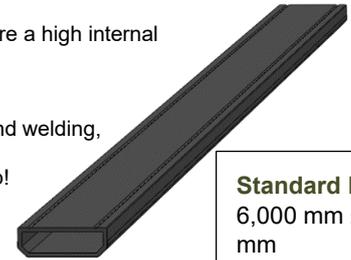




MULTITECH-P G
A less brittle spacer solution, with good thermal properties.

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 ± 10 mm

DIMENSIONS

Sizes	B [mm] ± 0.15	H [mm] ± 0.15
MULTITECH-P G 8	7.50	6.5
MULTITECH-P G 10	9.50	6.5
MULTITECH-P G 12 R	11.50	6.5
MULTITECH-P G 13	12.50	6.5
MULTITECH-P G 14 R	13.50	6.5
MULTITECH-P G 15	14.50	6.5
MULTITECH-P G 16 R	15.50	6.5
MULTITECH-P G 18 R	17.50	6.5
MULTITECH-P G 20 R	19.50	6.5
MULTITECH-P G 22	21.50	6.5
MULTITECH-P G 24	23.50	6.5

ACCESSORIES

Connectors

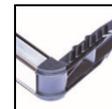


Plastic/Nylon



Steel

Corner



Plastic/Nylon



Butyl corner

Other accessories as flexible corners etc. are also available

R ready for launch, other sizes can be agreed!

MATERIALS

PP PLASTIC

Glass fiber reinforced. The wall thickness is standard 0.90±0.15mm

FOIL

Multilayer foil based on SiOx technology. Secures adhesion to most sealants. Foil thickness 40 – 45 µm.

COLORS

WHITE
≈ RAL 9016



LIGHT GREY
≈ RAL 7035



DARK GREY
≈ RAL 7040 & 7012



BLACK
≈ RAL 9004



LIGHT BROWN
≈ RAL 8003



DARK BROWN
≈ 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, $M_v < 0.3\%$
Fogging 60°C and 75°C tested



Thermal linear expansion
 $T_{\alpha, \text{foil}}$ 16 mm spacer = 1,724 E-5 1/K
 $T_{\alpha, \text{poly}}$ 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 colour change

QUALITY ASPECTS

Quality management

EN ISO 9001 for quality and ISO 50001 for Energy Management Systems.

Tests of the product

Processes and routines are established to secure the quality of the delivered material. During production the spacers are continuously monitored through systematic and random checks. Data will be available for a period of 5 years.

Full filing external demands according to:

- EN 1279
- RAL gütezeichen in process!

CUSTOMER FOCUS AND WARRANTY

On all spacers we offer a 5-year product warranty. The warranty covers free exchange of spacers in case of a defect. The warranty does not cover any other cost than the mere exchange of the defective spacers, and the warranty expressly does not cover installation of the spacers. The spacers must have been stored, installed and used according to present norms and technical standards. Special solutions and **usage** that **are not standardized** will need prior approval in writing. Related to temperature standardized condition for IG is -30°C/+70°C.

Storage and use

To secure the performance of the spacers, the stock conditions must be acceptable. Broken packaging, humidity and variation in temperature will have an effect on the spacer in general. Make sure the spacer is conditioned at room temperature before use.

Preferred conditions will be temperatures over 15°C and humidity RH of minimum 45%. Avoid having an environment with high concentration of dust.

General handling and attention according to safety data sheet for the spacer. Use gloves when handling the spacer/frames and make sure effective exhausting is present when cutting the spacer.

System performance

The user (the IG producer) must secure the whole system consisting of spacer, connector/corner key, bending machine, desiccant, primary and secondary sealant work well together in the chosen setup. Focus on compatibility, adhesion, dust and corner quality.

After handling and transporting the frames, it's important to check if the connector/corner keys are still in the correct position, if not there is a significant risk for desiccant dust inside the IG unit. Foam behind the connector/corner can be used to avoid such problems.

Cleaning the plastic surface

If for some reason, the plastic surface is defiled by dust from other materials it can be cleaned again by use of water or air. Dust can easily be removed with antistatic loaded compressed air or a moist cloth. Solvent based cleaners are not recommended, but if used, it is recommended to test the influence on products.

It is recommended to investigate and check all the specific points above.

ADDITIONAL SPECIFICATIONS AND INSTRUCTIONS

Packaging, volumes and options

Packaging		
Sizes	BOX (6 meters)	STILLAGE (6 meters)
8	960	
10	800	12,288
12	640	10,368
13	560	9,216
14	560	9,216
15	480	8,448
16	480	8,064
18	400	7,296
20	400	6,528
22	320	5,376
24	320	5,376

Sizes	Content [g/m] +/- 10% Desiccant 0.5-0.9 mm grain	Connector		Corner
		Steel (DP*)	Plastic/Nylon (DP*)	Plastic/Nylon Corner
8	16	✓	✓	✓
10	22	✓	✓	✓
12	28	✓	✓	✓
13	31		✓	✓
14	34	✓	✓	✓
15	37	✓	✓	✓
16	40	✓	✓	✓
18	46	✓	✓	✓
20	52	✓	✓	✓
22	58	✓		✓
24	64	✓		✓

*DP = Desiccant passage

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

Note: Some preinserted plastic connectors will lose pull force over time. This problem is only related to rough frame handling.

Energy labeling

For thermal calculations, we recommend using the two-box model, as this method is well validated by BF datasheet. Ask for drawing.

Materials	λ [W/mK]
Secondary sealing	0.40
Spacer box, $\lambda_{eq,2B}$	0.18

Thermal data

An overview of thermal data with different frame constructions.

Data 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]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]
Parameters						
CHROMATECH	0.068	8.4 / 10.3	1.439	0.066	10.6 / 12.2	1.174
CHROMATECH ultra S	0.050	9.8 / 11.5	1.395	0.046	12.0 / 13.3	1.126
THERMIX TX Pro	0.049	9.8 / 11.5	1.393	0.044	12.0 / 13.3	1.121
CHROMATECH ultra F&F1	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]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]
Parameters						
CHROMATECH	0.051	8.3 / 10.3	1.257	0.050	9.9 / 11.6	0.982
CHROMATECH ultra S	0.040	9.5 / 11.3	1.230	0.038	11.1 / 12.6	0.953
THERMIX TX Pro	0.040	9.5 / 11.3	1.230	0.038	11.1 / 12.6	0.953
CHROMATECH ultra F&F1	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 / 12.1	1.218	0.029	12.1 / 13.4	0.931

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)		
	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]
Parameters						
CHROMATECH	0.053	7.3 / 9.4	1.322	0.054	9.6 / 11.3	1.045
CHROMATECH ultra S	0.041	8.6 / 10.5	1.293	0.040	11.0 / 12.5	1.010
THERMIX TX Pro	0.040	8.7 / 10.6	1.290	0.039	11.0 / 12.5	1.008
CHROMATECH ultra F&F1	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)		
	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]	Ψ_g [W/mK]	$\Theta_{Si(-10/-5^\circ\text{C})}$	U_w [W/m ² K]
Parameters						
CHROMATECH	0.059	6.1 / 8.4	1.342	0.060	8.7 / 10.6	1.075
CHROMATECH ultra S	0.045	7.6 / 9.7	1.308	0.043	10.2 / 11.8	1.033
THERMIX TX Pro	0.043	7.6 / 9.7	1.303	0.042	10.3 / 11.9	1.031
CHROMATECH ultra F&F1	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	1.266	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

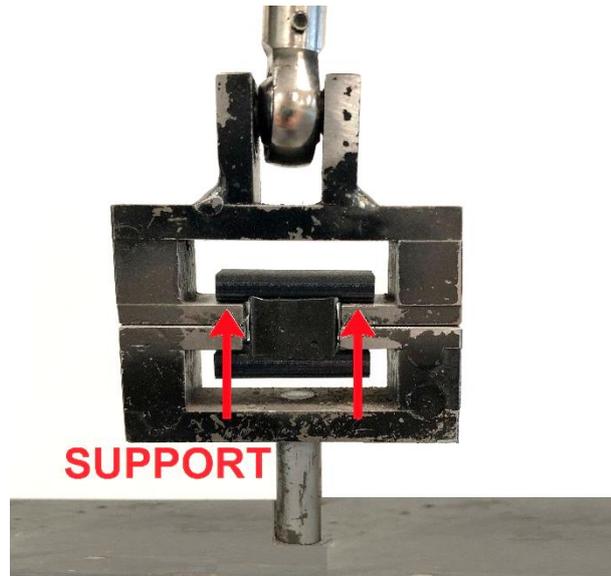
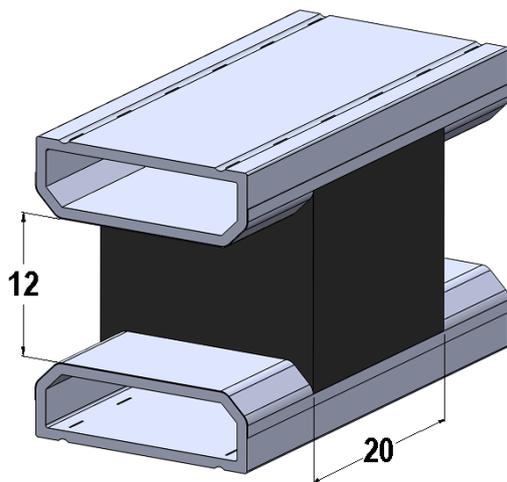
Θ Internal glass temperature

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

Adhesion check

According to EN1279-6 D.2 the following test must be done in order to check mixing and secure the adhesion between spacer and sealant. A pull of 0.3 MPa shall be applied for 10 minutes. No adhesive breakage is allowed (slip to surface).

The following is a guide to achieve the correct results for our spacers. The sealant shall cover 20 mm of the spacer back as shown on the drawing. No precleaning of spacer is allowed. It is important to secure proper contact between sealant and spacer back. The support from the test machine shall be as close as possible to the sealant and direct to the back spacer as illustrated.



Ask the actual sealant supplier for the conditions required during curing. Here some general guidelines:

- For PS curing at 20°C over a period of 24 to 48 hours is normally enough.
- For PU curing at 20°C can take much longer depending on the PU version. 28 days or more is quite normal. Ask sealant supplier for guidelines, it might be possible to accelerate the curing at a higher temperature.

Check the samples for type of breakage. Adhesive breakage is not allowed, and if seen analyzing is needed. Sources to failure: Wrong mix of sealant (A+B), insufficient application, contamination, or deformation of spacers.

Bending

- Use bending tools recommended by bending machine supplier
- Adjust side pressure until correct corner width is obtained (max +0.3 mm)
- Over bending due to resilience is to be adjusted for perfect 90° corners
- Room temperature during processing > 15°C

For further bending instructions, contact your bending machine supplier. Pay careful attention to our **Instruction for processing**.