

ALU PRO®

ROLLTECH®

ROLLTECH A/S - an Alu-Pro Group Company

The worlds
leading producer
of warm edge spacers
for the insulating
glass industry



More than 3 decades in the business

Alu-Pro S.r.l and ROLLTECH A/S have been suppliers to the insulating glass industry for more than 3 decades, and have built up great experience and expertise in the field of warm edge spacers. This means that we are now world leader(s) in the sector.

We create value for our customers through:

- Customer service and short delivery times
- Spacer solutions of a consistently high quality
- The widest product range on the market
- Modern production plants
- Standard services as well as specialist skills

Modern buildings require spacers that actively contribute to minimising heat loss through low U-values whilst also ensuring a long lifetime for the windows. This is why our spacers are created with a design and a quality that assists everyone, from architects and contractors to end users, towards getting a perfect result, from the planning phase to day-to-day use.

We believe in the value of genuine partnerships and are constantly striving to live up to the trust shown to us by our large customer base.

Our warm edge spacers reduce the energy bill and improve indoor climate for the benefit of you and your loved ones.

FACTS ABOUT OUR SPACERS

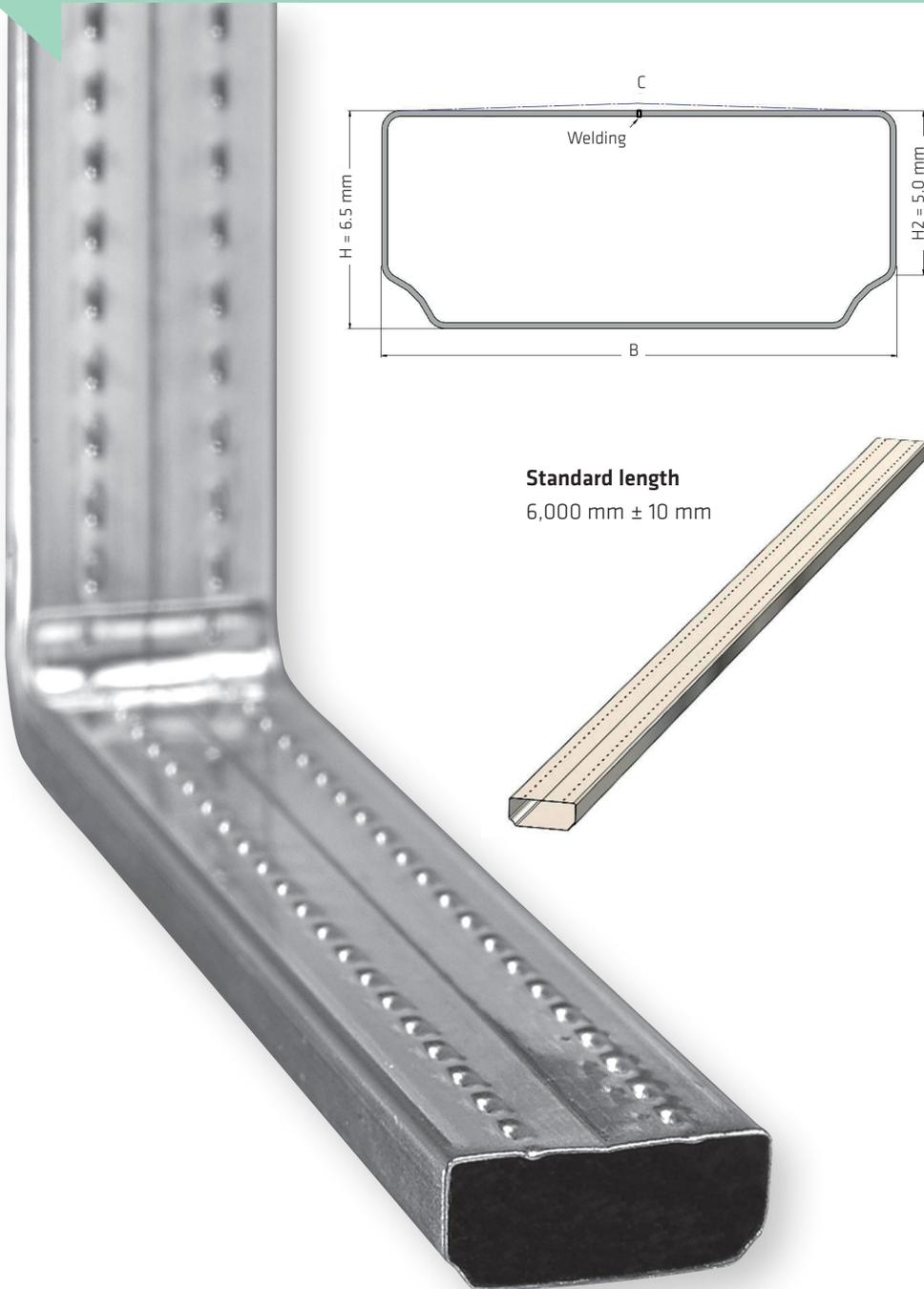
| | |
|---------------------------------|-------|
| ■ CHROMATECH | 3-4 |
| ■ THERMIX TX PRO | 5-6 |
| ■ CHROMATECH ultra S | 7-8 |
| ■ CHROMATECH ultra F / F1 | 9-10 |
| ■ MULTITECH-P G | 11-12 |
| ■ MULTITECH G | 13-14 |

Thermal compairing data15-17

Contact 18

CHROMATECH

Lowest thermal elongation, can withstand highest temperatures, yet still provide optimum production methods



DIMENSIONS

| Sizes | B (mm) +/- 0.10 |
|---------------|-----------------|
| CHROMATECH 8 | 7.5 mm |
| CHROMATECH 10 | 9.5 mm |
| CHROMATECH 11 | 10.5 mm |
| CHROMATECH 12 | 11.5 mm |
| CHROMATECH 13 | 12.5 mm |
| CHROMATECH 14 | 13.5 mm |
| CHROMATECH 15 | 14.5 mm |
| CHROMATECH 16 | 15.5 mm |
| CHROMATECH 18 | 17.5 mm |
| CHROMATECH 20 | 19.5 mm |
| CHROMATECH 24 | 23.5 mm |

H = 6.50 +/- 0.10 mm. H2 = 5.00 +/- 0.10 mm.

C = Centre height measured at the welding is H + 0.05 - 0.15 mm. Due to better bending quality.

MATERIALS

Stainless Steel The wall thickness is standard 0.18 mm

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon



Steel

Other accessories as flexible corners etc. are also available

COLORS

Can be supplied in almost all RAL and NCS colors.

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 10 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.81 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



Compression data (16 mm spacer)
Max. 30 N/cm static pressure



Volatile elements / Fogging
EN 1279
MV < 0.05% / No fogging



Thermal linear expansion
 $T\alpha$, metal 16 mm spacer = $1.5 \times 10^{-5} \text{ 1/K}$



UV stability
EN ISO 4892-2 / A
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

| Packaging | Quantity meter | | Quantity pcs. /box | | | | |
|-----------|----------------|-------|--------------------|-------------|---------------------|--------------|----------------------|
| | Sizes | Box | Container bundled | Steel (DP*) | Plastic/Nylon (DP*) | Steel corner | Plastic/Nylon corner |
| | 8 | 1.260 | 14.004 | 2.500 | 5.000 | 5.000 | 5.000 |
| | 10 | 960 | 12.672 | 2.500 | 5.000 | 5.000 | 5.000 |
| | 11 | 768 | 10.368 | 2.500 | - | - | - |
| | 12 | 672 | 10.368 | 2.500 | 5.000 | 2.500 | 5.000 |
| | 13 | 672 | 9.216 | 2.500 | - | - | - |
| | 14 | 576 | 9.216 | 2.500 | 5.000 | 2.500 | 4.000 |
| | 15 | 576 | 8.448 | 2.500 | 5.000 | 2.500 | 4.000 |
| | 16 | 480 | 8.064 | 2.000 | 5.000 | 2.500 | 3.500 |
| | 18 | 480 | 7.296 | 1.500 | 4.000 | 2.500 | 4.000 |
| | 20 | 384 | 6.144 | 1.500 | 4.000 | 2.500 | 3.000 |
| | 24 | 384 | 5.376 | 1.500 | 3.000 | 2.000 | - |

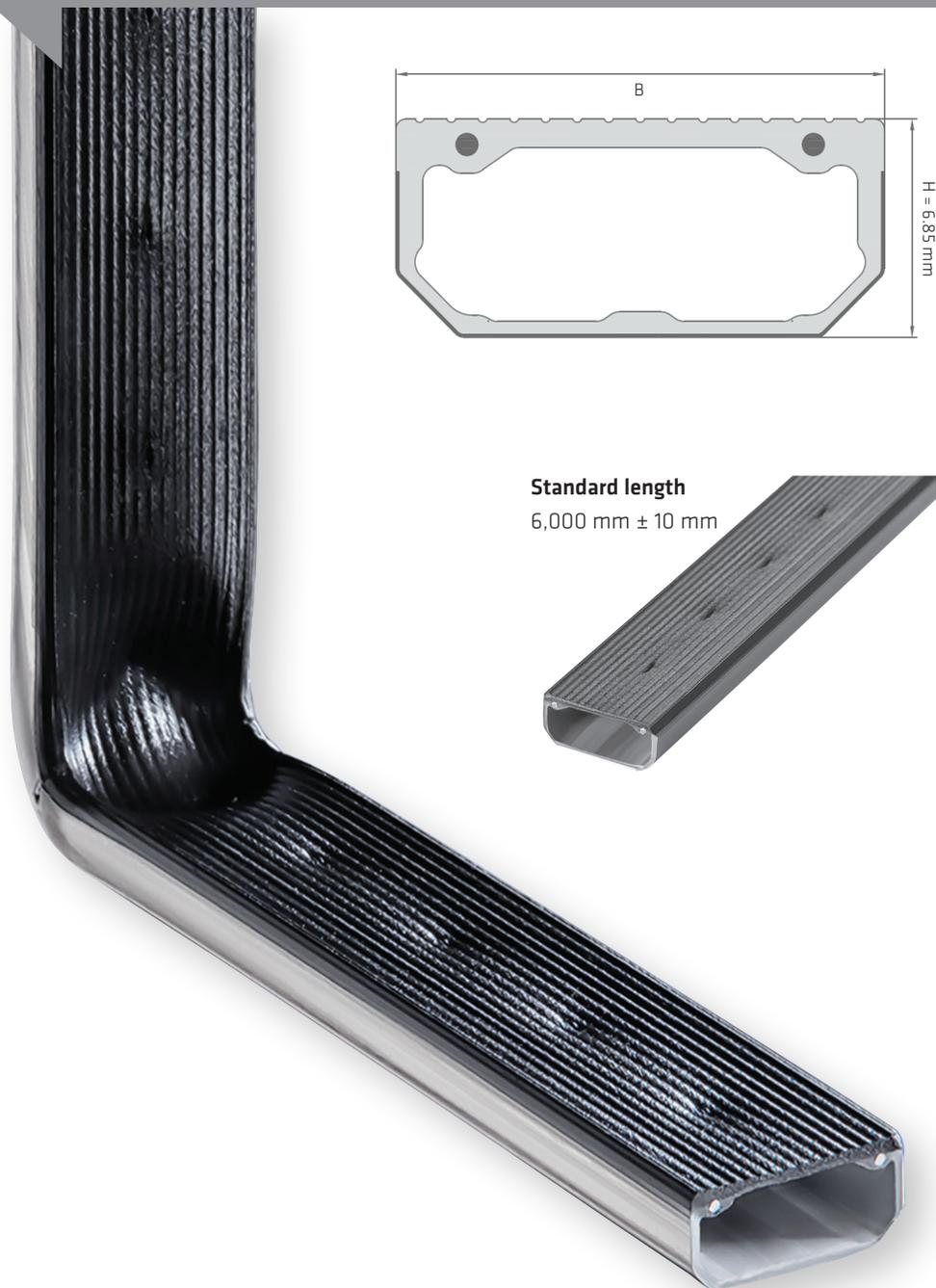
| Sizes | Content Desiccant 0.5-0.9 mm grain | Connector | | Corner | |
|-------|---------------------------------------|-------------|---------------------|--------------|---------------|
| | | Steel (DP*) | Plastic/Nylon (DP*) | Steel corner | Plastic/Nylon |
| 8 | 31 | ✓ | ✓ | ✓ | ✓ |
| 10 | 40 | ✓ | ✓ | ✓ | ✓ |
| 11 | 44 | ✓ | | | |
| 12 | 49 | ✓ | ✓ | ✓ | ✓ |
| 13 | 53 | ✓ | | | |
| 14 | 58 | ✓ | ✓ | ✓ | ✓ |
| 15 | 63 | ✓ | ✓ | ✓ | ✓ |
| 16 | 68 | ✓ | ✓ | ✓ | ✓ |
| 18 | 77 | ✓ | ✓ | ✓ | ✓ |
| 20 | 86 | ✓ | ✓ | ✓ | ✓ |
| 24 | 104 | ✓ | ✓ | ✓ | ✓ |

DP* = Desiccant passage.

All connectors are basically U-shaped and with passage for flow of desiccant during after filling. Notice that preinserted connectors will lose some of its force.

THERMIX TX PRO

Unique wiring technology combined with high-quality plastic and stainless steel.



DIMENSIONS

| Sizes | B (mm) +/- 0.15 | H (mm) +/- 0.15 |
|-------------------|-----------------|-----------------|
| Thermix TX PRO 8 | 7.50 mm | 6.85 mm |
| Thermix TX PRO 9 | 8.50 mm | 6.85 mm |
| Thermix TX PRO 10 | 9.50 mm | 6.85 mm |
| Thermix TX PRO 12 | 11.50 mm | 6.85 mm |
| Thermix TX PRO 13 | 12.50 mm | 6.85 mm |
| Thermix TX PRO 14 | 13.50 mm | 6.85 mm |
| Thermix TX PRO 15 | 14.50 mm | 6.85 mm |
| Thermix TX PRO 16 | 15.50 mm | 6.85 mm |
| Thermix TX PRO 18 | 17.50 mm | 6.85 mm |
| Thermix TX PRO 20 | 19.50 mm | 6.85 mm |
| Thermix TX PRO 22 | 21.50 mm | 6.85 mm |
| Thermix TX PRO 24 | 23.50 mm | 6.85 mm |

MATERIALS

TECATHERM PP, stainless steel

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon

COLORS



WHITE
RAL 9016



LIGHT GREY
RAL 7035



WINDOW GREY
RAL 7040



BLACK
RAL 9005



CLAY BROWN
RAL 8003



MAHOGANY
RAL 8016

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 10 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.31 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



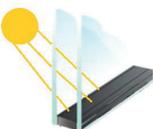
Compression data (16 mm spacer)
Max. 60 N/cm static pressure



Volatile elements / Fogging
EN 1279
MV < 0.05% / No fogging



Thermal linear expansion
 α_a , metal 16 mm spacer = $2.08 \times 10^{-5} \text{ 1/K}$
 α_a , polymer 16 mm spacer = $4.44 \times 10^{-5} \text{ 1/K}$



UV stability
EN ISO 4892-2 / A
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

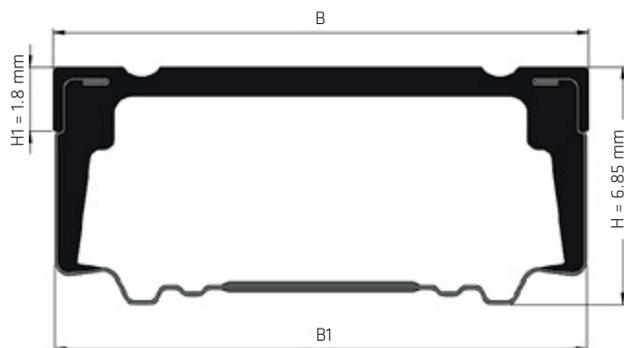
| PROFILES by 5 and 6 meters | | | | | | | | | | | | |
|---|-------------|--------------------------------|--|-------|-----------|--------|------------------------|--------|--------|-------|--------|--------|
| Product | Width in mm | Distance between glasses in mm | Bars' length in meters and filling quantity for packaging unit | | | | | | | | | |
| | | | Cardboard boxes | | Stillages | | Partition of stillages | | | | | |
| | | | 5 m | 6 m | 5 m | 6 m | 1/3 | 2/3 | 1/2 | 1/3 | 2/3 | 1/2 |
| Tecnopolymer spacer profile with two stainless wires, partially covered by a very thin stainless steel foil. The spacers are tied in bundles of 11 bars each. Cardboard boxes of 5 and 6 meters are loose sold or in wooden crates containing 28 or/and 35 boxes each, which must have the same length but can be of different thicknesses and colours. | 7.5 | 8 | 990 | 1.188 | 24.200 | 29.040 | 7.920 | 16.500 | 12.540 | 9.504 | 19.800 | 15.048 |
| | 8.5 | 9 | 990 | 1.188 | 22.880 | 27.456 | 7.260 | 14.850 | 11.550 | 8.712 | 17.820 | 13.860 |
| | 9.5 | 10 | 880 | 1.056 | 22.000 | 26.400 | 6.270 | 13.200 | 9.900 | 7.524 | 15.840 | 11.880 |
| | 11.5 | 12 | 660 | 792 | 18.480 | 22.176 | 5.390 | 11.000 | 8.250 | 6.468 | 13.200 | 9.900 |
| | 12.5 | 13 | 660 | 792 | 15.400 | 18.48 | 4.510 | 9.625 | 7.425 | 5.412 | 11.550 | 8.910 |
| | 13.5 | 14 | 550 | 660 | 15.400 | 18.480 | 4.510 | 9.625 | 7.425 | 5.412 | 11.550 | 8.910 |
| | 14.5 | 15 | 550 | 660 | 13.200 | 15.840 | 4.180 | 8.800 | 6.600 | 5.016 | 10.560 | 7.920 |
| | 15.5 | 16 | 550 | 660 | 13.200 | 15.840 | 4.070 | 8.525 | 6.435 | 4.884 | 10.230 | 7.722 |
| | 17.5 | 18 | 440 | 528 | 12.320 | 14.784 | 3.630 | 7.425 | 5.445 | 4.356 | 8.910 | 6.534 |
| | 19.5 | 20 | 440 | 528 | 11.440 | 13.728 | 2.970 | 6.600 | 4.950 | 3.564 | 7.920 | 5.940 |
| | 21.5 | 22 | 330 | 396 | 10.560 | 12.672 | 2.970 | 6.600 | 4.620 | 3.564 | 7.920 | 5.544 |
| 23.5 | 24 | 330 | 396 | 9.680 | 11.616 | 2.970 | 6.050 | 4.290 | 3.564 | 7.260 | 5.148 | |

The cardboard boxes for 5 m profiles measure: 510 x 17 x 10 (H) cm. - Thermix TX Pro profiles in 5 m length are not available from stock but have to be produced by order. The cardboard boxes for 6 m profiles measure: 610 x 17 x 10 (H) cm. The stillages for 5 m profiles measure: 515 x 79 x 72 (H) cm. - The stillages for 6 m profiles measure: 615 x 79 x 72 (H) cm. The stillages can be supplied with mixed profiles of different thicknesses and colours. Possible partitions: **1**) 1/3 + 1/3 + 1/3. **2**) 1/3 + 2/3. **3**) 1/2 + 1/2.

| ACCESSORIES | | | | | | | | |
|--|-------------|--------------------------------|------------------------|----------|--------------|-----------|--|----------|
| Product | Width in mm | Distance between glasses in mm | For closing the frames | | | | For the insertion of gas into the cavities | |
| | | | Connectors | | Corner keys | | Linears | |
| | | | Steel | Plastic | Plastic | | Plastic | |
| | | | Standard | Standard | Standard 90° | Flexibles | Support | Stoppers |
| Accessories for Thermix Tx Pro (Pieces for box) Standard connectors in steel and plastic. Standard and flexible corner keys in plastic. For gas filling: Supports and stoppers. | 7.5 | 8 | 2.500 | | 2.500 | 1,000 | 5.000 | 5.000 |
| | 8.5 | 9 | 2.500 | | 2.500 | | | |
| | 9.5 | 10 | 2.500 | | 2.500 | 1.000 | | |
| | 11.5 | 12 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 12.5 | 13 | 2.500 | 5.000 | 2.500 | | | |
| | 13.5 | 14 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 14.5 | 15 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 15.5 | 16 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 17.5 | 18 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 19.5 | 20 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| | 21.5 | 22 | 2.500 | 5.000 | 2.500 | 1.000 | | |
| 23.5 | 24 | 2.500 | 5.000 | 2.500 | 1.000 | | | |

CHROMATECH ultra S

The ultimate spacer designed for easy bending, large frames and 2-side desiccant filling.



Standard length
6,000 mm ± 10 mm



DIMENSIONS

| Sizes | B (mm) +/- 0.15 | B1 (mm) +/- 0.25/-0.95 |
|-----------------------|-----------------|------------------------|
| CHROMATECH ultra S 8 | 7.6 mm | 7.5 mm |
| CHROMATECH ultra S 10 | 9.6 mm | 9.5 mm |
| CHROMATECH ultra S 12 | 11.6 mm | 11.5 mm |
| CHROMATECH ultra S 13 | 12.6 mm | 12.5 mm |
| CHROMATECH ultra S 14 | 13.6 mm | 13.5 mm |
| CHROMATECH ultra S 15 | 14.6 mm | 14.5 mm |
| CHROMATECH ultra S 16 | 15.6 mm | 15.5 mm |
| CHROMATECH ultra S 18 | 17.6 mm | 17.5 mm |
| CHROMATECH ultra S 20 | 19.6 mm | 19.5 mm |
| CHROMATECH ultra S 22 | 21.6 mm | 21.5 mm |
| CHROMATECH ultra S 24 | 23.6 mm | 23.5 mm |
| CHROMATECH ultra S 26 | 25.6 mm | 25.5 mm |

H = 6.85 +0.15/-0.05 mm. H1 = 1.80 +0.50/0.10 mm

MATERIALS

Stainless Steel The wall thickness is standard 0.10 mm

Engineered PP Thickness of top 0.85 mm

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon

Other accessories as flexible corners etc. are also available

COLORS



WHITE
RAL 9016



LIGHT GREY
RAL 7035



WINDOW GREY
RAL 7040



BLACK
RAL 9004



CLAY BROWN
RAL 8003



MAHOGANY
RAL 8016

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 5 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.32 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



Compression data (16 mm spacer)
Max. 50 N/cm static pressure



Volatile elements / Fogging
EN 1279
MV < 0.2% / No fogging 60°C and 80°C



Thermal linear expansion
 $T\alpha$, metal 16 mm spacer = $1.56 \times 10^{-5} \text{ 1/K}$
 $T\alpha$, plastic 16 mm spacer = $2.16 \times 10^{-5} \text{ 1/K}$



UV stability
EN ISO 4892-2 / A
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

| Packaging | Quantity meter | | Quantity pcs. /box | | |
|-----------|----------------|--------|--------------------|-------------|-----------------------|
| | Sizes | Box | Container bundled | Steel (DP*) | Plastic/Nylon P (DP*) |
| 8 | 1152 | 15.744 | 2.500 | - | 2.000 |
| 10 | 960 | 12.672 | 2.500 | - | 2.000 |
| 12 | 768 | 10.368 | 2.500 | 2.000 | 2.000 |
| 13 | 672 | 9.216 | 2.500 | - | 2.000 |
| 14 | 672 | 9.216 | 2.500 | 2.000 | 2.000 |
| 15 | 576 | 8.448 | 2.500 | 2.000 | 2.000 |
| 16 | 76 | 8.064 | 2.000 | 2.000 | 2.000 |
| 18 | 480 | 7.296 | 1.500 | 2.000 | 2.000 |
| 20 | 480 | 6.144 | 1.500 | 2.000 | 2.000 |
| 22 | 384 | 5.376 | 1.500 | - | 2.000 |
| 24 | 384 | 5.376 | 1.500 | - | 2.000 |
| 26 | 384 | 5.376 | 1.500 | - | - |

| Sizes | Content Desiccant 0.5-0.9 mm grain | Connector | | | Corner |
|-------|---------------------------------------|-------------|---------------------|-----------------------|---------------|
| | | Steel (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon P (DP*) | Plastic/Nylon |
| 8 | 22-25 | ✓ | (✓) | | ✓ |
| 10 | 29-33 | ✓ | (✓) | | ✓ |
| 12 | 36-41 | ✓ | (✓) | ✓ | ✓ |
| 13 | 40-46 | ✓ | (✓) | | |
| 14 | 44-50 | ✓ | (✓) | ✓ | ✓ |
| 15 | 47-54 | ✓ | (✓) | ✓ | ✓ |
| 16 | 51-58 | ✓ | (✓) | ✓ | ✓ |
| 18 | 58-66 | ✓ | (✓) | ✓ | ✓ |
| 20 | 65-75 | ✓ | (✓) | ✓ | ✓ |
| 22 | 73-83 | ✓ | (✓) | | ✓ |
| 24 | 80-91 | ✓ | (✓) | | ✓ |
| 26 | 87-100 | ✓ | | | |

DP* = Desiccant passage. (✓) = Frame closing

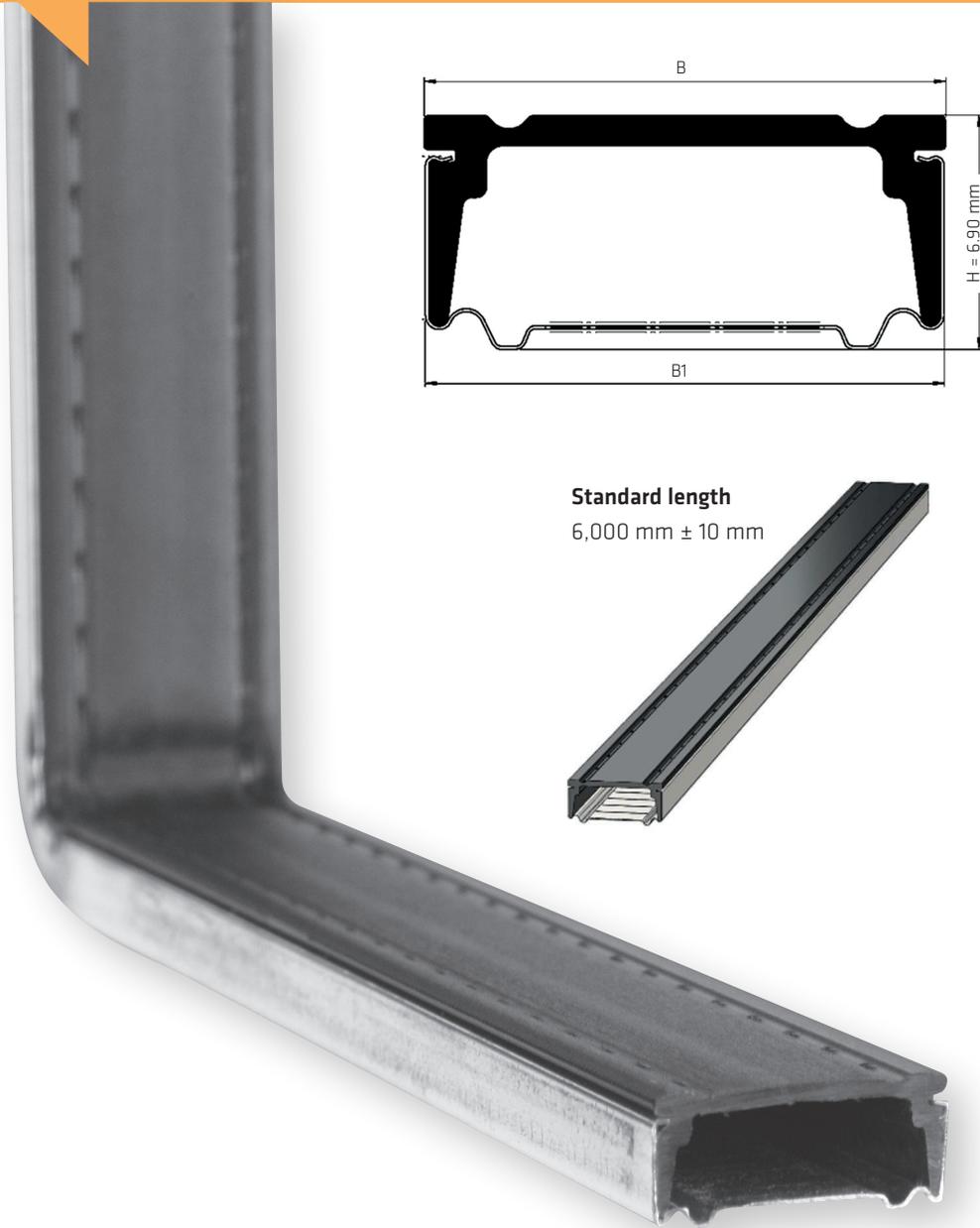
All connectors are basically U-shaped and with passage for flow of desiccant during after filling.

The P-connector has a closed backside part (bridge) to prevent dust leak.

Note that there will be a difference in pull force between preinserted- and direct inserted connectors.

CHROMATECH ultra F / F1

The hybrid spacer with the best lambda value on the market and designed for easy bending.



Standard length
6,000 mm ± 10 mm

DIMENSIONS

| Sizes | B (mm) +/- 0.15 | B1 (mm) +/- 0.25/-0.95 |
|-----------------------|-----------------|------------------------|
| CHROMATECH ultra F 8 | 7.6 mm | 7.5 mm |
| CHROMATECH ultra F 10 | 9.6 mm | 9.5 mm |
| CHROMATECH ultra F 12 | 11.6 mm | 11.5 mm |
| CHROMATECH ultra F 13 | 12.6 mm | 12.5 mm |
| CHROMATECH ultra F 14 | 13.6 mm | 13.5 mm |
| CHROMATECH ultra F 15 | 14.6 mm | 14.5 mm |
| CHROMATECH ultra F 16 | 15.6 mm | 15.5 mm |
| CHROMATECH ultra F 18 | 17.6 mm | 17.5 mm |
| CHROMATECH ultra F 20 | 19.6 mm | 19.5 mm |
| CHROMATECH ultra F 22 | 21.6 mm | 21.5 mm |
| CHROMATECH ultra F 24 | 23.6 mm | 23.5 mm |

H = 6.90 +/- 0.15 mm

MATERIALS

Stainless Steel The wall thickness is standard 0.10 mm
PVC Thickness of top 0.90 mm

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon

Other accessories as flexible corners etc. are also available

COLORS



LIGHT GREY
RAL 7035 (F)



WINDOW GREY
RAL 7040 (F)



BLACK
RAL 9004 (F1)



WHITE
RAL 9016 (F1)

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 10 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.28 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



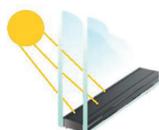
Compression data (16 mm spacer)
Max. 50 N/cm static pressure



Volatile elements / Fogging
EN 1279
MV < 0.2% / No fogging 60°C and 80°C



Thermal linear expansion
 $T\alpha$, metal 16 mm spacer = $1.49 \times 10^{-5} \text{ 1/K}$
 $T\alpha$, plastic 16 mm spacer = $3.75 \times 10^{-5} \text{ 1/K}$



UV stability
EN ISO 4892-2 / A
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

| Packaging | Quantity meter stillages | | | Quantity pcs. /box | | | | |
|-----------|--------------------------|-------|------------------------|------------------------|-------------------|---------------------|------------------------|---------------|
| | Sizes | Box | Container bundled (RT) | Container bundled (AP) | Steel (DP*) (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon P corner | Plastic/Nylon |
| | 8 | 1.152 | 15.744 | 19.584 | 2.500 | 5.000 | - | 2.000 |
| | 10 | 960 | 12.672 | 19.584 | 2.500 | 5.000 | - | 2.000 |
| | 12 | 768 | 10.368 | 16.128 | 2.500 | 5.000 | 2.000 | 2.000 |
| | 13 | 672 | 9.216 | 14.976 | 2.500 | - | - | 2.000 |
| | 14 | 672 | 9.216 | 14.976 | 2.500 | 5.000 | 2.000 | 2.000 |
| | 15 | 576 | 8.448 | 13.248 | 2.500 | 5.000 | 2.000 | 2.000 |
| | 16 | 576 | 8.064 | 13.248 | 2.000 | 5.000 | 2.000 | 2.000 |
| | 18 | 480 | 7.296 | 12.096 | 1.500 | 4.000 | 2.000 | 2.000 |
| | 20 | 480 | 6.144 | 10.944 | 1.500 | 4.000 | 2.000 | 2.000 |
| | 22 | 384 | 5.376 | 8.640 | 1.500 | 3.500 | - | 2.000 |
| | 24 | 384 | 5.376 | 7.488 | 1.500 | 3.000 | - | 2.000 |

RT = Rolltech. AP = Alu-Pro

| Sizes | Content Desiccant 0.5-0.9 mm grain | Connector | | | Corner |
|-------|------------------------------------|-------------|---------------------|-----------------------|---------------|
| | | Steel (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon P (DP*) | Plastic/Nylon |
| 8 | 20 | ✓ | ✓ | | ✓ |
| 10 | 29 | ✓ | ✓ | | ✓ |
| 12 | 36 | ✓ | ✓ | ✓ | ✓ |
| 13 | 41 | ✓ | | | |
| 14 | 45 | ✓ | ✓ | ✓ | ✓ |
| 15 | 49 | ✓ | ✓ | ✓ | ✓ |
| 16 | 52 | ✓ | ✓ | ✓ | ✓ |
| 18 | 60 | ✓ | ✓ | ✓ | ✓ |
| 20 | 68 | ✓ | ✓ | ✓ | ✓ |
| 22 | 76 | ✓ | ✓ | | ✓ |
| 24 | 84 | ✓ | ✓ | | ✓ |

DP* = Desiccant passage.

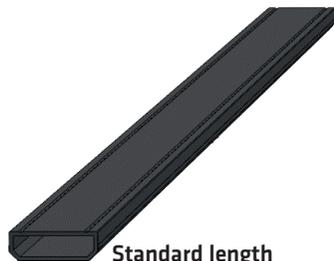
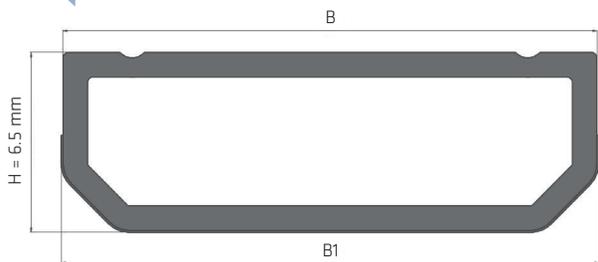
All connectors are basically U-shaped and with passage for flow of desiccant during after filling.

The P-connector has a closed backside part (bridge) to prevent dust leak.

Note that there will be a difference in pull force between preinserted- and direct inserted connectors.

MULTITECH-P G

A less brittle spacer solution, with good thermal properties.
 This spacer will secure a high internal surface temperature on the glass.
 Suited for bending and welding, to be evaluated for actual machine setup!



Standard length
 6,000 mm \pm 10 mm

DIMENSIONS

| Sizes | B (mm) +/- 0.15 |
|---------------------------|-----------------|
| MULTITECH-P G 8 | 7.5 mm |
| MULTITECH-P G 10 | 9.5 mm |
| MULTITECH-P G 12 R | 11.5 mm |
| MULTITECH-P G 13 | 12.5 mm |
| MULTITECH-P G 14 R | 13.5 mm |
| MULTITECH-P G 15 | 14.5 mm |
| MULTITECH-P G 16 R | 15.5 mm |
| MULTITECH-P G 18 R | 17.5 mm |
| MULTITECH-P G 20 R | 19.5 mm |
| MULTITECH-P G 22 | 21.5 mm |
| MULTITECH-P G 24 | 23.5 mm |

(**R** = Ready for launch, other sizes can be agreed!)

$H = 6.5 \text{ +/- } 0.15 \text{ mm}$

MATERIALS

PP Plastic

Glass fiber reinforced. The wall thickness is standard 0.90 mm (tol. +/- 0.15 mm)

Foil

Multilayer foil based on SiOx technology. Secures adhesion to most sealants

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon



Butyle

Other accessories as flexible corners etc. are also available

COLORS



WHITE
 RAL 9016



LIGHT GREY
 RAL 7035



DARK GREY
 RAL 7040/7012



BLACK
 RAL 9004



CLAY BROWN
 RAL 8003



MAHOGANY
 RAL 8016

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 10 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.18 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



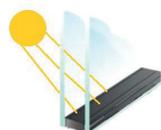
Compression data (16 mm spacer)
Max. 40 N/cm static pressure



Volatile elements / Fogging
EN 1279-4
MV < 0.3% / Fogging 60°C and 75°C tested



Thermal linear expansion
 α , foil 16 mm spacer = 1,724 E-5 1/K
 α , poly 16 mm spacer = 1,738 E-5 1/K



UV stability
EN ISO 4892-2 / A (CSTB test)
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

| Packaging | Quantity meter | | Quantity pcs. /box | | | |
|-----------|----------------|-----------|--------------------|-------------|-----------------------|----------------------|
| | Sizes | Box (6 m) | Stillage (6 m) | Steel (DP*) | Plastic/Nylon P (DP*) | Plastic/Nylon corner |
| | 8 | 960 | | 2.500 | 2.000 | 2.000 |
| | 10 | 800 | 12.288 | 2.500 | 2.000 | 2.000 |
| | 12 | 640 | 10.368 | 2.500 | 2.000 | 2.000 |
| | 13 | 560 | 9.216 | - | 2.000 | 5.000 |
| | 14 | 560 | 9.216 | 2.500 | 2.000 | 2.000 |
| | 15 | 480 | 8.448 | 2.500 | 2.000 | 2.000 |
| | 16 | 480 | 8.064 | 2.500 | 2.000 | 2.000 |
| | 18 | 400 | 7.296 | 2.500 | 2.000 | 2.000 |
| | 20 | 400 | 6.528 | 2.500 | 2.000 | 2.000 |
| | 22 | 320 | 5.376 | 2.500 | - | 2.000 |
| | 24 | 320 | 5.376 | 2.500 | - | 2.000 |

| Sizes | Content Desiccant 0.5-0.9 mm grain | Connector | | Corner |
|-------|---------------------------------------|-------------|---------------------|----------------------|
| | | Steel (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon corner |
| 8 | 18 | ✓ | ✓ | ✓ |
| 10 | 25 | ✓ | ✓ | ✓ |
| 12 | 31 | ✓ | ✓ | ✓ |
| 13 | 34 | | ✓ | ✓ |
| 14 | 38 | ✓ | ✓ | ✓ |
| 15 | 42 | ✓ | ✓ | ✓ |
| 16 | 45 | ✓ | ✓ | ✓ |
| 18 | 52 | ✓ | ✓ | ✓ |
| 20 | 58 | ✓ | ✓ | ✓ |
| 22 | 65 | ✓ | | ✓ |
| 24 | 72 | ✓ | | ✓ |

DP* = Desiccant passage.

All connectors are basically U-shaped and with passage for flow of desiccant during after filling.

Note that there will be a difference in pull force between preinserted- and direct inserted connectors.

MULTITECH G

Thermally better than any other known spacer bar. This will provide you with the highest internal surface temperature on the glass inside



Standard length
5,000 mm & 6,000 mm
± 10 mm



DIMENSIONS

| Sizes | B (mm) +/- 0.10 | B1 (mm) +/- 0.15 |
|----------------|-----------------|------------------|
| MULTITECH G 8 | 7.5 mm | 7.6 mm |
| MULTITECH G 10 | 9.5 mm | 9.6 mm |
| MULTITECH G 12 | 11.5 mm | 11.6 mm |
| MULTITECH G 13 | 12.5 mm | 12.6 mm |
| MULTITECH G 14 | 13.5 mm | 13.6 mm |
| MULTITECH G 15 | 14.5 mm | 14.6 mm |
| MULTITECH G 16 | 15.5 mm | 15.6 mm |
| MULTITECH G 18 | 17.5 mm | 17.6 mm |
| MULTITECH G 20 | 19.5 mm | 19.6 mm |
| MULTITECH G 22 | 21.5 mm | 21.6 mm |
| MULTITECH G 24 | 23.5 mm | 23.6 mm |
| MULTITECH G 27 | 26.5 mm | 26.6 mm |

H = 6.5 +/- 0.1 mm

MATERIALS

San Plast The wall thickness is standard 0.90 mm + 0.25/-0.05 mm

Foil The thickness is standard 40 my

ACCESSORIES

Connectors



Plastic/Nylon



Steel

Corners



Plastic/Nylon



Butyle

Other accessories as flexible corners etc. are also available

COLORS



WHITE
RAL 9016



LIGHT GREY
RAL 7035



TITANIUM GREY
RAL 9023



BLACK
RAL 9004



CLAY BROWN
RAL 8003



MAHOGANY
RAL 8016

EN1279 NORMATIVE TEST REFERENCES AND OTHER METHODS



Pull force
Depends on chosen connector



Rectitude from production
Sideways max. 5 mm/m
Up/down max. 10 mm/m



Two box model characteristic value
IFT WA-17/1
 $\lambda_{eq,2B} = 0.125 \text{ W/mK}$



Perforation holes size
Checked with airflow
Allowed humidity uptake 1-5wt% pr. 24 hours



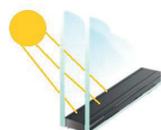
Compression data (16 mm spacer)
Max. 40 N/cm static pressure



Volatile elements / Fogging
EN 1279
MV < 0.3% / No fogging 60°C and 80°C



Thermal linear expansion
 $T\alpha$, metal 16 mm spacer = $1.83 \times 10^{-5} \text{ 1/K}$
 $T\alpha$, plastic 16 mm spacer = $2.01 \times 10^{-5} \text{ 1/K}$



UV stability
EN ISO 4892-2 / A
3,000 hours of radiation with no significant color change

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

| Packaging | Quantity meter cardboard boxes | | Quantity meter stillages | | | |
|-----------|--------------------------------|----------|--------------------------|--------------------|--------------------|--------------------|
| | Sizes | 5 meters | 6 meters | NM Type (5 meters) | NM Type (6 meters) | ZM type (6 meters) |
| | 8 | 960 | 1.152 | | | 19.584 |
| | 10 | 800 | 960 | 10.240 | 12.288 | 19.584 |
| | 12 | 640 | 768 | 8.640 | 10.368 | 16.128 |
| | 13 | 560 | 672 | 7.680 | 9.216 | 14.976 |
| | 14 | 560 | 672 | 7.680 | 9.216 | 14.976 |
| | 15 | 480 | 576 | 7.040 | 8.448 | 13.248 |
| | 16 | 480 | 576 | 6.720 | 8.064 | 13.248 |
| | 18 | 400 | 480 | 6.080 | 7.296 | 12.096 |
| | 20 | 400 | 480 | 5.440 | 6.528 | 10.944 |
| | 22 | 320 | 384 | 4.480 | 5.376 | 8.640 |
| | 24 | 320 | 384 | 4.480 | 5.376 | 7.488 |
| | 27 | 240 | | 3.840 | | |

| Packaging | Quantity pcs./box | | | Sizes | Content [g/m] Desiccant 0.5-0.9 mm grain | Connector | | Corner | |
|-----------|-------------------|---------------------|----------------------|-------|--|-------------|---------------------|----------------------|---|
| | Steel (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon corner | | | Steel (DP*) | Plastic/Nylon (DP*) | Plastic/Nylon corner | |
| | 8 | 2.500 | 2.000 | 2.000 | 8 | 18 | ✓ | ✓ | ✓ |
| | 10 | 2.500 | 2.000 | 2.000 | 10 | 25 | ✓ | ✓ | ✓ |
| | 12 | 2.500 | 2.000 | 2.000 | 12 | 31 | ✓ | ✓ | ✓ |
| | 13 | | 2.000 | 5.000 | 13 | 34 | | ✓ | ✓ |
| | 14 | 2.500 | 2.000 | 2.000 | 14 | 38 | ✓ | ✓ | ✓ |
| | 15 | 2.500 | 2.000 | 2.000 | 15 | 42 | ✓ | ✓ | ✓ |
| | 16 | 2.500 | 2.000 | 2.000 | 16 | 45 | ✓ | ✓ | ✓ |
| | 18 | 2.500 | 2.000 | 2.000 | 18 | 52 | ✓ | ✓ | ✓ |
| | 20 | 2.500 | 2.000 | 2.000 | 20 | 58 | ✓ | ✓ | ✓ |
| | 22 | 2.500 | | 2.000 | 22 | 65 | ✓ | | ✓ |
| | 24 | 2.500 | | 2.000 | 24 | 72 | ✓ | | ✓ |
| | 27 | | | 1.400 | 27 | 82 | | | ✓ |

DP* = Desiccant passage.

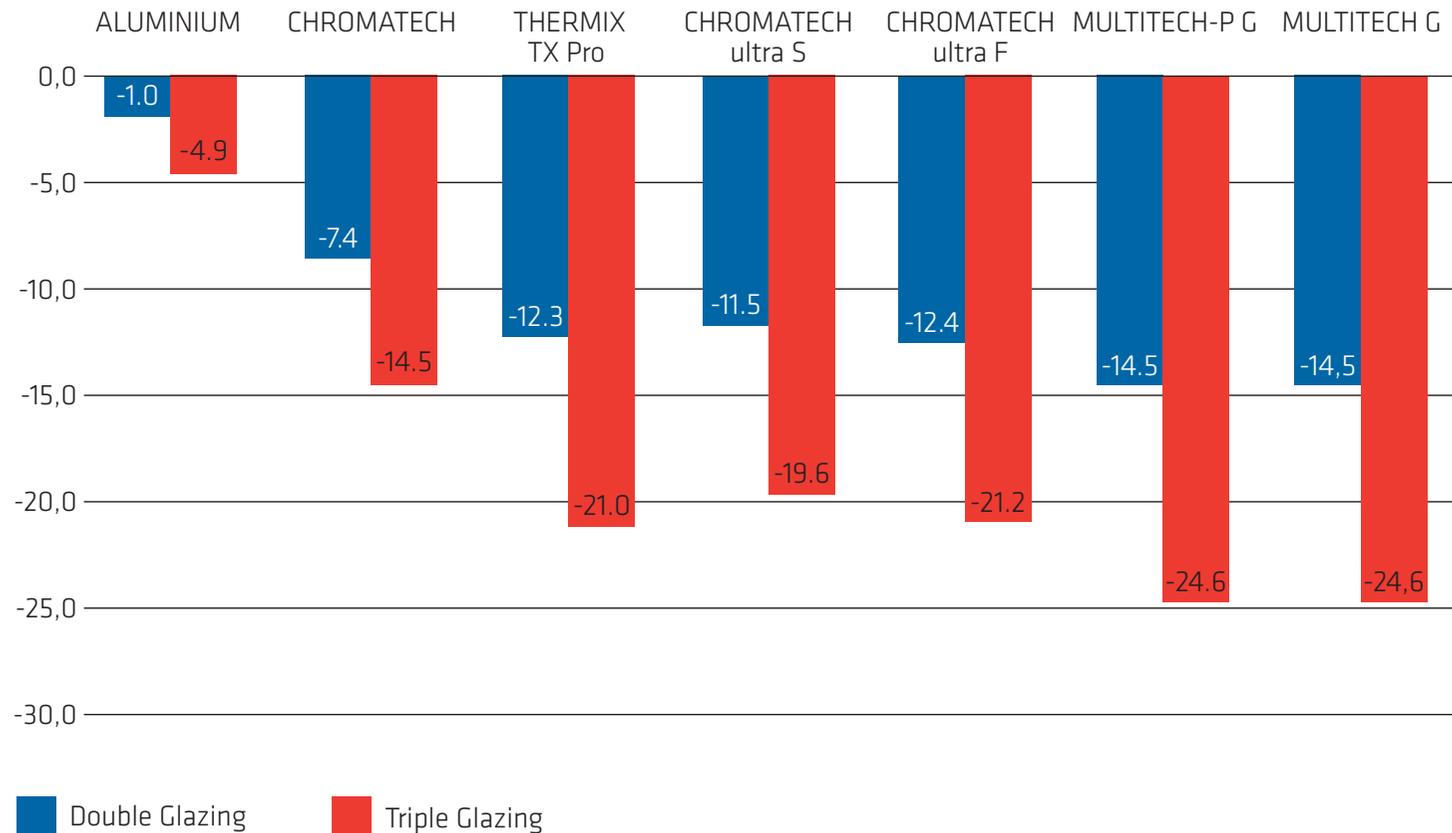
All connectors are basically U-shaped and with passage for flow of desiccant during after filling.

Note that there will be a difference in pull force between preinserted- and direct inserted connectors.

Warm edge spacers reduce the energy bill and improve indoor climate

Critical outdoor temperature in °C, at which condensation begins on the inside.

Example:
Alu-Frame Uf 1.6
Inside 20° C, 50% RH,
Dew Point 9.3° C
Double Glazing = 1.1 W
Triple Glazing = 0.7 W



An overview of thermal data with different constructions

These data are calculated by Bauwerk according to IFT guideline WA-08/3

Frame: **Aluminum profile** - $U_f = 1.6 \text{ W/m}^2\text{K}$

| Glass | Double IG - $U_g = 1.1 \text{ W/m}^2\text{K}$ (4-16-4) | | | Tripple IG - $U_g = 0.7 \text{ W/m}^2\text{K}$ (4-12-4-12-4) | | |
|--------------------|--|---------------------------|----------------------------|--|---------------------------|----------------------------|
| | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] |
| ALUMINIUM | 0.110 | 4.7 / 7.3 | 1.539 | 0.110 | 7.1 / 9.2 | 1.279 |
| CHROMATECH | 0.068 | 8.4 / 10.3 | 1.439 | 0.066 | 10.6 / 12.2 | 1.174 |
| THERMIX TX Pro | 0.049 | 9.8 / 11.5 | 1.393 | 0.044 | 12.0 / 13.3 | 1.121 |
| CHROMATECH ultra S | 0.050 | 9.8 / 11.5 | 1.395 | 0.046 | 12.0 / 13.3 | 1.126 |
| CHROMATECH ultra F | 0.048 | 9.9 / 11.6 | 1.390 | 0.043 | 12.1 / 13.4 | 1.118 |
| MULTITECH-P G | 0.039 | 10.6 / 12.2 | 1.369 | 0.034 | 12.7 / 13.9 | 1.097 |
| MULTITECH G | 0.036 | 10.8 / 12.4 | 1.362 | 0.031 | 12.9 / 14.1 | 1.090 |

Frame: **PVC profile** - $U_f = 1.2 \text{ W/m}^2\text{K}$

| Glass | Double IG - $U_g = 1.1 \text{ W/m}^2\text{K}$ (4-16-4) | | | Tripple IG - $U_g = 0.7 \text{ W/m}^2\text{K}$ (4-12-4-12-4) | | |
|--------------------|--|---------------------------|----------------------------|--|---------------------------|----------------------------|
| | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] |
| ALUMINIUM | 0.077 | 5.3 / 7.8 | 1.321 | 0.075 | 6.8 / 9.0 | 1.043 |
| CHROMATECH | 0.051 | 8.3 / 10.3 | 1.257 | 0.050 | 9.9 / 11.6 | 0.982 |
| THERMIX TX Pro | 0.040 | 9.5 / 11.3 | 1.230 | 0.038 | 11.1 / 12.6 | 0.953 |
| CHROMATECH ultra S | 0.040 | 9.5 / 11.3 | 1.230 | 0.038 | 11.1 / 12.6 | 0.953 |
| CHROMATECH ultra F | 0.039 | 9.6 / 11.3 | 1.228 | 0.037 | 11.2 / 12.7 | 0.950 |
| MULTITECH-P G | 0.034 | 10.2 / 11.9 | 1.216 | 0.032 | 11.8 / 13.1 | 0.938 |
| MULTITECH G | 0.031 | 10.5 / 12.0 | 1.208 | 0.030 | 12.0 / 13.3 | 0.933 |

To calculate with other U-values for glass please refer to our homepage where a calculator can be found (<https://www.winuw.de/rolltech/>).
Is also possible as an app "WinUw ROLLTECH" - Access it on Apple store or on Google play.

An overview of thermal data with different constructions

These data are calculated by Bauwerk according to IFT guideline WA-08/3

Frame: **Wood profile** - $U_f = 1.4 \text{ W/m}^2\text{K}$

| Glass | Double IG - $U_g = 1.1 \text{ W/m}^2\text{K}$ (4-16-4) | | | Tripple IG - $U_g = 0.7 \text{ W/m}^2\text{K}$ (4-12-4-12-4) | | |
|--------------------|--|---------------------------|----------------------------|--|---------------------------|----------------------------|
| Parameters | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] |
| ALUMINIUM | 0.081 | 4.1 / 6.7 | 1.392 | 0.086 | 6.2 / 8.5 | 1.125 |
| CHROMATECH | 0.053 | 7.3 / 9.4 | 1.322 | 0.054 | 9.6 / 11.3 | 1.045 |
| THERMIX TX Pro | 0.040 | 8.7 / 10.6 | 1.290 | 0.039 | 11.0 / 12.5 | 1.008 |
| CHROMATECH ultra S | 0.041 | 8.6 / 10.5 | 1.293 | 0.040 | 11.0 / 12.5 | 1.010 |
| CHROMATECH ultra F | 0.039 | 8.8 / 10.7 | 1.288 | 0.038 | 11.2 / 12.7 | 1.005 |
| MULTITECH-P G | 0.033 | 9.5 / 11.2 | 1.273 | 0.031 | 11.8 / 13.2 | 0.988 |
| MULTITECH G | 0.031 | 9.7 / 11.4 | 1.268 | 0.029 | 12.1 / 13.4 | 0.983 |

Frame: **Wood aluminum profile** - $U_f = 1.4 \text{ W/m}^2\text{K}$

| Glass | Double IG - $U_g = 1.1 \text{ W/m}^2\text{K}$ (4-16-4) | | | Tripple IG - $U_g = 0.7 \text{ W/m}^2\text{K}$ (4-12-4-12-4) | | |
|--------------------|--|---------------------------|----------------------------|--|---------------------------|----------------------------|
| Parameters | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] | Ψ_g [W/mK] | Θ_{si} (-10/-5 °C) | U_w [W/m ² K] |
| ALUMINIUM | 0.092 | 2.3 / 5.3 | 1.423 | 0.097 | 4.7 / 7.3 | 1.165 |
| CHROMATECH | 0.059 | 6.1 / 8.4 | 1.342 | 0.060 | 8.7 / 10.6 | 1.075 |
| THERMIX TX Pro | 0.043 | 7.6 / 9.7 | 1.303 | 0.042 | 10.3 / 11.9 | 1.031 |
| CHROMATECH ultra S | 0.045 | 7.6 / 9.7 | 1.308 | 0.043 | 10.2 / 11.8 | 1.033 |
| CHROMATECH ultra F | 0.043 | 7.8 / 9.8 | 1.303 | 0.041 | 10.4 / 12.0 | 1.028 |
| MULTITECH-P G | 0.036 | 8.5 / 10.4 | 1.286 | 0.034 | 11.1 / 12.6 | 1.011 |
| MULTITECH G | 0.033 | 8.8 / 10.7 | 1.279 | 0.031 | 11.4 / 12.8 | 1.004 |

To calculate with other U-values for glass please refer to our homepage where a calculator can be found (<https://www.winuw.de/rolltech/>).
Is also possible as an app "WinUw ROLLTECH" - Access it on Apple store or on Google play.

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