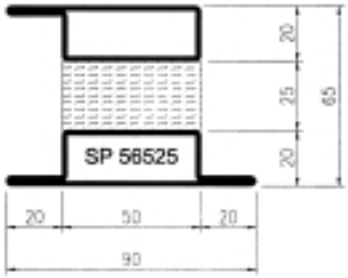


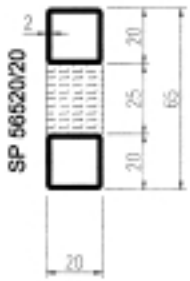






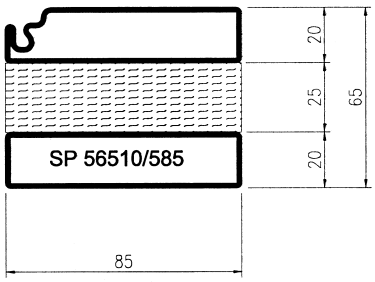


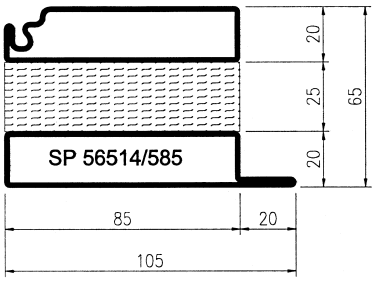


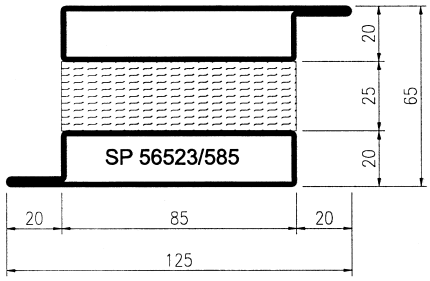


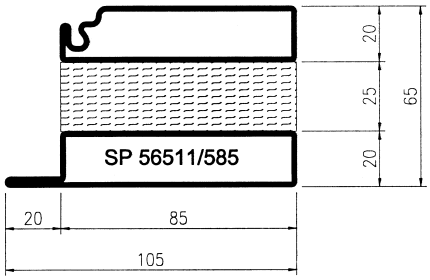
Length 3 m

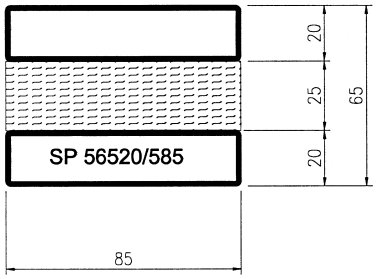
Length 3 m

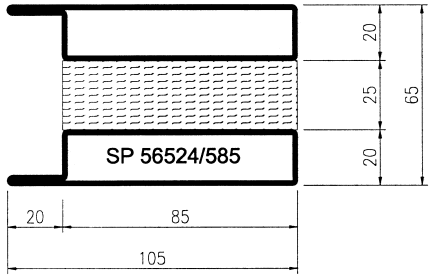


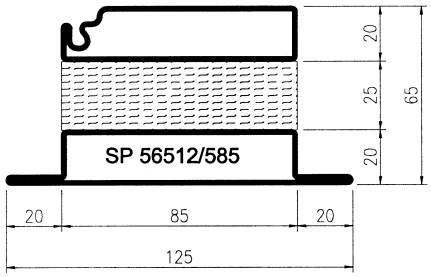


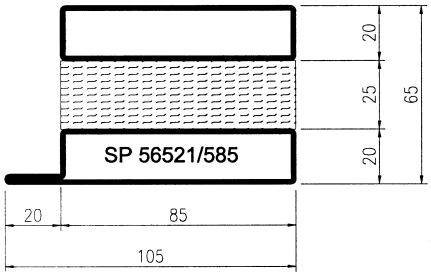


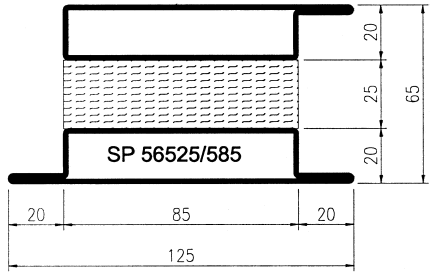


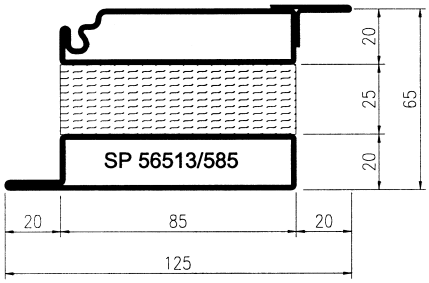


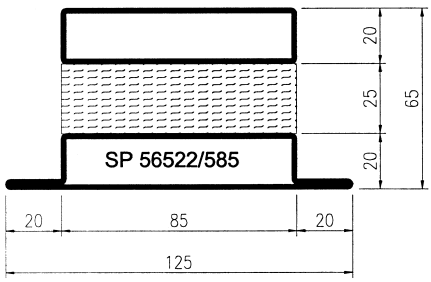


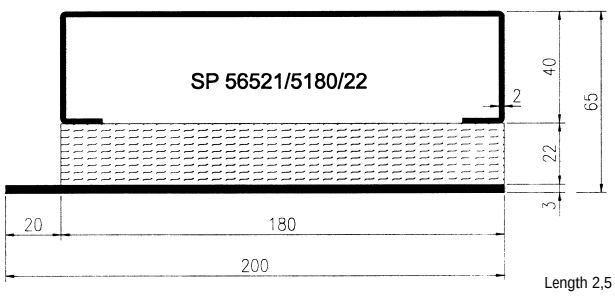












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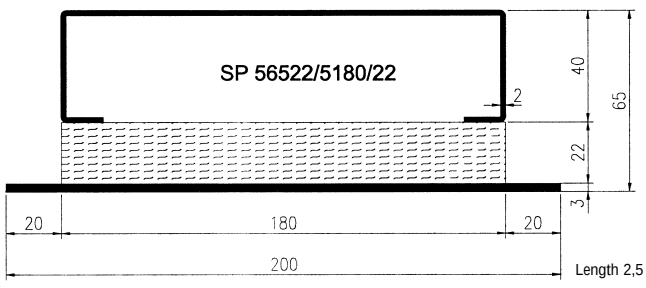

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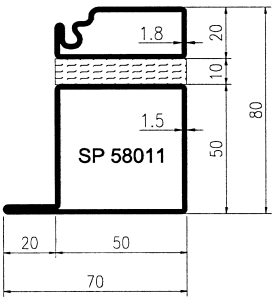
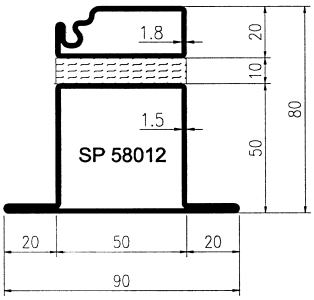
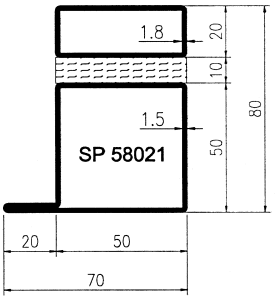
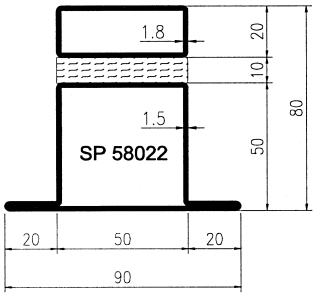
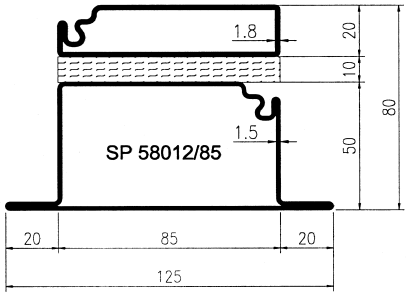
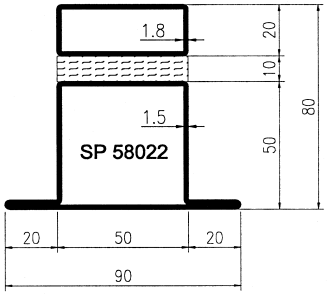


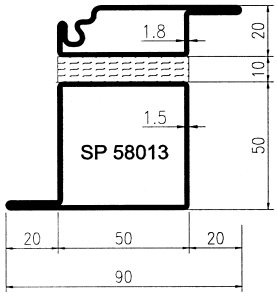


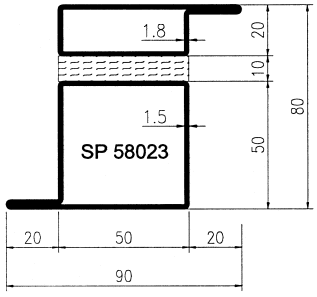


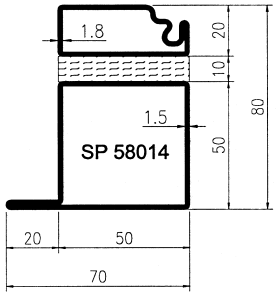




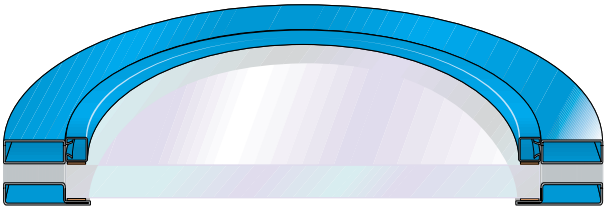


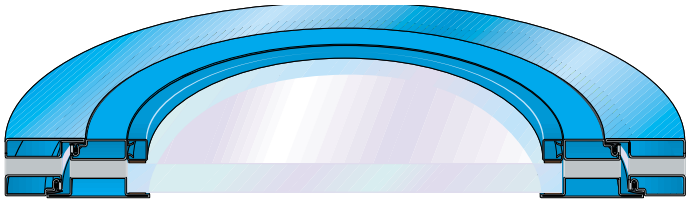






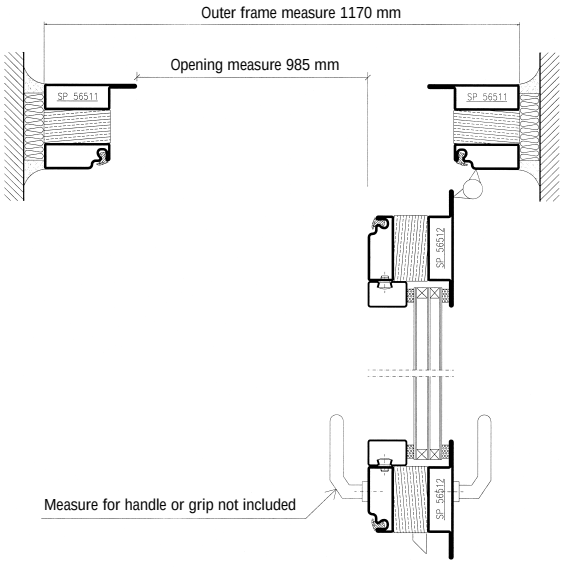
ARCHES AND ROUNDED WINDOWS

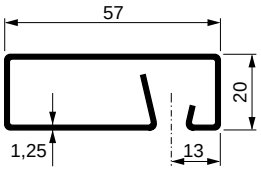




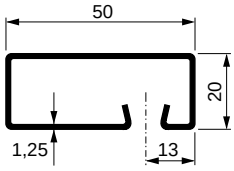
OPENING MEASURE - SINGLE DOOR

Opening measure by 90 degrees

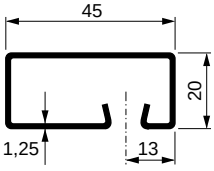




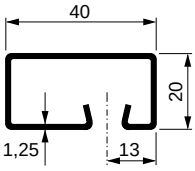
Glazing bead
SP 45720



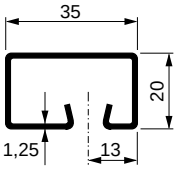
Glazing bead
SP 45020



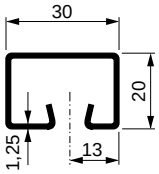
Glazing bead
SP 44520



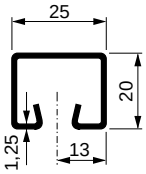
Glazing bead
SP 44020



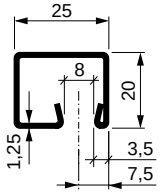
Glazing bead
SP 43520



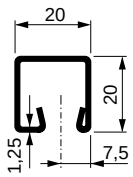
Glazing bead
SP 43020



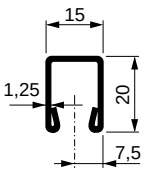
Glazing bead
SP 42520-1



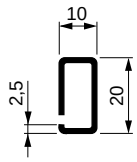
Glazing bead
SP 42520-2



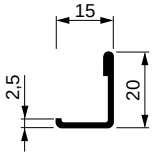
Glazing bead
SP 42020



Glazing bead
SP 41520

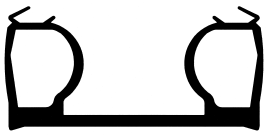


Glazing bead
SP 41020

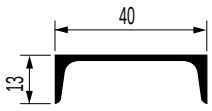


Glazing bead
SP 40520

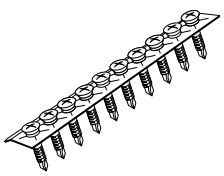
Rubber seal
SP 40010



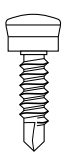
Finger trap proof gasket
SP 40067
L = 2500 mm



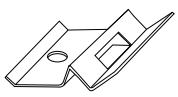
Rubber seal - threashold
SP 45065
L = 1400 mm



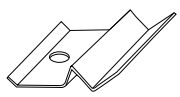
Bead screw
SP 40012 / 500 st



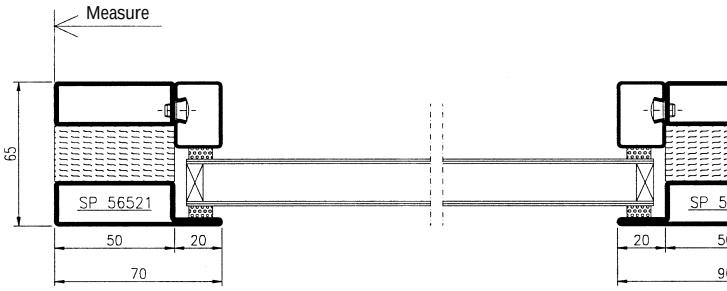
Bead screw
SP 40020 / 500 st

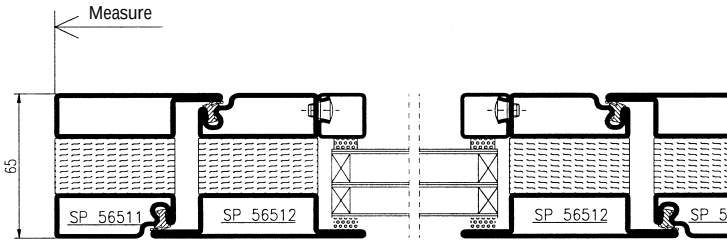


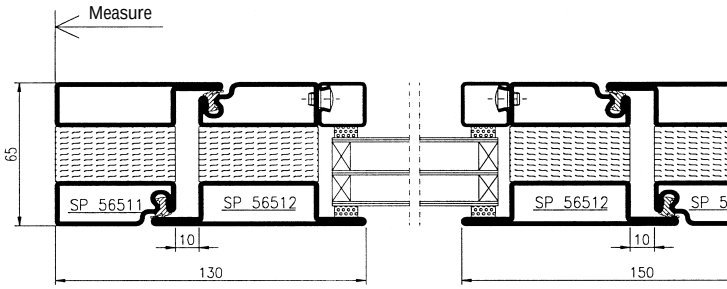
Spring
SP 40500

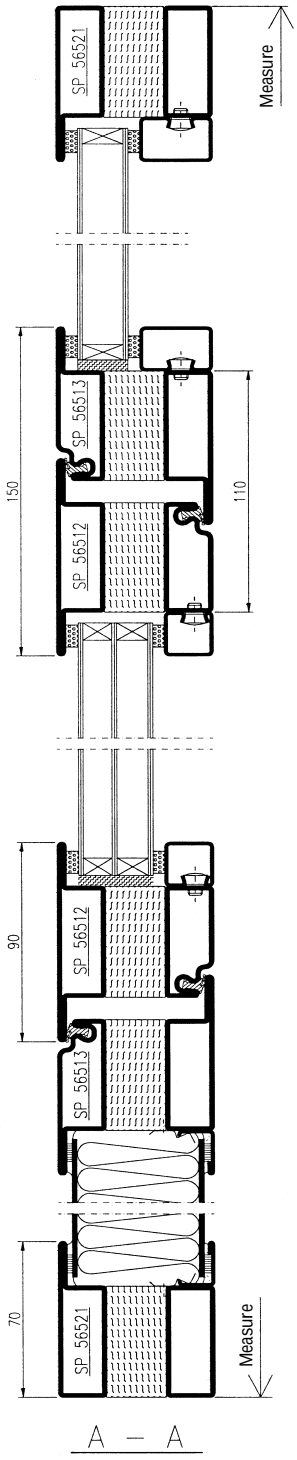


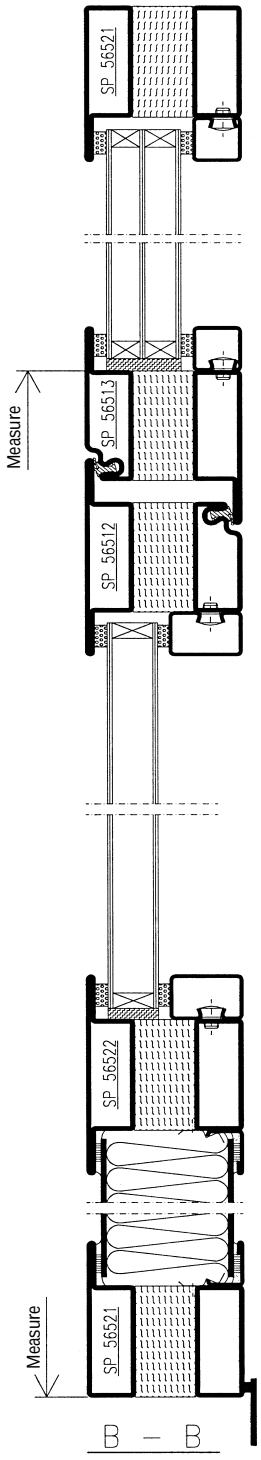
Spring
SP 41000


Measure
65
SP 56521
50
20
70
20

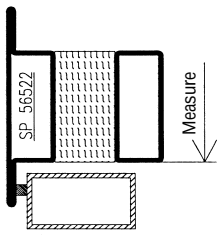

Measure
65
SP 56511
SP 56512
SP 56512

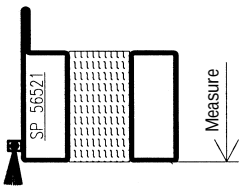

Measure
65
SP 56511
SP 56512
SP 56512
10
130
10
150

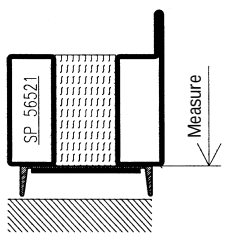

SP 56521
Measure
SP 56513
SP 56512
150
110
SP 56512
SP 56513
90
SP 56521
70
Measure
A – A

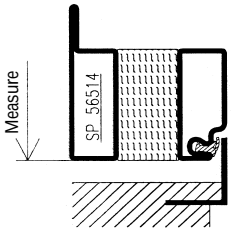

SP 56521
Measure
SP 56513
SP 56512
SP 56522
Measure
SP 56521
B – B

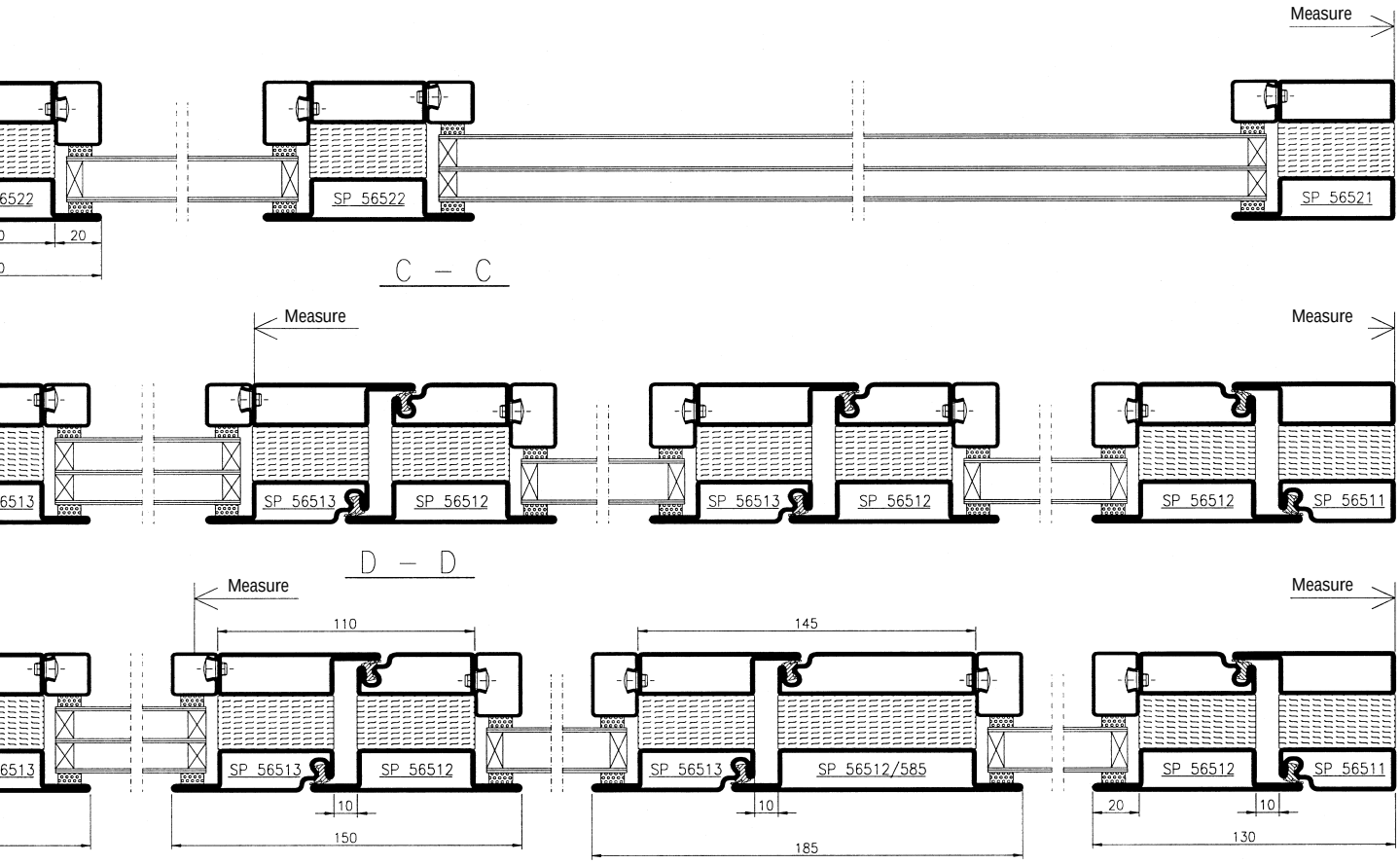

PERSONALINGÅNG


SP 56522
Measure

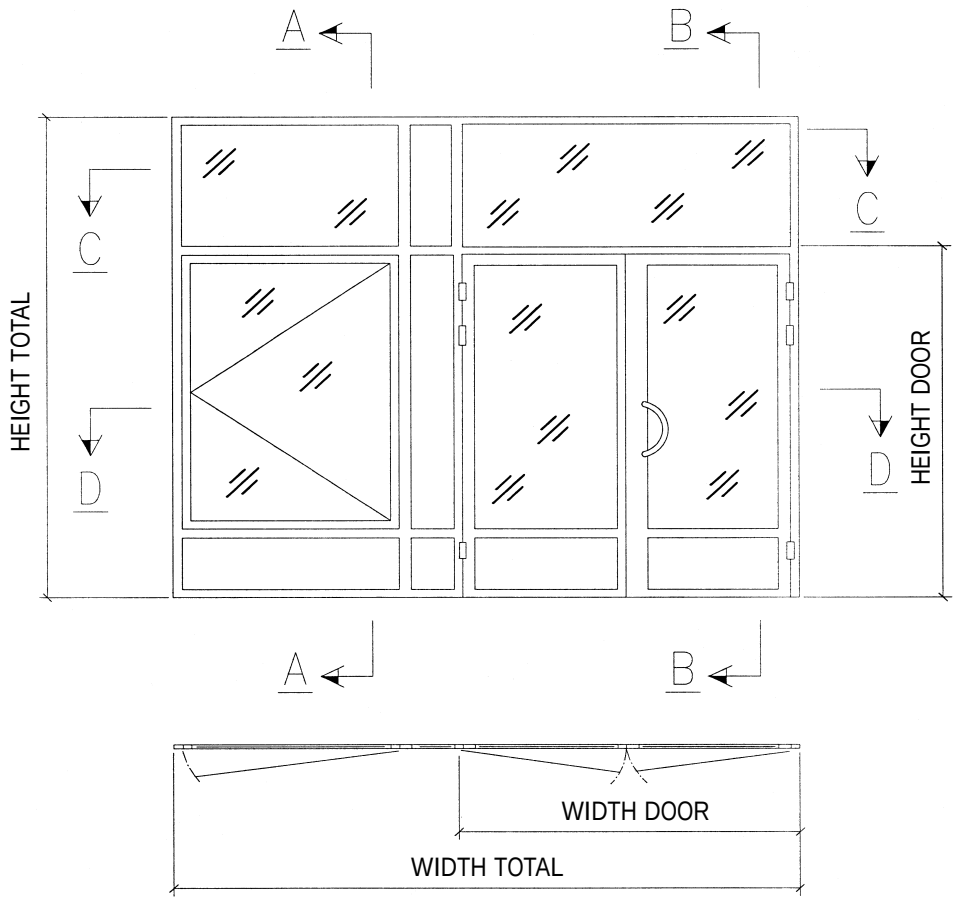

SP 56521
Measure


SP 56521
Measure


Measure
SP 56514

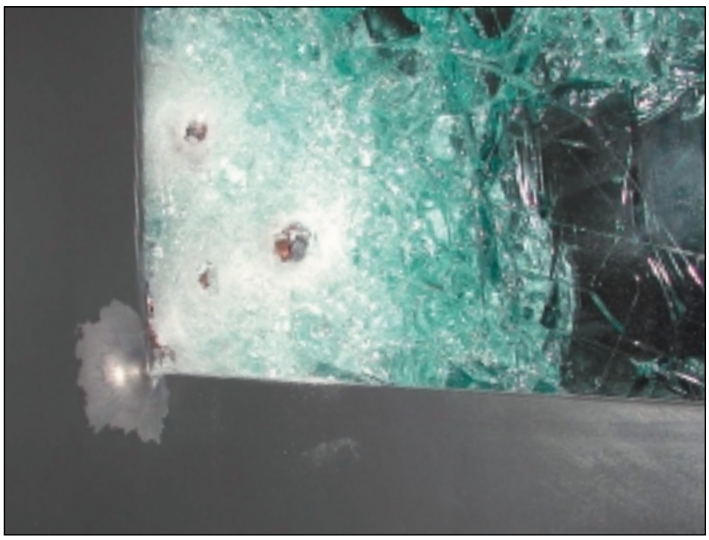


Alt. D - D for module locks



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 are 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.

Table1: Profile type with reinforcment of metal plate (mm)

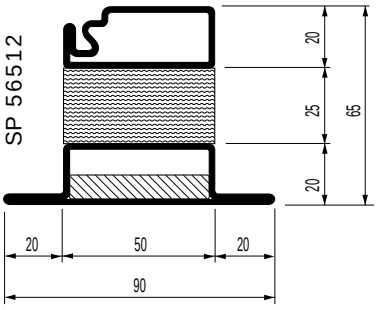
Profil nr	Class C1	Class C2	Class C3	Class C4	Class C5
350xx	4	5	8	12	12
565xx	-	-	-	8	8
765xx	-	-	-	8	8
900xx[1)]	-	3	3	6+4	6+4

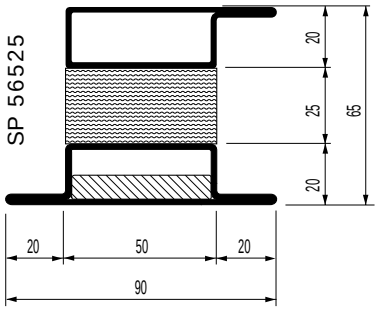
[1)] Reinforced with stainless steel metal plate

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 25 mm 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 RI 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 damage on the interior side. The projectiles had in other words remained enbedded of the profiles. On the basis of the results 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.

Sveriges Provnings- och Forskningsinstitut

Kent Gylltoft
Professor Tekn.dr.
Sektionschef

Sven-Agne Nilsson
Ingenjör

STÅLPROFILS BURGLARY RESISTANT PROFILE SYSTEM

SP 58000 is available in burglary resistant glazed door sections, classes 1, 2 and 3. The door sections are in compliance with the burglary resistant requirements in SS 81 73 45, 96B1.0235 A, B and C report, and the recommendations in 97B1.0581 from The Swedish Testing and Research Institute.

TABELL 1: Testing time and class

Class	1	2	3
Max time (sec)	180	600	600

Test report

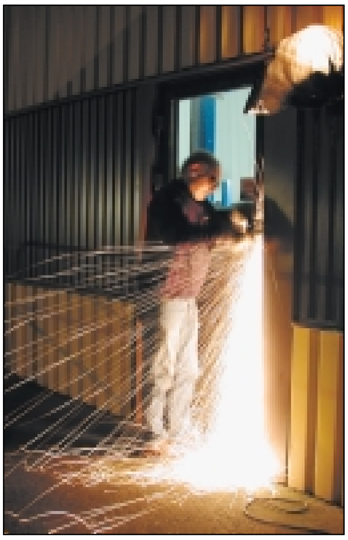
The Testing and Research Institute has on behalf of Stålprofil AB, Vårgårda tested the burglary resistant quality of steel door sections. The tests were carried out in accordance to the specifications for classes 1, 2 and 3 in SS 81 73 45 first edition. ”Doors – Burglary Resistance Classification, Tests and Requirements”. The door sections in question were manufactured with reinforced SP 58000 profile systems. See separate drawing.

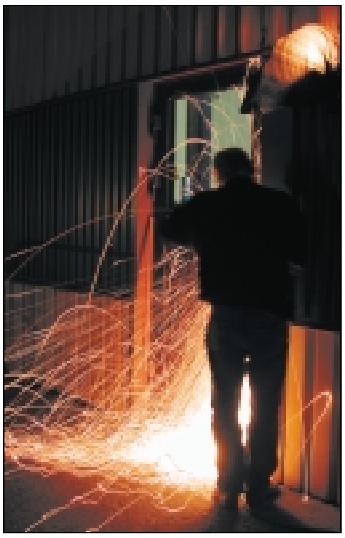
- Static load tests were performed according to SS-ISO 8296 and all resulting deformations were less or considerably less than the basic requirements of the classes.
- The appropriate tools, as laid out in each class were present and used on the door sections to force entry.
- Assaults were made on the reinforced locks for the maximum time allowed in each class, see table 1. At the end of the testing the locks were still locked and intact.
- Assaults were made on the lock keep for the maximum time allowable in the test for each individual class. At the end of testing the lock keep was still intact.
- The door panelling was subjected to testing with the aim of creating a hole in the door panel. The test ended after the maximum time allowed for each class without achieving a hole in the panel.
- Each door had 3 hinges and 3 rear edge fasteners. As with the previous tests the maximum time allowed for each class was utilized without causing the hinges to break.

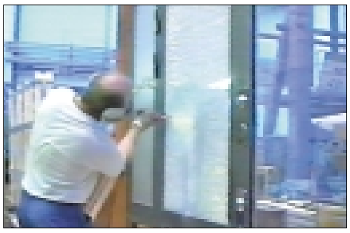
Summary

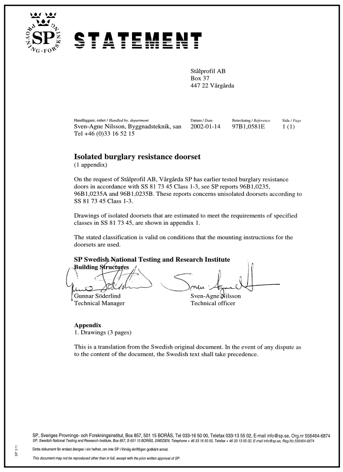
Static testing was carried out in compliance with classes 1, 2 and 3. The resulting deformations after testing were all within the allowable for each class.

Manual assaults with tools were carried out on locks, hinges and lock keep. The testing was further enhanced by a separate test to try and create a hole in the door panelling. Each individual manual assault was carried out for more than 180 seconds for class 1, and for over 600 seconds in classes 2 and 3.









STATEMENT

Stålprofil AB
Box 37
447 22 Vårgårda

Handläggare, enhet / Handled by, department	Datum / Date	Beteckning / Reference	Sida / Page
Sven-Agne Nilsson, Byggnadsteknik, san Tel +46 (0)33 16 52 15	2002-01-14	97B1,0581E	1 (1)

Isolated burglary resistance doorset
(1 appendix)

On the request of Stålprofil AB, Vårgårda SP has earlier tested burglary resistance doors in accordance with SS 81 73 45 Class 1-3, see SP reports 96B1,0235, 96B1,0235A and 96B1,0235B. These reports concerns unisolated doorsets according to SS 81 73 45 Class 1-3.

Drawings of isolated doorsets that are estimated to meet the requirements of specified classes in SS 81 73 45, are shown in appendix 1.

The stated classification is valid on conditions that the mounting instructions for the doorsets are used.

SP Swedish National Testing and Research Institute
Building Structures

Gunnar Söderlind, Technical Manager
Sven-Agne Nilsson, Technical officer

Appendix
1. Drawings (3 pages)

This is a translation from the Swedish original document. In the event of any dispute as to the content of the document, the Swedish text shall take precedence.

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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 556464-6874

SP 511

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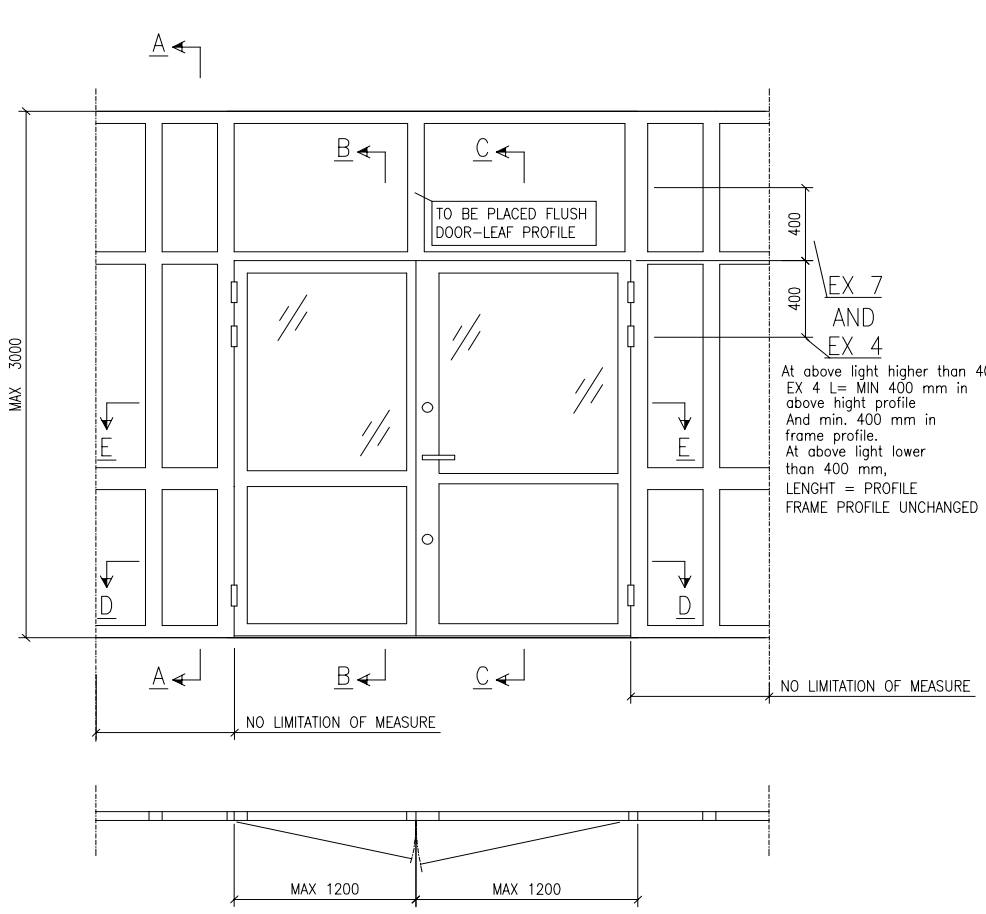
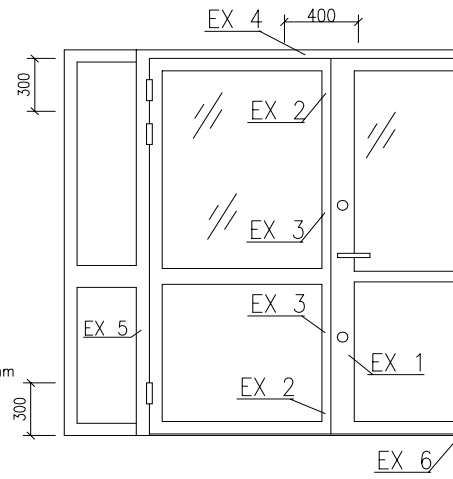
BURGLARY RESISTANT DOORS – SAFETY CLASSIFIED DOORS

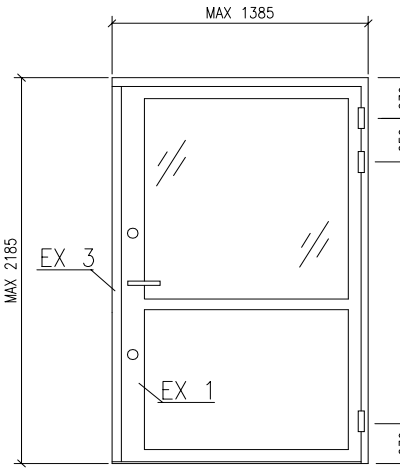
Burglary resistant doors are tested according to SS 81 73 45. The object is to test the parts of the door that can influence the capacity of the door to resist forced entry. Each part is tested according to the recommended time allowed e.g the hinges and glass in a class 3 door are tested for 10 minutes. Doors that withstand forced entry for the time period allowed in the test are considered to comply with the requirements in the standard.

The guidelines from The Swedish Anti-Burglary Union, who actually are responsible for the RUS regulations, stipulate that doors meeting the requirements in SS 81 73 45 should be your first choice. The inevitable conclusion is that from the start of your project a tested door would be preferable, and that inside windows meet the requirements for burglary resistant doors.

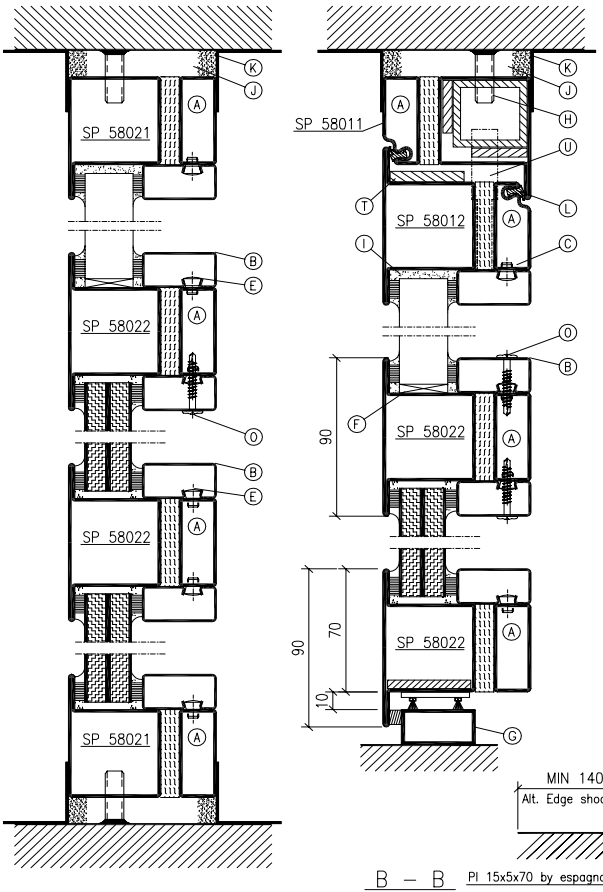
In those cases where the standard cannot be adhered to or followed it is the responsibility of the insurance company to advise as to how burglary resistance quality should be attained.





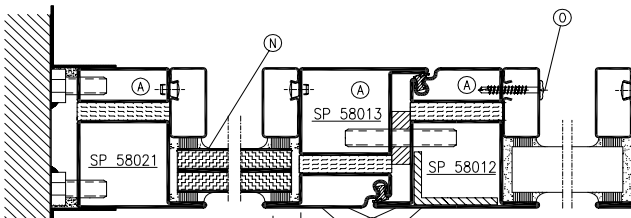


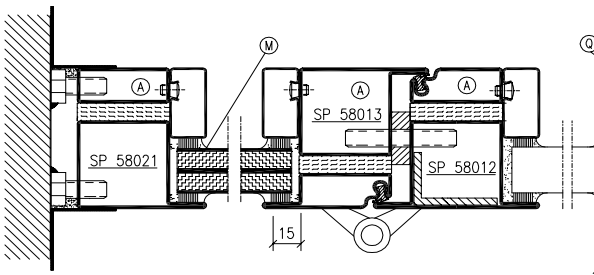
SINGLE DOOR 1385x2185
WHEN ABOVE LIGHT, REINFORCEMENT
AS WHEN DOUBLE DOOR IS APPLICABLE



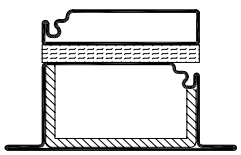
A – A

B – B

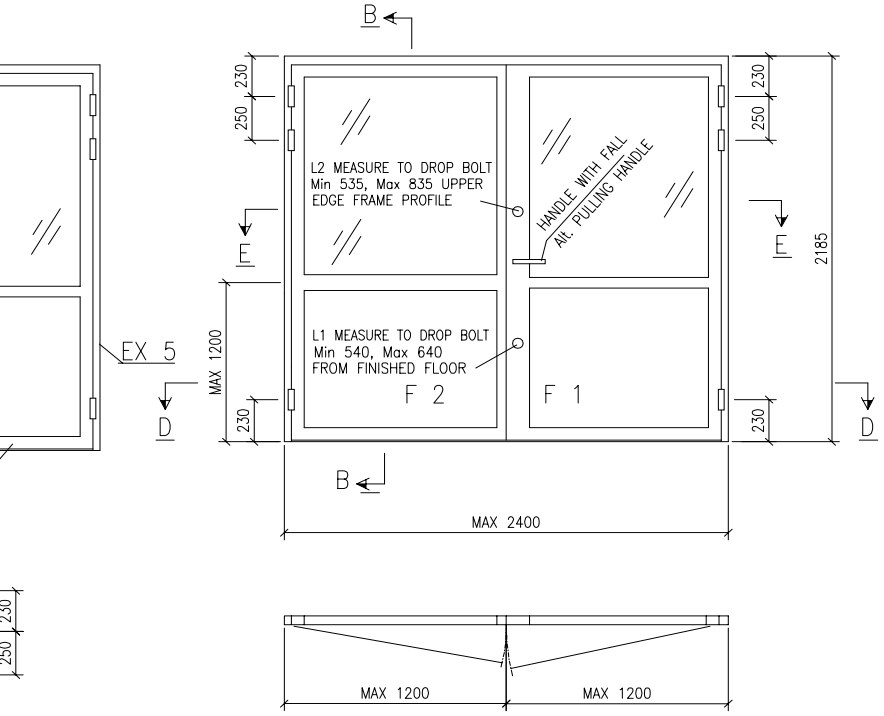




Alt. Without threshold



EX 1
Bended U–PROFILE lenght= profile, t=

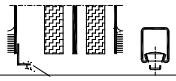


SYSTEM SP 58000 BURGLARY PROTECTED DOOR CLASS 3
MATERIALSPECIFICATION CLASS 3 ACC. TO SS 817345

NO	DESCRIPTION	MATERIAL	REMARKS
A	Steel profiles, SP 35000	Cold formed steel Wall thickness 1,5 mm	Untreated steel surface suitable for lacquering
B	Glazing beads	Sheet, ST 02, SENDZI–Mirband Z275 Wall thickness 1,25 mm	Secure with trough–going screws c/c max 300mm
C	Screw for beads	Steel	C/C max 300 mm
D	Rubber seal threshold		
E	Glass panes: Multigard 24		Thickness: 25 mm
F	Distance block		
G	Threshold Alt without threshold	Stainless or steel 40x20mm	To be screwed c/c max 400mm at double action door 50–100mm both sides of bar bolts
H	Fastening bolt M10	Steel	Welding onto mullion
I	Seal mass	Buthyl or equal	Leaf around to be complete filled
J	Seal mass	Buthyl or equal	
K	Cover plate or seal		
L	Gasket	Tanit	
M	Filling F 1	Shingle board/Sheet	Se detail
N	Filling F 2	Gypsum board / sheet	Se detail
O	Mounting screw	Steel	To sec. glaz. bead c/c max 300mm
P	Lock 2 items	Approved class 3	Measure see drawing
Q	Safety locking plate 2 it.		
R	Welding hinges		3 items /doorleaf
S	Double fastening bolts	Steel	Weld. onto mullions c/c max 600mm
T	Flat steel 15x6x50mm	Steel	Welded on by bar bolts
U	Bar bolt ASSA 96 Alt. 2 items DEJO 55045	Steel Bar ø 10 with hardened massive tap ø 14	Mounted single action
V	Insert for gear floor Length min 60mm	Steel	When mounting without threshold

GENERAL INSTRUCTION:
Frame profiles are jointed by welding. Sections are jointed with a flat steel or square tube that are welded or screwed. When the screw heads are visible it must be destroyed. Divison of glazed and filled sections and number of mullions can be optionally varied. Could also be execute as a single door, with the same reinforcement directions as a double door. The maximum measurements are not exceeded.

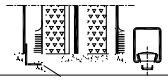
FILLING F 1



Sheet angle 10x20x1,25 to be welded onto sheet and profile. Alt. sheet is welded onto onto profile.

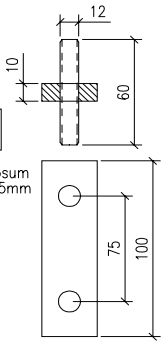
Filling consisting of: 1,25mm steel sheet, 10mm shingle board, 2,5mm steel sheet, 10mm shingle board,1,25mm steel sheet. Leaf around the filling to be filled with Buthyl mass. Sheets and boards are glued togheter.

FILLING F 2

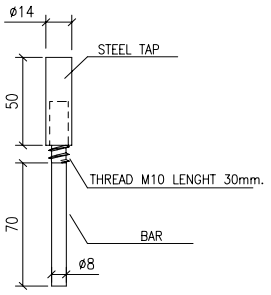


Sheet angle 10x20x1,25 to be welded onto sheet and profile. Alt. sheet is welded onto onto profile.

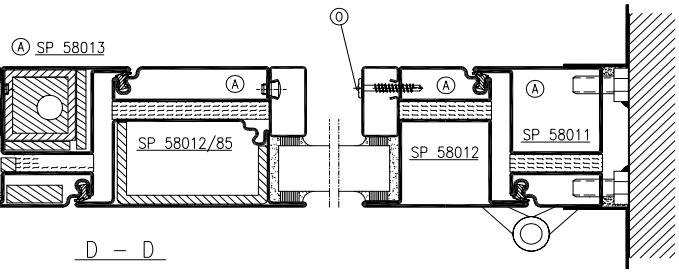
Filling consisting of: 1,25mm steel sheet, 10mm gypsum board, 2,5mm steel sheet, 10mm gypsum board,1,25mm steel sheet. Leaf around the filling to be filled with Buthyl mass. Sheets and boards are glued togheter.



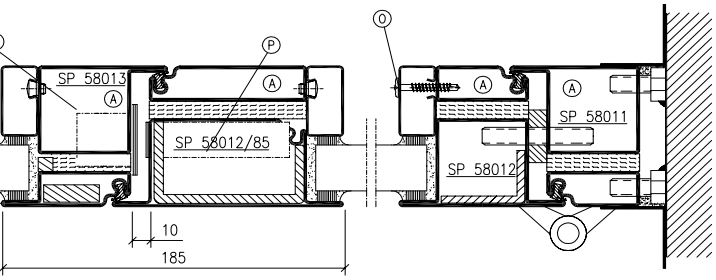
Back edge safety 3pts./dl 2 st hardened 12 mm steel taps length 60mm, c/c 75mm. Flat steel to be welded on to profile. To be safed with a insexscrew M 5.



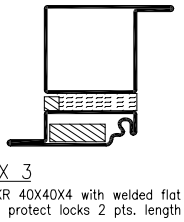
DROP BOLT ASSA 96
Angle cuted off, bar turned down according sketch. Completed with hardened steel tap ø14



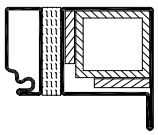
D – D



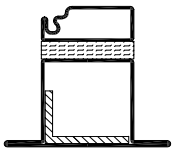
E – E



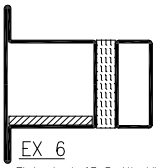
EX 3
VKR 40X40X4 with welded flat steell 30x5
To protect locks 2 pts. length 400mm.



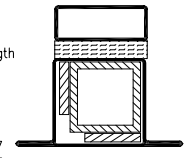
EX 4
VKR 40X40X4 with welded flat steel 30x5
Frame profile above drop bolt length 400 mm, and in side frame profile at above light, both sides.



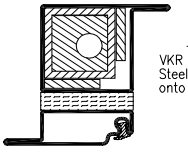
EX 5
L–Profile 30x45x4 length = profile length



EX 6
Flat steel 45x5 Alt. VKR 45x45x2
Length = Profile length



EX 7
VKR 40X40X4 with welded flat steell 30x5
At above light on both sides.



EX 2
VKR 40X40X4 with welded flat steel 30x5 L=300 mm.
Steel plate 30x30x20 for drop bolt to be welded onto tube.

= 5 mm

Konstr.	Ritad	Kop.	Kontr.	Stand.	Godk.	Skala	Ersätter	Ersatt av
	R.0					1:4, 1:40		
Firma: STÅLPROFIL AB	Titel: SYSTEM SP 58000 BURGLARY PROTECTED DOOR CLASS 3						Regist.nr	Dat. 1997-04-23
							Ritn.–nr 3–4128	

U-VALUE CALCULATION FOR STEEL PROFILE SYSTEM SP 56500

Report 1993-06-22
The Swedish Testing Institute, energy technology dept. Borås

U-value calculation for Stålprofilsystem

(6 attachments)

Objective

The customer delivered the drawings for the door section (3-4008) in steel profile system SP 56500. The U-value was calculated with FRAME computer software. The construction of the door can be seen in attachment 1.

Calculation

The calculation for the frame/arch and edges were carried out by FRAME computer software. The U-value for the central part of the window was calculated with the help of pre-defined heat conductivity modules in the FRAME software.

The glass portion was based on double and triple glazing (sealed airtight unit). The values for glass with low energy emission coating, Kappa Energy Clear (KEK) and Kappa Energy Float (KEF) from the Pilkington company with the values e= 0,12 and e= 0,18 were used.

Remaining glass sections have been given the value e= 0,84. Heat conductivity for distance profiles of aluminium have been set to 160 W/(m*k). Wood fibre between profiles were set to 0,12 W/(m*k). Please refer to report 92E6 3157 B. Please refer to attachment 1 and the table in the software for all other values.

Air temperature and conductivity resistance were set to, Ji 0+250°C and Rsi = 0,13 m^2K/W on the inside and Je = -50°C and Rse = 0,04m^2K/W on the outside.

To gather data for the first calculation (temperature on the warm respectively cold side) an iterative study method was adopted. Later studies however used the calculated temperatures from the previous study. The procedure was repeated until the temperatures remained constant.

The calculations were performed for the following glass combinations.

*Numbered from the outside i.e. external glass pane surface = 1

No	Glass Combination	Columns Width	Gas	Coating area no*
G1	D4-12	12	air	-
G2	D4-12	12	Ar	KEK (3)
G3	T4-12	12x12	air+air	-
G4	T4-12	12+12	Ar+Ar	KEK (5)
G5	T4-12	12+12	Ar+Ar	KEF (5)

U-valueW/ (m^2*K)for glass and fixed section
* Insulated section

Window Construction	Umiddle, W/(m^2•K)	Uedge, W/(m^2•K)
G1	2,80	3,05
G2	1,45	2,00
G3	1,85	2,30
G4	1,10	1,65
G5	1,20	1,75
F1*	0,65	1,30

* Wall with filling.

Area profiles

Upper Pane	SP 56521	0,985•0,525-0,4425=0,0746 m^2
Lower Pane	SP 56511+SP 56513	0,985•1,325-0,9027=0,4024 m^2
Between upper and lower panes	SP 56512+SP 56513	0,985•0,150=0,1478 m^2

Profiles	Surrounding Parts		Uk
SP 56521	3-window	wall	3,7
SP 56511+SP 56513	3-window	wall	3,3
SP 56512+SP 56513	3-window	3-window	3,6

Profile	Profile Width mm	Surrounding Parts		Uk
SP 56521	0,070	2-window	wall	4,4
		3-window	wall	3,7
		fixed section	wall	2,1
		2-window	2-window	5,4
		3-window	3-window	4,3
SP 56522	0,090	2-window	fixed section	3,6
		3-window	fixed section	3,1
SP 56512 +	0,150	2-window	2-window	4,3
+ SP 56513		3-window	3-window	3,6
		2-window	fixed section	3,3
		3-window	fixed section	2,9
SP 56512 +	0,130	2-window	wall	4,3
+ SP 56511		3-window	wall	3,3

U-value profiles

U-value W/(m^2*K) for profiles (UK)

U-value – entire construction (see drawing on next page)

$$U_{med} = \frac{2,19•0,4425+2,02•0,9027+3,7•0,0746+3,3•0,4024+3,6•0,1478}{0,4425+0,902700,0746+0,4024+0,1478} = 2,50\ W/(M^2•K)$$

	Uglass		UK			Umiddle
	Upper	Lower	21	11+13	12+13	
G1	3,07	2,90	4,4	4,3	4,3	3,4
G2	1,83	1,66	4,4	4,3	4,3	2,5
G3	2,19	2,02	3,7	3,3	3,6	2,5
G4	1,47	1,31	3,7	3,3	3,6	2,0
G5	1,57	1,41	3,7	3,3	3,6	2,1
F1*	1,06	0,9	2,7	2,7	2,7	1,5

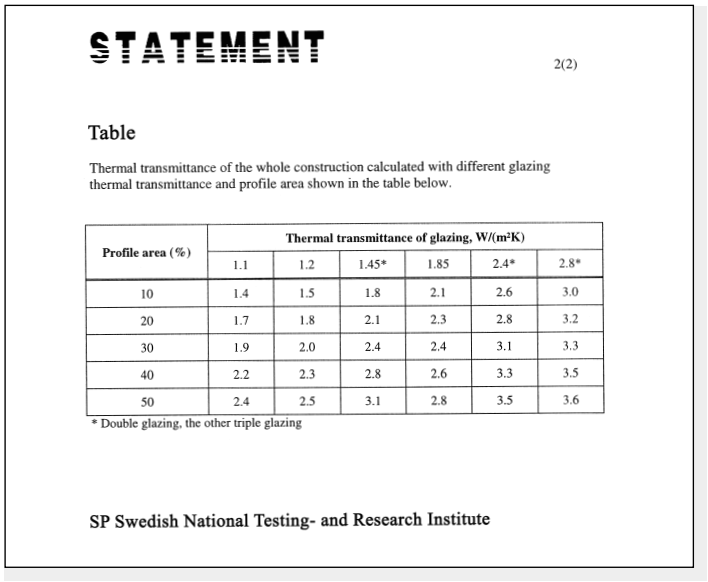
Results for all glass combinations

Report 1999-08-03
Swedish testing and Research Institute

Calculation U-value
(2 attachments)

Objective
Calculation of U-value for a complete construction of SP 56500 with varying profile areas. The door section in appendix 1 was calculated with various glass alternatives.

Profile share	U-value glass (midpoint), W/(m²K)					
	1,1	1,2	1,45*	1,85	2,4*	2,8*
10 %	1,4	1,5	1,8	2,1	2,6	3,0
20 %	1,7	1,8	2,1	2,3	2,8	3,2
30 %	1,9	2,0	2,4	2,4	3,1	3,3
40 %	2,2	2,3	2,8	2,6	3,3	3,6



STATEMENT 2(2)

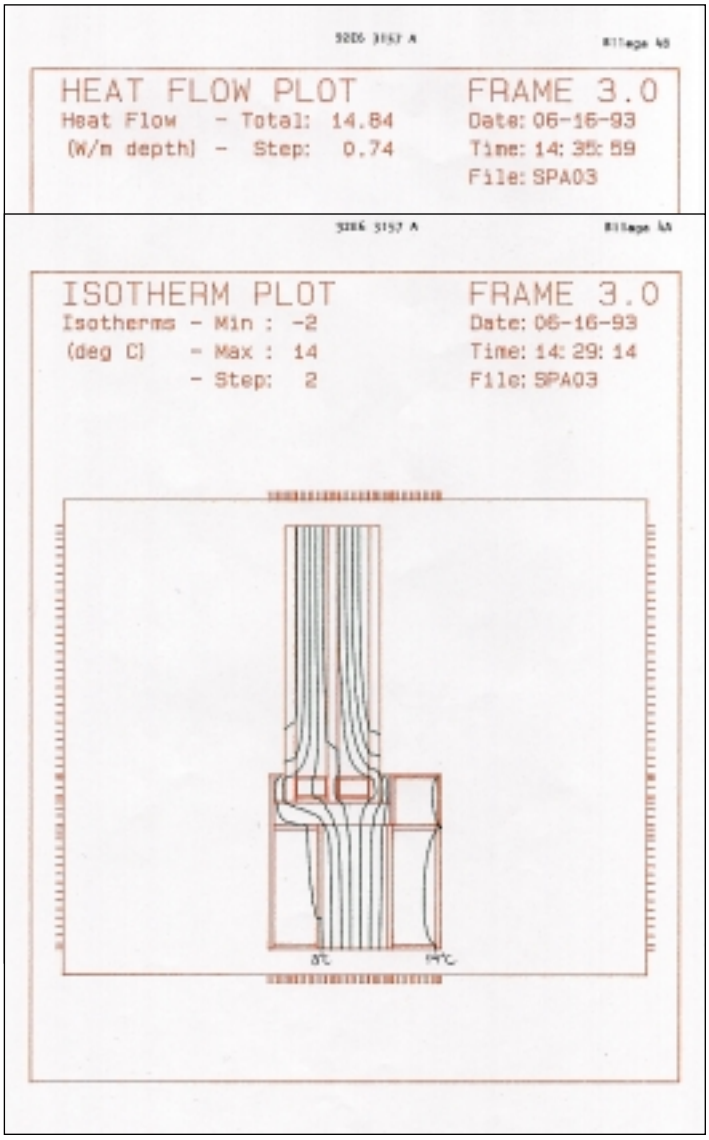
Table

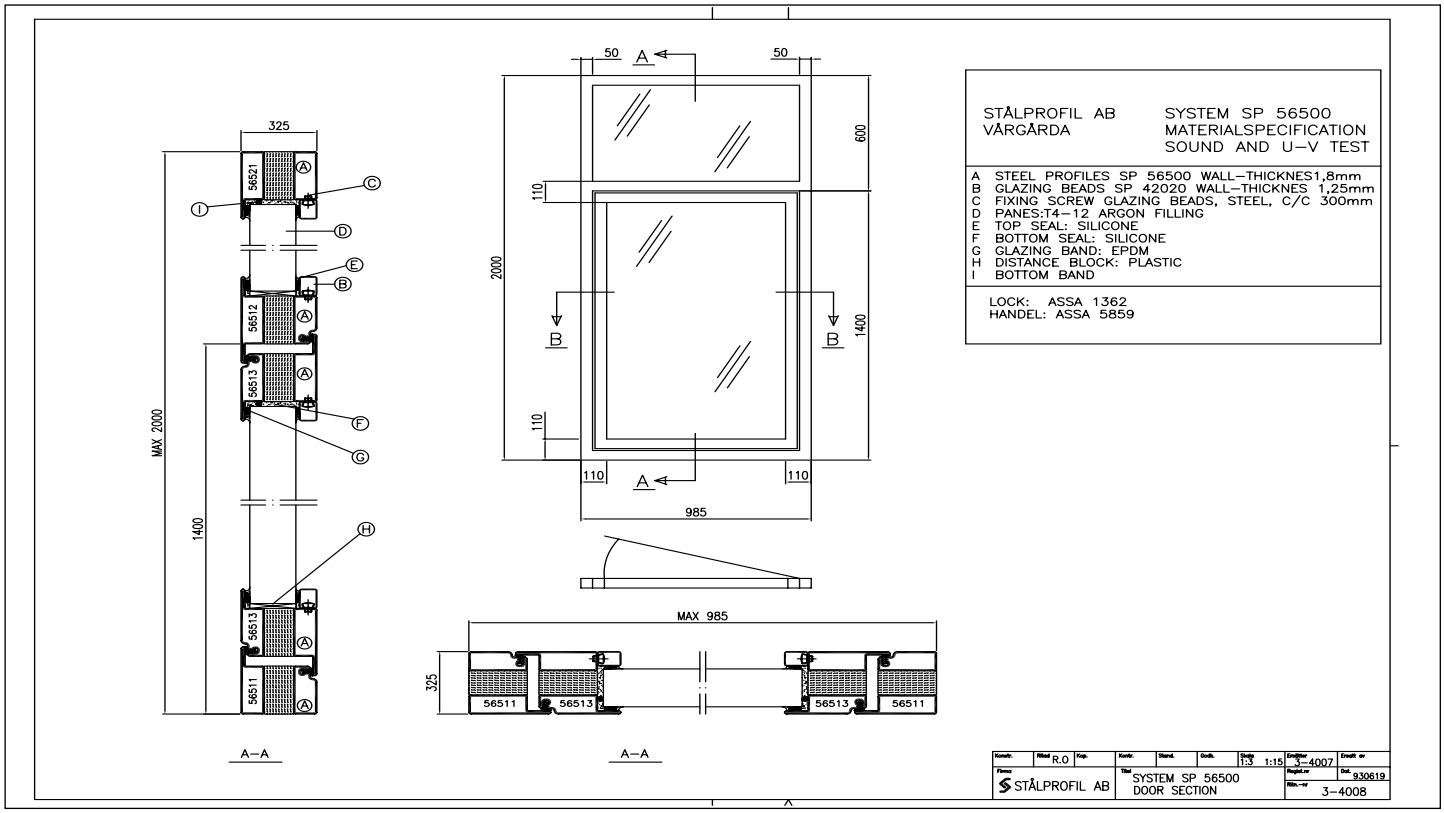
Thermal transmittance of the whole construction calculated with different glazing thermal transmittance and profile area shown in the table below.

Profile area (%)	Thermal transmittance of glazing, W/(m²K)					
	1.1	1.2	1.45*	1.85	2.4*	2.8*
10	1.4	1.5	1.8	2.1	2.6	3.0
20	1.7	1.8	2.1	2.3	2.8	3.2
30	1.9	2.0	2.4	2.4	3.1	3.3
40	2.2	2.3	2.8	2.6	3.3	3.5
50	2.4	2.5	3.1	2.8	3.5	3.6

* Double glazing, the other triple glazing

SP Swedish National Testing- and Research Institute



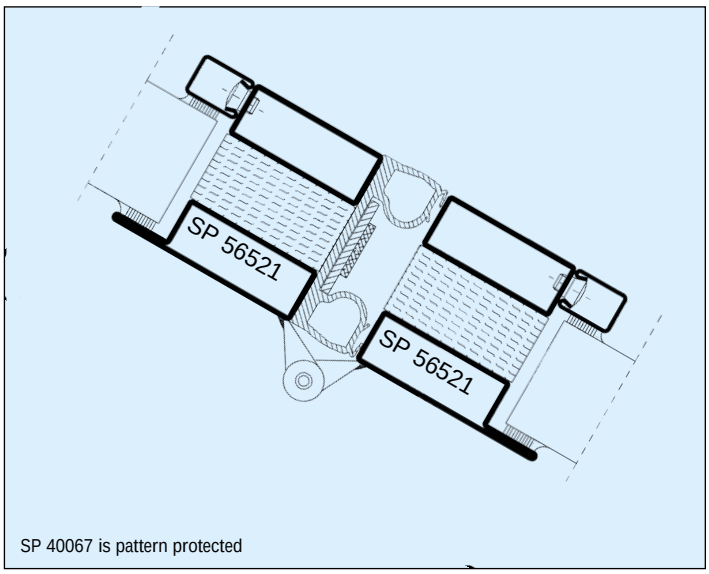


FINGER TRAP PROOF GASKET

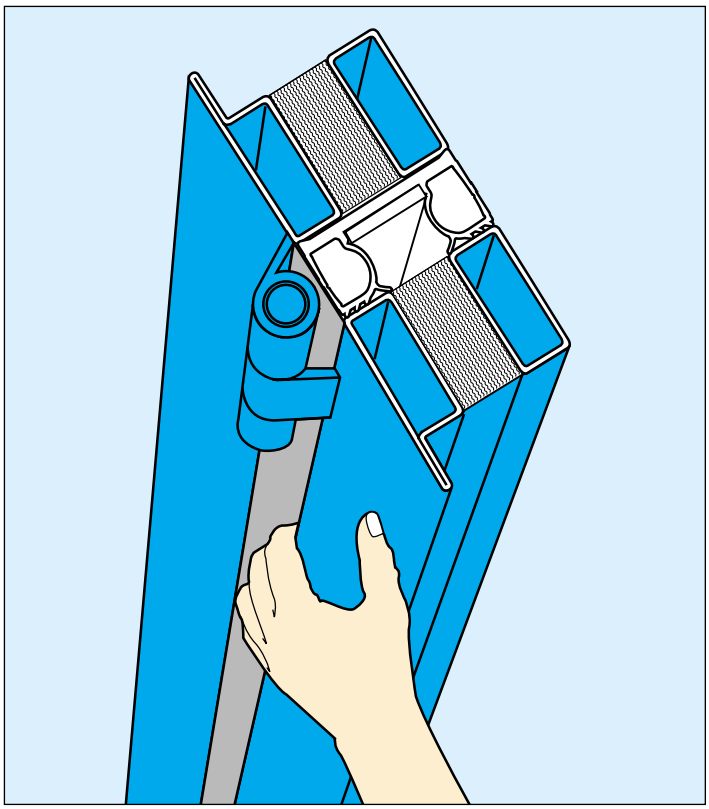
THE FINGER TRAP PROOF GASKET IS AVAILABLE FOR INSULATED AND NON-INSULATED PROFILES IN FIRE RESISTANT CLASSES UP TO AND INCLUDING E 60/EI 60

AVOID PINCH INJURIES!

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



SP 40067 is pattern protected



MODULE LOCKS

Stålprofils 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
- Easy adaptation for handicap
- Extensive assortment of accessories, e.g surface treatment and door handles

STATEMENT

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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:

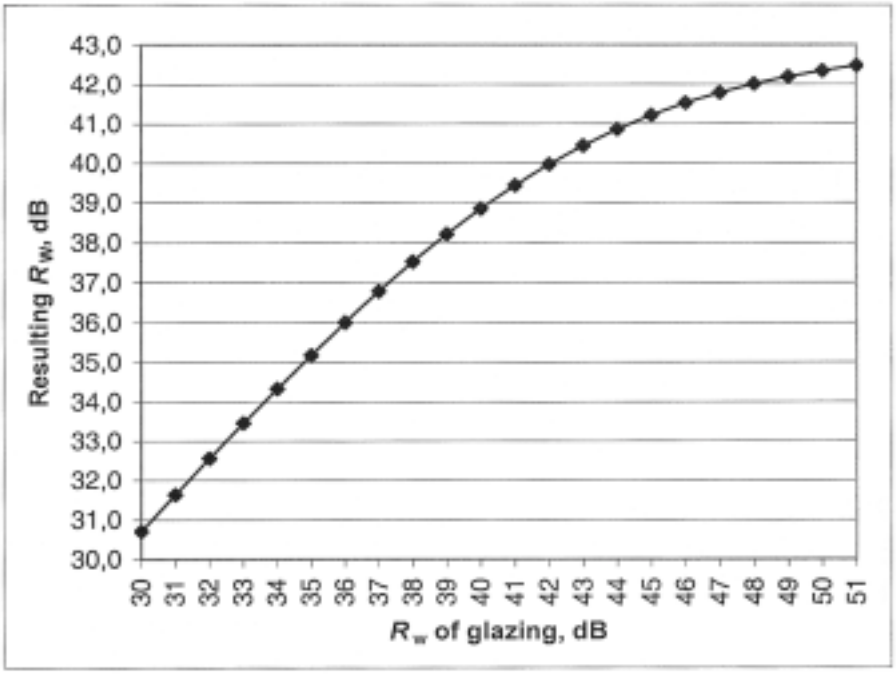
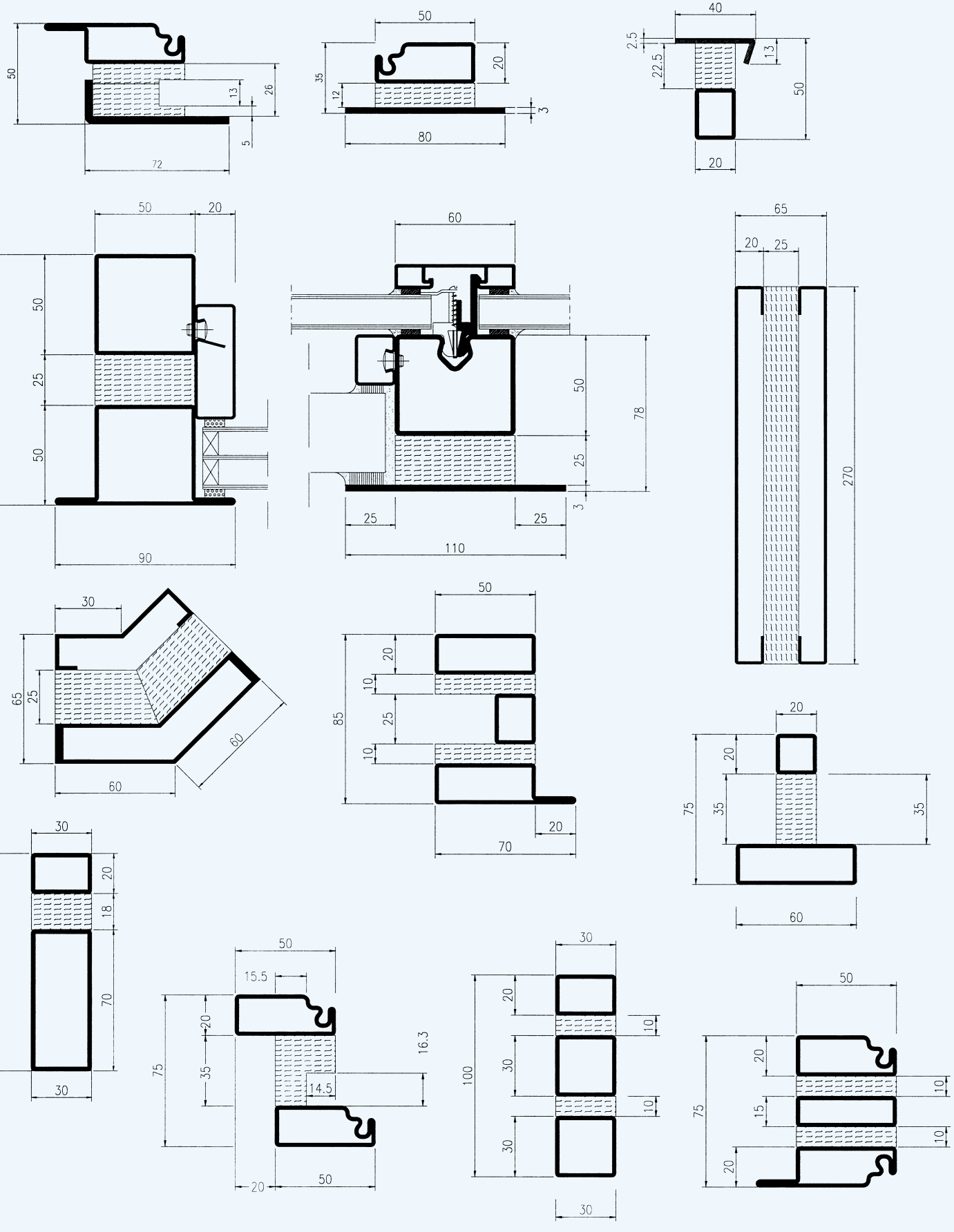


Figure 1 Resulting R_w of the complete facade as a funcion of R_w of the glazing units mounted in the facade. The steel profile has $R_w = 36$ dB, a value achieved by the profiles SP 56500/SP 956500.

Possible and impossible profile constructions, designed per customer specifications

Your wish = Our development



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