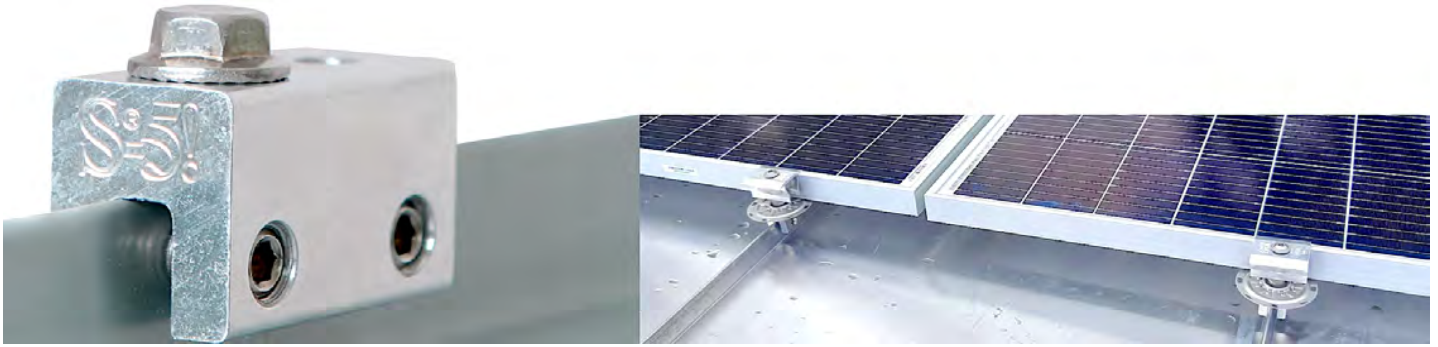


# S-5!®



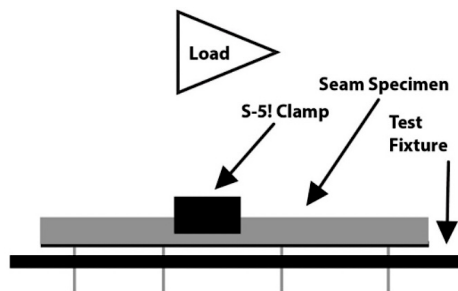
## The Right Way!



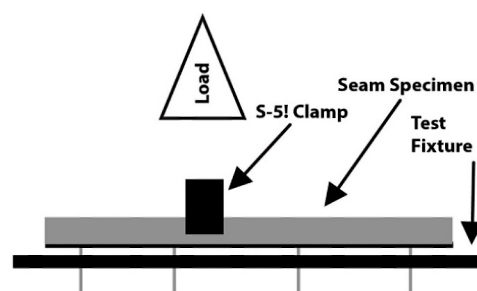
The S-5! clamp is designed for secure fastening of solar panels to metal profiles. It features a robust design with a set screw for easy adjustment and a wide base for stability. The clamp is made of high-quality aluminum, ensuring durability and resistance to corrosion. Its unique shape allows for a tight fit on various profile sizes, providing a reliable and long-lasting connection. The S-5! clamp is the preferred choice for solar installers looking for a secure and easy-to-use fastening solution.



This type of test tests the clamp itself and the connection of the clamp to the profile under test conditions. Tests made with load pulling parallel (shear) to seam and with load pulling normal (tensile) to seam:



Load test pulling parallel (shear) to seam



Load test pulling normal (tensile) to seam

The result of all tests was that the load-bearing capacities of the S-5!® clamps are generally higher than those of the profiles and their attachment to the supporting structure. This applies to the S-5!® Clamps with two set screws as well as to the S-5!® Mini clamps with one set screw.

The tests and approval confirm the S-5!® clamps' well-known reliability and maximum holding strengths that are not achieved by other seam clamps available on the market.



# 6 Yck 'jg'UzfgghgY'Wf'cb'cZH Y' c`Xjb[ 'ghYb[ h g'cZH Y' G!) °a`WLa dg'hYghYX`Vml G'hYghj[b[ 'jbg[h hYg'cb'gYUa `UbX' a UYf]U`mdYg`Wta a cb`mi gYX`j'b'9i fcdY"

S-5!® Clamp	Metal Roof Producer	Roof Panel	Material	Material Thickness	Setscrew Tension	Test Result	Test Method	Allowable Load *
E-Clamp	Astron	LMR 600	Stahl	0,66 mm	17,0 Nm	8,28 kN	Parallel	4,14 kN
	Butler	MR24	Stahl	0,64 mm	17,0 Nm	8,44 kN	Parallel	4,22 kN
	Corus	Falzinc	Aluminium	0,7 mm	13,0 Nm	5,14 kN	Parallel	2,57 kN
	Haushaut	DF-Falz	Aluminium	0,7mm	13,0 Nm	4,91 kN	Parallel	2,46 kN
	Novelis	Falzonal	Aluminium	0,7 mm	13,0 Nm	5,34 kN	Parallel	2,67 kN
	Prefa	Prefalz	Aluminium	0,7 mm	13,0 Nm	4,65 kN	Parallel	2,33 kN
	Rheinzink	Rheinzink Double Folded Seam	Titanzink	0,7 mm	13,0 Nm	5,54 kN	Parallel	2,77 kN
		Rheinzink Double Folded Seam	Titanzink	0,8 mm	13,0 Nm	7,44 kN	Parallel	3,72 kN
	NedZink	NATUREL	Titanzink	0,7mm	13,0 Nm	6,05 kN	Parallel	3,02 kN
	Umicore	VM ZINC	Titanzink	0,7 mm	13,0 Nm	6,58 kN	Parallel	3,29 kN
	Zintek	Zintek Double Folded Seam	Titanzink	0,7 mm	13,0 Nm	5,27 kN	Parallel	2,67 kN
	Roofinox	ASP ML-100	Edelstahl	0,5 mm	13,0 Nm	6,89 kN	Parallel	3,44 kN
Uginox	Uginox FTE	Edelstahl	0,5 mm	13,0 Nm	5,84 kN	Parallel	2,92 kN	
E-Mini	Astron	LMR 600	Stahl	0,66 mm	17,0 Nm	10,30 kN	Normal	3,43 kN
	Butler	MR24	Stahl	0,51 mm	13,0 Nm	10,02 kN	Normal	3,34 kN
	Corus	Falzinc	Aluminium	0,7 mm	13,0 Nm	3,91 kN	Normal	1,30 kN
	Haushaut	DF-Falz	Aluminium	0,7 mm	13,0 Nm	3,75 kN	Normal	1,25 kN
	Novelis	Falzonal	Aluminium	0,7 mm	13,0 Nm	3,89 kN	Normal	1,30 kN
	Prefa	Prefalz	Aluminium	0,7 mm	13,0 Nm	3,82 kN	Normal	1,27 kN
	Rheinzink	Rheinzink Double Folded Seam	Titanzink	0,7 mm	13,0 Nm	4,53 kN	Parallel	2,26 kN
		Rheinzink Double Folded Seam	Titanzink	0,7 mm	13,0 Nm	5,38 kN	Normal	1,79 kN
	NedZink	NATUREL	Titanzink	0,7mm	13,0 Nm	5,44 kN	Normal	1,81 kN
	Privé-Stylinov	Profil No. 1	Stahl	0,6 mm	13,0 Nm	7,06 kN	Normal	2,35 kN
	Umicore	VM ZINC	Titanzink	0,7 mm	13,0 Nm	4,90 kN	Normal	1,63 kN
	Zintek	Zintek Double Folded Seam	Titanzink	0,8 mm	13,0 Nm	6,19 kN	Normal	2,06 kN
Roofinox	ASP ML-100	Edelstahl	0,5 mm	13,0 Nm	8,30 kN	Normal	2,77 kN	
Uginox	Uginox FTE	Edelstahl	0,5 mm	13,0 Nm	7,40 kN	Normal	2,46 kN	
S-Clamp	Fischer	Kliptec Snapfalz	Stahl	0,82 mm	17,0 Nm	8,76 kN	Parallel	4,38 kN
	Jacobi	Jacobi-Snapfalz 38	Stahl	0,75 mm	17,0 Nm	7,90 kN	Parallel	3,95 kN
	Privé-Stylinov	Profil No. 3 Snapfalz	Stahl	0,6 mm	17,0 Nm	4,21 kN	Normal	2,10 kN
	NeZink	Single Folded Seam 24mm	Titanzink	0,7 mm	13,0 Nm	5,29 kN	Parallel	2,65 kN
	Haushaut	Single Folded Seam 25mm	Aluminium	0,7 mm	13,0 Nm	4,89 kN	Parallel	2,45 kN
	Protectum	RS50-PS Single Folded Seam	Edelstahl	0,5 mm	13,0 Nm	6,08 kN	Parallel	3,04 kN
S-Mini	Fischer	Kliptec Snapfalz	Stahl	0,82 mm	17,0 Nm	5,51 kN	Normal	1,80 kN
	Jacobi	Jacobifalz 38 Snapfalz	Stahl	0,75 mm	17,0 Nm	6,74 kN	Normal	2,25 kN
	Privé-Stylinov	Profil No. 3 Snapfalz	Stahl	0,6 mm	17,0 Nm	3,50 kN	Normal	1,17 kN
	NedZink	Single Folded Seam 24mm	Titanzink	0,7 mm	13,0 Nm	3,16 kN	Normal	1,05 kN
	Haushaut	Single Folded Seam 25mm	Aluminium	0,7 mm	13,0 Nm	2,35 kN	Normal	0,78 kN
	Protectum	RS50-PS Single Folded Seam	Edelstahl	0,5 mm	13,0 Nm	5,06 kN	Normal	1,69 kN

\* Allowable loads are listed utilizing a default Factor of Safety: 2,0 for parallel load and 3,0 for normal load. The values of the E-Mini are identical for the E-Mini-FL. This type of test tests the clamp itself and the connection of the clamp to the seam/profile under test conditions. Please note the respective installation instructions. © Copyright RoofTech GmbH and S-5!® Metal Roof Innovations Ltd..



# 6 Yck 'jg'Usecond'gY'YW]cb'cZH Y\ c`X]b[ 'ghfYb[ H g'cZ H Y'G!) °¤ `WUa dg'hYghYX`Vmi G'hYgh]b[ 'jbg]hi hYg'cb'gYUa` UbX'a UHf]U`hmdYg`Wta a cb`mii gYX`j]b'9i fcdY"

S-5!® Clamp	Metal Roof Producer	Roof Panel	Material	Material Thickness	Setscrew Tension	Test Result	Test Method	Allowable Load *
Z-Clamp	Aluform	Alufalz 65	Aluminium	0,8 mm	13,0 Nm	7,98 kN	Parallel	3,99 kN
		Alufalz 65	Aluminium	1,0 mm	13,0 Nm	10,8 kN	Parallel	5,42 kN
		Interfalz 65	Aluminium	0,8 mm	13,0 Nm	8,78 kN	Parallel	4,39 kN
		Interfalz 65	Aluminium	1,0 mm	13,0 Nm	10,9 kN	Parallel	5,46 kN
	Bemo	Bemo Roof N50	Aluminium	0,8 mm	13,0 Nm	11,8 kN	Parallel	5,88 kN
		Bemo Roof N50	Aluminium	1,0 mm	13,0 Nm	10,9 kN	Parallel	5,47 kN
		Bemo Roof N50	Stahl	0,6 mm	17,0 Nm	7,86 kN	Parallel	3,93 kN
	Corus	Kal Zip	Aluminium	0,8 mm	13,0 Nm	11,8 kN	Parallel	5,88 kN
		Kal Zip	Aluminium	1,0 mm	13,0 Nm	10,9 kN	Parallel	5,47 kN
Kal Zip		Stahl	0,6 mm	17,0 Nm	7,86 kN	Parallel	3,93 kN	
Z-Mini	Aluform	Alufalz 65	Aluminium	0,8 mm	13,0 Nm	5,82 kN	Parallel	2,91 kN
		Alufalz 65	Aluminium	0,8 mm	13,0 Nm	3,56 kN	Normal	1,19 kN
		Interfalz 65	Aluminium	0,8 mm	13,0 Nm	4,13 kN	Normal	1,38 kN
		Interfalz 65	Aluminium	1,0 mm	13,0 Nm	6,59 kN	Normal	2,20 kN
	Bemo	Bemo Roof N50	Aluminium	1,0 mm	13,0 Nm	8,22 kN	Parallel	4,11 kN
		Bemo Roof N50	Aluminium	1,0 mm	13,0 Nm	2,76 kN	Normal	0,92 kN
	Corus	Kalzip 65	Aluminium	0,9 mm	13,0 Nm	7,64 kN	Parallel	3,82 kN
		Kalzip 65	Aluminium	0,9 mm	13,0 Nm	4,52 kN	Normal	1,51 kN
	Kingspan	KingZip	Stahl	0,5 mm	17,0 Nm	4,54 kN	Normal	1,51 kN
KingZip		Aluminium	0,9 mm	13,0 Nm	4,62 kN	Normal	1,54 kN	
ZH-Mini	Bemo	Bemo Roof N50	Aluminium	1,0 mm	8,5 Nm	4,46 kN	Normal	1,49 kN
B-Clamp	KME	TECU 25mm	Kupfer	0,7 mm	13,0 Nm	5,67 kN	Parallel	2,84 kN
B-Mini	KME	TECU 25mm	Kupfer	0,7 mm	13,0 Nm	4,45 kN	Normal	1,48 kN
H-Mini	New Tech Mach.	SSQ 275	Stahl	0,51 mm	13,0 Nm	5,10 kN	Normal	1,70 kN
K-Grip-Mini + GMX10 Inset	Domico	Domitec	Aluminium	1,0mm	13,0 Nm	2,32kN	Normal	0,77 kN
	Lysaght	Klip-Lok 406	Stahl	0,48 mm	22,6 Nm	4,44 kN	Normal	1,48 kN
	Safintra	Saflock 410	Stahl	0,58 mm	17,0 Nm	3,36 kN	Normal	1,12 kN
N-Mini	Lysaght	ENSEAM 25mm	Stahl	0,51 mm	13,0 Nm	5,30 kN	Normal	1,77 kN
	McElroy Metal	Meridian	Stahl	0,40 mm	13,0 Nm	3,21 kN	Normal	1,07 kN
N1.5-Clamp	SCH Holland	Nailstrip Klikfels 35-500	Stahl	0,56 mm	17,0 Nm	5,24 kN	Parallel	2,62 kN
N1.5-Mini	SCH Holland	Nailstrip Klikfels 35-500	Stahl	0,56 mm	17,0 Nm	5,12 kN	Normal	1,71 kN
	New Tech Mach.	Nailstrip SS40SL	Stahl	0,51 mm	17,0 Nm	6,07 kN	Normal	2,02 kN
NH1.5-Mini	VicWest	Prestige	Stahl	0,51 mm	13,0 Nm	2,89 kN	Normal	0,96 kN
	New Tech Mach.	FF150 Nail Strip	Stahl	0,51 mm	13,0 Nm	6,94 kN	Normal	2,31 kN
R465-Mini	Zambelli	Rib-Roof 465	Aluminium	0,7 mm	13,0 Nm	4,08 kN	Parallel	2,04 kN
		Rib-Roof 465	Aluminium	0,7 mm	13,0 Nm	4,89 kN	Normal	1,63 kN
RC-Clamp	Iscom	Riverclack 55	Aluminium	0,7mm	18,0 Nm	2,04 kN	Normal	0,68 kN
	Iscom	Riverclack 55	Aluminium	0,8mm	18,0 Nm	2,37 kN	Normal	0,79 kN

\* Allowable loads are listed utilizing a default Factor of Safety: 2,0 for parallel load and 3,0 for normal load. The values of the Z-Mini are identical for the Z-Mini-FL. This type of test tests the clamp itself and the connection of the clamp to the seam/profile under test conditions. Please note the respective installation instructions. © Copyright RoofTech GmbH and S-5!® Metal Roof Innovations Ltd..



All components in Germany related to fixing solar products for PV installations need to carry a German approval by the DIBt (German Center of Competence for Civil Engineering - Authority of the German Government). Since March 2017 the S-5-Z- and S-5-E- Clamps have the national technical approval by the DIBt: abZ aBG No. Z-14.4-719 - valid until May 2027.

The S-5!® Z-clamp family have the national technical approval for the round „bulb“ seams for all these international operating producer:

- Kalzip-Aluminium-Stehfalzprofil from **Kalzip**
- BEMO-FLAT-ROOF from **Bemo**
- ALUFALZ and FALZ-RIPP from **Aluform**

The S-5-Z-Clamp, S-5-Z-Mini and S-5-Z-Mini-FL are currently the only clamps on the market with an approval for all these three round bulb seam profiles.

**Please note this information from Kalzip:**

Kalzip requires “an official approval for assembly with Kalzip” when using clamps from other manufacturers. For the installation of solar systems on Kalzip roofs, only tested system accessories approved for this purpose may be used. **Non-approved components invalidate the Kalzip warranty!**

**Due to the approval by the DIBt, such proof is given for the S-5!® Z clamp family and they may therefore can be used for installations on such Kalzip roofs.**

The S-5!® E-Clamp family was tested on the Rheinzink double folded seam system and currently the only clamps on the market with an official approval for this double-folded standing seam roof.

**Please note this information from Rheinzink:**

Rheinzink basically only recommends the use of the S-5! Clamps, as only these have the official approval in connection with their roofs and thus offer the only possibility that a structural engineer can provide a static proof for the entire system.

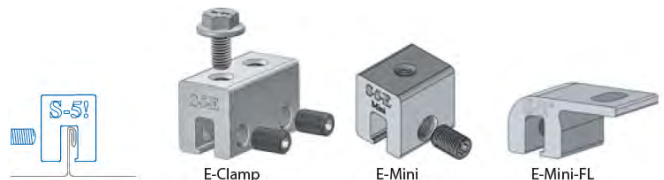
**Should the tradesman or planner nevertheless work with other clamps and this causes damage to the roof, then of course the Rheinzink material warranty and system warranty no longer apply.**

The result of all tests was, with very few exceptions, that the load capacity of each individual S-5!® clamp is stronger than the load capacity of the roof panels or profiled sheets and their attachment to the supporting structure. This applies not only to the Clamps with two setscrews but also to the S-5!® Mini clamps with one setscrew. **The load-bearing capacity values from this building approval may be used for static calculations.**

**Please don't hesitate to contact us for further information and the test results.**

**All S-5!® E and Z clamps have been completely tested in the required four load directions, and unlike other seam clamps, not only the clamps in connection with the seam, but in connection with the entire roof structure, including the standing seam profiles, the clips or holders and their attachment to the supporting structure!**

The extensive test procedure was made by the well-known institute KIT (Karlsruhe Institute of Technology).

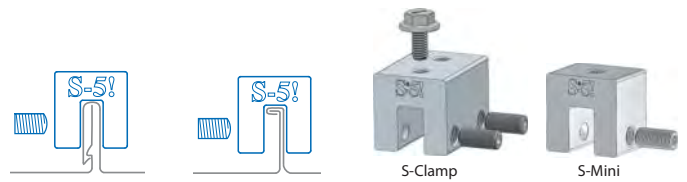
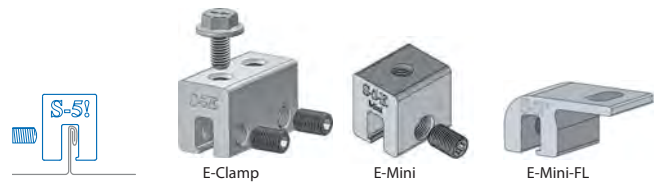


## the perfect fastening base for many different applications

**The S-5!® Clamps with two set screws, M8 thread(s) on the top and one M8x16 stainless steel screw with locking serration, are used for very high loads such as e.g. for single fastenings, fall protection and the S-5!® ColorGard snow guard system.**

### S-5!® E-Clamps for Double Folded Seams

The E-clamps made of Aluminium have an opening slot of 7mm and offer mounting solutions on double standing seam roofs. **Official approved by the DIBt.: Z-14.4-719.**



### S-5!® S-Clamps for Snap Lock and Angle Seams

With a bigger opening slot of 14mm the S-Clamps are extremely versatile for angle seams and a big number of industrial seams such as Snap-Lock or Snap-together profiles from Fischer-Kliptec, Schlebach, Prive-Stylinov, Ruukki or similar.

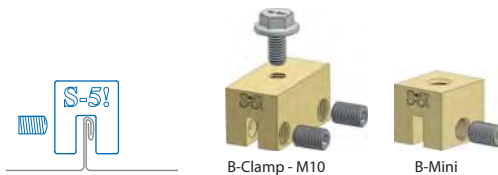
### S-5!® Z-Clamps for Round Bulb Seams

The Z-Clamps are specially developed to fit roofs having round "bulb" seams with a max. 22mm diameter such as profiles of Kalzip®, Bemo®, Aluform, Euroseam® or Kingspan. **Official approved by the DIBt.: Z-14.4-719.**



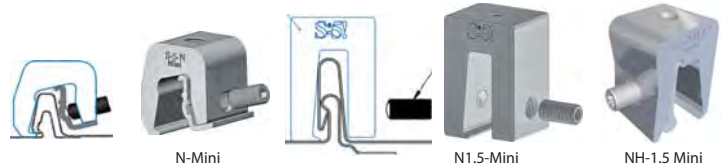
### S-5!® B-Clamps for Copper Roofs

The B-clamps with an opening slot of 6mm are the perfect choice for copper roofs with double standing seam. The B-clamps are **made of Brass** and thus enable material-compatible installations on copper roofs.



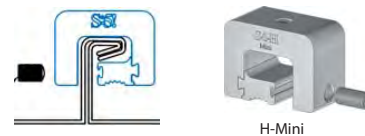
### S-5!® N-Mini and N1.5-Mini Clamps for Nail Strip Seams

The N-Mini clamp is suitable for 1 inch (25mm) high and the N1.5-Mini clamp and NH1.5-Mini clamp for 1.5 inch (38mm) high Nail-strip profiles such as those from Schlebach or similar.



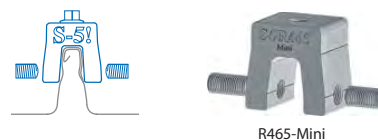
### The S-5!® H-Mini for larger Horizontal Profiles

The H-Mini clamp is developed for different types of larger horizontal seams up to 32mm width.



### The S-5!® R465 Mini Clamp

is specially designed for the profiles Zambelli RIB-Roof 465, Domico GBS and similar. The exact fit with the set screws on both sides are the basis for the high holding forces.



### The S-5!® RC Clamp

is specially designed for the profiles Zambelli RIB-Roof 465, Domico GBS and similar. The exact fit with the set screws on both sides are the basis for the high holding forces.



**All not stocked S-5!® products can be imported from S-5!, USA, after customer request – even in small quantities and in short time with air freight. If you would like a quote, further information or advice on a project, please do not hesitate to contact us.**

The respective installation instructions must be observed for the applications and installation of the products (please request if necessary). The suitability of the products for the intended use is checked by the buyer and user themselves. Any loads imposed on the S-5!® clamp will be transferred to the panels. Panel attachment and building structure must also be sufficient to carry these loads. Descriptions, pictures and drawings may represent development stages that are not available in this form. RoofTech GmbH and the manufacturers do not accept any responsibility for the installation, suitability, effect and applications or any further liability. The contents of our documents are protected by copyright. S-5!® products are protected by international patents.