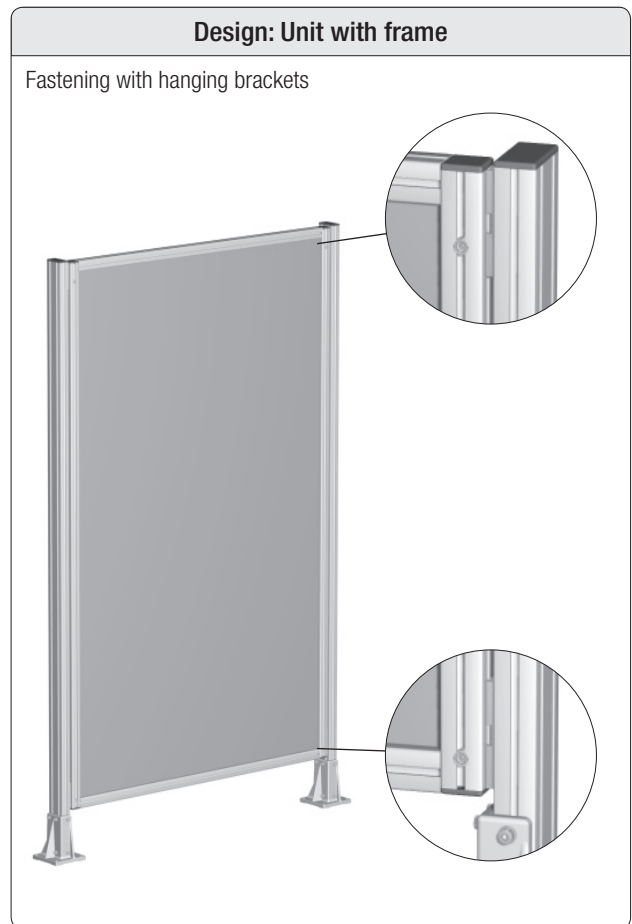
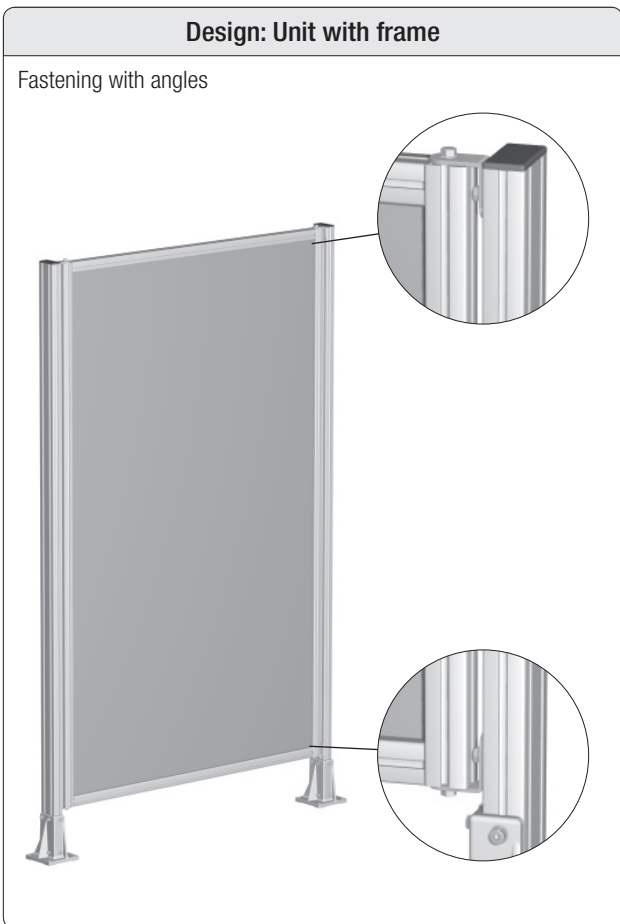
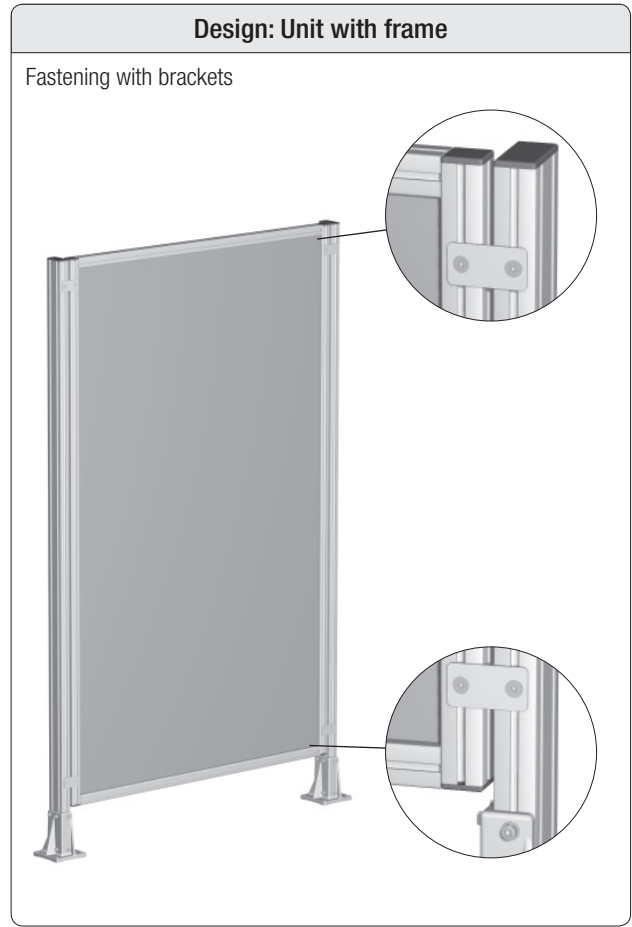
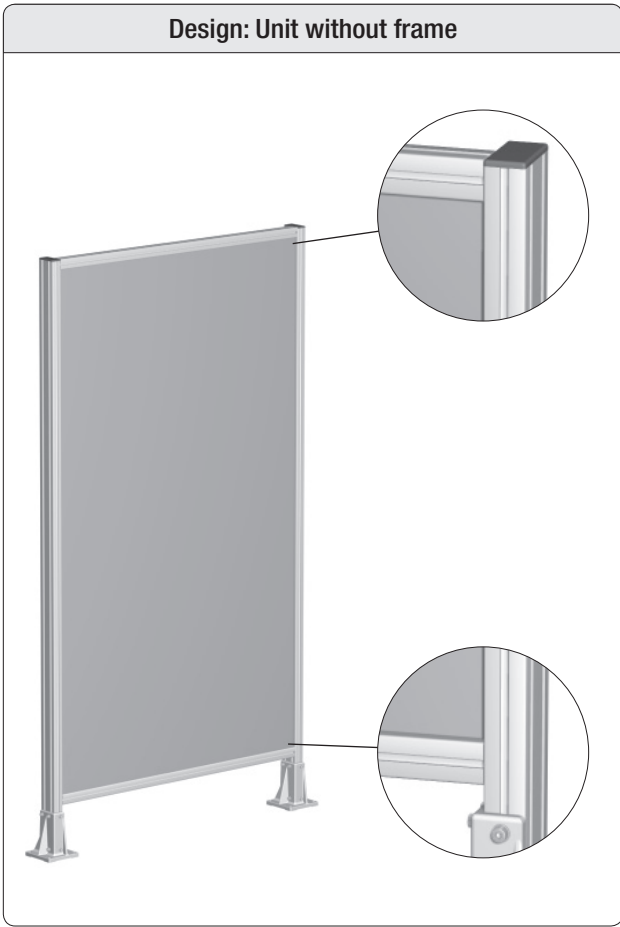

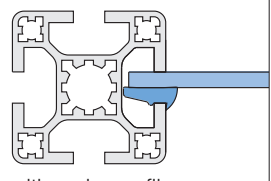
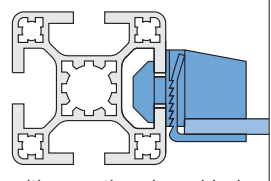
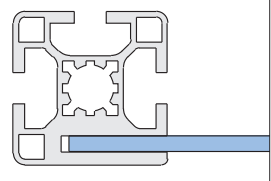
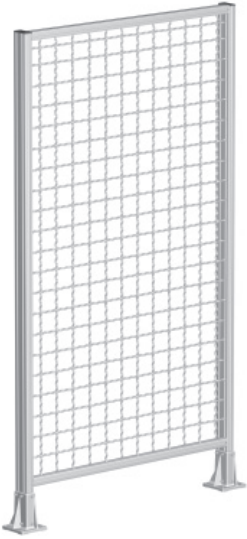
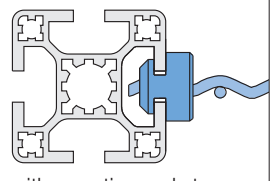
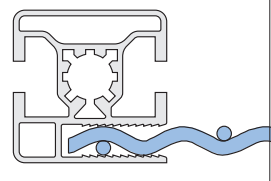
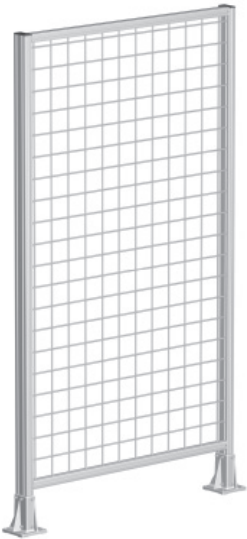
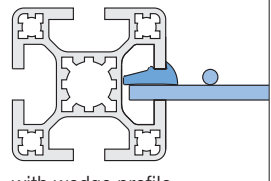
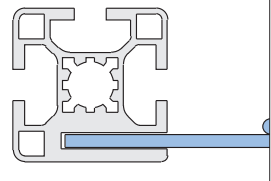
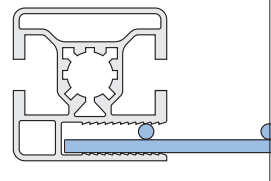


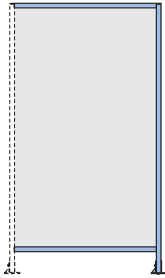
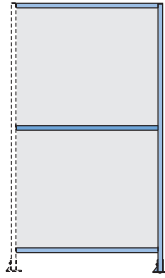
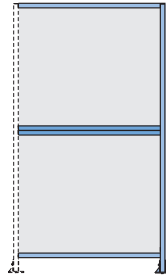

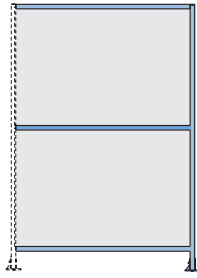
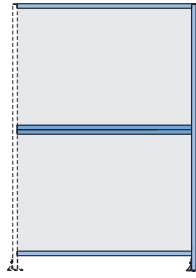
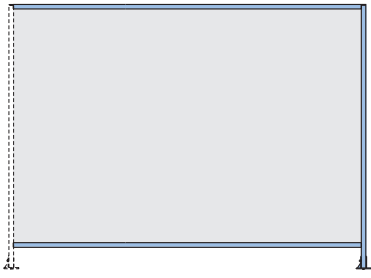
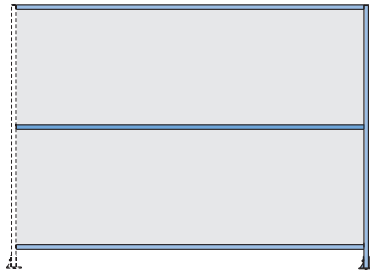
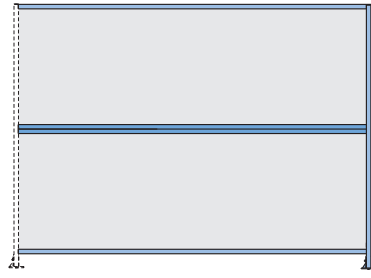
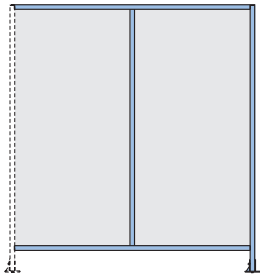
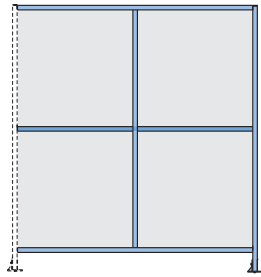
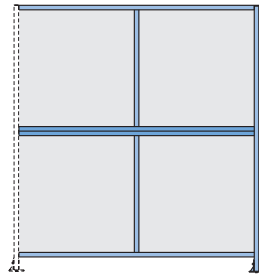
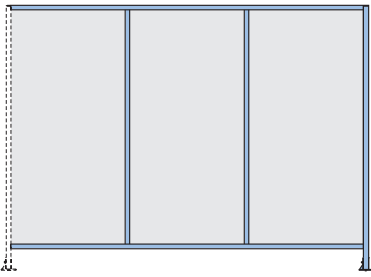
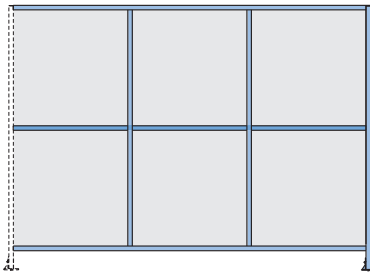
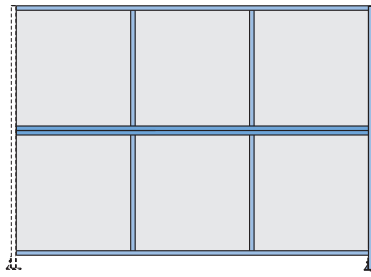


» Safety barriers

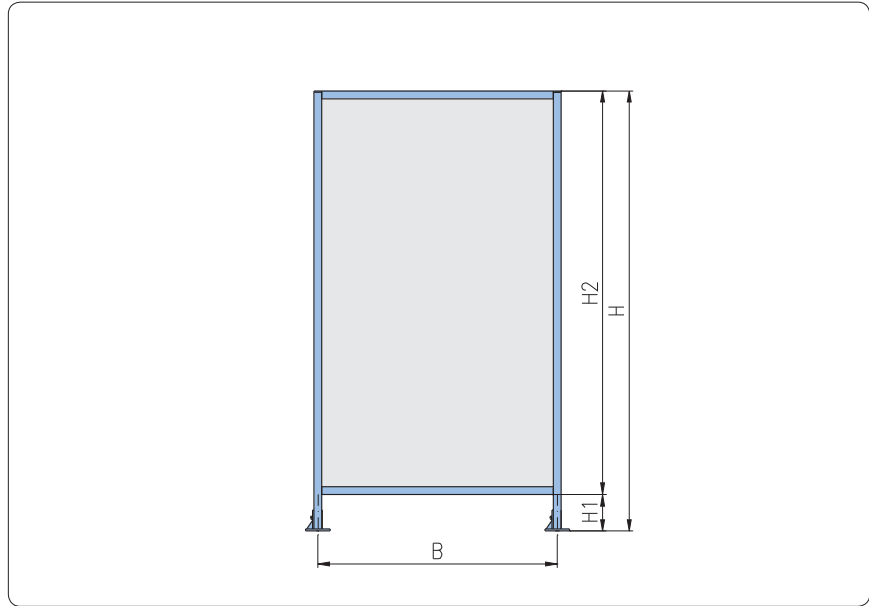
	Page
Frame variations	1
Unit without frame	1
Unit with frame	1
Mounting of panel elements	2
Classifications.....	3
Standard unit dimensions	4
Safety barriers: Designs.....	5
Safety barrier unit without frame	5
Safety barrier unit with frame	6
Single hinged door.....	7
Double hinged door.....	8
Sliding door.....	9
Profiles.....	10
Profile group 40, E3-slot, P (plain).....	10
Profile group 40, E3-slot	10
Profile group 45, E4-slot, P (plain).....	10
Panel profiles 30, F-slot, P (plain)	11
Panel profiles 40, E3-slot, P (plain)	12
Panel profiles 50, E4-slot, P (plain)	13
Wire net profiles 30, F-slot, P (plain)	14
Wire net profiles 40, F / E3-slot, P (plain)	14
Standards for guards	15
Static load	16
Dynamic load	17
Test layout.....	17
Safety barrier unit without frame.....	18
Safety barrier unit with frame	19



Panel element	Frame profile		
	Standard	Panel	Wire net
<p>Polycarbonate</p> 	 <p>with wedge profile</p>  <p>with mounting clamp blocks</p>		
<p>Wire net</p> 	 <p>with mounting sockets</p>		
<p>Welded wire net (steel)</p> 	 <p>with wedge profile</p>		

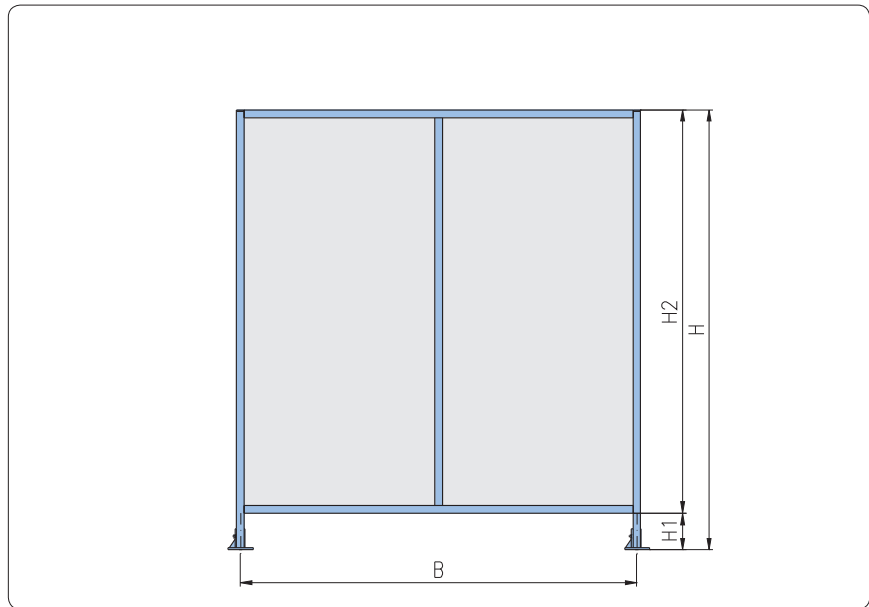
without cross strut	with cross strut	divided
		
		
		
		
		

Single panel unit



H	H1		B				
1,800	200	300	250	500	750	1,000	1,250
2,000							
2,200							
2,300							
2,300							

Double panel unit



H	H1		B			
1,800	200	300	1,500	1,750	2,000	2,500
2,000						
2,200						
2,300						
2,300						

**Safety barrier unit:
without frame**


Unit			Post														
Panel element	Frame profile			Mounting			Post profile										
	Standard	Pa- nel	Wire net	of panel element			Standard					Panel					
	40×40, 4E	45×45, 4E	40×40	30×30	40×40	wedge profile	m. clamp blocks	mounting sockets	40×40	40×80	80×80	80×80, corner	45×45	45×90	60×80 5E	60×80 6E	
Polycarbonate trans- parent	4 mm	•				•	•		•	•	•	•					
			•				•	•					•	•			
				•												•	•
Wire net	alu	3×20×20 mm	•						•	•	•	•					
				•									•	•			
		4×30×30 mm	•							•	•	•	•				
	steel	4×30×30 mm, 4×40×40 mm	•							•	•	•	•				
				•										•	•		
		4×30×30 mm, 4×40×40 mm	•							•	•	•	•				
Welded wire net (steel)	3×25×25 mm	•				•			•	•	•	•					
			•				•					•	•				
	4×40×40 mm	•				•			•	•	•	•					
			•				•						•	•			
Welding protecting glass	4 mm	•				•			•	•	•	•					
			•				•						•	•			
				•												•	•

**Safety barrier unit:
with frame**

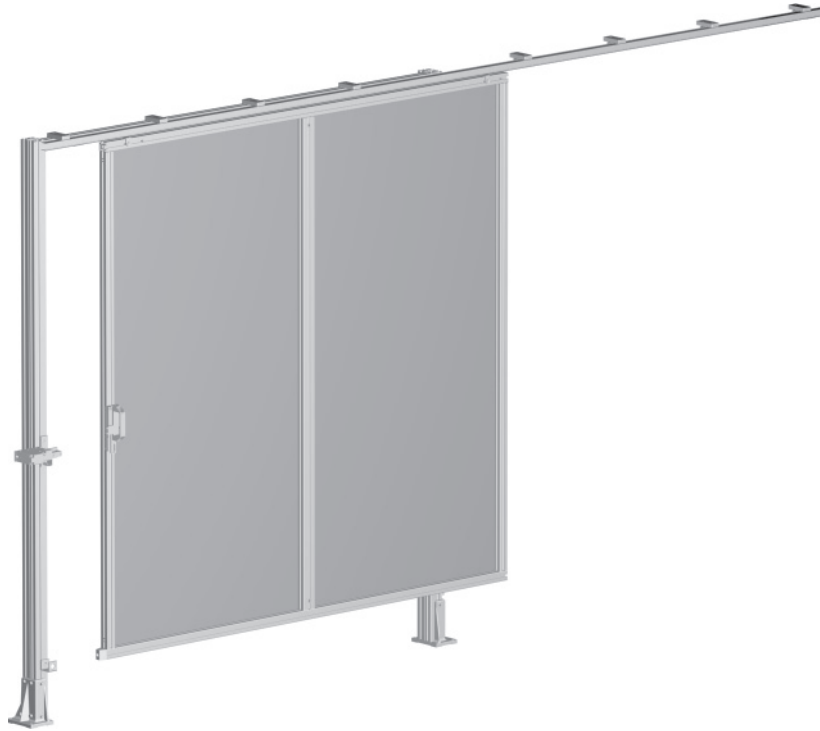

Unit			Post													Fastening				
Panel element	Frame profile					Mounting			Post profile								of element			
	Standard		Pa- nel	Wire net		of panel element			Standard				Panel							
	40×40, 4E	45×45, 4E	40×40	30×30	40×40	wedge profile	m. clamp blocks	mounting sockets	40×40	40×80	80×80	80×80, corner	45×45	45×90	60×80 5E	60×80 6E	hanging bracket	angle	bracket	
Polycarbonate trans- parent	4 mm					•	•		•	•	•	•					•	•	•	
		•				•	•						•	•			•	•	•	
			•												•	•	•	•	•	
Wire net	alu	3×20×20 mm	•					•	•	•	•						•	•	•	
			•						•			•	•				•	•	•	
		4×30×30 mm	•						•	•	•	•					•	•	•	
	steel	4×30×30 mm, 4×40×40 mm				•	•		•	•	•	•	•	•				•	•	
			•						•	•	•	•						•	•	•
					•	•			•	•	•	•	•	•				•	•	
										•	•	•	•	•				•	•	•
Welded wire net (steel)	3×25×25 mm	•				•			•	•	•	•					•	•	•	
		•					•						•	•			•	•	•	
	4×40×40 mm	•				•			•	•	•	•					•	•	•	
		•					•						•	•				•	•	•
Welding protecting glass	green- brown	4 mm	•			•			•	•	•	•					•	•	•	
			•				•						•	•			•	•	•	
				•											•	•		•	•	•

Single hinged door


Unit			Post														
Panel element	Frame profile			Mounting			Post profile										
	Standard	Panel	Wire net	of panel element			Standard					Panel					
	40×40, 4E	45×45, 4E	40×40	30×30	40×40	wedge profile	m. clamp blocks	mounting sockets	40×40	40×80	80×80	80×80, corner	45×45	45×90	60×80 5E	60×80 6E	
Polycarbonate transparent	4 mm	•				•	•		•	•	•	•					
			•				•	•					•	•			
				•												•	•
Wire net	alu	3×20×20 mm	•						•	•	•	•					
				•									•	•			
		4×30×30 mm	•							•	•	•	•				
	steel	4×30×30 mm, 4×40×40 mm				•	•			•	•	•	•				
			•							•	•	•	•				
					•	•				•	•	•	•				
										•	•	•	•				
Welded wire net (steel)	3×25×25 mm	•				•			•	•	•	•					
			•				•						•	•			
	4×40×40 mm	•				•			•	•	•	•					
			•				•							•	•		
Welding protecting glass	4 mm	•				•			•	•	•	•					
			•				•						•	•			
				•												•	•

Double hinged door


Unit			Post											Locking						
			Frame profile			Mounting			Post profile											
Panel element			Standard	Pa- nel	Wire net	of panel element			Standard					Panel						
			40×40, 4E	45×45, 4E	40×40	30×30	40×40	wedge profile	m. clamp blocks	mounting sockets	40×40	40×80	80×80	80×80, corner	45×45	45×90	60×80 5E	60×80 6E	top	bottom
Polycarbonate trans- parent	4 mm	•					•	•		•	•	•	•					•	•	
			•				•	•						•	•			•	•	
Wire net	alu	3×20×20 mm							•	•	•	•						•	•	
				•						•				•	•			•	•	
		4×30×30 mm	•							•	•	•	•					•	•	
	steel	4×30×30 mm, 4×40×40 mm				•	•			•	•	•	•	•	•				•	•
				•						•					•	•			•	•
		3×25×25 mm	•					•		•	•	•	•	•	•				•	•
Welded wire net (steel)	3×25×25 mm						•						•	•				•	•	
			•											•	•			•	•	
	4×40×40 mm	•					•			•	•	•	•					•	•	
			•											•	•			•	•	
Welding protecting glass	4 mm						•			•	•	•	•					•	•	
			•											•	•			•	•	
				•												•	•	•	•	

Sliding door


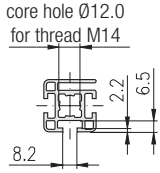
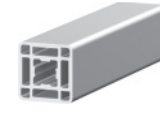
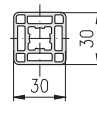
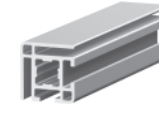
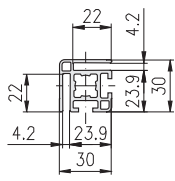
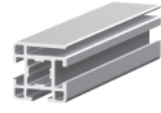
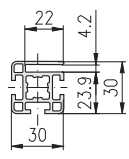
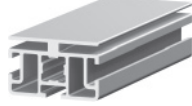
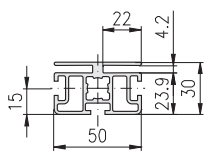
Unit			Post																
Panel element	Frame profile					Mounting			Post profile										
	Standard		Panel	Wire net		of panel element			Standard							Panel			
	40×40, 4E	45×45, 4E	40×40	30×30	40×40	wedge profile	m. clamp blocks	mounting sockets	40×40	40×80	80×80	80×80, corner	45×45	45×90	60×80 5E	60×80 6E			
Polycarbonate transparent	4 mm	•				•	•		•	•	•	•							
			•				•	•					•	•					
				•												•	•		
Wire net	alu	3×20×20 mm	•						•	•	•	•							
				•									•	•					
		4×30×30 mm	•						•	•	•	•							
	steel	4×30×30 mm, 4×40×40 mm				•	•			•	•	•	•	•	•				
			•						•	•	•	•							
						•	•			•	•	•	•	•	•				
										•	•	•	•	•	•				
Welded wire net (steel)	3×25×25 mm	•				•			•	•	•	•							
			•				•						•	•					
	4×40×40 mm	•				•			•	•	•	•							
			•				•							•	•				
Welding protecting glass	4 mm					•			•	•	•	•							
			•				•						•	•					
				•												•	•		

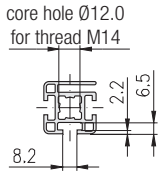
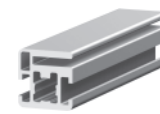
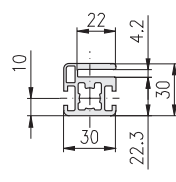
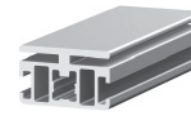
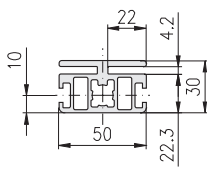
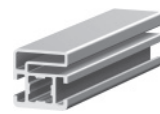
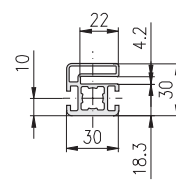
<p style="text-align: center;">light</p>					
	<p>Description</p>	Profile 40×40, 4E, LP	Profile 40×80, 6E, LP	Profile 80×80, 8E, LP	
	<p>bar, 6 m</p>	1.11.040040.43LP.60	1.11.040080.64LP.60	1.11.080080.83LP.60	
	<p>packing unit (number)</p>	1.11.040040.43LP.61 (8)	1.11.040080.64LP.61 (4)	1.11.080080.83LP.61 (2)	
<p>moment of inertia cm⁴</p> <p>moment of resistance cm³</p> <p>weight kg/m</p>	$I_x = 9.9$ $I_y = 9.9$ $W_x = 4.9$ $W_y = 4.9$ $G = 1.5$	$I_x = 62.7$ $I_y = 17.7$ $W_x = 15.6$ $W_y = 8.8$ $G = 2.5$	$I_x = 114.0$ $I_y = 114.0$ $W_x = 28.4$ $W_y = 28.4$ $G = 4.1$		

Profile group 40 mm, E3-slot

Profile group 45 mm, E4-slot, P (plain)

<p style="text-align: center;">heavy</p>		<p style="text-align: center;">light</p>				
	<p>Description</p>		Profile 80×80, 8E, angle, S	Description	Profile 45×45, 4E, LP	Profile 45×90, 6E, LP
	<p>bar, 6 m</p>		1.11.080080.87S.60	bar, 6 m	1.11.045045.43LP.60	1.11.045090.64LP.60
	<p>packing unit (number)</p>		1.11.080080.87S.61 (2)	packing unit (number)	1.11.045045.43LP.61 (8)	1.11.045090.64LP.61 (4)
<p>moment of inertia cm⁴</p> <p>moment of resistance cm³</p> <p>weight kg/m</p>	$I_x = 120.0$ $I_y = 120.0$ $W_x = 23.8$ $W_y = 23.8$ $G = 6.3$	<p>Trägheitsmoment cm⁴</p> <p>Widerstandsmoment cm³</p> <p>Gewicht kg/m</p>	$I_x = 13.5$ $I_y = 13.5$ $W_x = 6.0$ $W_y = 6.0$ $G = 1.9$	$I_x = 98.0$ $I_y = 27.5$ $W_x = 21.8$ $W_y = 12.2$ $G = 3.3$		

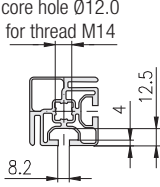
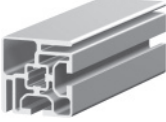
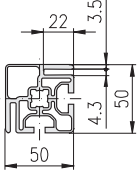
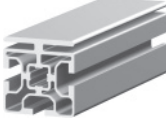
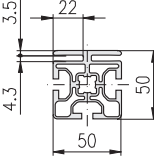
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content; margin-bottom: 10px;">light</div> 	 	 	 	 	
	Description	Panel profile 30×30, OF, LP	Panel profile 30×30, 2F, corner, LP 4	Panel profile 30×30, 3F, LP 4	Panel profile 30×50, 3F, LP 4
	bar, 6 m	1.14.030030.03LP0.60	1.14.030030.22LP4.60	1.14.030030.33LP4.60	1.14.030050.34LP4.60
	packing unit (number)	1.14.030030.03LP0.61(10)	1.14.030030.22LP4.61(10)	1.14.030030.33LP4.61(10)	1.14.030050.34LP4.61 (6)
	moment of inertia cm ⁴ moment of resistance cm ³ weight kg/m	$I_x = 3.8$ $I_y = 3.8$ $W_x = 2.4$ $W_y = 2.4$ G = 1.1	$I_x = 3.3$ $I_y = 3.3$ $W_x = 2.2$ $W_y = 2.2$ G = 1.0	$I_x = 3.3$ $I_y = 2.8$ $W_x = 2.2$ $W_y = 1.8$ G = 0.9	$I_x = 5.5$ $I_y = 11.8$ $W_x = 3.6$ $W_y = 4.8$ G = 1.5

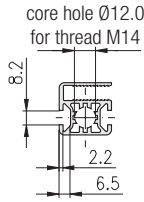
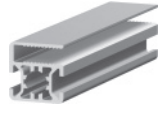
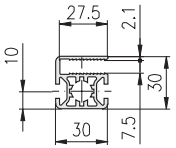
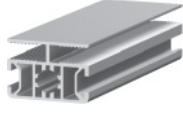
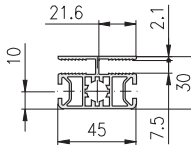
<div style="border: 1px solid black; border-radius: 10px; padding: 5px; width: fit-content; margin-bottom: 10px;">light</div> 	 	 	 	
	Description	Panel profile 30×30, 2F, LP 5	Panel profile 30×50, 2F, LP 5	Panel profile 30×30, 2F, LP 6
	bar, 6 m	1.14.030030.23LP5.60	1.14.030050.24LP5.60	1.14.030030.23LP6.60
	packing unit (number)	1.14.030030.23LP5.61(10)	1.14.030050.24LP5.61(10)	1.14.030030.23LP6.61 (6)
	moment of inertia cm ⁴ moment of resistance cm ³ weight kg/m	$I_x = 4.3$ $I_y = 3.3$ $W_x = 2.8$ $W_y = 2.2$ G = 1.2	$I_x = 7.0$ $I_y = 14.7$ $W_x = 4.7$ $W_y = 5.9$ G = 1.9	$I_x = 3.6$ $I_y = 2.8$ $W_x = 2.4$ $W_y = 1.9$ G = 1.0

<p>light</p>	 	 	 	 	
	Description	Panel profile 40×40, 2E, corner, LP 4	Panel profile 40×40, 3E, LP 4	Panel profile 40×60, 3E, LP 4	Panel profile 60×80, 5E, LP 4
	bar, 6 m	1.14.040040.22LP4.60	1.14.040040.33LP4.60	1.14.040060.34LP4.60	1.14.060080.54LP4.60
	packing unit (number)	1.14.040040.22LP4.61 (8)	1.14.040040.33LP4.61 (8)	1.14.040060.34LP4.61 (8)	1.14.060080.54LP4.61 (4)
	moment of inertia cm ⁴ moment of resistance cm ³ weight kg/m	$I_x = 10.3$ $I_y = 10.3$ $W_x = 5.2$ $W_y = 5.2$ G = 1.8	$I_x = 10.2$ $I_y = 8.7$ $W_x = 5.1$ $W_y = 4.3$ G = 1.65	$I_x = 14.8$ $I_y = 26.3$ $W_x = 7.4$ $W_y = 8.8$ G = 2.4	$I_x = 100.4$ $I_y = 50.4$ $W_x = 25.1$ $W_y = 16.8$ G = 3.8

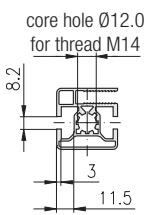
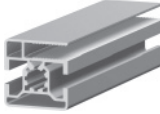
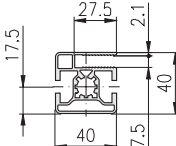
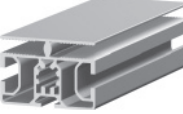
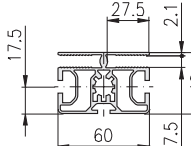
<p>light</p>	Profile for door stop				
	Description	Panel profile 60×80, 6E, LP 4	Profile 20×30, 1F, LP	Assembly drawing	Assembly drawing
	bar, 6 m	1.14.060080.64LP4.60	1.11.020030.14LP.60		
	packing unit (number)	1.14.060080.64LP4.61 (4)	1.11.020030.14LP.61 (10)		
moment of inertia cm ⁴ moment of resistance cm ³ weight kg/m	$I_x = 88.1$ $I_y = 52.0$ $W_x = 22.1$ $W_y = 17.3$ G = 3.7	$I_x = 2.2$ $I_y = 1.4$ $W_x = 1.5$ $W_y = 1.4$ G = 0.7	$I_x = 113.0$ $I_y = 64.0$ $W_x = 28.5$ $W_y = 21.3$ G = 4.5	$I_x = 89.2$ $I_y = 53.3$ $W_x = 22.3$ $W_y = 17.7$ G = 4.4	

machining data ↗ Profile machining 1.1A (Catalogue 'The Profile System')

light				
	 	 		
Description	Panel profile 50×50, 2E, corner, LP 4	Panel profile 50×50, 3E, LP 4		
bar, 6 m	1.14.050050.22LP4.60	1.14.050050.39LP4.60		
packing unit (number)	1.14.050050.22LP4.61 (6)	1.14.050050.39LP4.61 (6)		
moment of inertia cm ⁴	$I_x = 19.4$ $I_y = 19.4$	$I_x = 24.1$ $I_y = 21.4$		
moment of resistance cm ³	$W_x = 7.6$ $W_y = 7.6$	$W_x = 8.0$ $W_y = 8.5$		
weight kg/m	G = 2.4	G = 2.7		

light				
	 	 		
Description	Wire net profile 30×30, 2F, LP 7.5	Wire net profile 30×45, 2F, LP 7.5		
bar, 6 m	1.15.030030.23LP7.60	1.15.030045.24LP7.60		
packing unit (number)	1.15.030030.23LP7.61(10)	1.15.030045.24LP7.61 (8)		
moment of inertia cm ⁴	$I_x = 2.6$ $I_y = 3.2$	$I_x = 4.3$ $I_y = 7.4$		
moment of resistance cm ³	$W_x = 1.7$ $W_y = 2.1$	$W_x = 2.9$ $W_y = 3.3$		
weight kg/m	$G = 0.86$	$G = 1.15$		

Wire net profiles 40, F / E3-slot, P (plain)

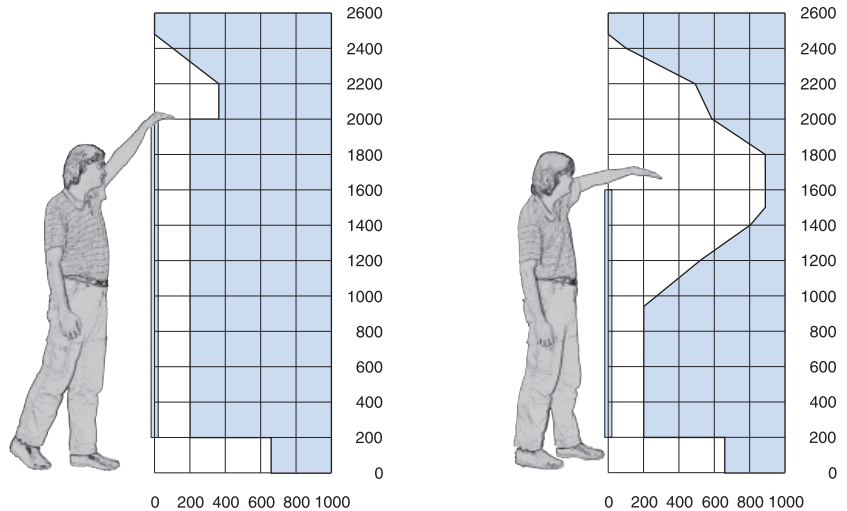
light				
	 	 		
Description	Wire net profile 40×40, 2E, LP 7.5	Wire net profile 40×60, 2E, 1F, LP 7.5		
bar, 6 m	1.15.040040.23LP7.60	1.15.040060.34LP7.60		
packing unit (number)	1.15.040040.23LP7.61 (8)	1.15.040060.34LP7.61 (8)		
moment of inertia cm ⁴	$I_x = 7.5$ $I_y = 8.2$	$I_x = 12.2$ $I_y = 22.5$		
moment of resistance cm ³	$W_x = 3.8$ $W_y = 4.1$	$W_x = 6.1$ $W_y = 7.5$		
weight kg/m	$G = 1.35$	$G = 1.97$		

Standards for guards

Besides the essential safety requirements of the **machinery directive 98/37/EC** and the **DIN EN ISO 12100 part 1+2 - safety of machinery** - the following standards (Type B Standards) apply when designing guards, e.g. safety barriers.

EN 294 - Safety distances to prevent danger zones being reached by the upper limbs

The safety distances depend on the height and size of the opening in the safety guard. A mesh size of 40x40 mm requires a safety distance of 200 mm. The following figures show the safety distance profiles in accordance with **EN 294** and **EN 811** for two different heights of the safety barrier. The safety distance layout of a concrete safety barrier always requires a risk assesment according to **DIN EN ISO 12100**.

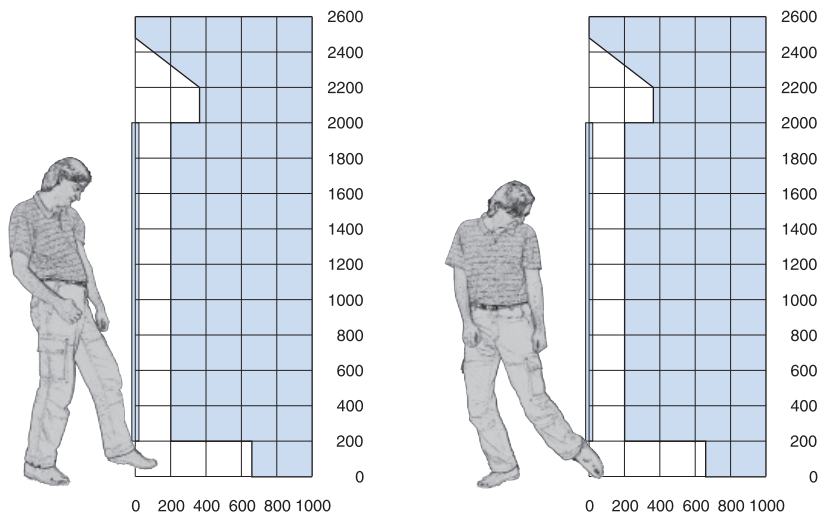


EN 811 - Safety distances to prevent danger zones being reached by the lower limbs

When the following preconditions are fulfilled EN 811 allows greater openings than EN 294:

- the related persons are at least 14 years old
- it is justifiable predictable that for reaching the hazardous area only the lower limbs are used.

In accordance with EN 811 openings greater than 180 mm (slit shaped) or 240 mm (square / circular type) allow access to the whole body. Besides this an extended rule exists for ground clearance, where access from upright position is assumed. Ground clearance of 200 mm results in a safety distance of 665 mm for the feet area, as it is shown in the following figures.



DIN EN 953 - Guards

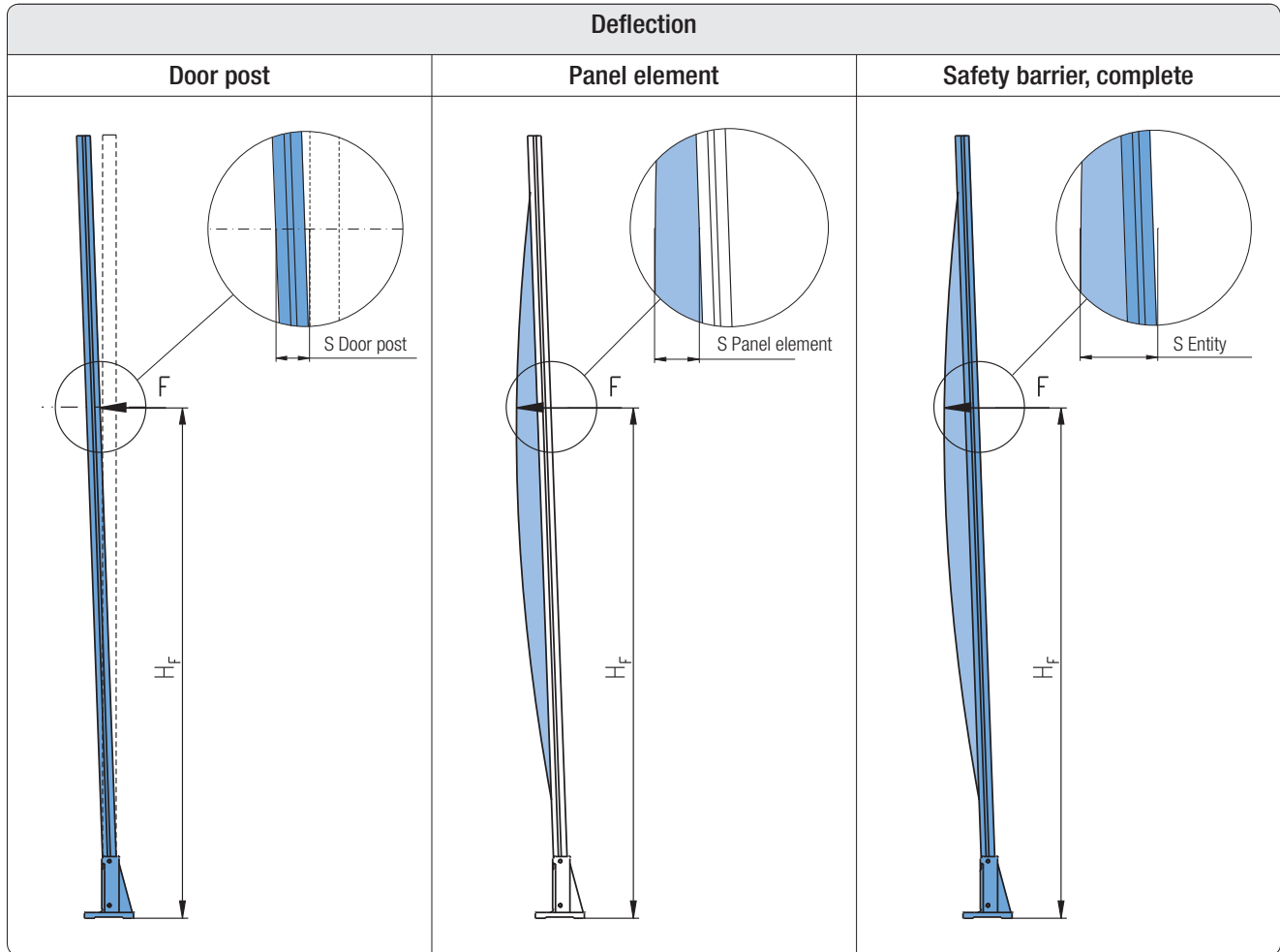
General requirements for the design and construction of fixed and movable guards

Note

If for a certain machinery a special machinery safety standard (Type C Standard) is provided, the specifications of this Type C Standard take precedence.

Examples of Type C Standards:

- DIN EN 619 - Continuous handling equipment and systems
 - DIN EN 693 - Hydraulic presses
 - DIN EN 775 - Industrial robots.
- Recommendations for safety

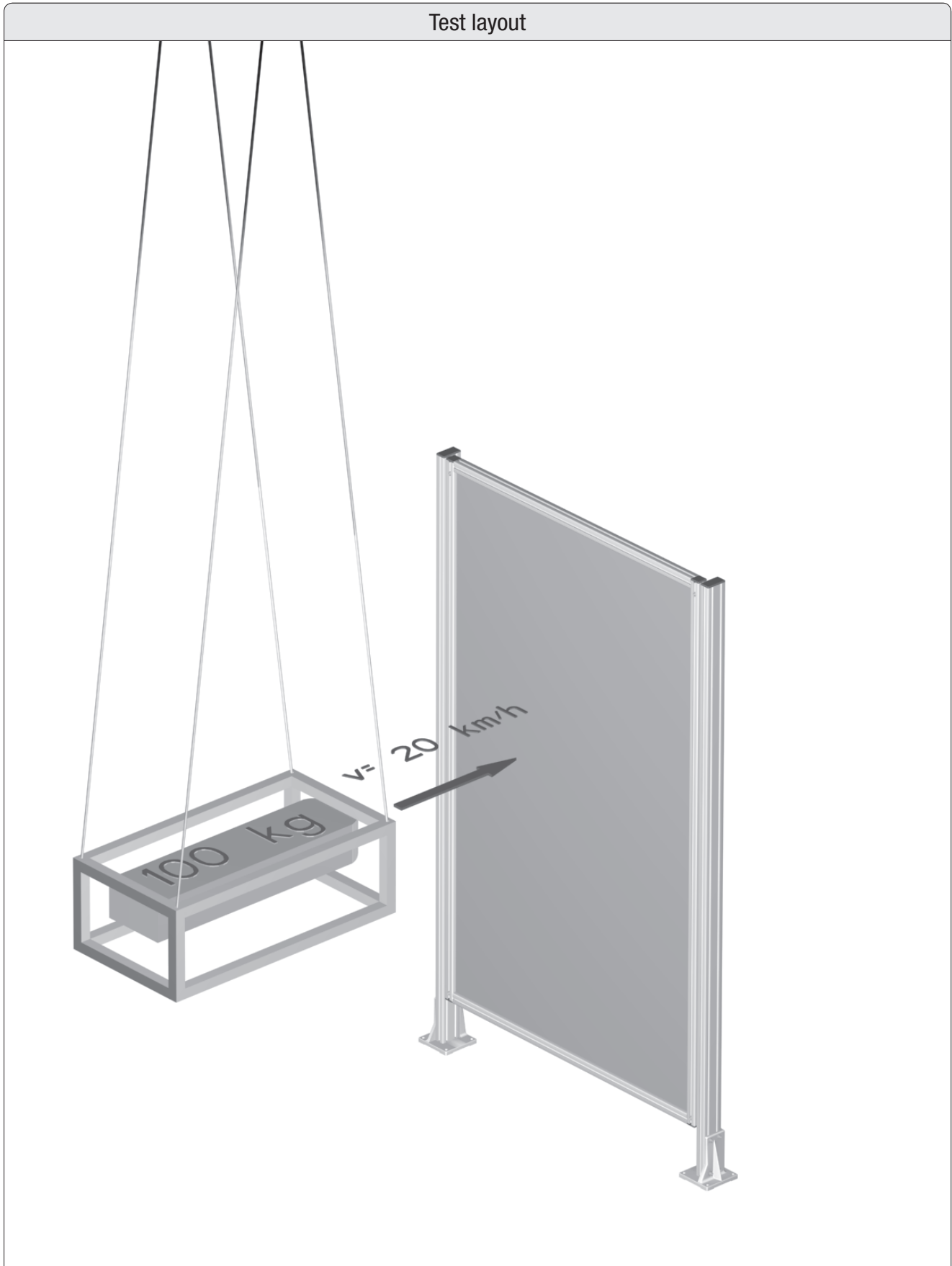


Safety barrier element: without frame
Panel element: Polycarbonate 4 mm

F in N							
100	150	300	450	600	1,000	1,500	2,000

Standard profile	Door post		S in mm							
	H_f		1.0	2.0	3.0	5.0	6.0	10.0	15.0	20.0
Profile 40×80, 6E, LP	1,000		1.0	2.0	3.0	5.0	6.0	10.0	15.0	20.0
	1,500		3.5	5.0	10.0	15.0	20.0	35.0	62.0	95.0
Safety barrier, complete	$H_f = 1,500$		S in mm							
	Profile 40×80, 6E, LP	Door post	2.0	2.5	5.0	8.0	10.0	17.5	31.0	48.0
		Panel element	30.0	38.0	49.0	59.0	65.0	82.0	98.0	115.0
		Entity	32.0	40.5	54.0	67.0	75.0	99.0	129.0	163.0

Panel profile	Door post		S in mm							
	H_f		1.0	1.5	2.0	3.0	5.0	8.0	12.0	16.0
Profile 60×80, 6E, Panel, LP	1,000		1.0	1.5	2.0	3.0	5.0	8.0	12.0	16.0
	1,500		2.6	3.5	7.0	10.0	14.0	26.0	40.0	52.0
Safety barrier, complete	$H_f = 1,500$		S in mm							
	Profile 60×80, 6E, Panel, LP	Door post	1.5	2.0	3.5	5.0	7.0	13.0	20.0	26.0
		Panel element	35.0	39.0	48.0	54.0	60.0	73.0	84.0	94.0
Entity		36.5	41.0	51.5	59.0	67.0	86.0	104.0	120.0	



Test conditions

During this test a body of 100 kg is accelerated to 20 km/h.
 During impact of the body into the test barrier an energy of 1600 Joule will be released.
 The impact zone is located at the upper third of the test barrier.

Safety barrier unit: without frame

Test with:	Panel element:	Polycarbonate 4 mm
	Post:	Panel profile 60×80 mm
	Frame:	Panel profile 40×40 mm



before impact



at impact



after impact

Result

MayTec safety barrier units succeeded all crash tests without permanent damage.



Safety barrier unit: with frame

Test with:

Panel element:

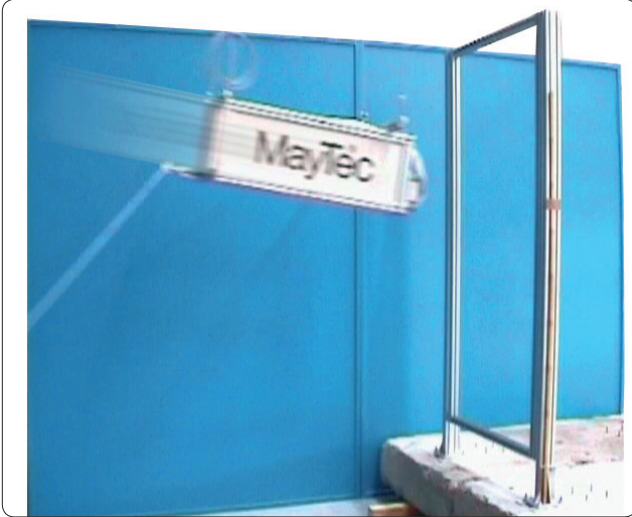
Polycarbonate 4 mm

Post:

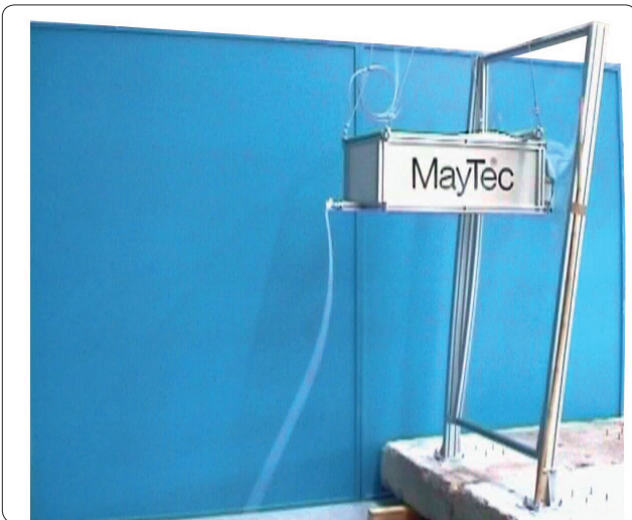
Panel profile 60×80 mm

Frame:

Panel profile 40×40 mm



before impact



at impact



after impact

Result

MayTec safety barrier units succeeded all crash tests without permanent damage.



Safety barrier unit: with frame

Test with:	Panel element:	Welded wire net (steel) 4×40×40 mm	
	Post:	Panel profile 60×80 mm	
	Frame	vertical:	Panel profile 40×40 mm
		horizontal:	Wire net profile 30×30 mm



before impact



at impact



after impact

Result

MayTec safety barrier units succeeded all crash tests without permanent damage.



Imprint

Subject to technical modification.

All rights reserved.

Copying - also in parts - only allowed by written consent.

© MayTec Aluminium Systemtechnik GmbH,
Germany, D - 85221 Dachau, 2015

La chiave ...

del successo

elevata stabilità

economicità

funzionalità

Australia

MayTec Australia P/L

Unit 8, 175 James Ruse Drive
Rosehill, NSW 2142

Prefisso internazionale: +61
Telefono: (0) 2 / 9898 9929
Telefax: (0) 2 / 9638 4086
e-mail: info@maytec.com.au
<http://www.maytec.com.au>

Germania

MayTec Aluminium
Systemtechnik GmbH
Kopernikusstraße 20
D - 85221 Dachau

Prefisso internazionale: +49
Telefono: (0) 8131 / 33 36 - 0
Telefax: (0) 8131 / 33 36 - 119
e-mail: mail@maytec.de
<http://www.maytec.de>

USA

MayTec Inc.

901 Wesemann Drive
West Dundee, IL 60118

Prefisso internazionale: +1
Telefono: 847 - 429 - 0321
Telefax: 847 - 429 - 0460
e-mail: mail@maytecinc.com
<http://www.maytecinc.com>

May Tec

Distributore Italia
Bonechi s.r.l.
via A. Righi 48
52100 Arezzo

Prefisso internazionale: +39
Telefono: 0575 984848
Telefax: 0575 980874
e-mail: maytec@bonechi-ar.it
<http://www.maytec.it>

 **Bonechi**