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## MultiMaterial-Welding®

LiteWWeight® SN Pin – Technical Data Sheet

**MULTIMATERIAL-WELDING®**

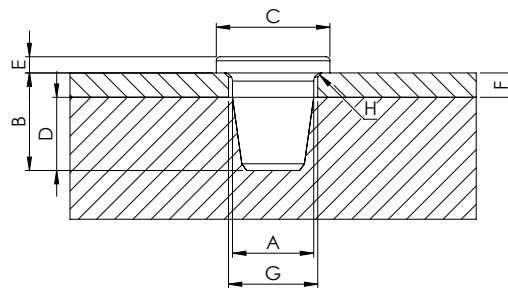
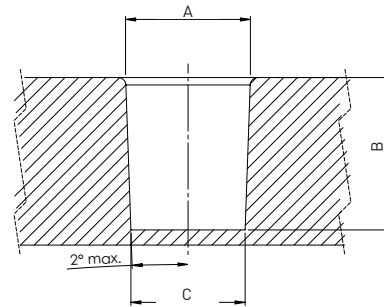
# LiteWWeight® SN Pin

**MULTIMATERIAL-WELDING®**

MM-Welding® is an innovative fastening technology platform that uses ultrasonic energy to partially melt thermoplastic materials into porous materials to create a functional and strong form-lock connection in fractions of a second.

**LITEWWEIGHT® PIN**

The Pin family of products provides a strong connection into sandwich panels comprised of a paper honeycomb core and glass-fiber-reinforced layers bonded with PUR foam, typically found in automotive interior parts. The "SN" type pins work by bonding to the foam and glass fibers inside a molded indentation in the panel's skin. Since this boss can be molded at the same time as the panel is produced, there is no additional step to prepare the substrate for this LiteWWeight® technology.



**PRODUCTS**

LiteWWeight® PIN-SN-12   BN 56111		
Function	For holding down a functional part, used to replace a screw & nut or rivet solution	
Material	PA6-GF30 / PBT-GF30	
Color	Black	
Boss geometry	A: Boss diameter	Ø 8.2 mm
	B: min. boss depth	9 mm
	C: approx. bottom dia	Ø 7.6 mm
Fastener geometry & Sketch	A: pin diameter	Ø 10 mm
	B: pin length	12 mm
	C: pin head dia.	Ø 14 mm
	D: pin inserted length	9 mm
	E: pin head thickness	2 mm
	F: part thickness	3 mm
	G: part hole dia.	Ø 11 mm
	H: part hole chamfer	0.5 mm x 45°



Figure 1: ideal substrate pre-molded boss geometry, see table for dimensions  
Figure 2: PIN-SN-12 fastener dimensions and recommended part through-hole, see table for dimensions.

## MECHANICAL PROPERTIES

Test type	Average value*	Maximum value
Axial pull-out	800 N	1100N

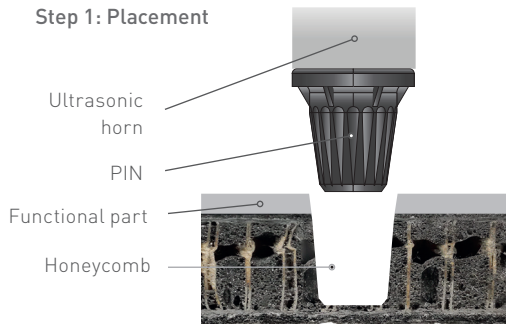
\* values are subject to substrate composition and substrate geometry variations



The information in this document are for guidance purposes and do not represent a warranty or guarantee of any kind. The physical characteristics represent typical or average values. All information and recommendations are given to the best of our knowledge and experience. The user is responsible for determining the application fit. Please consult Bossard for support and specific advice.

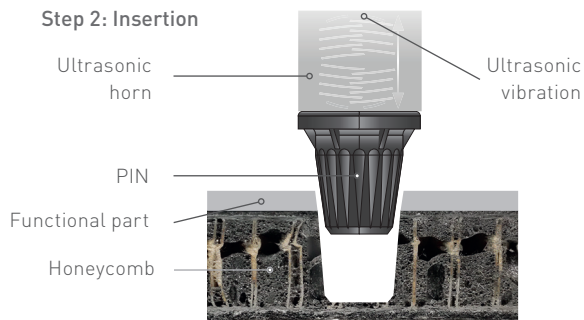
## INSTALLATION & ASSEMBLY GUIDELINES

### Step 1: Placement



The pre-moulded holes can be placed anywhere on the substrate, as long as the geometric tolerances described in the first table can be attained. Please note that the direction of insertion is aligned with the axis of the pre-moulded hole. In case the boss is not perpendicular to the panel's surface, care needs to be taken to place the substrate at the correct angle relative to the ultrasonic equipment.

### Step 2: Insertion

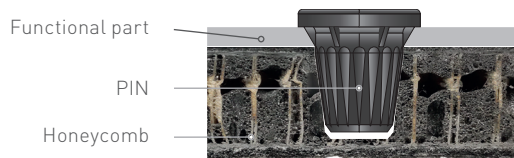


Welding time: 0.35s  
 Holding time: 0.5s  
 Cycle time: 2s

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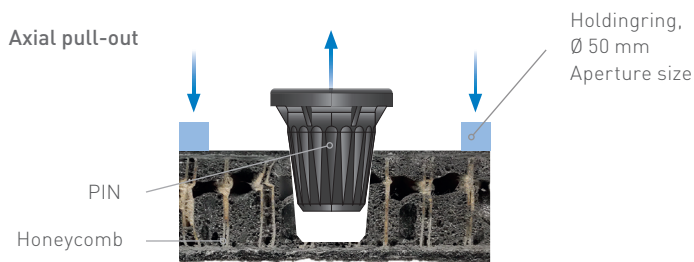
## INSTALLATION & ASSEMBLY GUIDELINES

### Step 3: Functional part, PIN-SN-12



The part thickness must match the cylindrical portion of the pin, which is 3 mm. It is important that the hole through which the pin will be inserted has the proper diameter (11 mm) and a 45° chamfer at the top (0.5 mm) to ensure a proper fit and no loosening of the connection.

## Test procedure



Maximum axial force needed to extract the pin from the substrate.

Test speed: 20 mm/min  
Holding ring: diameter 50 mm

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