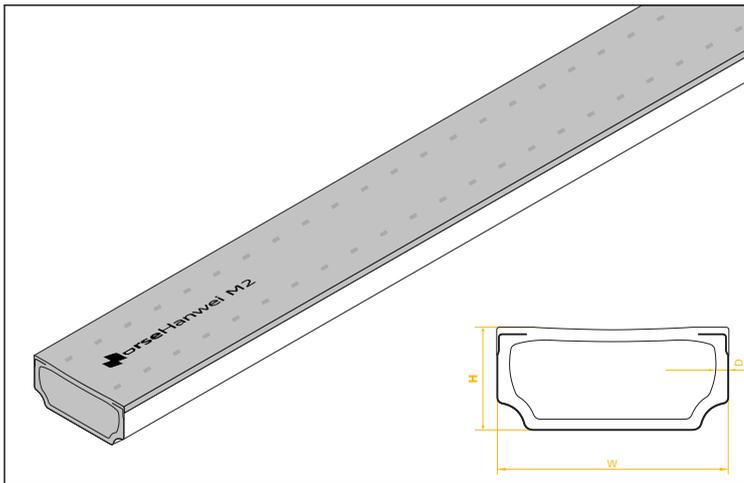


# NorseSpacer

## M2-PP Co-Extruded

### Product data sheet

With its outstanding thermal performance, the NorseSpacer M2 spacer bar is one of the best warm edge products on the market. Thanks to the sophisticated material composition of PP and stainless steel materials, NorseSpacer M2 has a high degree of elasticity with special advantages for processing – and at the same time ensures the required stability for the spacer bar frame. The optimally coordinated design of material, geometry, perforation and film also delivers maximum certainty about the functionality of the insulating glass units, in particular as regards the lifespan.



### DIMENSIONS

Sizes	H[mm] +/-0.15	W[mm] +/-0.15	D[mm] +/-0.15
6A	6.85	5.5	0.9
8A	6.85	7.5	0.9
9A	6.85	8.5	0.9
10A	6.85	9.5	0.9
11A	6.85	11	0.9
12A	6.85	11.5	0.9
13A	6.85	12.5	0.9
14A	6.85	13.5	0.9
15A	6.85	14.5	0.9
16A	6.85	15.5	0.9
18A	6.85	17.5	0.9
19A	6.85	18.5	0.9
20A	6.85	19.5	0.9
22A	6.85	21.5	0.9
24A	6.85	23.5	0.9
27A	6.85	26.5	0.9

### EFFICIENT PROCESSING OPTIONS FOR EVERY REQUIREMENT



! Push-fit corner



J Rounded corner

### ACCESSORIES



NORSESPACER PLASTIC CORNER



NORSESPACER PLASTIC CORNER



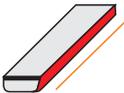
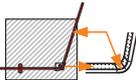
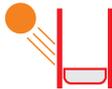
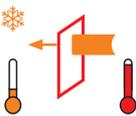
NORSESPACER BLACK PLUG-IN

NorseSpacer M2 can be processed with various methods entirely to suit individual requirements. Apart from classic frame manufacture by hand, automated processing using bending machines is also possible. As you would expect, curves and various special shapes can also be made. Our portfolio also includes the necessary accessories.

### COLORS



## Specification / Test method

	5000 mm 6000mm +10/0 mm Measuring tape		After bending, there is no rupture in the bending part JC/T 2453-2018 6.4
	≤13kg Dynamometer		<0.02% Test at ift Rosenheim according to EN 1279-4:2018 Annex H
	The distortion value is not greater than 1.0mm JC/T 2453-2018 6.2		No significant color change after 4000 h EN ISO 4892-2 CSTB certified (French DTA)
	The stomatal distribution is uniform, and the air pressure difference is >0.1Mpa JC/T 2453-2018 6.5		$\lambda_{eq} = 0.24W/(m \cdot K)$ The equivalent thermal conductivity has been determined in accordance with the ift guideline WA-17 eng/1 "Thermally Improved Spacers – Determination of the Equivalent Thermal Conductivity by Measurement".

## PSI values comparison

Window system W/m <sup>2</sup> K	Wood 1.4-1.3	Plastic 1.2	Wood + aluminium 1.4	Aluminium 1.6	
<b>Glazing</b>	<b>Double  triple glazing</b>				
<b>NorseSpacer M2-PP Co-Extruded</b>	ψvalue	0.040   0.039	0.040   0.038	0.044   0.042	0.049   0.044
	U <sub>w</sub> Window	1.29   0.98	1.23   0.92	1.31   1.03	1.39   1.12
	Temperature factor f <sub>RSI</sub>	0.62   0.70	0.65   0.70	0.59   0.59	0.66   0.73
	Surface temp. T <sub>s</sub> at-10C°, +20 C°	10.6   12.5	11.3   12.9	9.7   11.9	11.5   13.3

Double glazing insulating glass unit: 4-16-4 (U<sub>w</sub> = 1.1 W/m<sup>2</sup>K)  
 Triple glazing insulating glass unit: 4-12-4-12-4 (U<sub>w</sub> = 0.7 W/m<sup>2</sup>K)  
 Source: ift Rosenheim WA-08/3 (Warm Edge working group)/ BF window data sheets

## Standard packaging profiles and accessories NorseSpacer M2-PP Co-Extruded

PROFILES by 5 and 6 meters Bars					ACCESSORIES				
Product	Sizes	Width in mm	Cardboard boxes		Product	Sizes	Width in mm	Black.PJug-In	
			5 meters	6 meters				Plastic Corner	Gas Corner Keys
NorseSpacer M2-PP Co-Extruded	8A	7.5	1155	1386	Accessories for NorseSpacer M2-PP Co-Extruded (Pieces for box)	8A	7.5	2000	5000
	9A	8.5	1050	1260		9A	8.5	2000	5000
	10A	9.5	945	1134		10A	9.5	2000	2500
	11A	11.0	840	1008		11A	11.0	2000	2500
	12A	11.5	840	1008		12A	11.5	2000	2500
	13A	12.5	735	882		13A	12.5	2000	2500
	14A	13.5	735	882		14A	13.5	2000	2500
	15A	14.5	630	756		15A	14.5	2000	2500
	16A	15.5	630	756		16A	15.5	2000	2500
	18A	17.5	525	630		18A	17.5	2000	2500
	19A	18.5	525	630		19A	18.5	2000	2500
	20A	19.5	500	600		20A	19.5	2000	2500
	22A	21.5	420	504		22A	21.5	2000	2500
	24A	23.5	420	504		24A	23.5	2000	2500
27A	26.5	340	408	27A	26.5	2000	2500		

The cardboard boxes for 5 m profiles measure: 510\*16\*11(H) cm.  
The cardboard boxes for 6 m profiles measure: 610\*16\*11(H) cm.

Sizes	Content [g/m] +/-10% Desiccant 0.5-0.9 mm grain	Connector	
		Plastic Corner (DP *)	Black Plug-In
8A	21		✓
9A	23		✓
10A	26		✓
11A	30		✓
12A	34		✓
13A	38		✓
14A	42		✓
15A	46		✓
16A	50		✓
18A	56		✓
19A	60		✓
20A	62		✓
22A	70		✓
24A	78		✓
27A	82		✓

\*DP = Desiccant passage

The plastic plug corner of the connector lacks a drying agent flow channel after filling, while the black straight plug-in is basically U-shaped 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.

## PERFORMANCE CHARACTERISTICS

- The heat conduction coefficient is as low as  $\lambda_{eq} = 0.24 \text{ w/(m} \cdot \text{k)}$ , which is the best choice for passive housing.
- Greatly reduce the phenomenon of dew, prevent the growth of mold, so that more comfortable living.
- The 0.1 mm stainless steel sheet can effectively block water vapor.
- Excellent flame retardant, noise reduction performance, can effectively improve building safety and quality of life.
- Excellent bending performance, can be applied to conventional automatic cold bending, to meet the production process of any bending angle requirements.
- Perfect co-extrusion synthesis - the perfect combination of the two raw materials ensures the adhesion of butyl sealant.
- Taller 7mm height improves handling and placement of spacer frames.
- Can be used in curved glass.

## QUALITY ASPECTS

### Quality management

EN ISO 9001 for quality

### 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 15 years.

### Full filing external demands according to:

- EN 1279
- Swiss standard SGS

## CUSTOMER FOCUS AND WARRANTY

On all spacers we offer a 15 years' 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 defect 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 from us in order to be covered. Related to temperature standardized condition for IG is  $-30^{\circ}\text{C}/+70^{\circ}\text{C}$ .

### 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  $15^{\circ}\text{C}$  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 there is exhausting 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, butyl and sealant works well together in the chosen setup. Focus on compatibility, adhesion, dust and corner quality.

After handling and transport of 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 influence on products.

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



### HENAN WARM EDGE ENERGY SAVING TECHNOLOGY DEVELOPMENT CO., LTD.

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