

# heroyal W 77 HI

Window systems



## Window systems

Top-quality materials, technical perfection down to the smallest detail and a wide variety of design options distinguish the efficient system technology available from heroal. These are benefits that speak for themselves. For decades, heroal has been a reliable partner to architects, building constructors and processors thanks to its innovative solutions made of aluminium and aluminium composite materials for the building shell.

Planners appreciate the variety of design options, building constructors can realise their individual wishes with a reliable system and our partners benefit from the economical and efficient heroal system solutions.

The innovative heroal W 77 window system offers a very high level of quality, functionality and flexibility. It is a state-of-the-art, durable and efficient window system solution for any range of application.

Discover our new heroal W 77 window system.





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A window system to meet present and future needs

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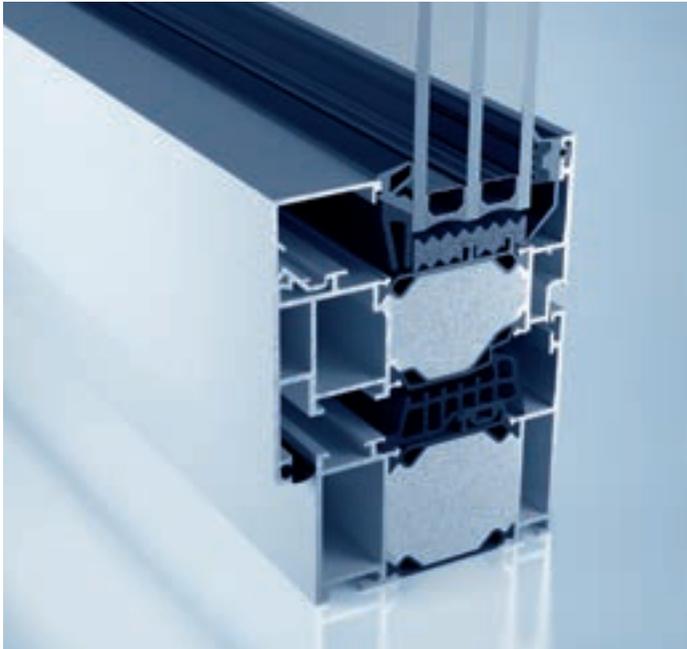
Easily combined, doubly secure

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# heroal W 77 HI

A window system to meet present and future needs



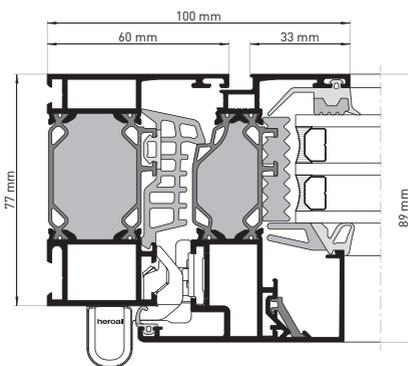
An intelligent combination of geometry and material enables the new heroal W 77 window system to achieve a  $U_f$  value of  $0.95 \text{ W/m}^2\text{K}$  (view width: 120 mm) at passive-house level, with an installation depth of just 77 mm. With this development, heroal has designed the thermally separated aluminium window in such a way that it not only meets present demands stated by the 2016 German Energy Savings Regulation (Energieeinsparverordnung, EnEV) over the long term, but also fulfils future requirements for “nearly zero-energy buildings”.

The most significant system feature of the heroal W 77 window system is its low installation depth of 77 mm coupled with unique energy values. This means less material, energy and resources, resulting in a perfect balance between profitability and economy.

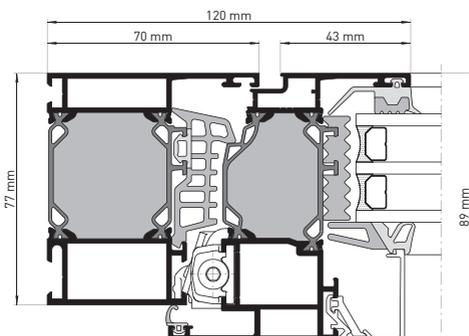
Standard window fittings can be used, making it possible to “update” fitting components over the long term. As a result, architects and planners are offered a window system with a great number of variances, maximum quality and superior product reliability, enabling them to design architecture that fulfils investor requirements and preferences.

### System dimensions and system properties

- » Installation depths: frame 77 mm, casement 89 mm
- » View widths: frames 50 – 250 mm, cross bars 74 – 254 mm, casement 33 – 67 mm
- » Max. thickness of infill panel/glass: frame 54 mm, casement 66 mm
- » Max. casement weight: 300 kg
- » Max. casement leaf height: 2,800 mm
- » Highly heat-insulated 3-chamber aluminium compound system
- » Heat insulation:  $U_{f[120]} = 0.95 \text{ W/m}^2\text{K}$
- » U-value adjustment due to modular insulation zone construction
- » Air permeability: 4
- » Tightness against driving rain: 9A
- » Wind load resistance: C5/B5
- » Soundproofing classes: 1-5
- » Burglary resistance:
  - Window elements: RC 3
  - in combination with the heroal safe RC 3 roller shutter system: RC 4
- » System security using exposed (heroal WF 100) and concealed (heroal WF 100 i) heroal aluminium sliding bar fittings



heroal W 77 with heroal WF 100 fitting system



heroal W 77 with heroal WF 100 i fitting system

# heroal W 77

Three requirements fulfilled in a single system



The heroal W 77 window system features the well-known advantages offered by aluminium profile compound systems, such as the customised adjustment of view widths, colour design and static requirements. However, it also meets the demands of the 2016 German Energy Savings Regulation (Energieeinsparverordnung, EnEV) as well as KfW 40 and KfW 55 standards, meaning that this forward-looking design also meets requirements that will apply in the future.

The modular window system design enables customised planning and implementation depending on the heat insulation requirement.

System option	$U_{f(120)}$ (W/m <sup>2</sup> K)	Glass spacer		Glazing		$U_w$ (W/m <sup>2</sup> K)	2016 EnEV $U_w \leq 1.0$	KfW 55 $U_w \leq 0.9$	KfW 40 $U_w \leq 0.8$	
		Material	$\psi_g$ (W/mK)	$U_g$ (W/m <sup>2</sup> K)	$U_w$ (W/m <sup>2</sup> K)					
heroal W 77	1.1	TGI Spacer	0.044	0.8	1.0	•				
				0.7	0.94					
				0.6	0.87		•			
				0.5	0.80			•		
		Swisspacer V	0.033			0.8	0.98	•		
						0.7	0.91			
						0.6	0.84		•	
						0.5	0.78			•
		Swisspacer U	0.031			0.8	0.97	•		
						0.7	0.91			
						0.6	0.84		•	
						0.5	0.77			•

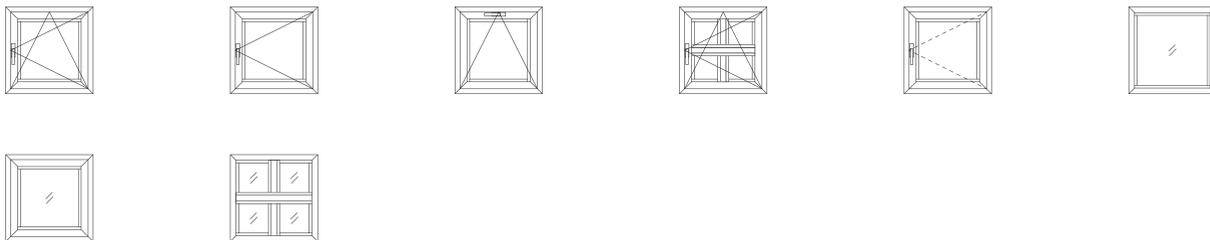
System option	$U_{f(120)}$ (W/m <sup>2</sup> K)	Glass spacer		Glazing		$U_w$ (W/m <sup>2</sup> K)	2016 EnEV $U_w \leq 1.0$	KfW 55 $U_w \leq 0.9$	KfW 40 $U_w \leq 0.8$	
		Material	$\psi_g$ (W/mK)	$U_g$ (W/m <sup>2</sup> K)	$U_w$ (W/m <sup>2</sup> K)					
heroal W 77 HI	0.95	TGI Spacer	0.044	0.8	0.96	•				
				0.7	0.89		•			
				0.6	0.82					
				0.5	0.75			•		
		Swisspacer V	0.033			0.8	0.93	•		
						0.7	0.86		•	
						0.6	0.79			•
						0.5	0.73			•
		Swisspacer U	0.031			0.8	0.92	•		
						0.7	0.86		•	
						0.6	0.79			•
						0.5	0.72			•

Calculation as per DIN EN ISO 10077-1  
Element dimensions: 1,230 x 1,480 mm according to DIN EN 12567-1

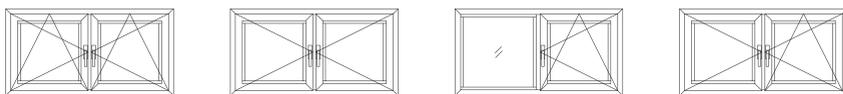
# heroal W 77

## Types of opening

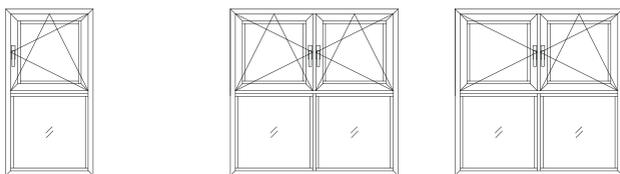
### Single-part elements



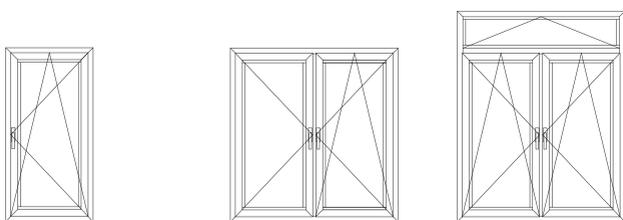
### Two-part elements



### Floor-to-ceiling elements



### Door elements

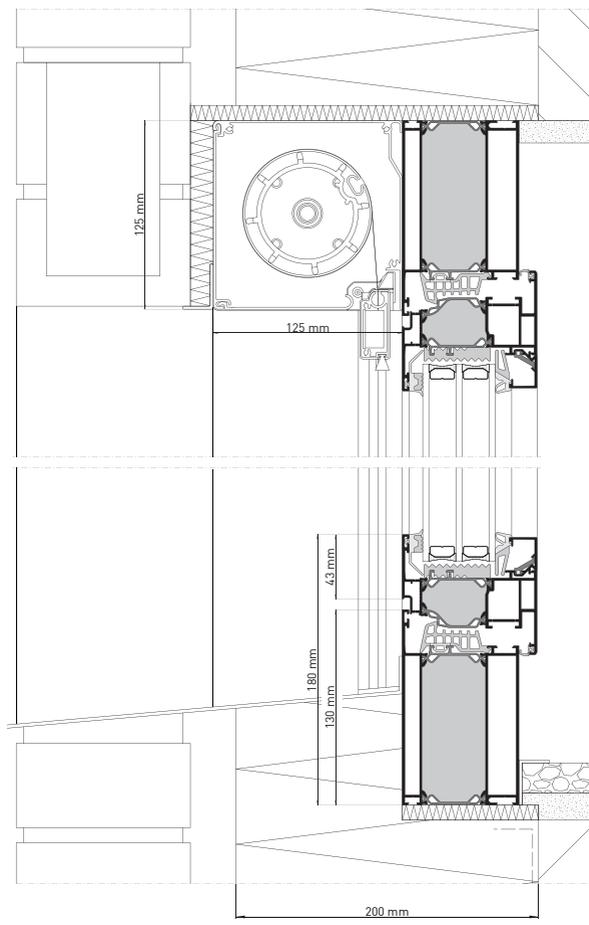


### Form elements



# heroal W 77 PH

The window system with passive-house certification



heroal W 77 PH with VS Z sun protection system

### Requirements fulfilled

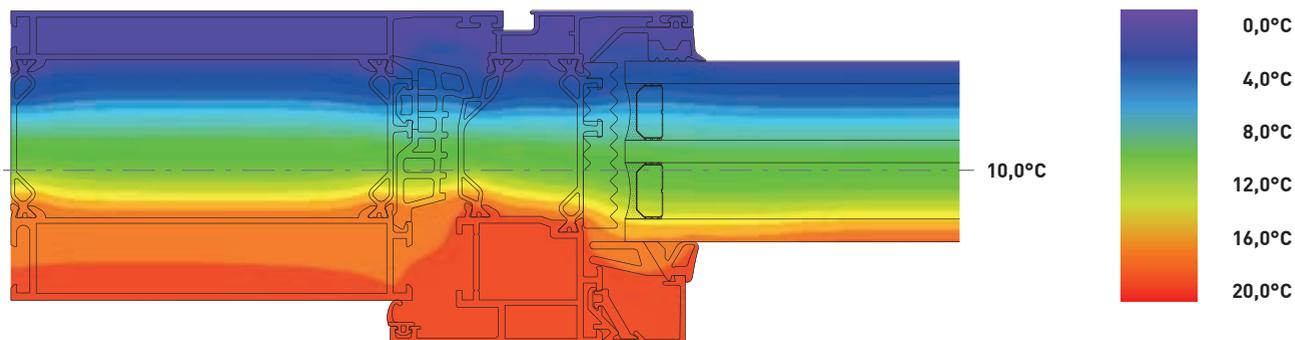
With an installation depth of just 77 mm and a view width of 180 mm, the heroal W 77 PH window system meets the high requirements of the Dr. Feist German Passive House Institute.



A  $U_f$  value of 0.8 W/m<sup>2</sup>K, which meets passive house requirements, is achieved with a view width of just 120 mm.

### Optimised isothermal curve

The central position of the glass means that both the temperature curve within the construction and the weight distribution are virtually parallel, and centred to the window level. Both these factors ensure the ideal transmission of the temperature and load curve into the structure. The installation depth also allows the window system to be installed in combination with flush-mounted (concealed) sun protection with an insulation thickness of just 200 mm, in the pre-wall installation format tried and tested in passive-house construction.



Isothermal curve in line with  $U_f$  EN ISO 10077-2

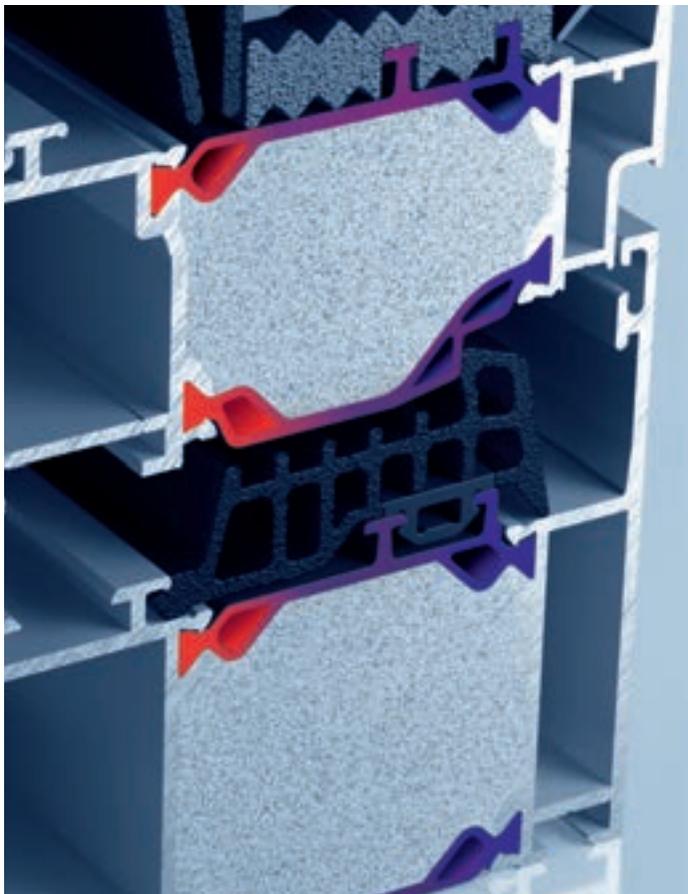
## heroal profile technology

Sustainability in manufacturing aluminium compound profiles is a key indicator for the quality of heroal system technology.

The intelligent use of material starts with the manufacturing of profile half-shells. During this step, recycled materials from the A/U/F recyclable material cycle are fed back into the production process. Resource-efficient production is also a key focus in

profile coating. Surplus quantities of powder are collected and reused here in a latest-generation coating facility.

Processors and partners also benefit from heroal's focus on sustainability.



### heroal thermal break technology

The unique and innovative heroal thermal break technology combines maximum loading capacity with minimal heat loss.

The thermal break geometries reduce the energy flux, and therefore significantly reduce thermal conduction.

Thanks to the unique bridge geometry, the heroal W 77 achieves  $U_w$  values that surpass the requirements of the current German Energy Savings Regulation (Energieeinsparverordnung, EnEV) and meet requirements that will in the future, with an installation depth of 77 mm for frames and 89 mm for casements.

### heroal foam filling process

Foam filling in the modular insulation zone area of heroal aluminium compound profiles is performed during an in-house process developed by heroal using PU foam with a polyol and isocyanate base. The insulating foam is manufactured without halogenised propellant, i.e. without HCFCs. The natural resources sugar and starch are used as additional stabilisers. In contrast with what are referred to as "backpack" variants, in which the insulating material is bonded on the thermal break, the insulation chambers of heroal profile systems are completely filled, resulting in improved and optimum exploitation of the heat insulation.

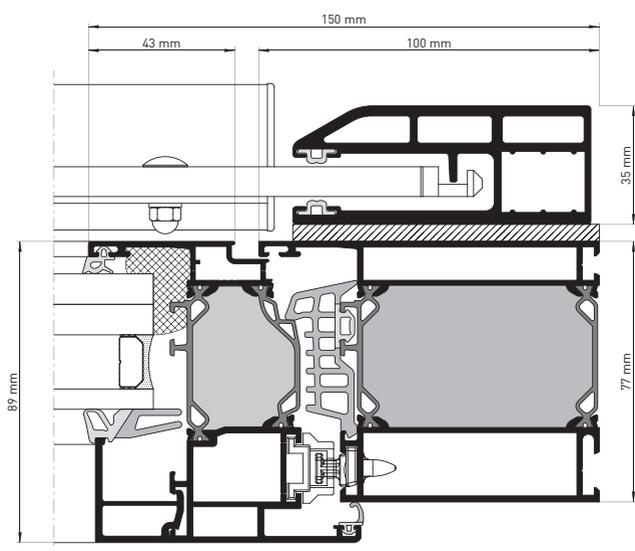
### heroal proprietary profile compound

heroal is the only company, based on QM 323, that has an externally monitored association of factories producing heat-insulated aluminium-plastic compound profiles. The perfectly balanced combination of adhesive cord and knurling ensures above-average rigidity in the heroal insulating process and the shift values of heroal aluminium compound profiles.



## Burglary resistance

Easily combined, doubly secure



heroal W 77 + roller shutter heroal RS 37 RC 3

### Breaking it off instead of breaking in

Ground floor windows are particularly popular targets for burglars. Police therefore recommend the use of windows of resistance class RC 2 for preventing break-ins by opportunistic offenders. However, if the location and circumstances mean that it is possible for intruders to avoid being interrupted, even whilst making noise with loud tools, even more effective protection may be necessary. For heroal this is good reason for exceeding the recommendations – both with the heroal W 72 and W 77 window systems and with the heroal RS 37 RC 3 high-grade steel roller shutters. Tested separately by ift Rosenheim, they afford burglary resistance of resistance class RC 3, and in combination even resistance class RC 4. Even experienced offenders with cordless drills, sawing and hammering tools do not penetrate the building within 30 minutes. This is a period of time during which most offenders will have long since abandoned their attempts.



heroal WF locking side with corner guide, closing elements and mushroom locks

### heroal WF

The heroal fitting system is setting industry standards. Standard equipment already includes fitting components for a basic level of security. The anti-lift protection, horizontal tipping point and mushroom lock ensures the basic level of security. Tests corresponding to resistance classes RC 2 and RC 3 were successfully completed without special fittings parts for the casement, but with a reduced number of RC closing points:

the number of closing points was reduced from 12 to 4 in resistance class RC 2 with a casement leaf size of 1,250 x 1,400 mm, and from 18 to 12 in resistance class RC 3 with the same casement leaf size.

# System properties and performance features

## System dimensions

Description		heroyal W 77 PH	heroyal W 77 HI	heroyal W 77	heroyal W 72 <small>U<sub>f</sub> = 1.3 W/m²K</small>
Profile installation depth (mm)	Frame profiles	77	77	77	72
	Casement profiles	89	89	89	84
	Cross bar profiles	77	77	77	72
Profile view widths (mm)	Frame profiles	145	50 - 250	50 - 250	50 - 250
	Casement profiles	43	33 - 67	33 - 67	33 - 67
	Cross bar profiles	164	74 - 254	74 - 254	74 - 254
Min. view width of frame/casement profile (mm)		180	90	90	90
Casement profile variants	SBN <sup>1)</sup>	•	•	•	•
	KBN <sup>2)</sup>	•	•	•	•
Max. thicknesses of infill panel/ glass (mm)	Frame profiles	54	54	58	54
	Casement profiles	66	66	68	64
Glass inset	Frame profiles	18	18	18	18
	Casement profiles	18	18	18	18
Max. casement weights (kg) <sup>3)</sup>		300	300	300	300
Max. casement leaf heights (mm) <sup>3)</sup>		2,800	2,800	2,800	2,800

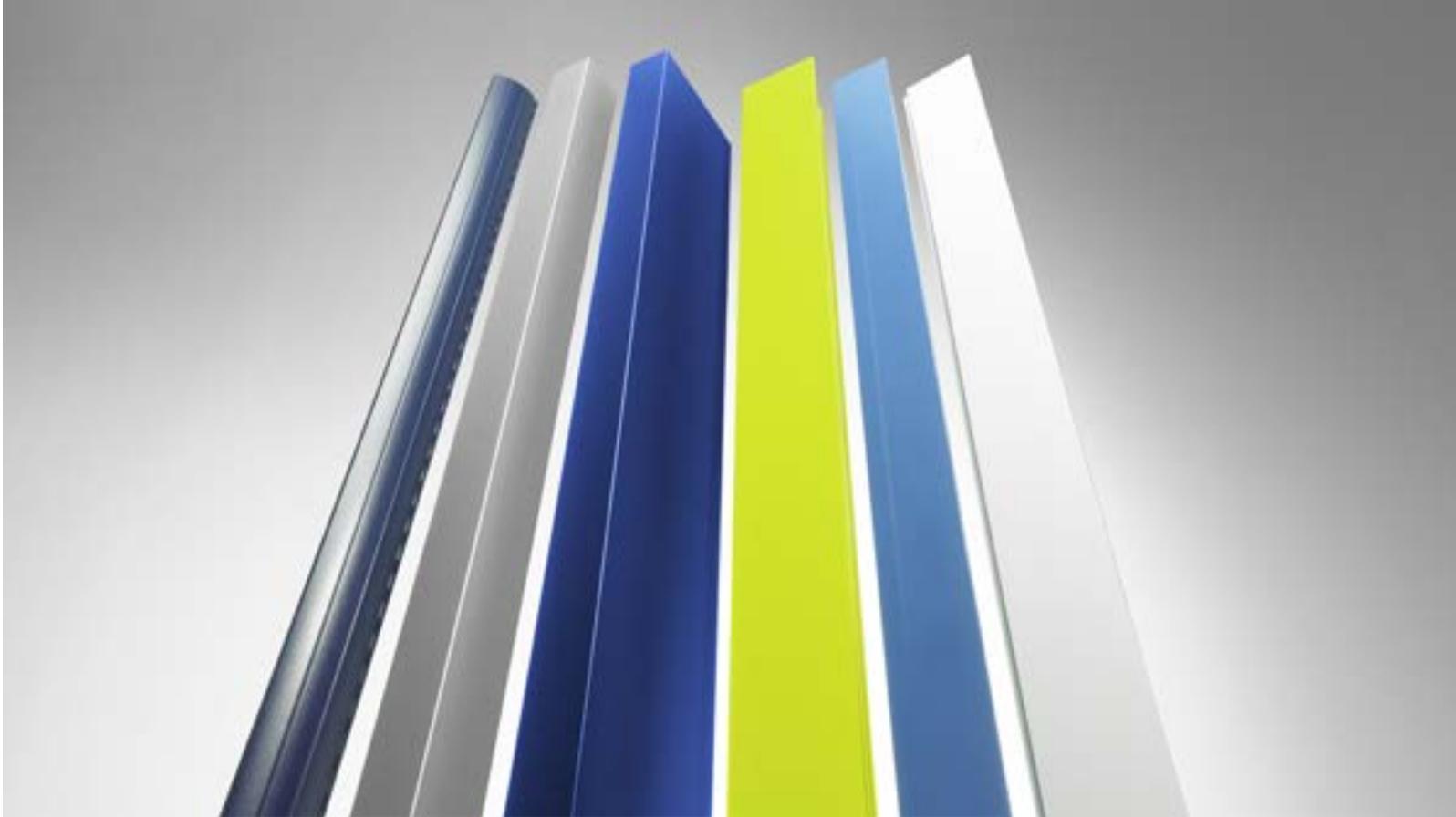
## System properties

Heat insulation (U <sub>f</sub> in W/m²K)	DIN EN ISO 10077	0.78	≥ 0.74	≥ 0.76	≥ 0.85	
Heat insulation (U <sub>f</sub> in W/m²K)/ profile view width (mm)	DIN EN ISO 10077	0.78 180	0.95 120	1.1 120	1.3 120	1.2 120
Heat insulation (U <sub>w</sub> in W/m²K)	DIN EN ISO 10077	0.79	≥ 0.72	≥ 0.77	≥ 0.84	
Air permeability	DIN EN 12207	4	4	4	4	
Tightness against driving rain	DIN EN 12208	9A	9A	9A	9A	
Wind load resistance	DIN EN 12210	C5/B5	C5/B5	C5/B5	C5/B5	
Soundproofing class (SSK)	DIN EN ISO 717-1	TBC	1-5	1-5	1-5	
Burglary resistance	DIN V ENV 1627	TBC	RC 4	RC 4	RC 4	
Operating forces	DIN EN 12217	1	1	1	1	
Mechanical durability	DIN EN 13115	4	4	4	4	
Ability to bear safety equipment	DIN EN 14354	fulfilled	fulfilled	fulfilled	fulfilled	

<sup>1)</sup> Sliding bar fitting groove

<sup>2)</sup> Plastic fitting groove

<sup>3)</sup> Certified heroyal WF fitting systems



## heroal surfaces

Surface finishing is an integral part of heroal system components. heroal offers optimally matched systems for windows, doors, façades, as well as roller shutters, roller doors and sun protection. With our heroal hwr powder coating, we rely on quality from our own coating plants. The award as the official GSB Premium coater and the Qualicoat quality seal underline the quality leadership! Apart from the powder coating, heroal also offers its customers Eloxal surfaces and laminations. A twin-coat thick coating is used in the roller shutter field in particular. heroal delivers its entire product portfolio directly ex-works, thus ensuring the shortest delivery times for its partners.



## Our service is consistently geared to your needs

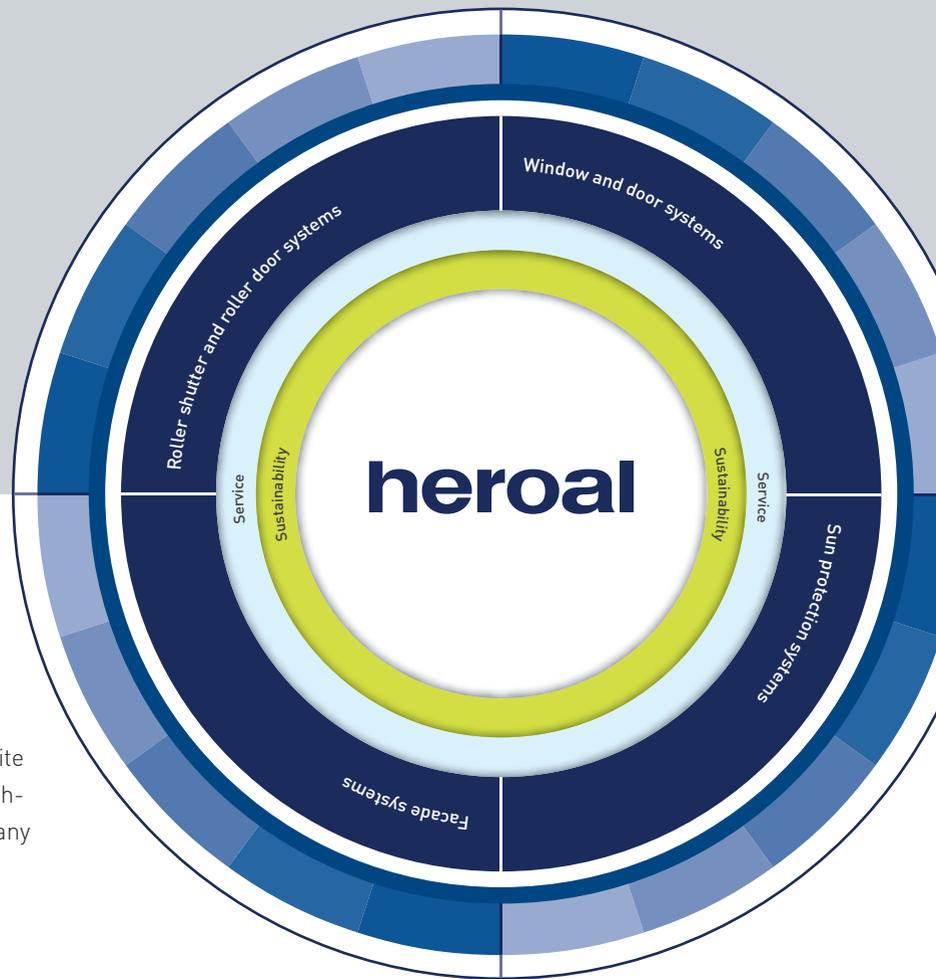
Alongside its extensive system portfolio with perfectly coordinated products, heroal also provides a service that is unique and the most efficient in the sector – founded on a consistent focus on customers' requirements, wishes and needs. The basis of heroal service – alongside the trained team of employees – is the in-house, energy-efficient production, made in Germany with an unparalleled manufacturing range and process reliability, which ensures optimum product quality for sustainable, cost-effective and value-enhancing construction for processors, architects and constructors. This is also ensured by the new heroal logistics centre, covering an area of around 40,000 m<sup>2</sup>, and the company truck fleet. The heroal service portfolio is rounded off by the testing centre for roller shutters, roller doors, sun protection, windows, doors and façades, which is certified by ift Rosenheim and can also be used by customers, as well as by the efficient, in-house profile bending and edging service: heroal is the only systems supplier in the sector to offer such a service to its customers.

# heroal – the aluminium systems supplier

As one of the leading aluminium systems suppliers, heroal develops and produces perfectly coordinated systems for windows, doors, façades, roller shutters, roller doors and sun protection, complemented by louvre and sliding shutters, insect protection and terrace roofs and carports. By minimising energy consumption during production, maximising energy conservation during usage and ensuring optimum profitability during system processing and building improvement, heroal system solutions make a significant contribution to sustainable construction.

## Innovation, service, design, sustainability

The heroal brand represents system solutions that unite practical innovations, industry-leading service and high-quality design that can be sustainably integrated into any architecture.



Roller shutters | Sun protection | Roller doors | Windows | Doors | Façades | Service

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