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European Technical Assessment Body
for construction products



European Technical Assessment

ETA-23/0301
of 22 August 2025

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Polycarbonate system PANELPIÙ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Product family
to which the construction product belongs

Self-supporting translucent roof and wall kits

Manufacturer

PolyPiù S.r.l.
Via A. da Giussano 15
20011 CORBETTA (MI)
ITALIEN

Manufacturing plant

PolyPiù S.r.l.
Via A. da Giussano 15
20011 CORBETTA (MI)
ITALIEN

This European Technical Assessment
contains

46 pages including 40 annexes which form an integral
part of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 220089-00-0401-v01

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Specific part

1 Technical description of the product

1.1 Kit description and setup

The "Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall" roof and wall kit is made up of components which are factory-made and assembled on site as a self-supporting translucent roof or wall kit.

An essential part of the kit is a translucent PC multi-wall sheet in accordance with EN 16153, which can be connected to an area of any size by means of a joint on the long sides. The PC sheet is housed in aluminium covering profiles, which are thermally separated by plastic insulating bars. The kit can be constructed as one-span system or, with additional intermediate supports transverse to the main bearing direction, as multi-span system. To withstand wind suction on continuous systems, they are held on internal supports by lift anchors.

The following components are used for the manufacture of the "Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall" self-supporting translucent roof and wall kit:

- translucent polycarbonate (PC) multi-wall sheet of thickness 40 mm and 60 mm
- aluminium profiles with or without thermal barrier
- aluminium additional profiles
- lift anchors, made of aluminium
- sealing profiles

The components and the system setup of the product are given in Annexes A 1.1, A 1.2 and A 2.1, A 2.2.

The material values, dimensions and tolerances of the roof kit not indicated in the annexes shall correspond to the values laid down in the technical documentation¹ of this European Technical Assessment.

1.1.1 Multi-wall sheets

The following multi-wall sheets made from polycarbonate (PC) in accordance with the harmonised European standard EN 16153 are used.

Table 1: Multi-wall sheets

Manufacturer	Trade name	Sheet height [mm]	Annex
PolyPiù S.r.l. IT- CORBETTA (MI)	PANELPIÚ 500/40 4-wall	40	A 4.1
	PANELPIÚ 500/40 14-wall	40	A 4.2
	PANELPIÚ 500/60 14-wall	60	A 4.3

The multi-wall sheets have unfilled hollow chambers and weatherproofing on the outer surfaces which are unmistakably identified.

1.1.2 Covering profiles without thermal barrier "F1P40DE", "F2P40DE", "F1P60/65DE" and "F2P60/65DE"

The covering profiles without thermal barrier are made from the aluminium alloy EN AW-6060, T66 in accordance with EN 755-2 and have the dimensions given in the Annexes A 3.1. to A 3.4.

¹ The technical documentation comprises all information of the holder of this ETA necessary for the production, installation and maintenance of the roof and wall kit; these are in particular the structural analysis, design drawings and the manufacturer's installation instructions. The part to be treated confidentially is deposited with Deutsches Institut für Bautechnik.

1.1.3 Covering profiles with thermal barrier "F1TTP40DE", "F2TTP40DE", "F1TTP60/65DE" "F2TTP60/65DE", "F76" and "F70"

The aluminium profiles with thermal barrier are made from the aluminium alloy EN AW-6060, T66 in accordance with EN 755-2 and have the dimensions given in the Annexes A 3.5. and A 3.10.

The plastic insulating bars consist of polyamide PA66 with a glass fiber content of about 25 % and are produced by extrusion of the molding material ISO 16396-1-PA66,GF25,EC2L. This corresponds to the deposit at the Deutsches Institut für Bautechnik.

1.1.4 Additional profiles "F67" and "F68"

The additional profiles "F67" and "F68" are made from the aluminium alloy EN AW-6060, T66 in accordance with EN 755-2 and have the dimensions given in Annex A 3.11.

1.1.5 Lift anchors "F46", "F77" and "F74"

The lift anchors "F46", "F77" and "F74" are made from the aluminium alloy EN AW-6060, T66 in accordance with EN 755-2 and have the dimensions given in the Annexes A 3.12 to A 3.14.

1.1.6 Sealing profiles

The sealing profiles (inner and outer gasket) are made from thermoplastic elastomer (TPE) and have the dimensions and Shore hardness of 60 ± 5 Shore A in accordance with EN ISO 868 given in Annex A 3.15. Parts of the outer gasket are made of Polypropylene (PP).

1.1.7 "Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall" roof and wall kit

The "Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall" roof and wall kit is made up of the components described in Section 1.1.1 to 1.1.6. The lift anchors in accordance with section 1.1.5 are used only for multi-span systems.

Table 2: Reaction to fire of the components

Multi-wall sheets	Class in accordance with the DoP of EN 16153/ at least Class E as per EN 13501-1
Sealing profiles/ Plastic insulating bars of aluminium covering profiles	No contribution to fire spread in accordance with EOTA TR 021 (Version June 2005)
Aluminium profiles, lift anchors	Class A1 as per EN 13501-1 (without further testing as per Commission Decision 96/603/EC, as amended by Commission Decisions 2000/605/EC and 2003/424/EC)

2 Specification of the intended use in accordance with the applicable European Assessment Document

The self-supporting translucent roof and wall kit may be used in the roof or wall area for open or closed structures. The multi-wall sheets may be combined to form continuous areas of any length over a rectangular ground plan.

When used in roof areas, a minimum slope of 5° is required for the multi-wall sheets. The roof and wall kit is not a walk-on system; it may not be used for bracing of the support structure.

The performance data given in Section 3 is only valid if the roof and wall kit is used in compliance with the specifications and the conditions given in Annexes A to C.

The verifications and assessment methods on which this European Technical Assessment (hereinafter referred to as "ETA") is based lead to the assumption of a working life of the roof and wall kit of at least ten years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the structure.

3 Performance of the product and methods for assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Fire performance in case of external fire exposure	No performance assessed
Reaction to fire	Class E
Resistance to fire	No performance assessed

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Watertightness	Category 1 (no leaks with no differential air pressure) from an inclination of 3° from the horizontal

3.3 Safety and accessibility (BWR 4)

Essential characteristic	Performance
Characteristic structural resistance resulting from downward loads and uplift loads [kN/m²]	See Annex B 2.1
Moment and support reaction at intermediate supports for multi-span systems	See Annex B 2.2
Material-dependent influencing factor for the effect of load duration	See Annex B 1.2
Material-dependent influencing factor for ageing and environmental effects	See Annex B 1.3
Material-dependent influencing factor for thermal effects	See Annex B 1.3
Deformation behaviour	See Annex B 1.4
Resistance to damage by impact loads with a soft object (50 kg)	SB 0 (no requirement)
Resistance to impact loads from a hard object (250 g)	Passed in accordance with EN 16153

3.4 Protection against noise (BWR 5)

No performance assessed

3.5 Energy economy and heat retention (BWR 6)

No performance assessed

3.6 Other essential characteristics

Essential characteristic	Performance
Aspects of durability	See Annex A 4

4 Assessment and verification of constancy of performance (AVCP) systems applied, with reference to its legal base

According to the European Assessment Document (EAD) 220072-00-0401, for the roof kits the legal basis is as follows: 98/600/EC

The system to be applied is: 3

According to the European Assessment Document (EAD) 220072-00-0401-v01, for the wall kits the legal basis is as follows: 2003/640/EC

The system to be applied is: 2⁺

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

The following technical specifications are referred to:

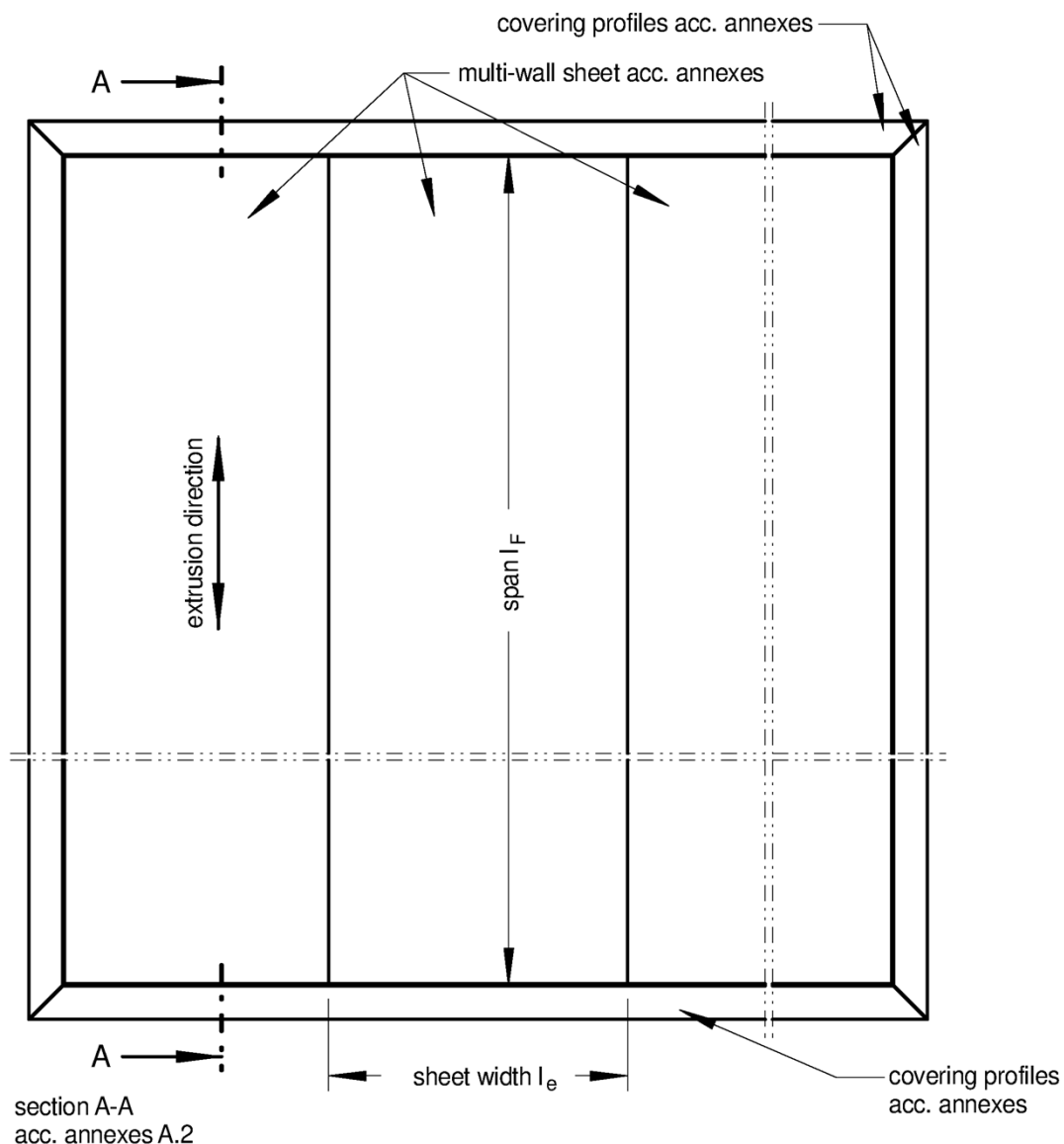
EAD 220089-00-0401-v01	Self-supporting translucent roof kits with covering made of plastic sheets: opaque sheets and self-supporting wall kits, including opaque sheets
EN 16153:2015-05	Light transmitting flat multiwall polycarbonate (PC) sheets for internal and external use in roofs, walls and ceilings - Requirements and test methods
EN 755-2:2016-10	Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles - Part 2: Mechanical properties
EN ISO 16396-1:2023-02	Plastics-Polyamide (PA) moulding and extrusion materials - Part 1: Designation system and basis for specifications
EN ISO 868:2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer
DIN EN 13501-1:2010-01	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

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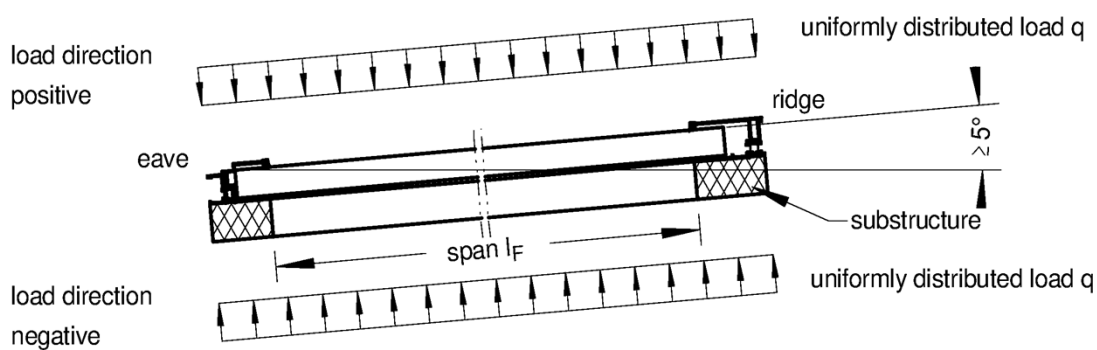
Inka Fischer
Head of Section

beglaubigt:
Wachner

Front view roof and wall single span system



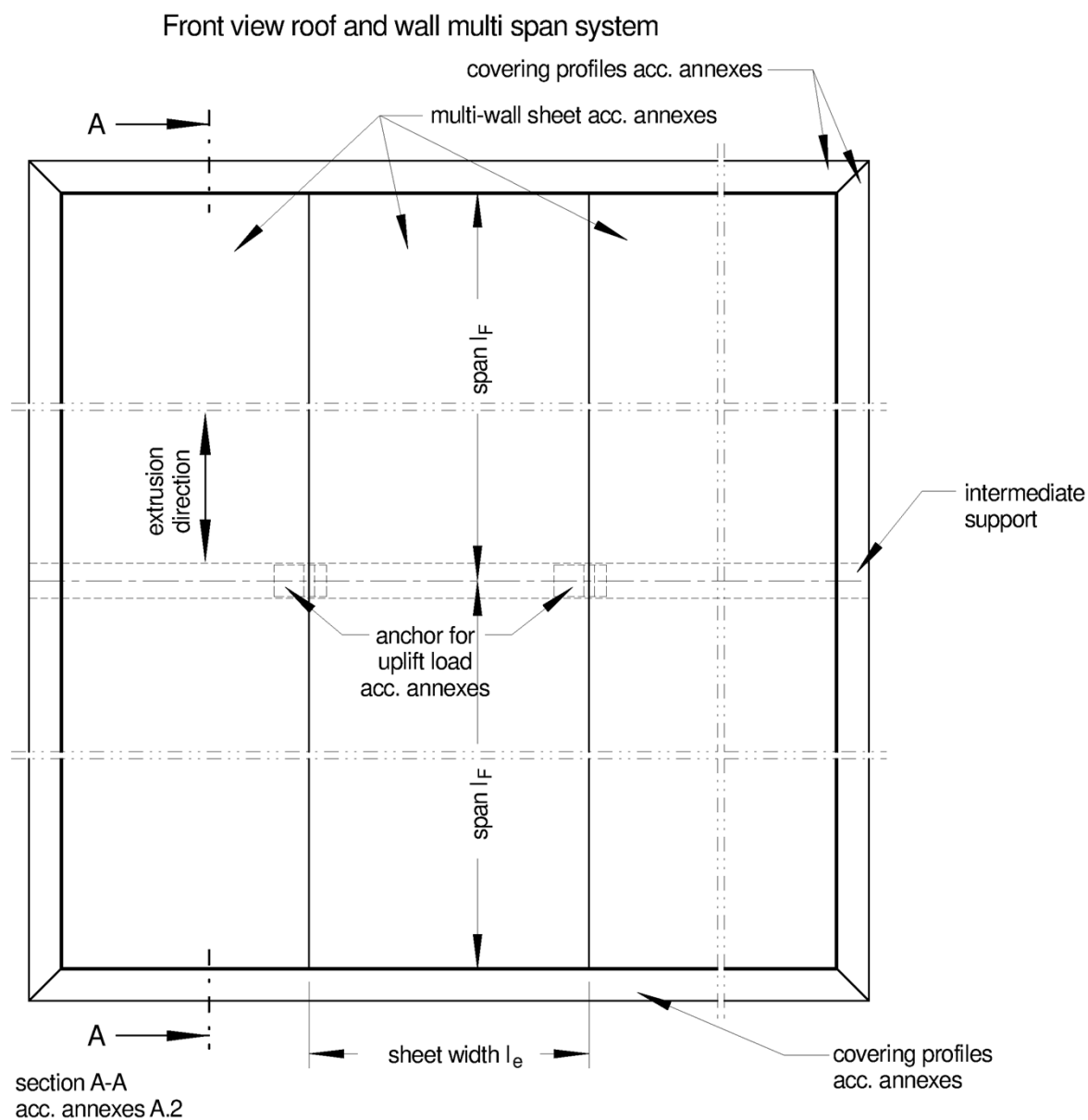
Schematic figure longitudinal section roof



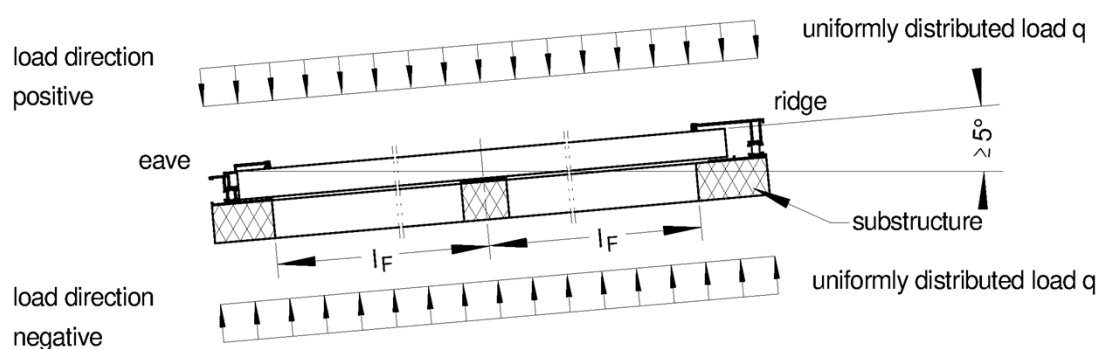
Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Assembly situation single-span-system

Annex A 1.1



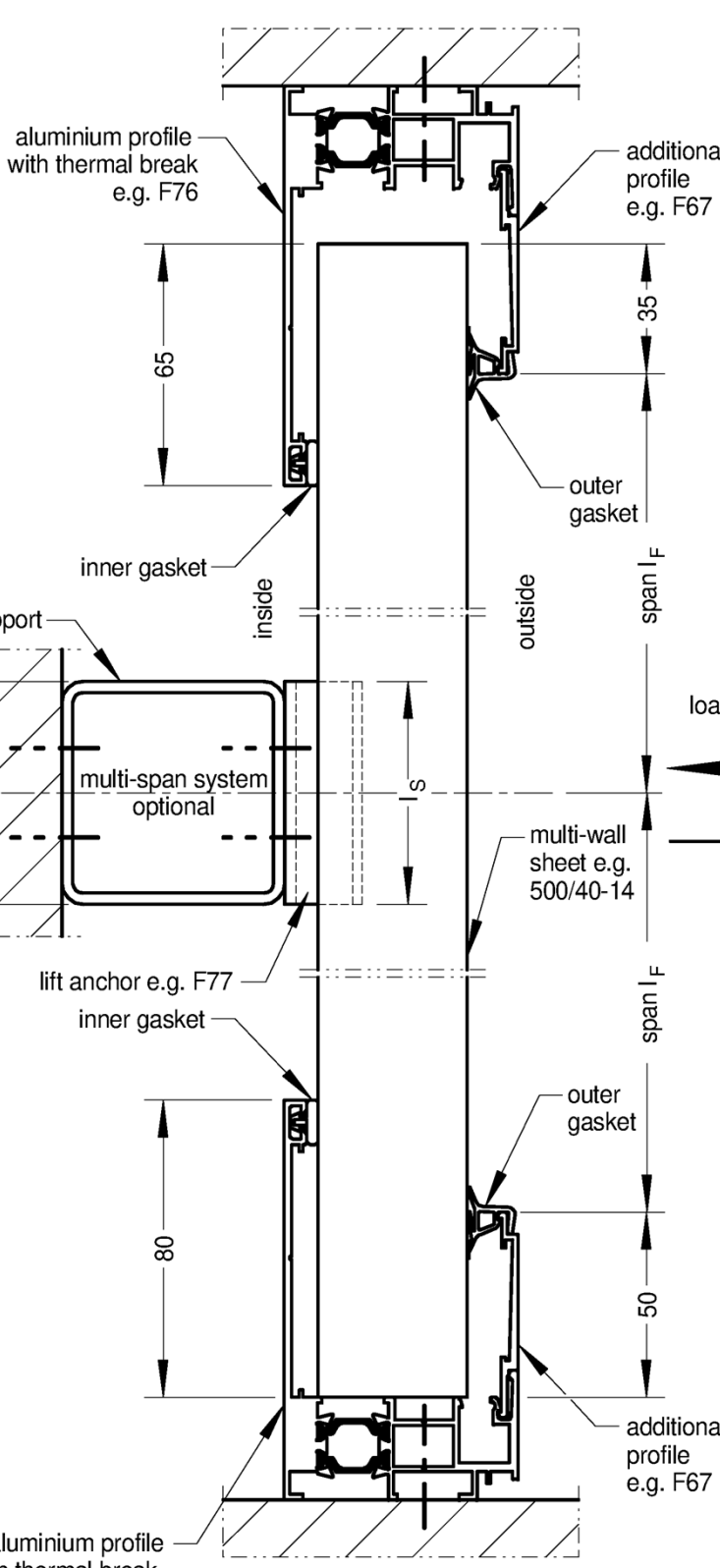
Schematic figure longitudinal section roof



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Assembly situation multi-span-system

Annex A 1.2

optional covering 40 profiles (top):			
Profile no.	Annex		
F2P40DE + F67	A.3.2 A.3.11		
F2P40DE + F68	A.3.2 A.3.11		
F2TTP40DE + F67	A.3.6 A.3.11		
F2TTP40DE + F68	A.3.6 A.3.11		
F76 + F67	A.3.9 A.3.11		
F76 + F68	A.3.9 A.3.11		
optional covering 40 profiles (bottom):			
Profile no.	Annex		
F1P40DE + F67	A.3.1 A.3.11		
F1P40DE + F68	A.3.1 A.3.11		
F1TTP40DE + F67	A.3.5 A.3.11		
F1TTP40DE + F68	A.3.5 A.3.11		
F76 + F67	A.3.9 A.3.11		
F76 + F68	A.3.9 A.3.11		
optional covering 60 profiles (top):			
Profile no.	Annex		
F2P60/65DE + F67	A.3.4 A.3.11		
F2P60/65DE + F68	A.3.4 A.3.11		
F2TTP60/65DE + F67	A.3.8 A.3.11		
F2TTP60/65DE + F68	A.3.8 A.3.11		
F70 + F67	A.3.10 A.3.11		
F70 + F68	A.3.10 A.3.11		
optional covering 60 profiles (bottom):			
Profile no.	Annex		
F1P60/65DE + F67	A.3.3 A.3.11		
F1P60/65DE + F68	A.3.3 A.3.11		
F1TTP60/65DE + F67	A.3.5 A.3.11		
F1TTP60/65DE + F68	A.3.5 A.3.11		
F70 + F67	A.3.10 A.3.11		
F70 + F68	A.3.10 A.3.11		

aluminium profile with thermal break e.g. F76

additional profile e.g. F67

inner gasket

outer gasket

multi-span system optional

multi-wall sheet e.g. 500/40-14

lift anchor e.g. F77

inner gasket

outer gasket

additional profile e.g. F67

aluminium profile with thermal break e.g. F76

Dimensions in mm

load direction positive negative

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Schematic drawing,
not drawn to scale

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Support condition wall installation
Example for assembly in reveal with and without thermal barriers

Annex A 2.1

optional covering 40
profiles (top):

Profile no.	Annex
F2P40DE	A.3.2
+ F67	A.3.11
F2P40DE	A.3.2
+ F68	A.3.11
F2TTP40DE	A.3.6
+ F67	A.3.11
F2TTP40DE	A.3.6
+ F68	A.3.11
F76	A.3.9
+ F67	A.3.11
F76	A.3.9
+ F68	A.3.11

optional covering 60
profiles (top):

Profile no.	Annex
F2P60/65DE	A.3.4
+ F67	A.3.11
F2P60/65DE	A.3.4
+ F68	A.3.11
F2TTP60/65DE	A.3.8
+ F67	A.3.11
F2TTP60/65DE	A.3.8
+ F68	A.3.11
F70	A.3.10
+ F67	A.3.11
F70	A.3.10
+ F68	A.3.11

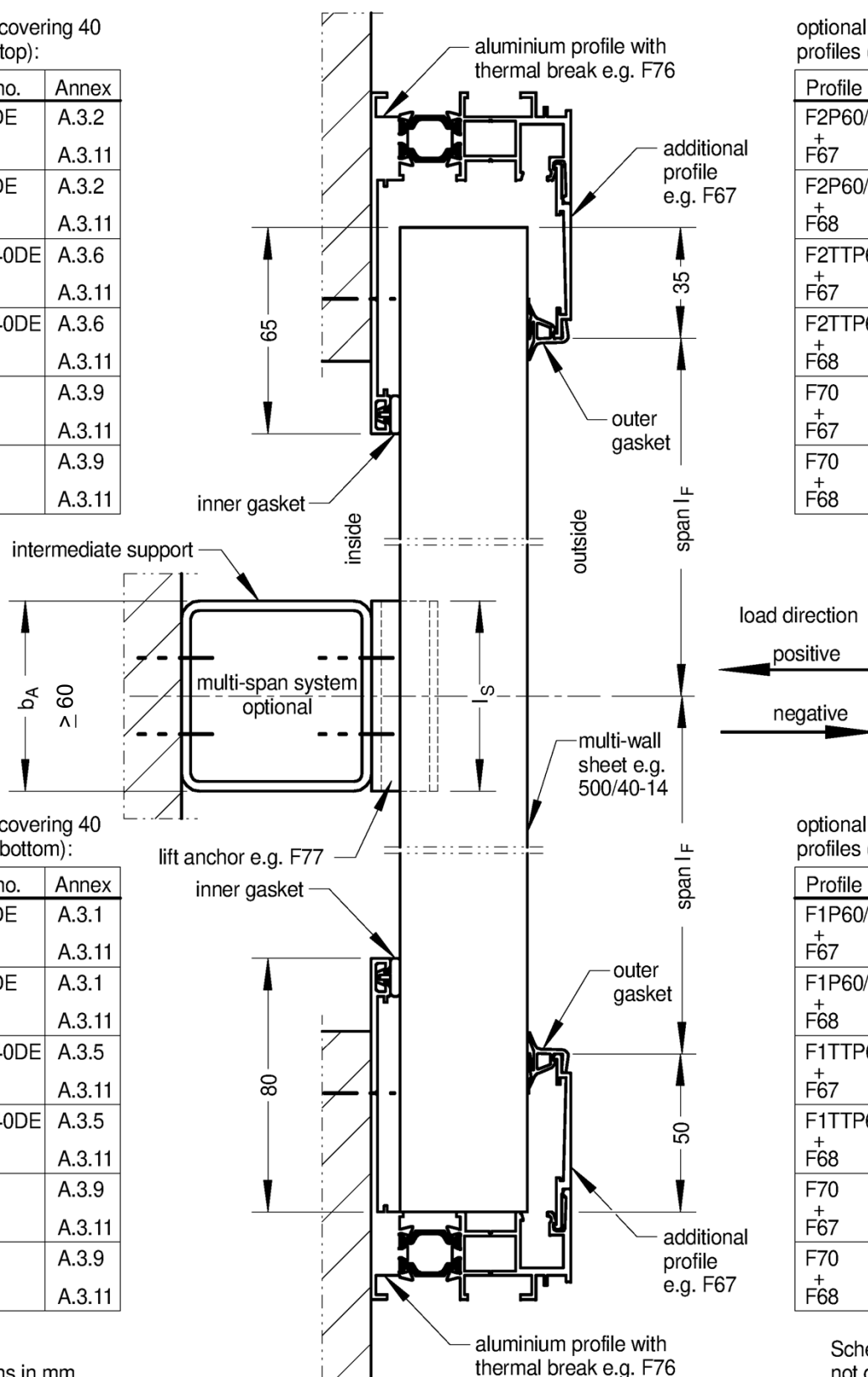
optional covering 40
profiles (bottom):

Profile no.	Annex
F1P40DE	A.3.1
+ F67	A.3.11
F1P40DE	A.3.1
+ F68	A.3.11
F1TTP40DE	A.3.5
+ F67	A.3.11
F1TTP40DE	A.3.5
+ F68	A.3.11
F76	A.3.9
+ F67	A.3.11
F76	A.3.9
+ F68	A.3.11

optional covering 60
profiles (bottom):

Profile no.	Annex
F1P60/65DE	A.3.3
+ F67	A.3.11
F1P60/65DE	A.3.3
+ F68	A.3.11
F1TTP60/65DE	A.3.5
+ F67	A.3.11
F1TTP60/65DE	A.3.5
+ F68	A.3.11
F70	A.3.10
+ F67	A.3.11
F70	A.3.10
+ F68	A.3.11

Dimensions in mm

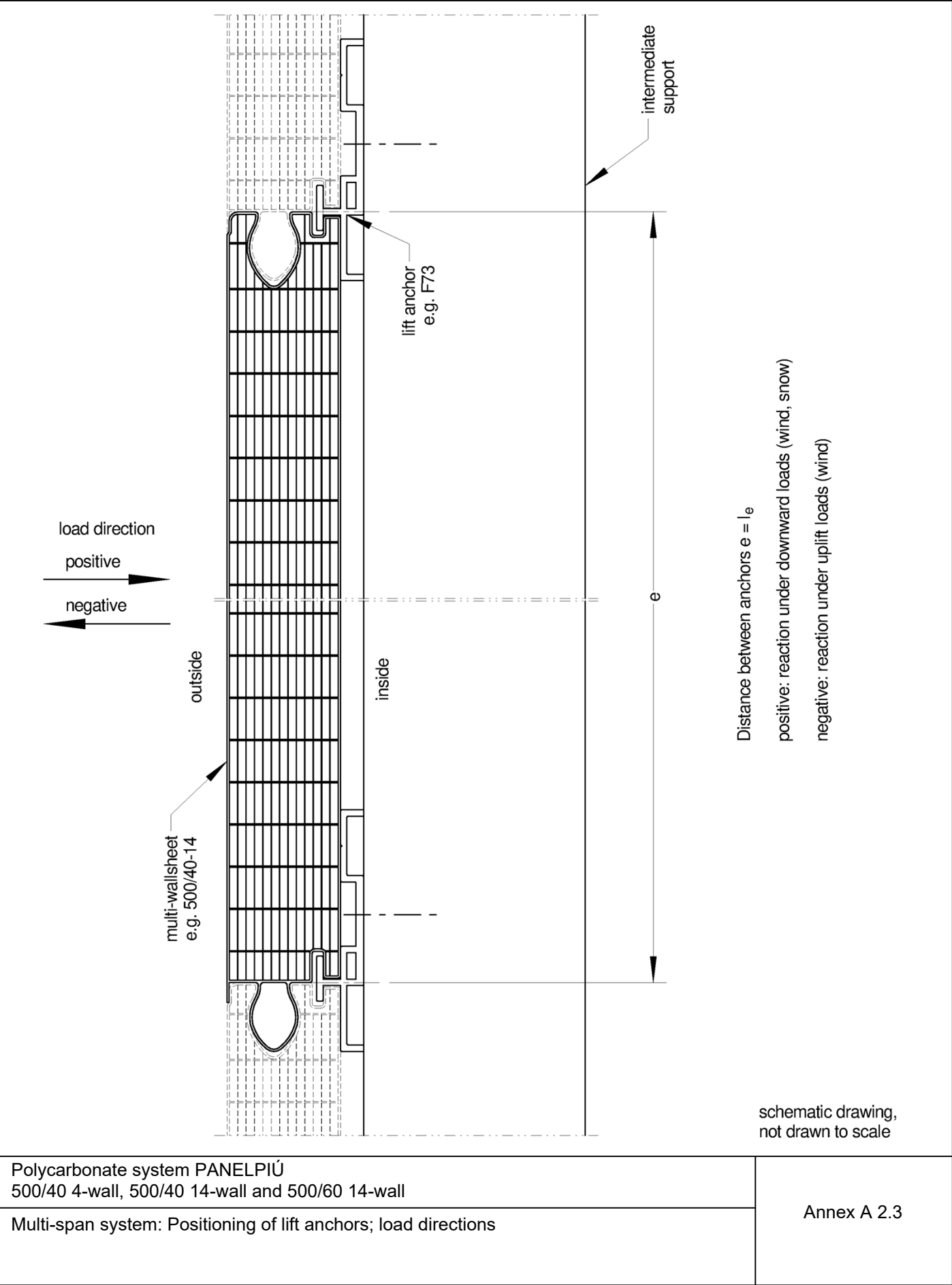


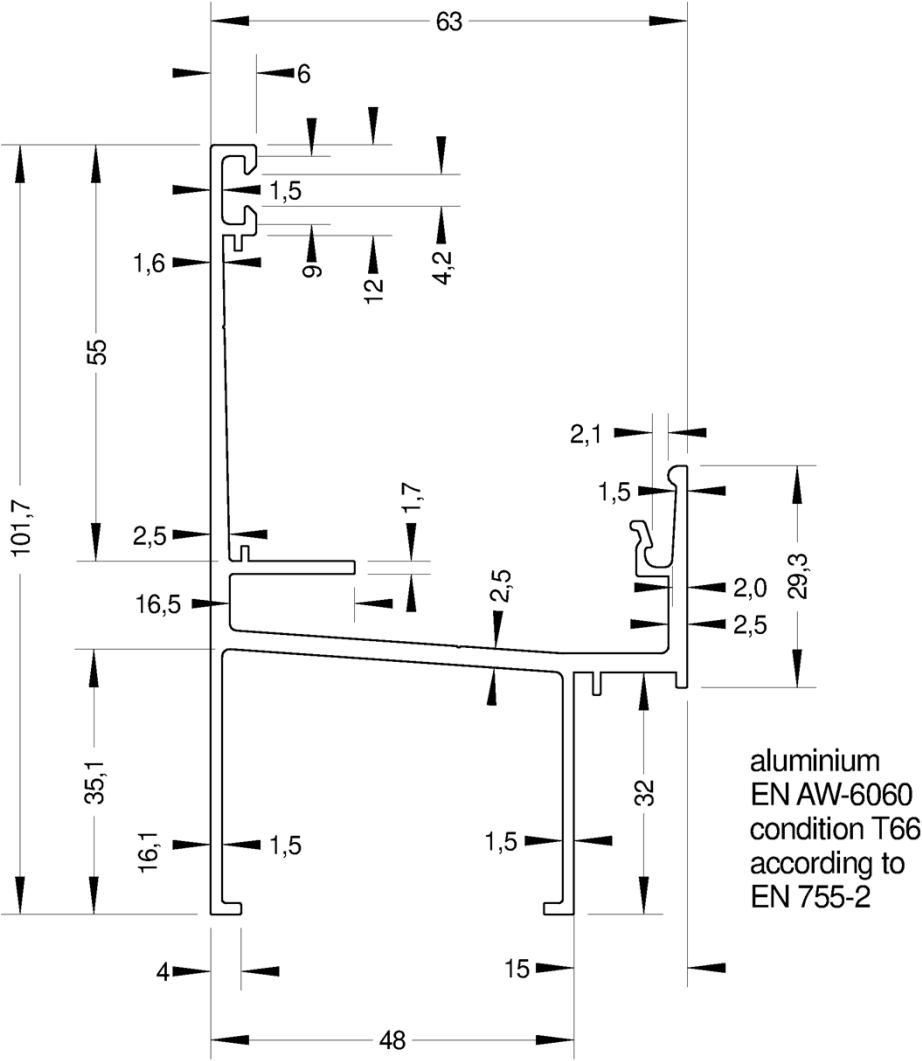
Schematic drawing,
not drawn to scale

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Support condition wall and roof installation
Example curtain wall/roof opening installation with and without thermal barriers

Annex A 2.2

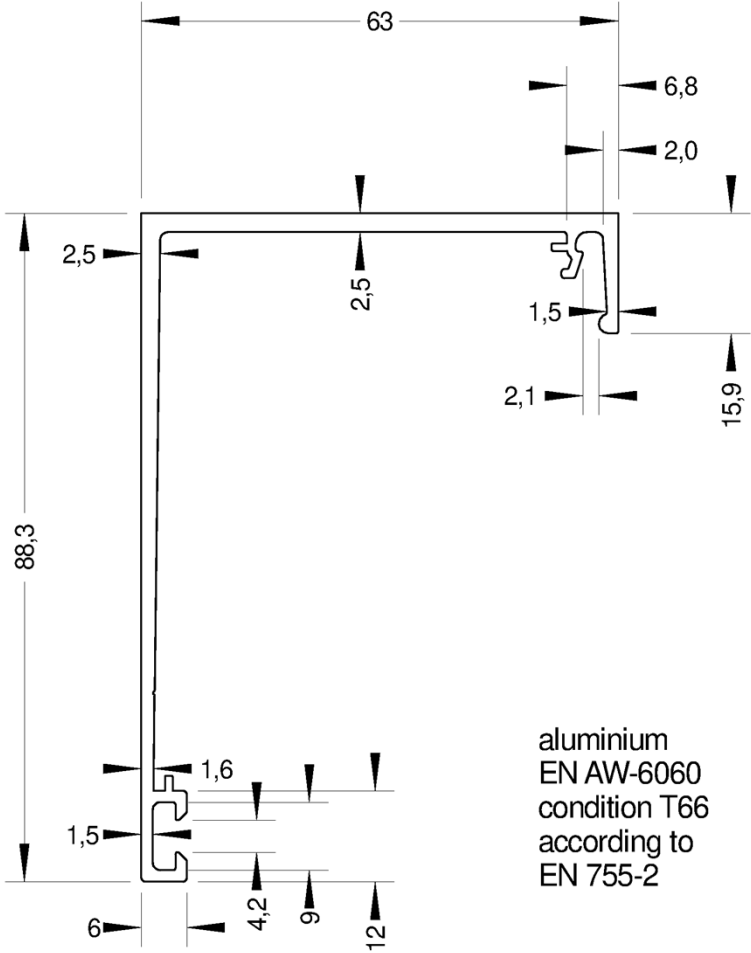




Tolerances according to EN 755-9

Dimensions in mm

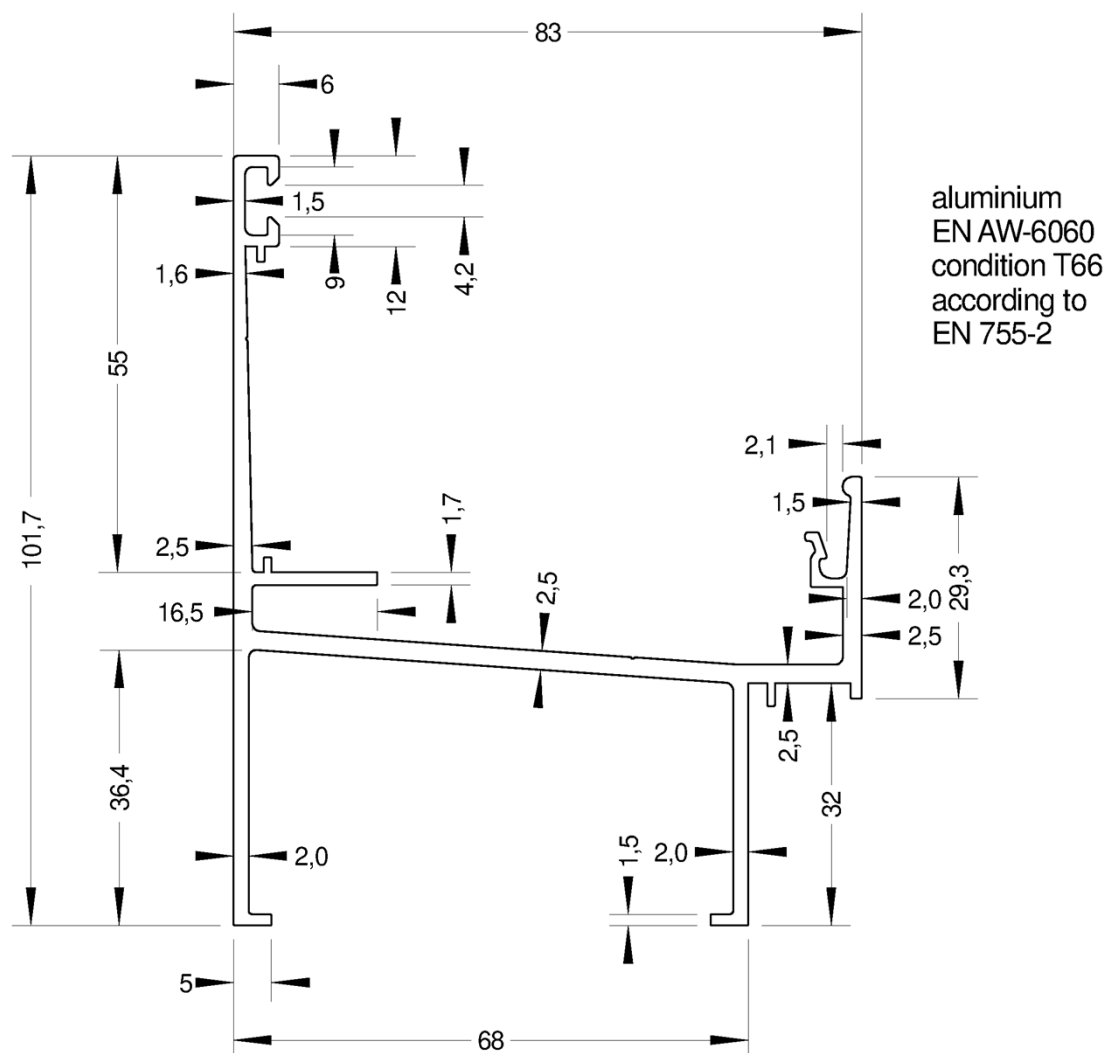
Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.1
Aluminium profile without thermal barrier F1P40DE Cross-section geometry	



Tolerances according to EN 755-9

Dimensions in mm

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.2
Aluminium profile without thermal barrier F2P40DE Cross-section geometry	



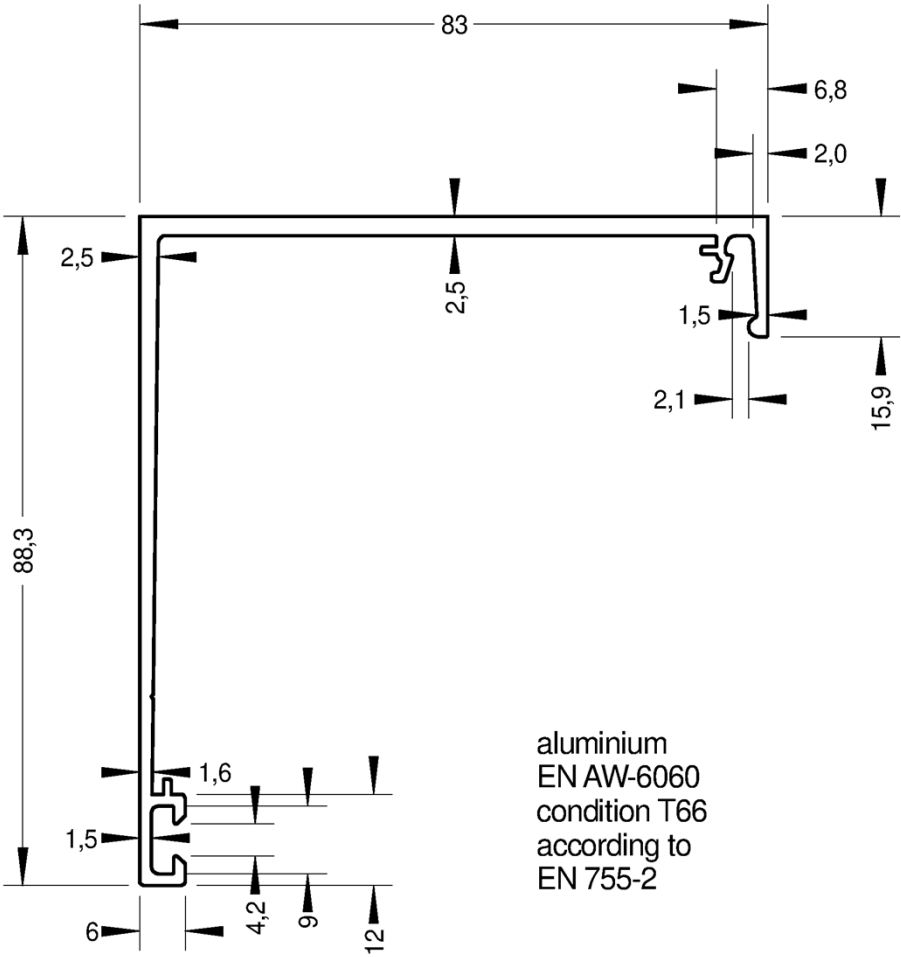
Tolerances according to EN 755-9

Dimensions in mm

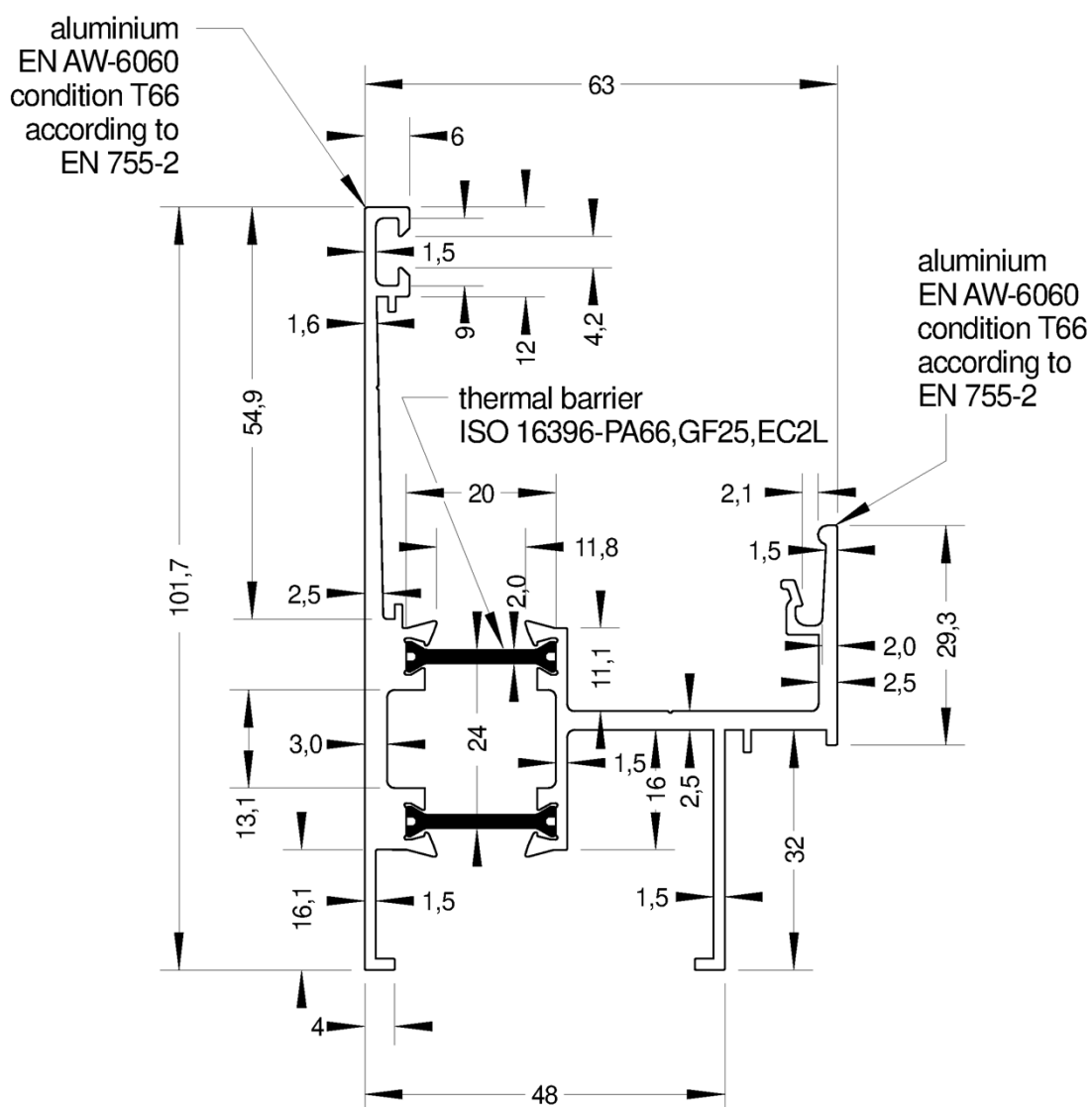
Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Aluminium profile without thermal barrier F1P60/65DE
Cross-section geometry

Annex A 3.3



Tolerances according to EN 755-9		Dimensions in mm
Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall		Annex A 3.4
Aluminium profile without thermal barrier F2P60/65DE Cross-section geometry		



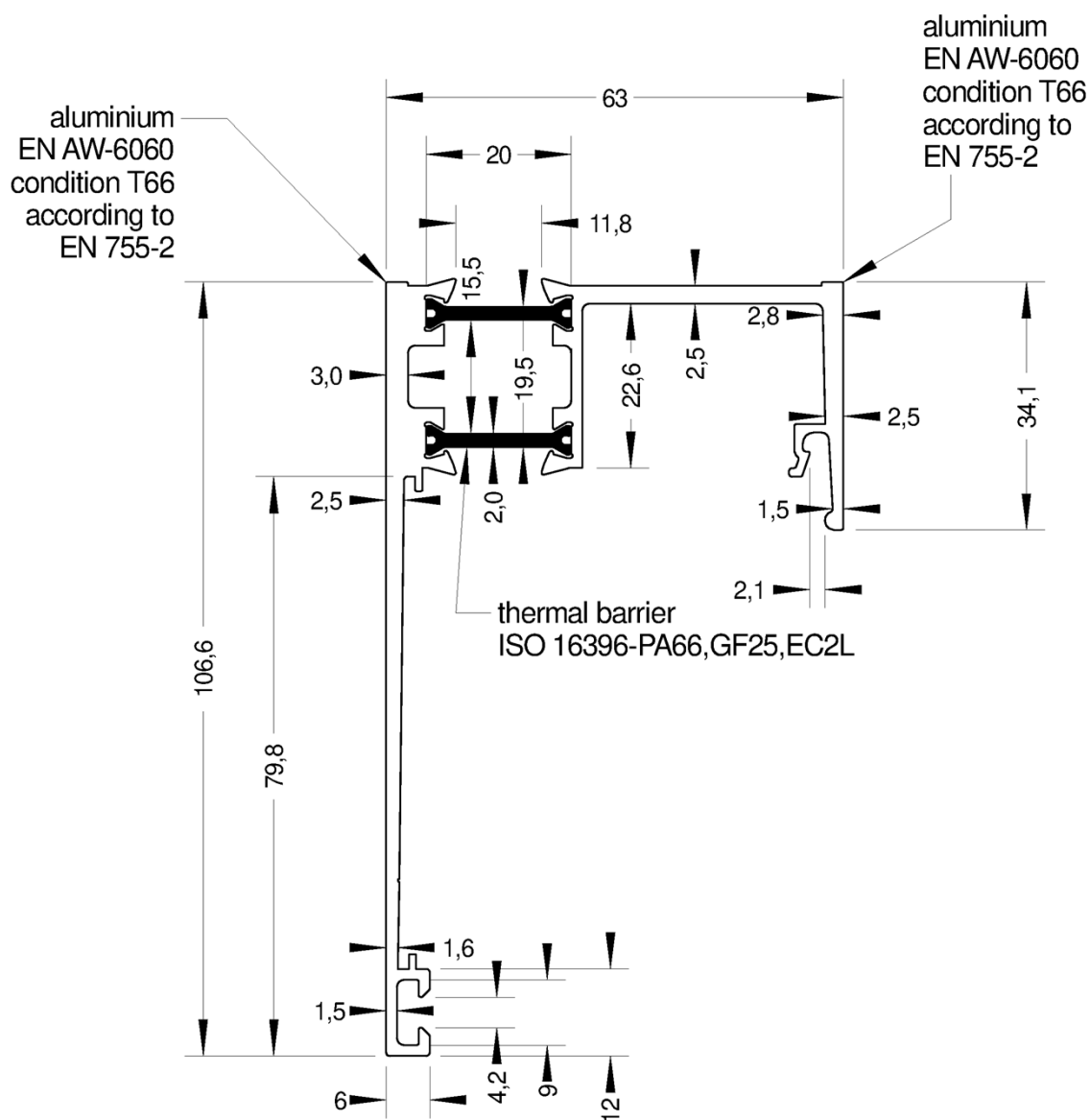
Tolerances according to EN 755-9 (aluminium)
and DIN ISO 2768-1 (thermal barrier)

Dimensions in mm

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Aluminium profile with thermal barrier F1TTP40DE
Cross-section geometry

Annex A 3.5



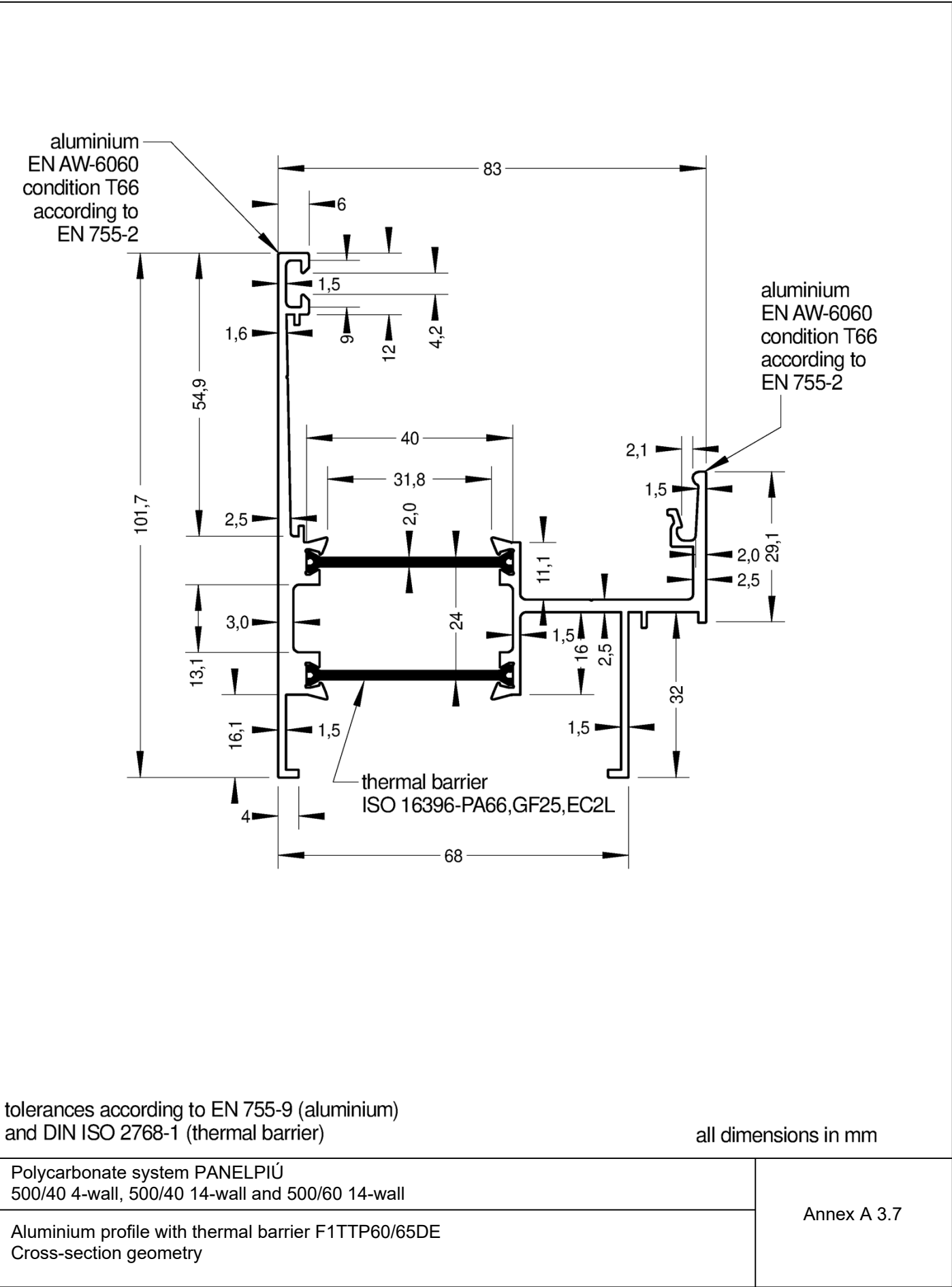
tolerances according to EN 755-9 (aluminium)
and DIN ISO 2768-1 (thermal barrier)

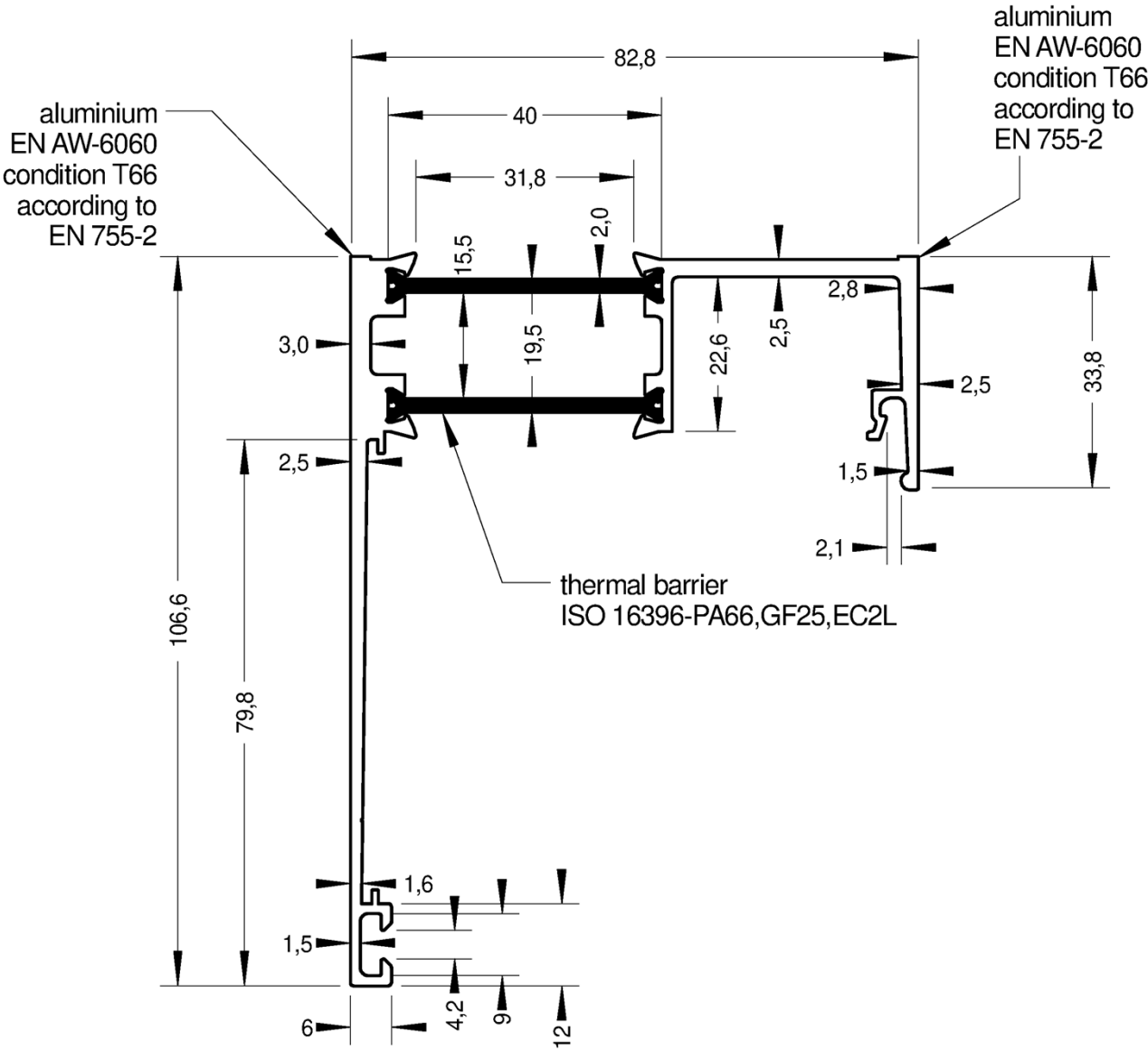
all dimensions in mm

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Aluminium profile with thermal barrier F2TTP40DE
Cross-section geometry

Annex A 3.6

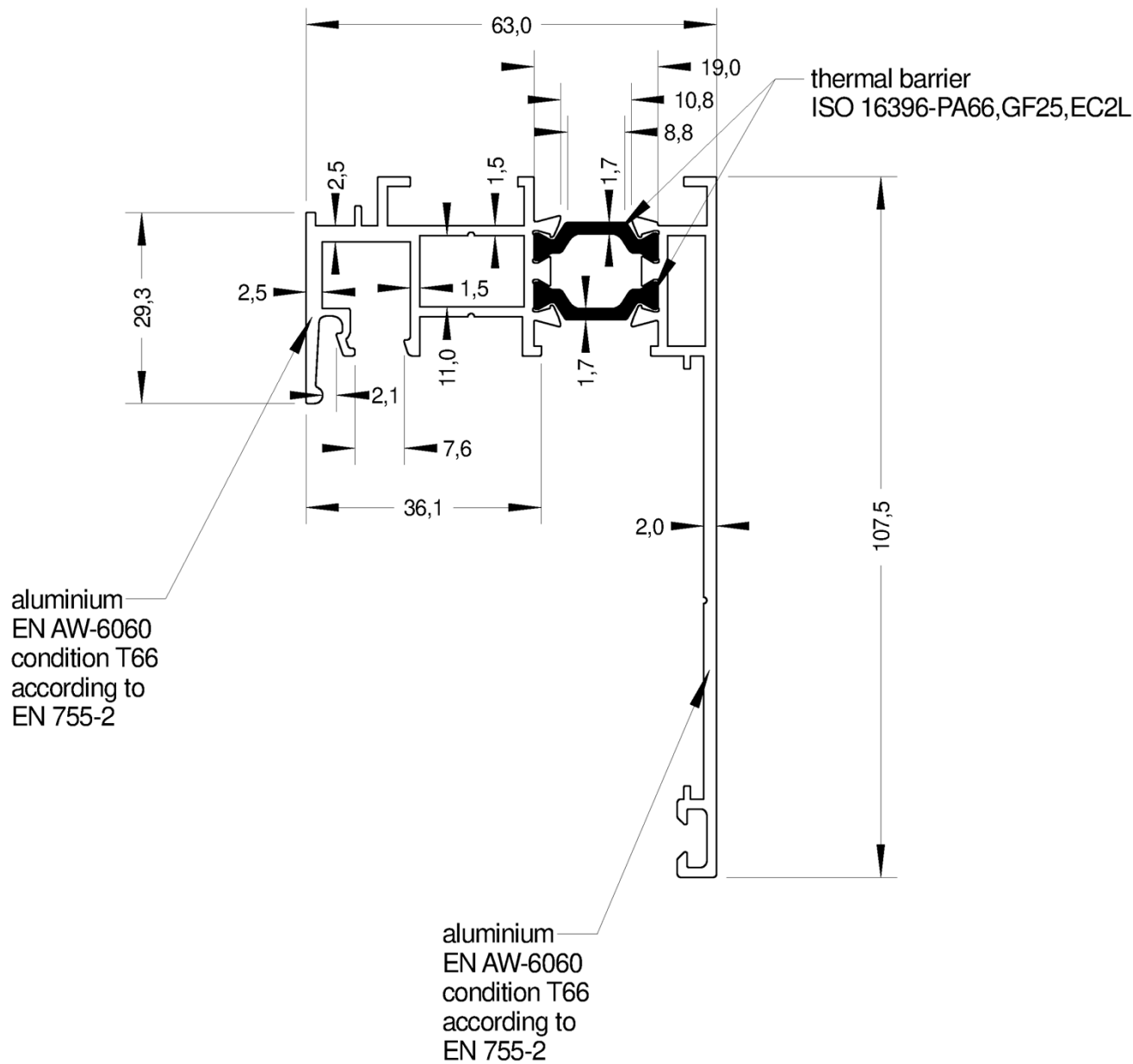




tolerances according to EN 755-9 (aluminium)
and DIN ISO 2768-1 (thermal barrier)

all dimensions in mm

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.8
Aluminium profile with thermal barrier F2TTP60/65DE Cross-section geometry	



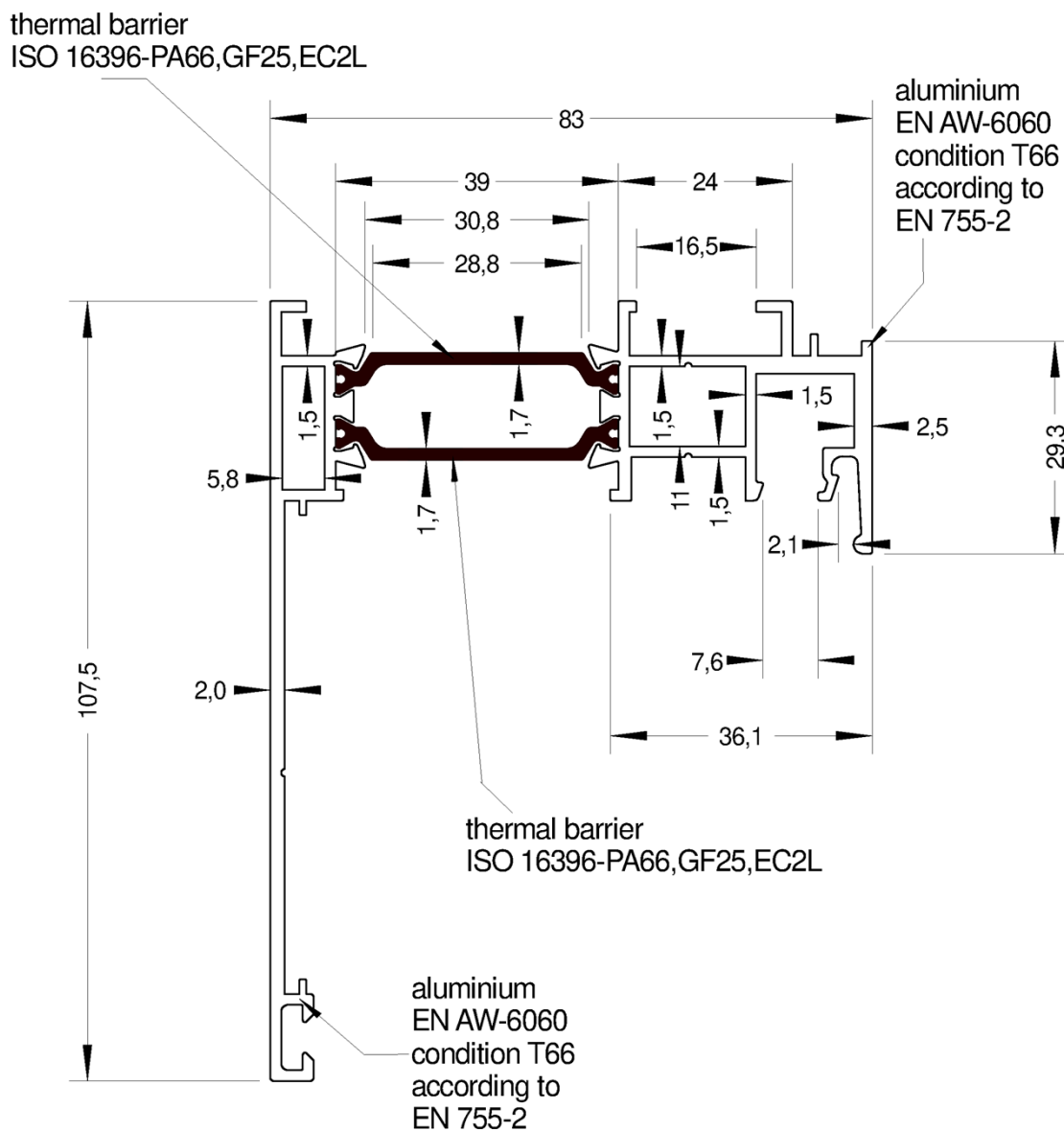
tolerances according to EN 755-9 (aluminium)
and DIN ISO 2768-1 (thermal barrier)

all dimensions in mm

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Aluminium profile with thermal barrier F76
Cross-section geometry

Annex A 3.9



Tolerances according to EN 755-9 (aluminium)
and DIN ISO 2768-1 (thermal barrier)

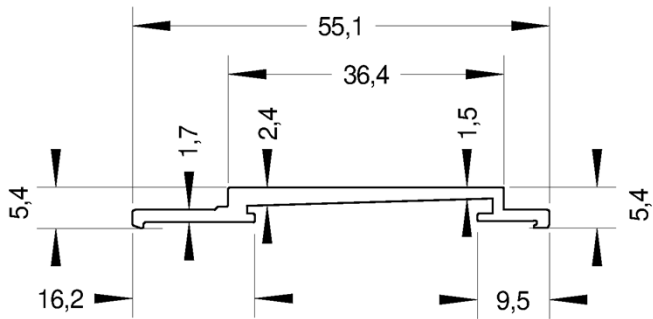
Dimensions in mm

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Aluminium profile with thermal barrier F70
Cross-section geometry

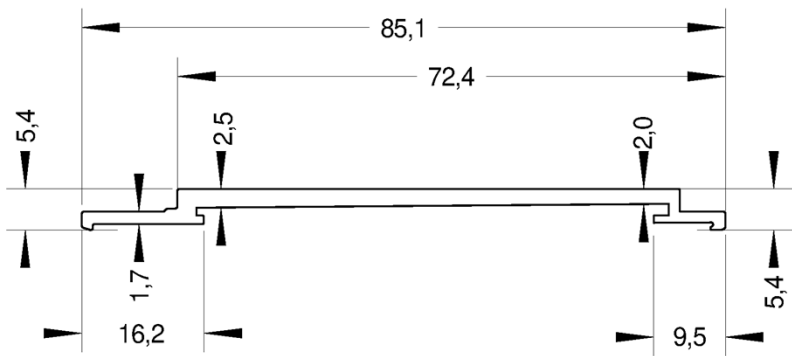
Annex A 3.10

Additional profil F67



aluminium
EN AW-6060
condition T66
according to
EN 755-2

Additional profil F68

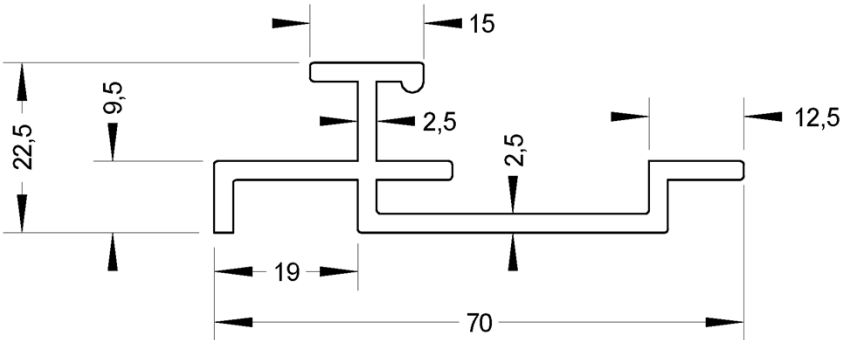


aluminium
EN AW-6060
condition T66
according to
EN 755-2

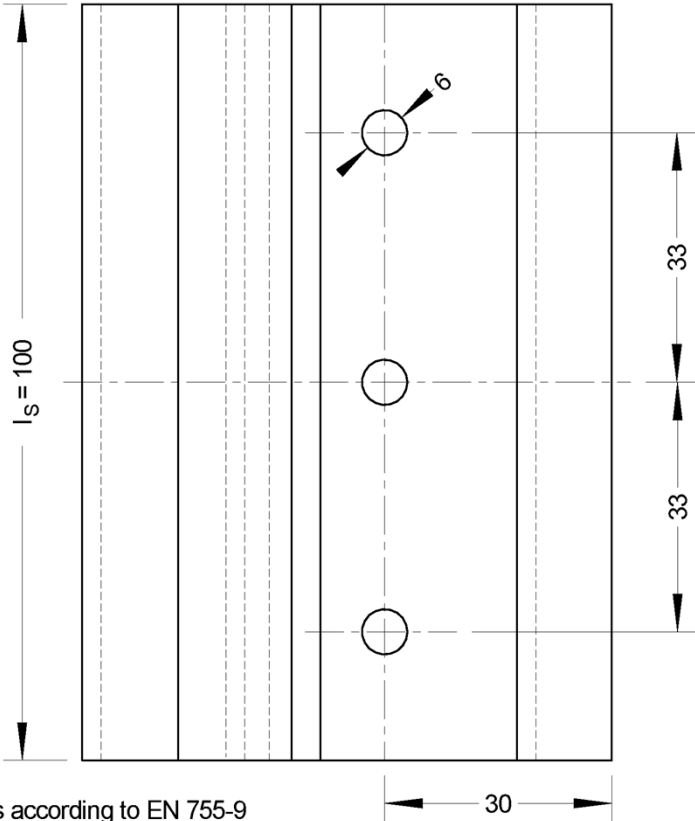
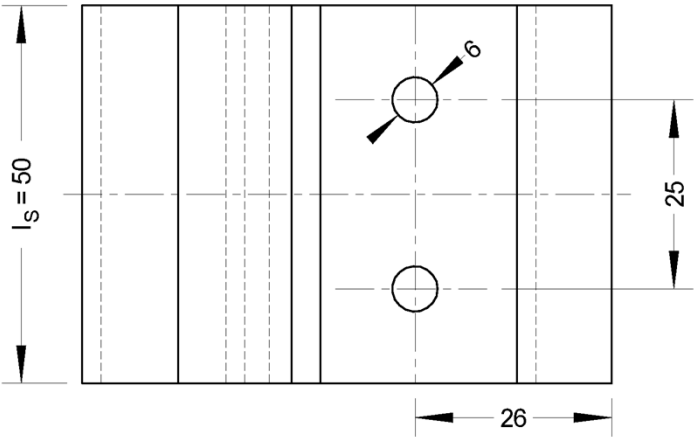
Tolerances according to EN 755-9

Dimensions in mm
(schematic, not up to scale)

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.11
Aluminium additional profile F67 and F68 Cross-section geometry	



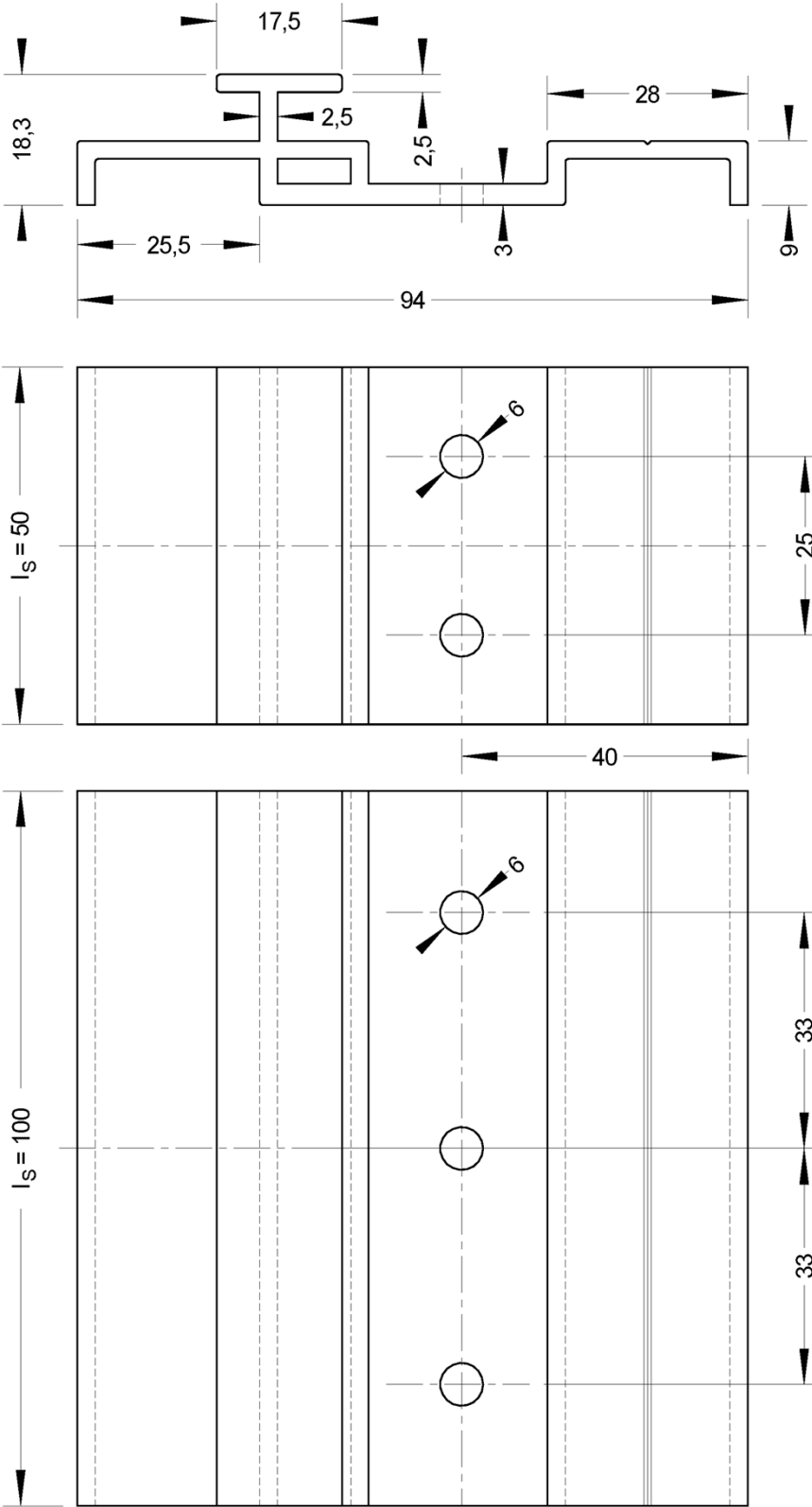
aluminium
EN AW-6060
condition T66
according to
EN 755-2



Dimensions without tolerances according to EN 755-9

All dimensions in mm

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.12
Lift anchor F46, Cross-section geometry and length	

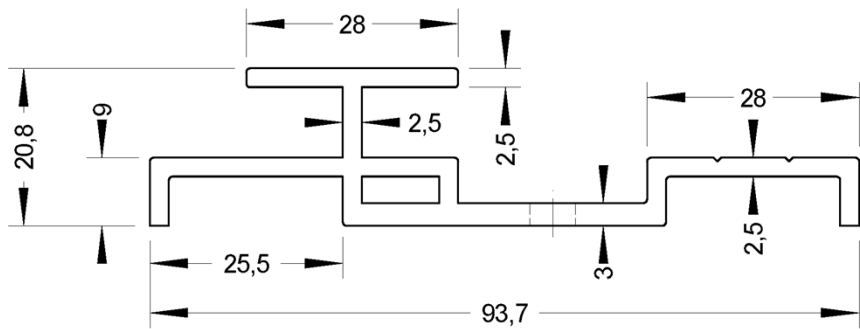


aluminium
EN AW-6060
condition T66
according to
EN 755-2

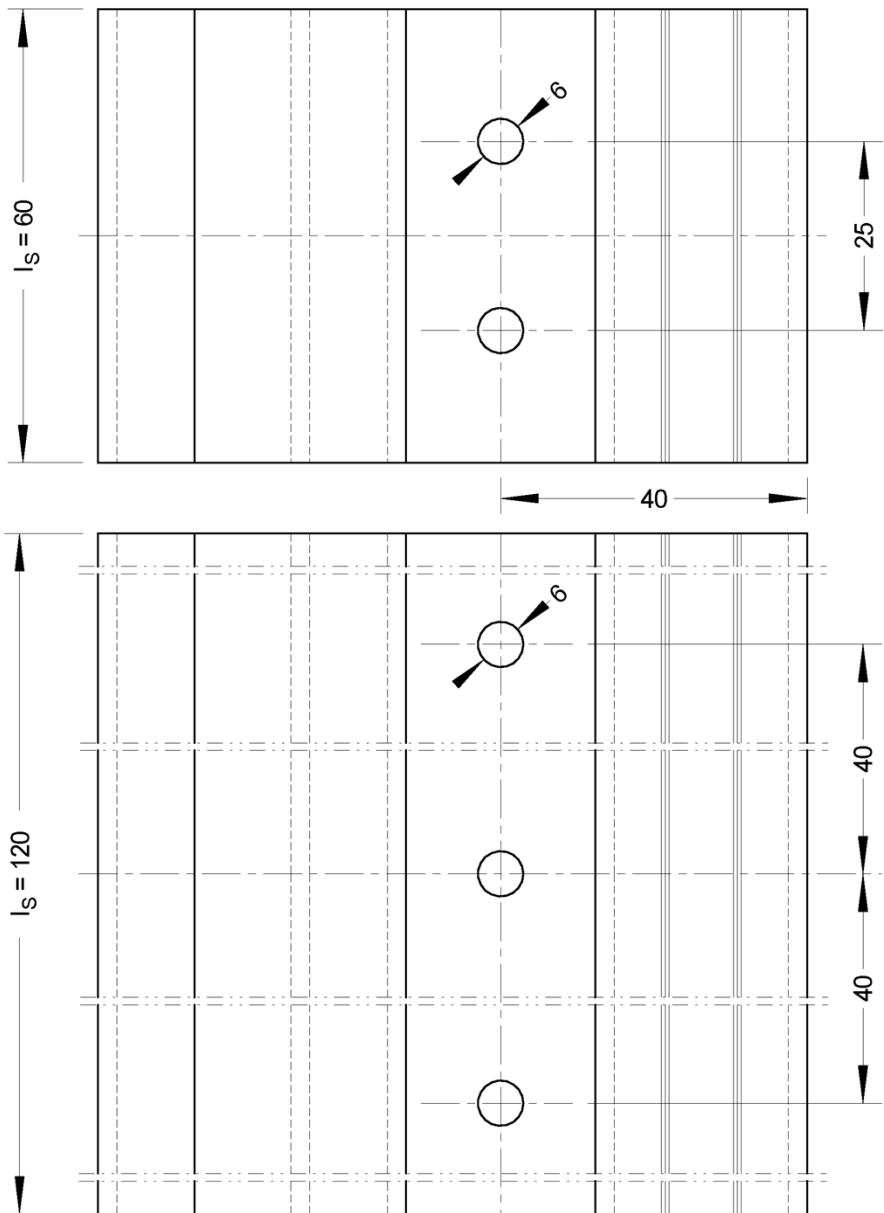
Dimensions without tolemaces according to EN 755-9

All dimensions in mm

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.13
Lift anchor F77, Cross-section geometry and length	



EN AW-6060
condition T66



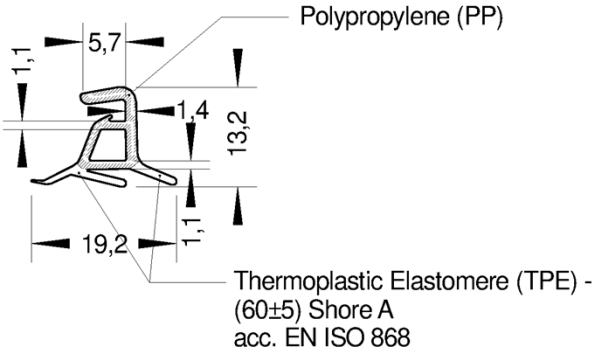
Dimensions without tolerances according to EN 755-9
All dimensions in mm

Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

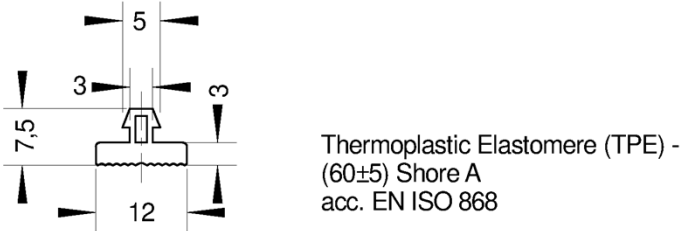
Lift anchor F74,
Cross-section geometry and length

Annex A 3.14

Outer gasket



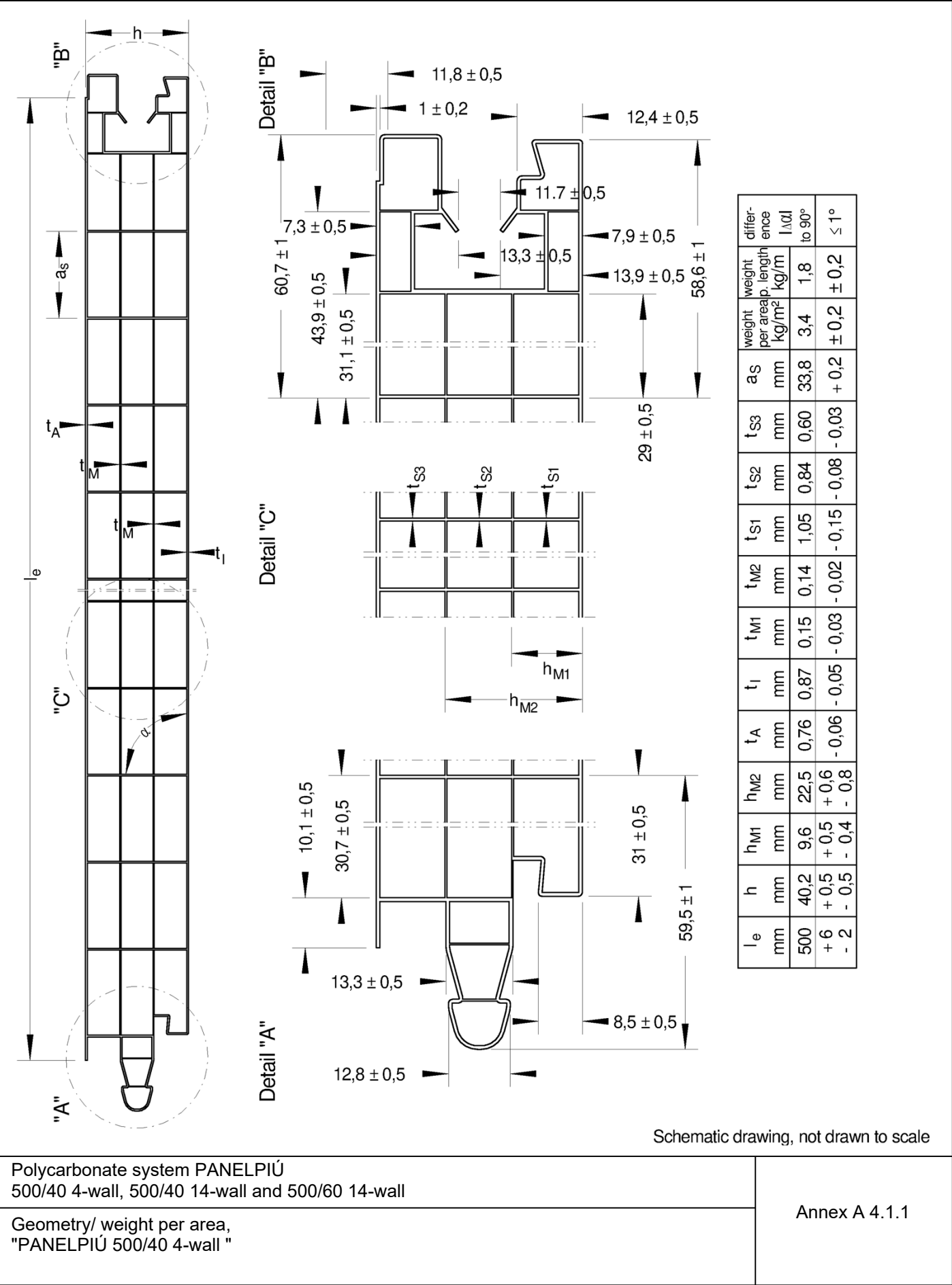
Inner gasket

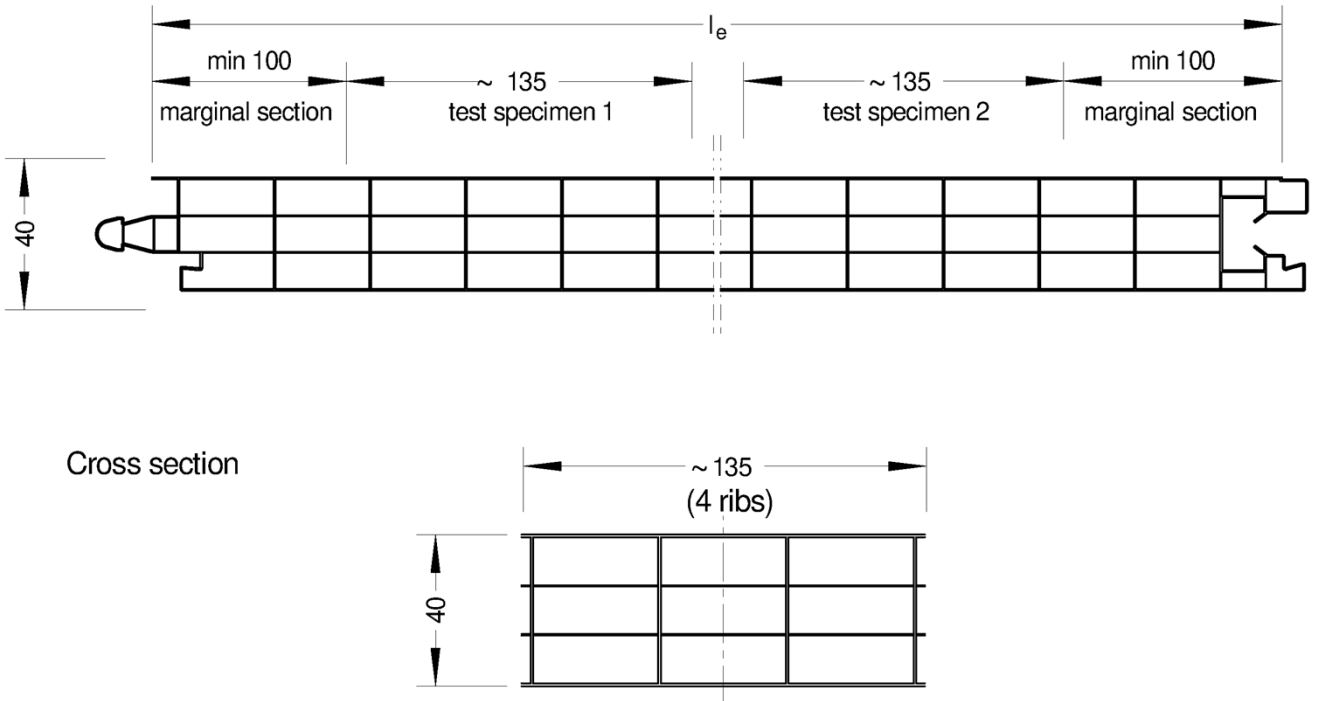


Tolerances according to DIN ISO 2768-1

Dimensions in mm

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 3.15
Sealing profiles: Inner and outer gasket Cross-section geometry	





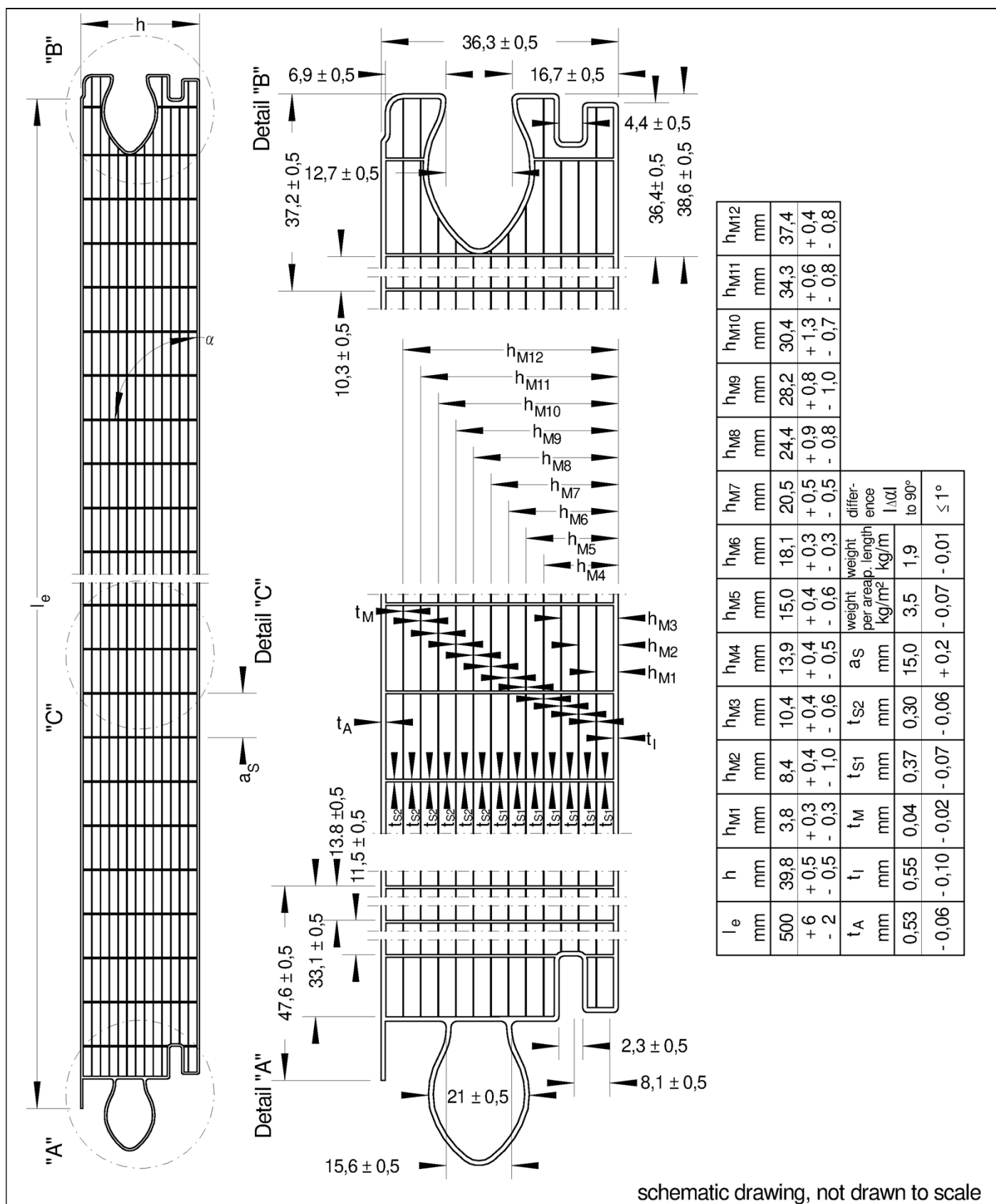
Minimum performance levels or classes for the sheets
(as declared in the DoP in accordance with EN 16153)

B _x	Durability as variation (after ageing)			
	of yellowness index	of the light transmittance	of deformation flexural modulus	of tensile strength
994	≤ 10 (ΔA)	≤ 5 % (ΔA)	Cu 1	Ku 1

Reaction to fire: Class B-s1,d0 in accordance with EN13501-1

dimensions in mm
schematic drawing, not drawn to scale

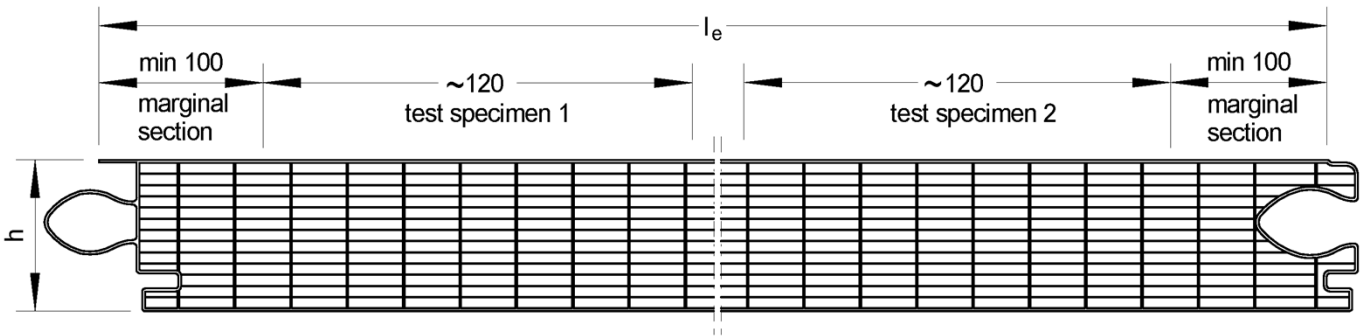
Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 4.1.2
Minimum performance levels or classes for the sheets in accordance with EN 16153 "PanelPIÚ 500/40 4-wall "	
Cross section of the test specimen for determining bending stiffness	



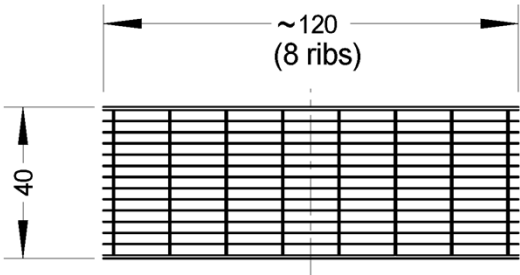
Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Geometry/ weight per area,
"PANELPIÚ 500/40 14-wall"

Annex A 4.2.1



Cross section



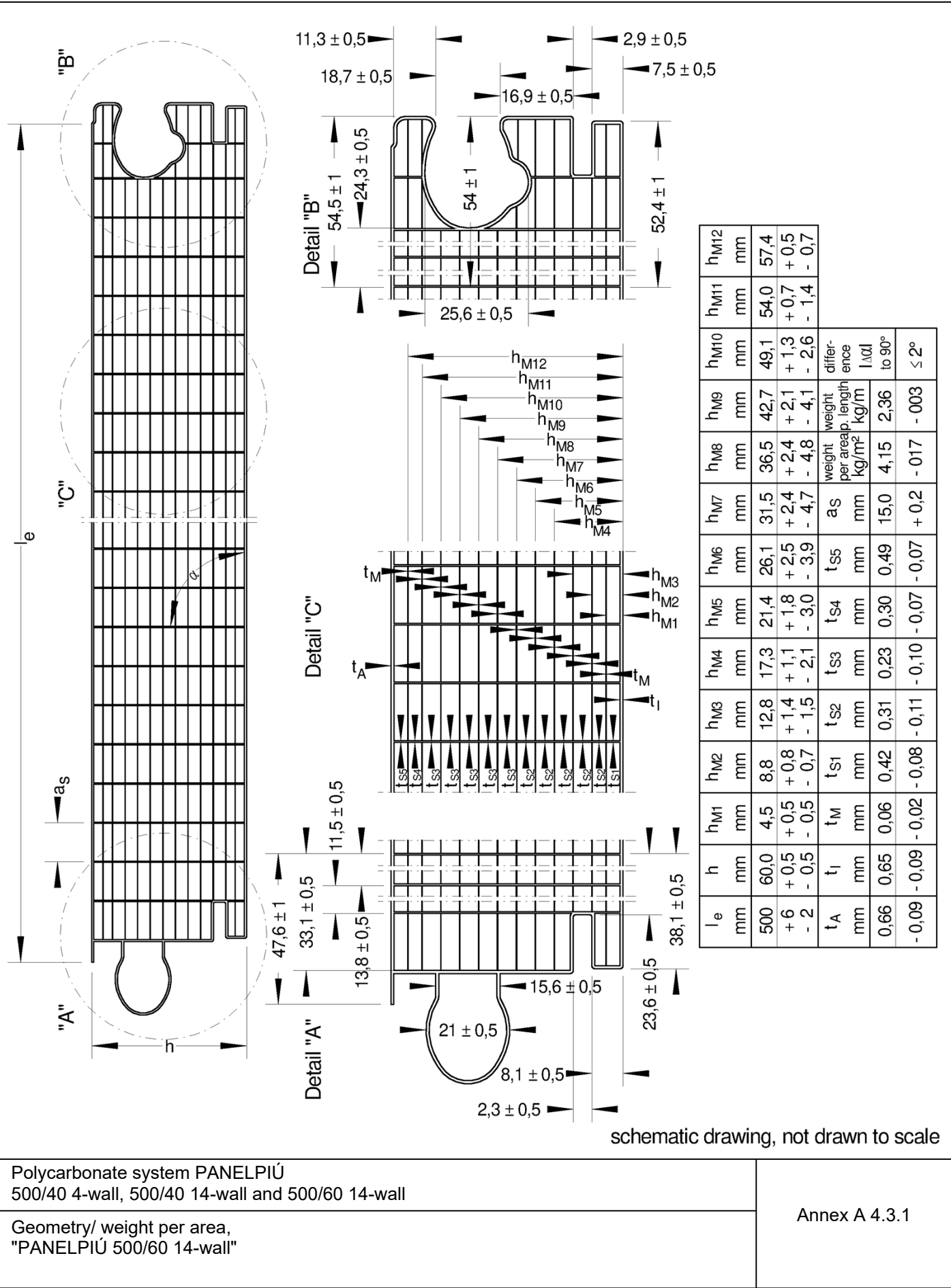
Minimum performance levels or classes for the sheets
(as declared in the DoP in accordance with EN 16153)

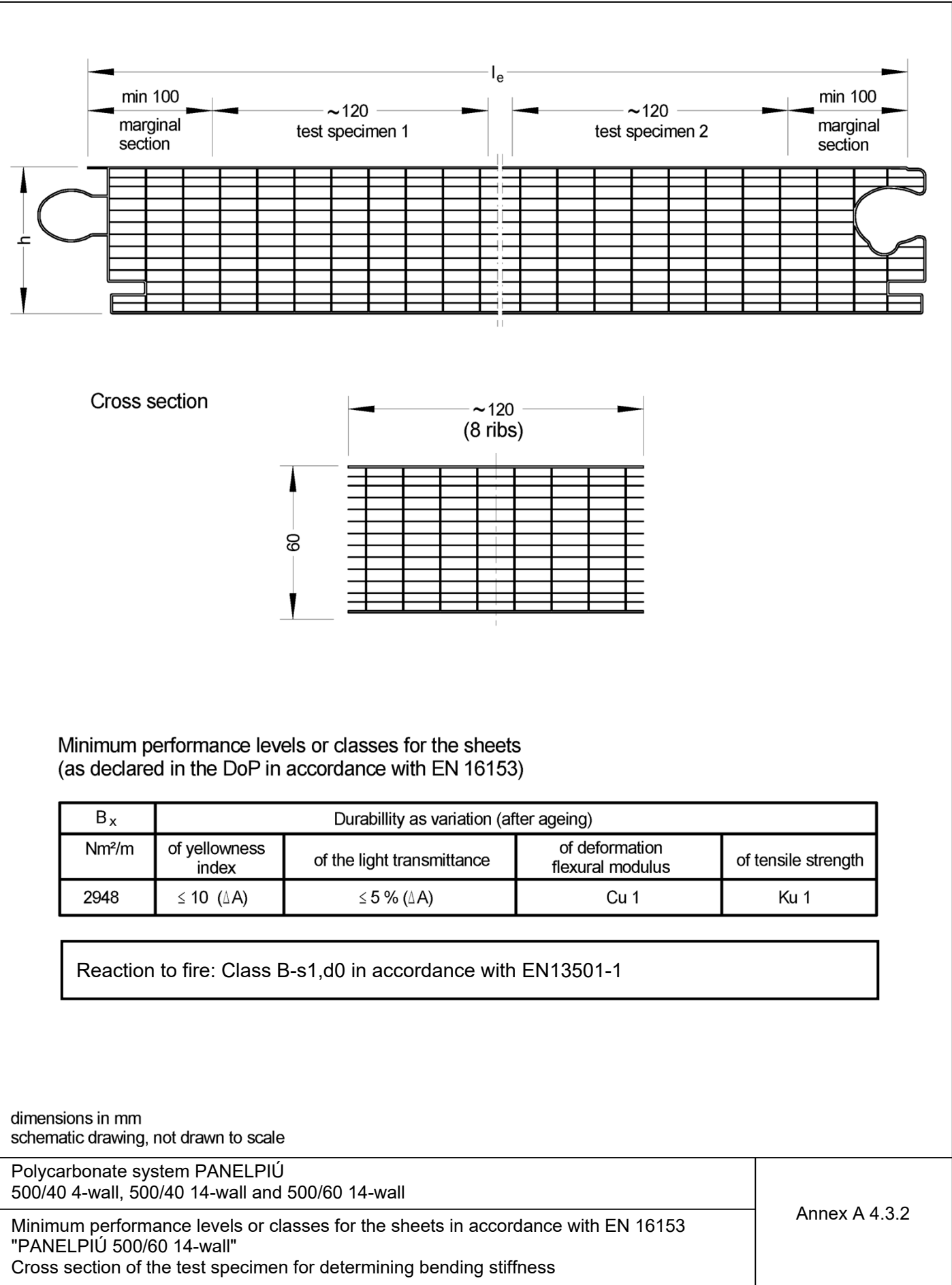
B _x	Durability as variation (after ageing)			
	Nm ² /m	of yellowness index	of the light transmittance	of deformation flexural modulus
1116		≤ 10 (ΔA)	≤ 5 % (ΔA)	Cu 1
				Ku 1

Reaction to fire: Class B-s1,d0 in accordance with EN13501-1

dimensions in mm
schematic drawing, not drawn to scale

Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex A 4.2.2
Minimum performance levels or classes for the sheets in accordance with EN 16153 "PIÚ 500/40 14-wall"	
Cross section of the test specimen for determining bending stiffness	





Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Annex B

Provisions for design and dimensioning

Dimensioning, installation and execution of the kit shall be in compliance with the national technical specifications. These differ in terms of their content as well as their status within the legal frameworks of the member states.

If no national provisions exist, dimensioning can be carried out in accordance with Annexes B 1 and B 2. In case the roof and wall kit, in particular the multi-wall sheets are systematically in contact with chemicals, the resistance to these substances shall be checked. Thereby, high concentrations of chemicals in the surrounding air shall be also considered.

Installation, packaging, transport, storage as well as use, maintenance and repair shall be carried out in accordance with the manufacturer's instructions (extract see Annex C).

B 1 Load-bearing capacity and serviceability of the covering

B 1.1 General

The design and arrangement of the multi-wall sheets as described in Section 1.1.1 in the translucent roof and wall kit shall correspond to the specifications given in Annexes A 1 to A 4. The specifications given in Section 2 shall be complied with.

The stability shall be verified for the ultimate limit state (ULS)

$$E_d \leq R_d$$

and for the serviceability limit state (SLS)

$$E_d \leq C_d$$

E_d : design value of the action

R_d : design value of the structural resistance for verification of the ultimate limit state

C_d : design value of the structural resistance for verification of the serviceability limit state

The multi-wall sheets shall not be used for bracing the aluminium structure.

The multi-wall sheets shall not be walked on.

Assessment pertaining to fall-through protection is not included in this ETA.

When using multi-field systems, the continuity effect must be taken into account when determining the load. The verification of the aluminium profiles and lift anchors, their fixings as well as the verification of substructure is not included in this ETA and must be carried out on a case-by-case basis. The dead load of the PC sheets may need to be taken into account.

B 1.2 Design values for actions, E_d

The design values for the actions shall be determined in accordance with EN 1991 and EN 1990.

The action resulting from the dead weight of the multi-wall sheets may be neglected for the structural design calculation in accordance with Section B.1.3 of the roof and wall kit. Live loads are not permitted.

The design value of the action results from the characteristic values of the actions taking into account the partial safety factors γ_F , the coefficients ψ and the factors for the effects of the duration of load action C_t .

For the wind and temperature effects to be considered in the load case "summer" the Ψ coefficient defined in EN 1990 may be applied. In design situations where the wind is applied as the dominant variable action, the Ψ coefficient may be considered in the design value of the structural resistance.

The actions E_k shall be increased through multiplication by the factors C_t in consideration of the action duration and based on load.

Load action	Duration of load action	$K_t = C_t$
Wind	very short	1.00
Snow as an extraordinary snow load (e.g. in the low-lying plains of northern Germany)	short: up to one week	1.15
Snow	medium: up to three months	1.20
Dead Load	constantly	1.50

B 1.3 Design values for structural resistance R_d (ULS) and C_d (SLS)

The design values for structural resistance R_d and C_d result from the characteristic value of structural resistance R_k and C_d in consideration of the material safety factor γ_M , the factor taking into account the effects of media C_u and the temperature factor C_θ as follows:

$$R_d = \frac{R_k}{\gamma_{MR} \cdot C_u \cdot C_\theta} \quad C_d = \frac{R_k}{\gamma_{MC} \cdot C_u \cdot C_\theta}$$

The following factors shall be applied:

Factor taking into account the effects of media and ageing C_u		1,10
Temperature factor C_θ	summer	1,20
	winter	1,00

The following material safety factors shall be applied as a function of the consequence class (CC) in accordance with EN 1990:

Consequence class	Material safety factor γ_{MR}	Material safety factor γ_{MC}
CC 1	1,25	1,09
CC 2	1,30	1,13

In design situations where wind is considered to be the dominant variable action, the reduction in structural resistance due to temperature may be reduced by means of the Ψ coefficient for the summer load case. For this design situation a reduction factor for temperature of $C_\theta = 1 + \Psi \cdot (C_\theta - 1.0)$ may be applied.

The characteristic values for structural resistance R_k shall be taken from the tables in Annex B 2.1.1 to B 2.2.6 for the given multi-wall sheets and direction of loading.

– Single-span system

The load direction "negative" and "positive" as well as the span l_F are given in Annex A 1.1 and A 2. The characteristic values for structural resistance R_k and C_k related to the span l_F shall be taken from the tables in Annex B 2.1.1 to B 2.1.4 for the given multi-wall sheets and direction of loading.

– Multi-span system

The load direction "negative" and "positive" as well as the span l_F are given in Annex A 1.2 and A 2. The characteristic values for structural resistance R_k and C_k are given as interaction between support moment and force at the intermediate support and shall be taken from the tables in Annex B 2.2.1 to B 2.2.6 for the given multi-wall sheets and direction of loading.

The load at intermediate support is decisive.

For load direction "negative" the factor C_u can be set to 1,0. Therefore direct sunlight on the inside of the multi-wall sheets must be excluded.

The intermediate supports for fixing the suction anchors must have the minimum width $b_A \geq 60$ mm, specified in Annex A 2.1 and A 2.2. The minimum span l_F as given in Annex A 1.2 shall be 0,50 m.

For the determination of the respective span, the centre of the lift anchor is decisive for the load direction "negative" and the centre of the intermediate support for the load direction "positive".

– Local buckling

When the characteristic values are fully utilised, reversible local buckling may occur in the pressed outer wall of the sheets without affecting the load-bearing capacity.

B 1.4 Limiting of deflection

The design value for structural resistance C_d for deflection is given by the design value of limiting of deflection $f_{R,d}^{GZG}$. The deflection is to be carried out for uniformly distributed loads assuming a linear-elastic material behavior as follows:

$$\frac{f_{E,d}^{GZG}}{f_{R,d}^{GZG}} \leq 1,0$$

$f_{E,d}^{GZG}$: design value of deflection as a result of E_d

$f_{R,d}^{GZG}$: design value of deflection limit

For calculation the design value of deflection as a result of E_d the following bending stiffness (B) of the multi wall sheets shall be applied:

"PANELPIÚ 500/40 4-wall": $B = 1500 \text{ Nm}^2/\text{m}$

"PANELPIÚ 500/40 14-wall": $B = 1400 \text{ Nm}^2/\text{m}$

"PANELPIÚ 500/60 14-wall": $B = 4500 \text{ Nm}^2/\text{m}$

The characteristic values for dead load of multi wall sheets shall be taken from the Annex A.4.

Restraint stresses are to be compensated by constructive solutions. The changes in length due to temperature must be assessed on a case-by-case basis. The following coefficient of thermal expansion is to be used for the multi-wall sheets:

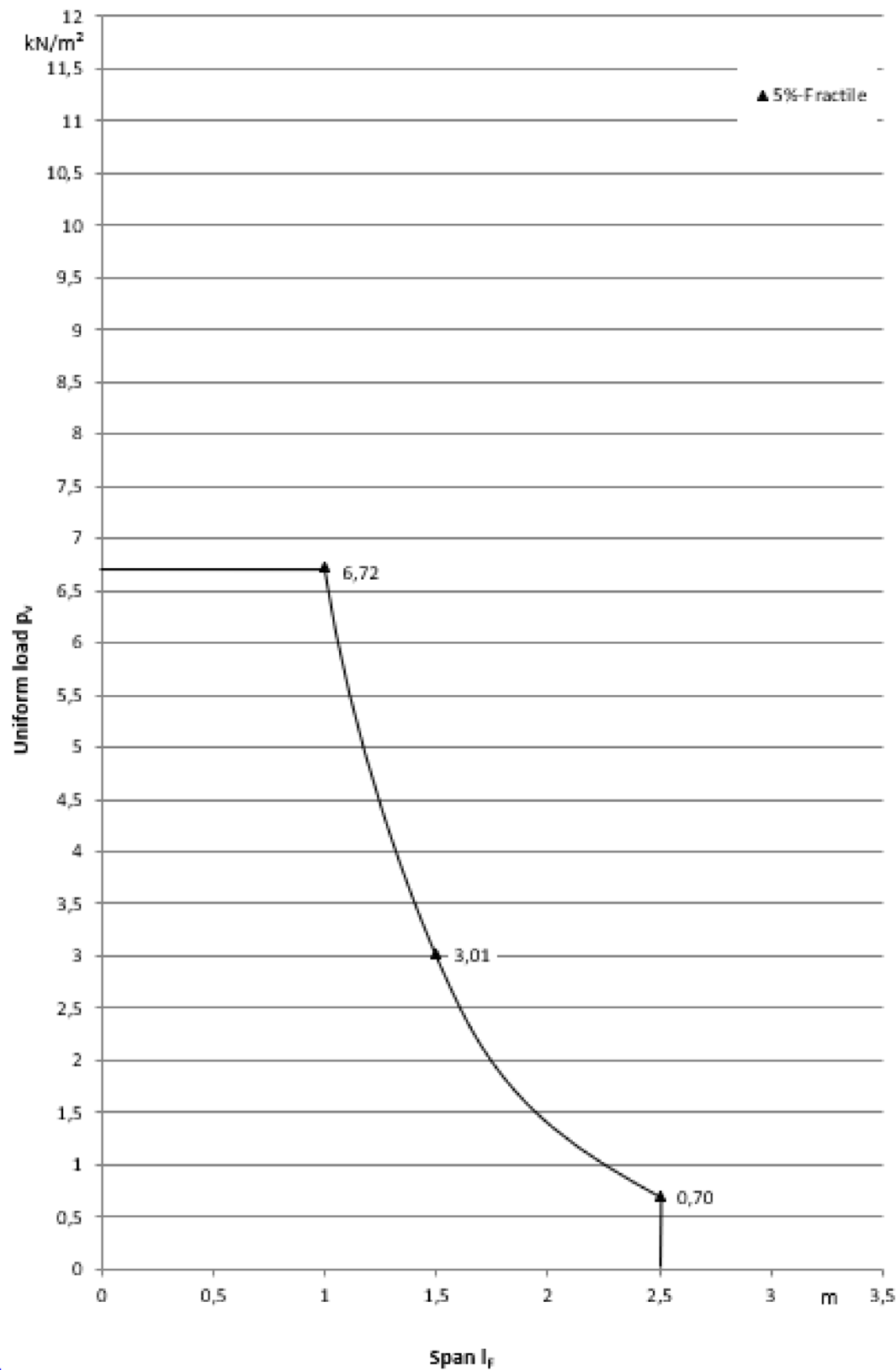
$$\alpha_T = 65 \cdot 10^{-6} \text{ K}^{-1}$$

The design values for limiting of deflection results as follows:

$$f_{R,d}^{GZG} = \frac{f_{R,k}}{C_u \cdot C_\theta \cdot \gamma_{MC}}$$

The limit of deflection ($f_{R,k}$) is to be determined that a proper function is not impaired, for example, no water sacks form or water penetrates.

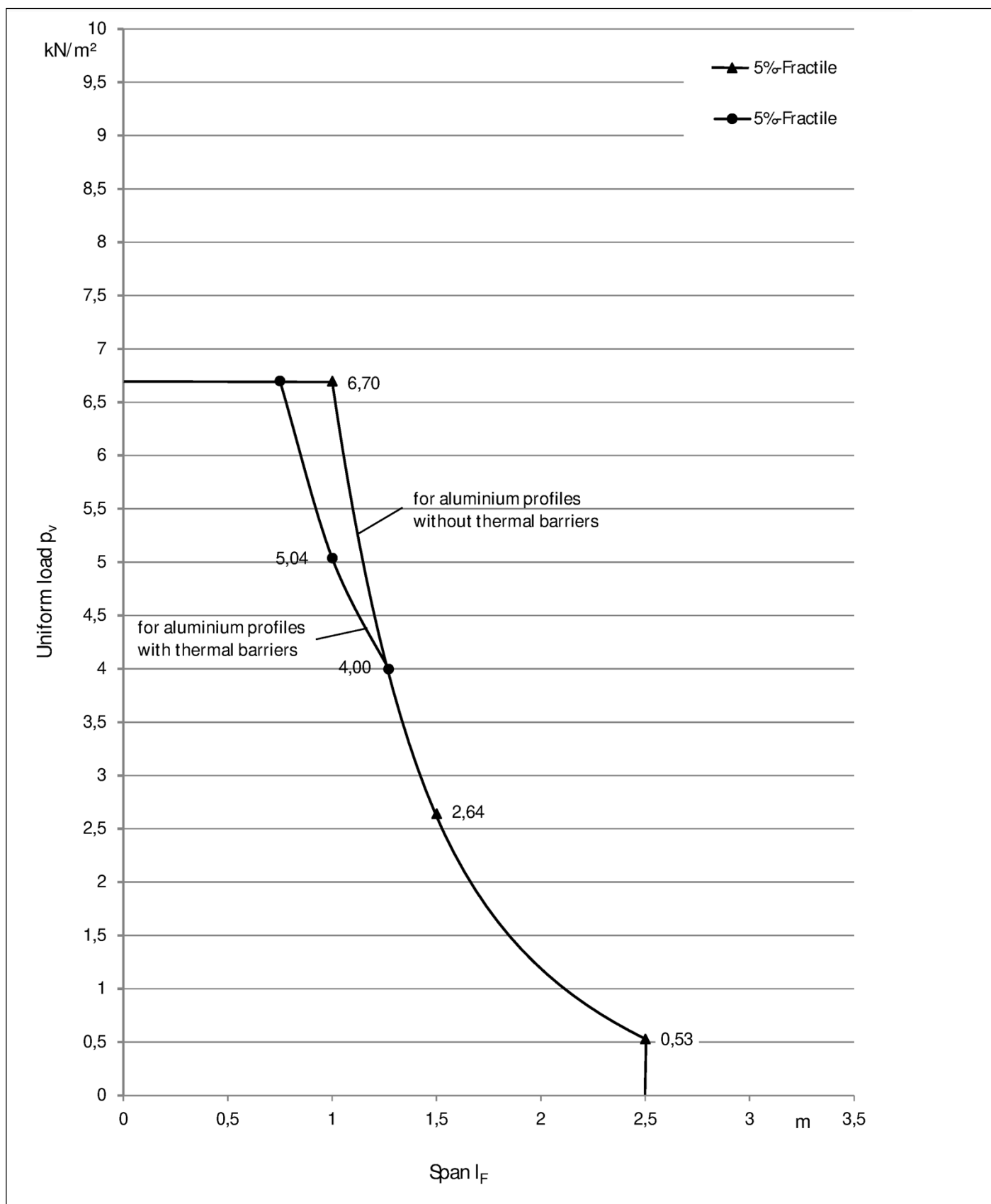
The factors given in Section B 1.2 und Section B 1.3 shall be applied.



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K (Interaction uniform load and span)
single-span system, load direction positive
"PANELPIÚ 500/40 4-wall" and "PANELPIÚ 500/40 14-wall"

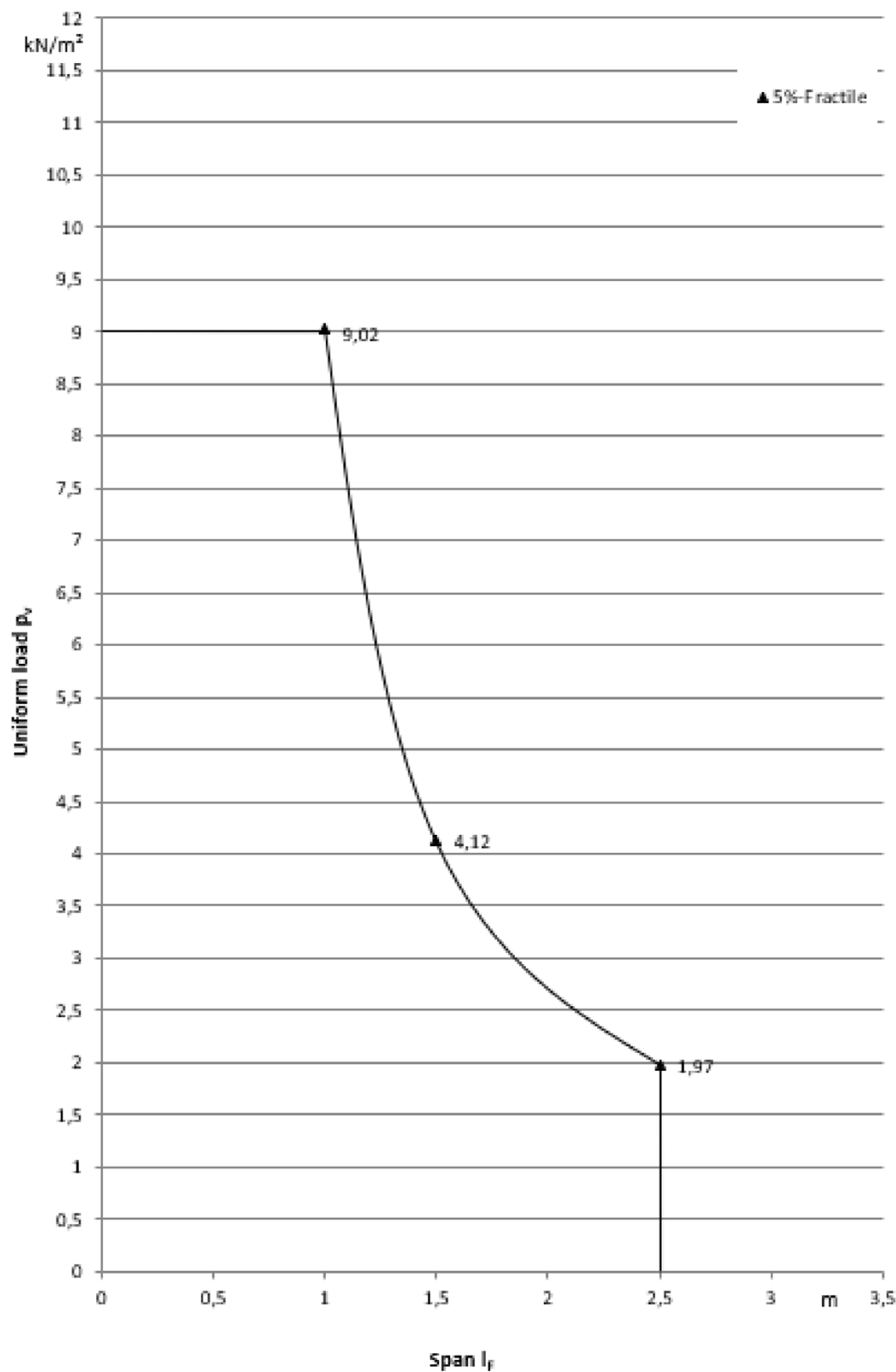
Annex B 2.1.1



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K (Interaction uniform load and span)
single-span system, load direction negative
"PANELPIÚ 500/40 4-wall" and "PANELPIÚ 500/40 14-wall"

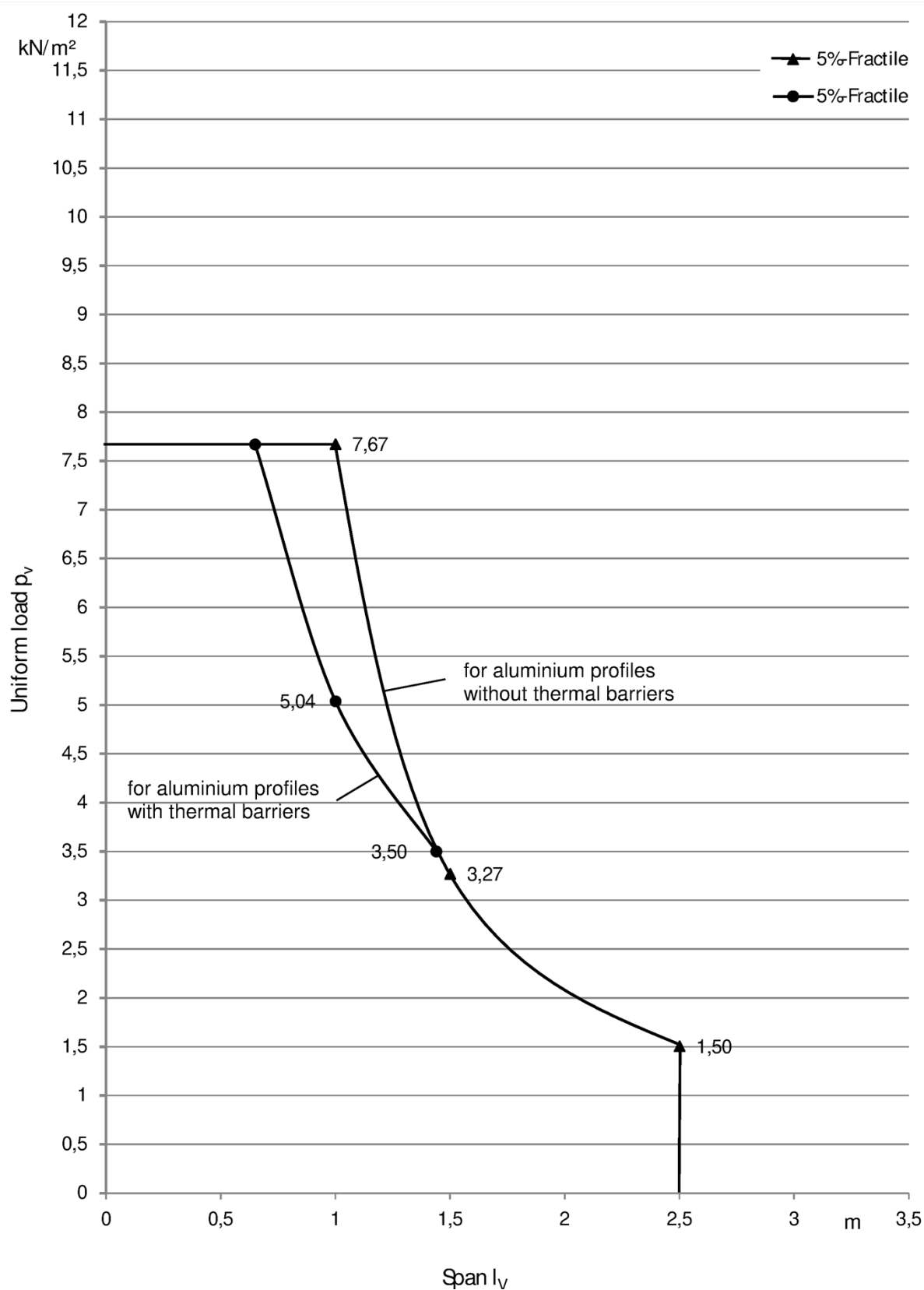
Annex B 2.1.2



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K (Interaction uniform load and span)
single-span system, load direction positive
"PANELPIÚ 500/60 14-wall"

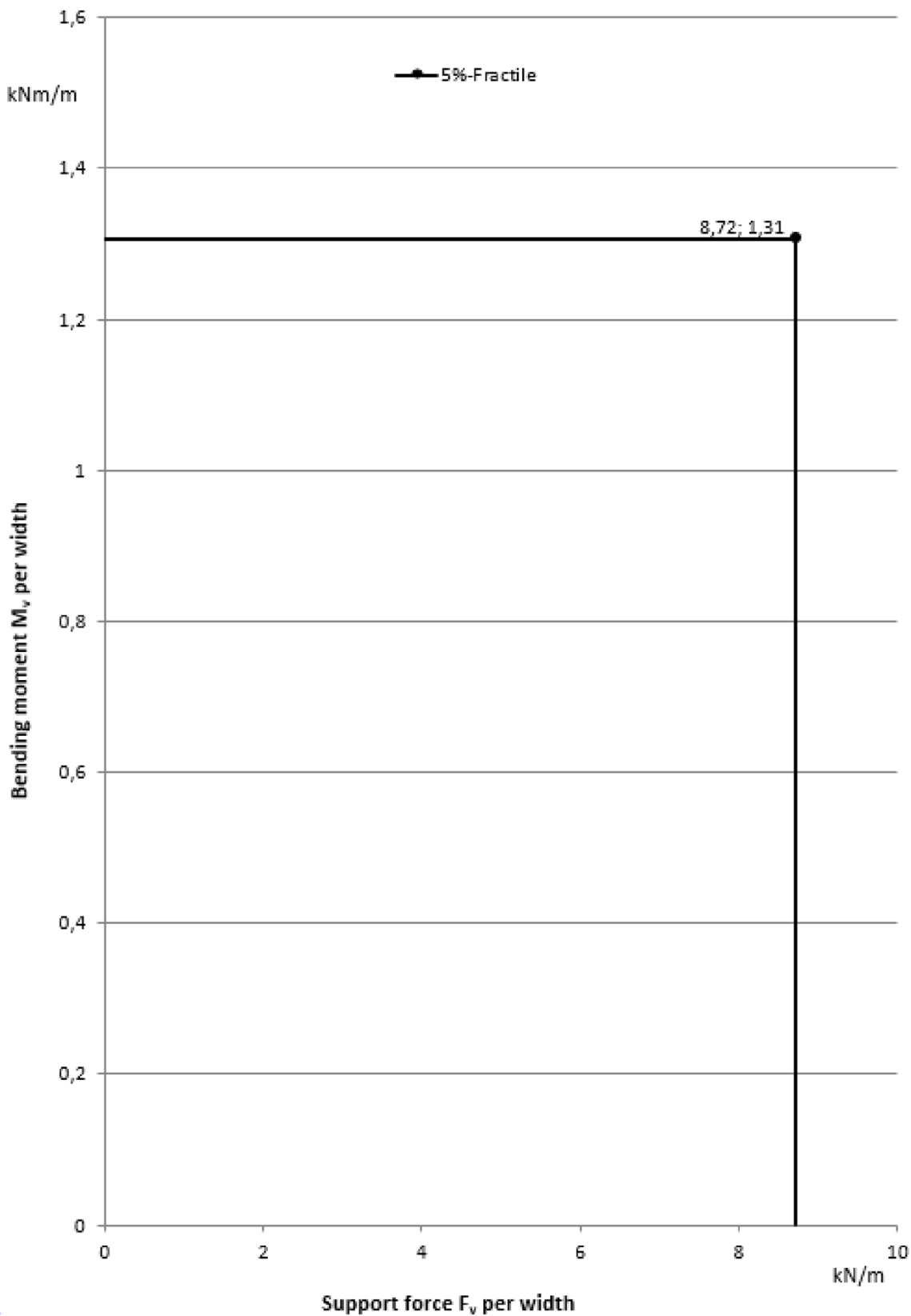
Annex B 2.1.3



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K (Interaction uniform load and span)
single-span system, load direction negative
"PANELPIÚ 500/60 14-wall"

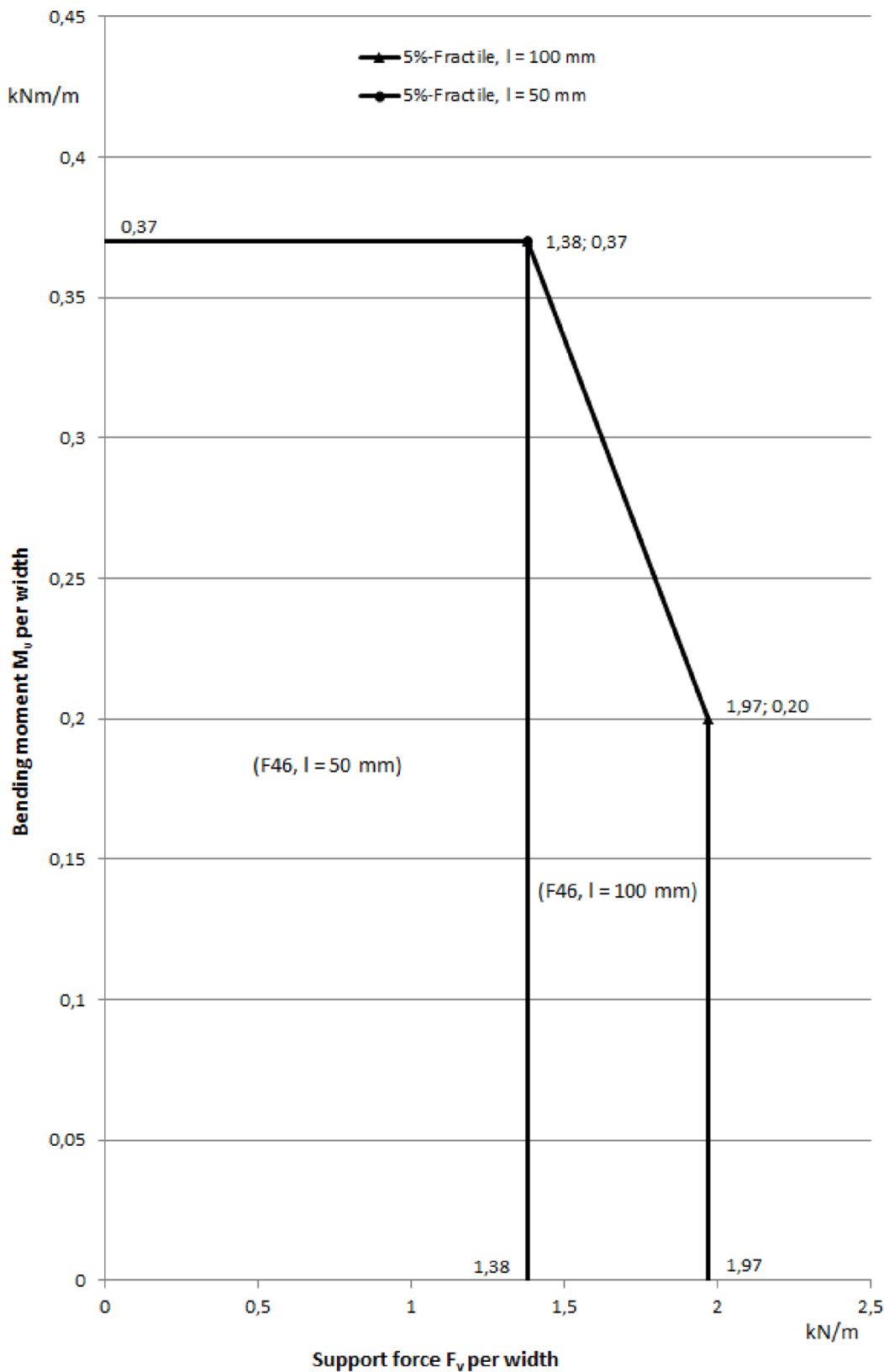
Annex B 2.1.4



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K : Interaction $M_{R,k}/F_{R,k}$
Multi-span system, load direction positive (wind- and snowload)
"PANELPIÚ 500/40 4-wall" with suction anchor F46 ($l=50$ and 100 mm)

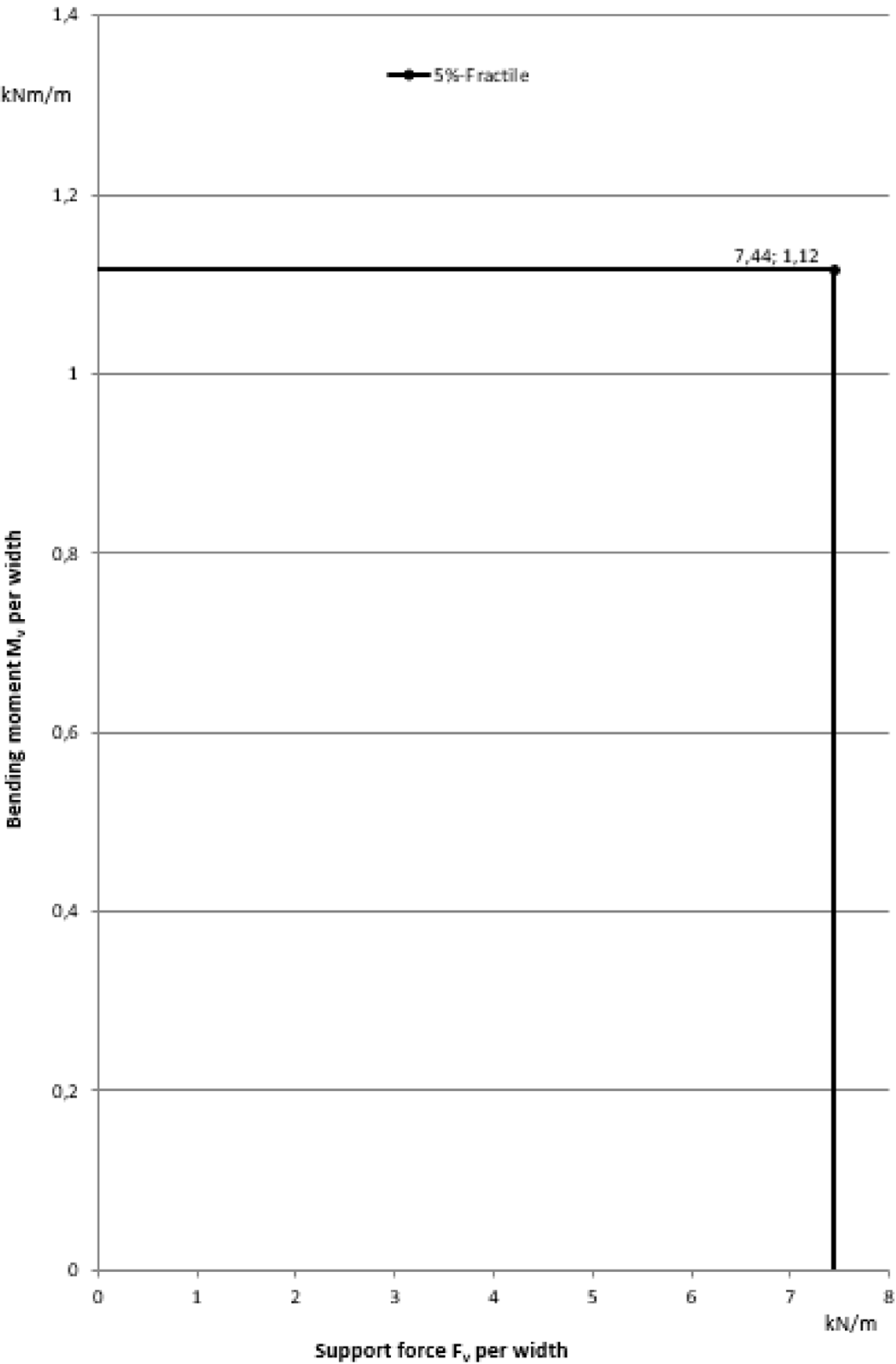
Annex B 2.2.1



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K : Interaction $M_{R,k}/F_{R,k}$
Multi-span system, load direction negative (windload)
"PANELPIÚ 500/40 4-wall" with suction anchor F46 ($l=50$ and $l=100$ mm)

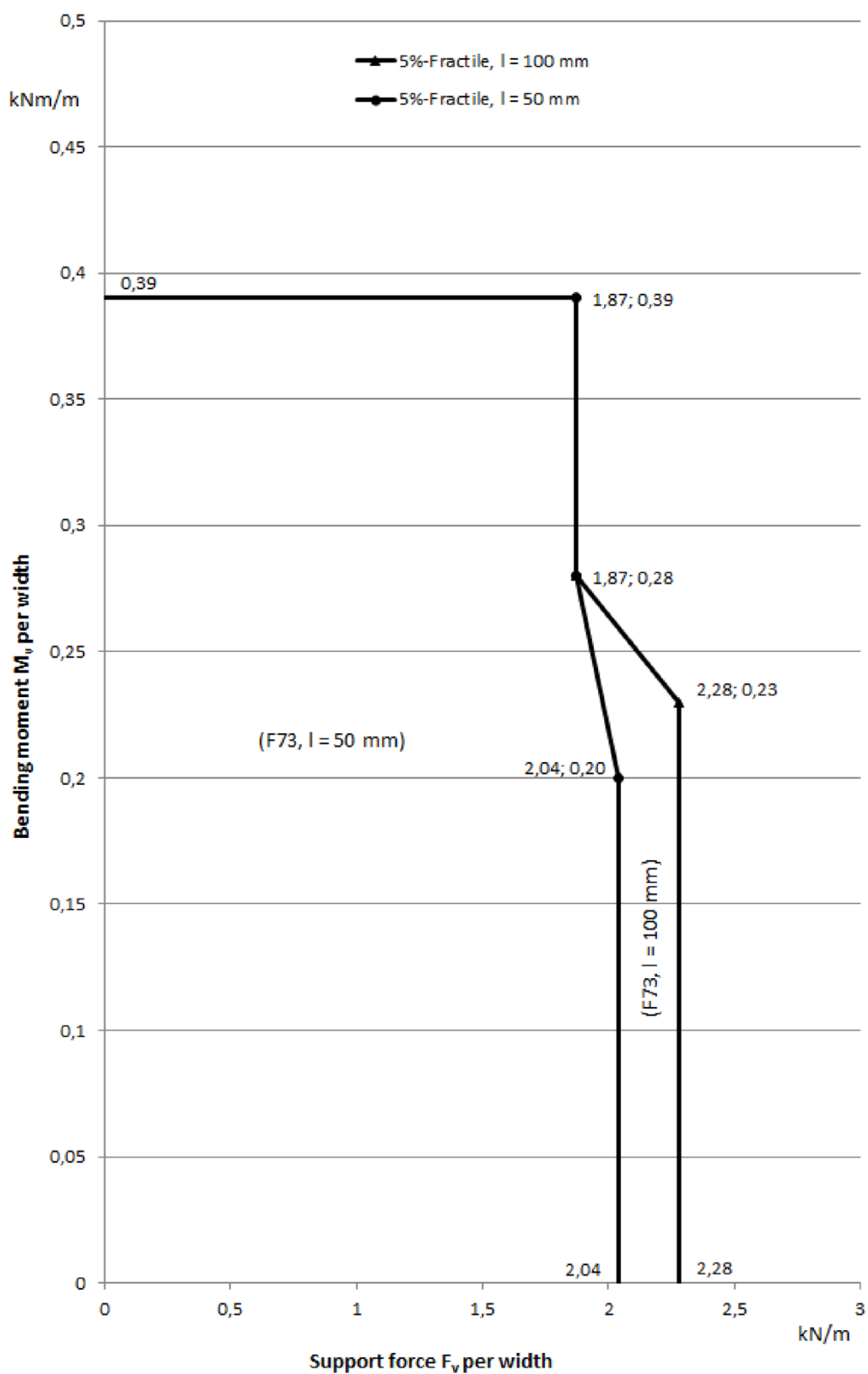
Annex B 2.2.2



Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K : Interaction $M_{R,k}/F_{R,k}$
Multi-span system, load direction positive (wind- and snowload)
"PANELPIÚ 500/40 14-wall" with suction anchor F77 ($l=50$ and 100 mm)

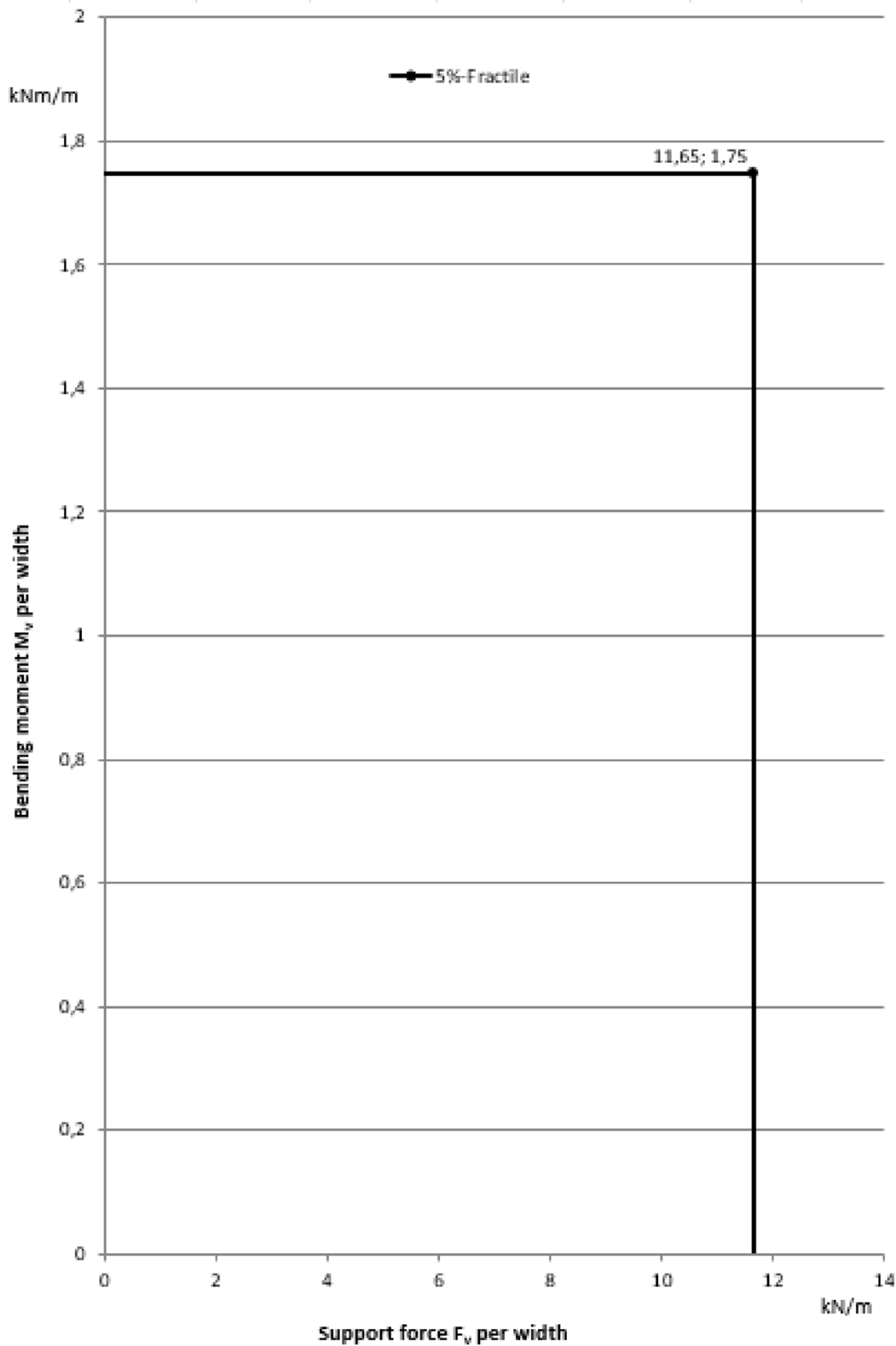
Annex B 2.2.3



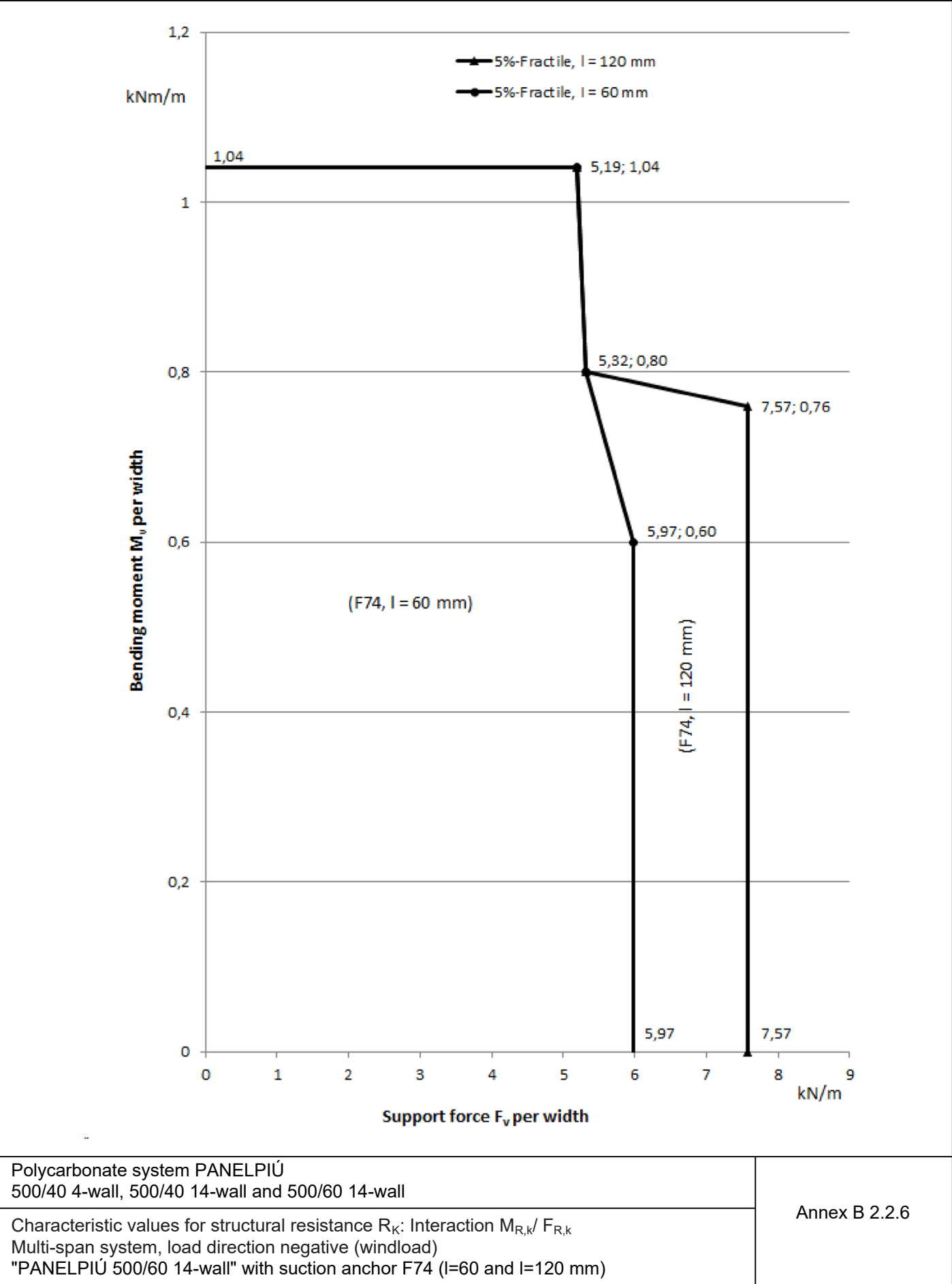
Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall

Characteristic values for structural resistance R_K : Interaction $M_{R,k} / F_{R,k}$
Multi-span system, load direction negative (windload)
"PANELPIÚ 500/40 14-wall" with suction anchor F77 ($l=50$ and $l=100 \text{ mm}$)

Annex B 2.2.4



Polycarbonate system PANELPIÚ 500/40 4-wall, 500/40 14-wall and 500/60 14-wall	Annex B 2.2.5
Characteristic values for structural resistance R_K : Interaction $M_{R,k}/ F_{R,k}$ Multi-span system, load direction positive (wind- and snowload) "PANELPIÚ 500/60 14-wall" with suction anchor F74 (l=60 and 120 mm)	



**Polycarbonate system PANELPIÚ
500/40 4-wall, 500/40 14-wall and 500/60 14-wall**

Annex C

**Provisions for installation, packaging, transport,
storage, use, maintenance and repair**

C 1 Installation

The verification of aluminum covering profiles and suction anchors, their fixings as well as the verification of substructure is not subject of this ETA. The stability shall be verified for the respective substructure in accordance with the valid European specifications. Before the roof and wall kit is installed, the dimensional stability of the substructure shall be checked.

If the roof and wall kit is installed in roof a minimum inclination of 5° is necessary. The installation in reveal is only used in the wall kits. The compliance of the existing substructure with the substructure applied during the planning and verification of its load-bearing capacity shall be checked visually. The installation of the roof and wall kit may only be performed by specialists who are specially trained for this purpose. The installation guidelines of the manufacturer shall be respected. The manufacturer of the roof and wall kit shall inform the specialists that they may only carry out assembly and installation of the roof and wall kit in accordance with his instructions and the provisions of the ETA. The hollow chambers of the multi-wall sheets may not be filled.

If the translucent roof and wall kit can systematically come into contact with chemical substances, the resistance to these substances of the multi-wall sheets in particular must be checked. Connection of the translucent roof and wall kit to the substructure shall be carried out in accordance with the structural analysis. The multi-wall sheets are to be connected to an area of any size by means of a joint on the long sides. The multi-wall sheets are to be framed on end supports by aluminum covering profiles given in Annex A 2.1 and A 2.2. The set-in stated there is a minimum bearing width to be observed at all times. Installed as multi-span system the multi-wall sheets are fastened by lift anchors. The hollow chamber profiles can be anchored in the longitudinal direction using suction anchors in accordance with Annex A 2.3 to prevent wind suction. The free longitudinal sides of the hollow chamber profiles must be held in the lateral frame profiles

The translucent roof and wall kit shall be installed and connected to the adjacent structure in a manner ensuring that no moisture can penetrate into it and avoiding thermal bridges. These details shall be evaluated on a case-by-case basis.

C 2 Packaging, transport and storage

The components of the roof and wall kit must be stored and transported according to the manufacturer's instructions in such a way that damage to the components is excluded.

Storage should be protected from direct sunlight and bad weather. When storing outdoors, an opaque, light-coloured tarpaulin must be used. Storage must not be on the ground.

To avoid oxidation of raw aluminium profiles due to possible residual moisture in the original packaging, it is recommended to store them in a dry place or to unpack them immediately after unloading.

Packages must be inclined slightly to the horizontal to facilitate drying and separated from the floor so that there is sufficient space for good ventilation and to avoid heat build-up inside packages.

No more than two pallets may be stacked on top of each other. Tension straps must be provided in case of strong wind.

It is the responsibility of the manufacturer to ensure that the information is made known to the appropriate persons.

C 3 Use, maintenance and repair

The roof and wall kit in installed condition is not a walk-on system. For installation purposes, the roof and wall kit may be walked on by a single person using boards laid across the substructure (at least two bearing profiles) for support.

To maintain the visual appearance the roof and wall kit is to clean in regular intervals to manufacturer's instructions. Within the scope of maintenance, the installed roof and wall kit shall be visually inspected by the building's owner every two years. The manufacturer shall be consulted if the PC multi-wall sheets exhibit surface cracks or damage or if they are strongly discoloured. Repair shall be arranged where necessary.