TA.TEC | TECHNICAL EVIDENCE #001

OFF-THE-SHELF WEDGE TOOLS

FOR A CHANGING SUPPLY CHAIN



Independent comparative evaluation
under defined bonding conditions

EVIDENCE WINDOW

WIRE	EVALUATION	MEASURED PARAMETERS
30 µm | 50 µm *AlSi-S*	**Independent comparison** *Standard wedges*	**Deformation | Pull force**

Micro Point Pro offers off-the-shelf wedge bonding tools alongside customer-specific **build-to-print** / **build-to-spec** manufacturing capabilities.

STANDARD WEDGES.
DEFINED CONDITIONS.
MEASURED RESULTS.

Prepared by
TA.TEC Consulting GmbH
Official MPP Representative DACH

Based on an independent technical evaluation by **Bond-IQ GmbH**

WHAT WAS EVALUATED?

TWO OFF-THE-SHELF WEDGE CONFIGURATIONS

Bond-IQ compared two standard MPP wedge-wedge tools with corresponding SPT tools under defined bonding and pull-test conditions.

CONFIGURATION WINDOW

TEST A

wire
30 µm AlSi-S

MPP
4WCS4-2025-W7C-F00

SPT
UT45A-W-2025-1.00-C

Bond length
63.5 µm

TEST C

wire
50 µm AlSi-S

MPP
4**WCS4-3550-W7C-F21**

SPT
UT45A-W-3550-1.00-C

Bond length
127 µm

Focus of study: off-the-shelf tools, not customer-specific build-to-print / build-to-spec matching.

STANDARD WEDGES.
DEFINED CONDITIONS.
MEASURED RESULTS.

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HOW WAS IT EVALUATED?

DEFINED TEST SETUP

The comparison was performed under defined bonding and pull-test conditions, with visual and mechanical evaluation in accordance with DVS 2811.

TEST SETUP WINDOW

BONDING PLATFORM

F&S BONDTEC 58er Serie
Bond head 5830-0069
Bond frequency approx. 100 kHz

MATERIALS

Würth ENEPIG 2247 substrates
Heraeus AlSi-S wire
30 µm and 50 µm

TEST METHOD

Approx. 200 wires per comparison
Pull tester: *F&S BONDTEC 56i Serie*
Automated pull test,
Pull test followed the bonding sequence

EVALUATION BASIS

Deformation
Pull force with angular correction
Fracture pattern
Evaluation according to DVS 2811

Focus of study: defined conditions, comparable deformation and DVS 2811-based visual and mechanical evaluation.

STANDARD WEDGES.
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MEASURED RESULTS.

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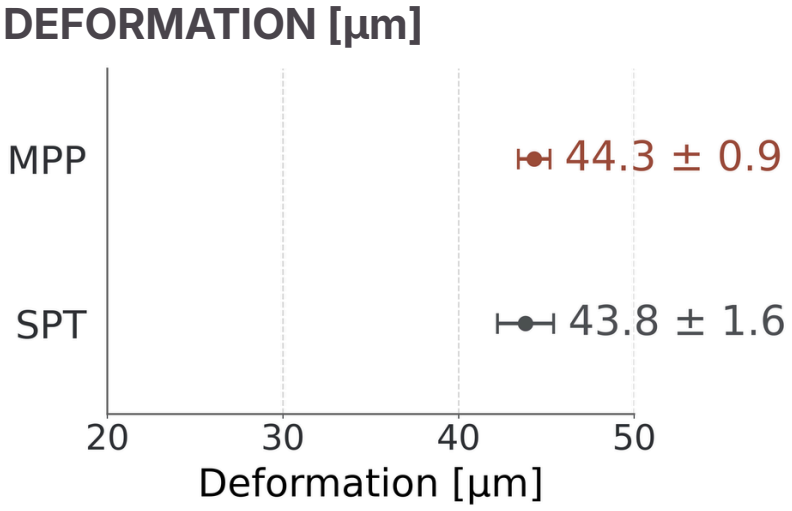
Based on an independent technical evaluation by **Bond-IQ GmbH**

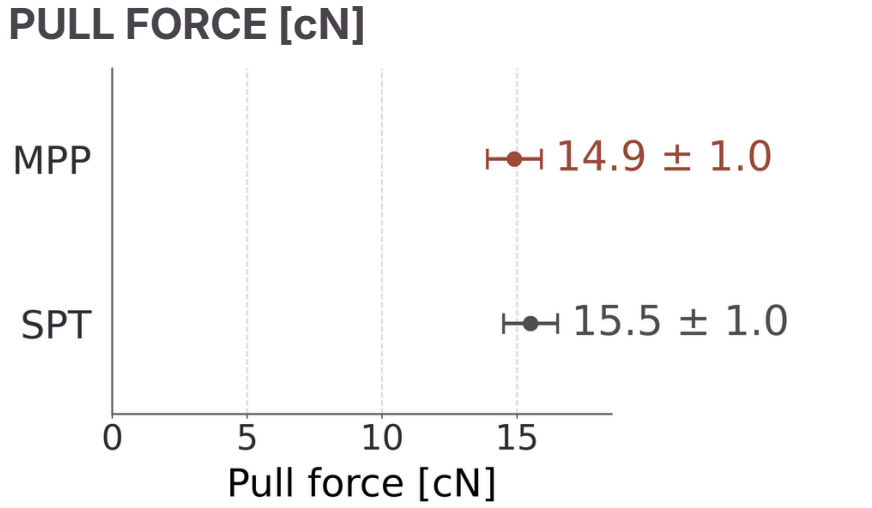
TEST A - 30 µm AlSi-S

COMPARABLE BONDING BEHAVIOR

MPP and SPT off-the-shelf wedge tools were evaluated under the defined Test conditions.

RESULT WINDOW





RESULTS (TEST A)

PARAMETER	MPP	SPT
Deformation [µm]	44.3 ± 0.9	43.8 ± 1.6
Pull force [cN]	14.9 ± 1.0	15.5 ± 1.0
US setting [digits]	96	100

TEST OBSERVATIONS

No lift-offs
No notable outliers
100% heel breaks
for both tools

Result: Comparable deformation and pull-force behavior were observed under the investigated Test conditions.

STANDARD WEDGES.
DEFINED CONDITIONS.
MEASURED RESULTS.

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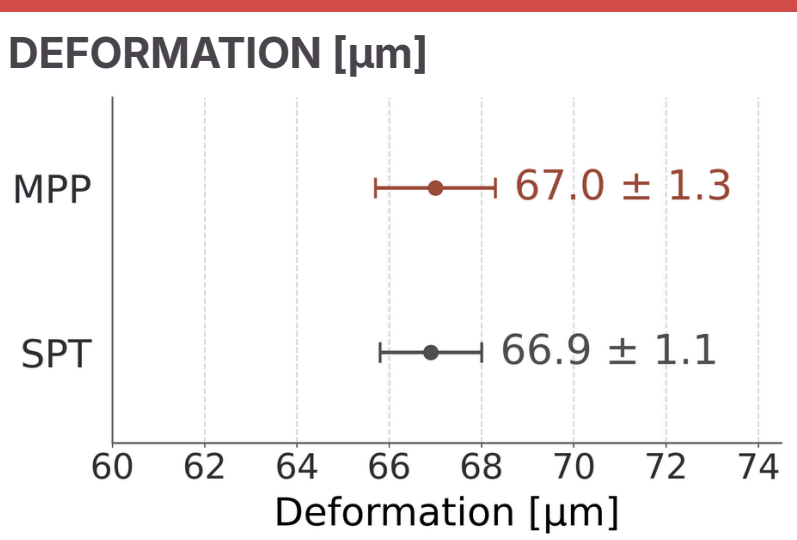
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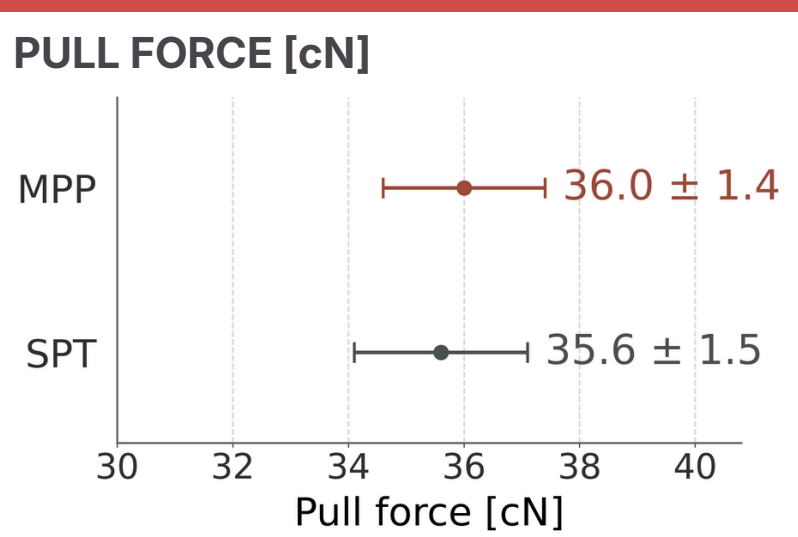
TEST C - 50 µm AlSi-S

COMPARABLE BONDING BEHAVIOR

MPP and SPT off-the-shelf wedge tools were evaluated under the defined Test conditions.

RESULT WINDOW





RESULTS (TEST C)

PARAMETER	MPP	SPT
Deformation [µm]	67.0 ± 1.3	66.9 ± 1.1
Pull force [cN]	36.0 ± 1.4	35.6 ± 1.5
US setting [digits]	75	86

TEST OBSERVATIONS

No lift-offs
No notable outliers
100% heel breaks
for both tools

Result: Comparable deformation and pull-force behavior were observed under the investigated Test conditions.

STANDARD WEDGES.
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MEASURED RESULTS.

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WHAT DOES THE STUDY SHOW?

COMPARABLE BONDING BEHAVIOR

Across the two investigated off-the-shelf tool configurations, **Bond-IQ** reported comparable bonding behavior under the defined test conditions.

SUMMARY WINDOW

TEST A

30 µm AlSi-S

Comparable deformation and pull-force behavior

TEST C

50 µm AlSi-S

Comparable deformation and pull-force behavior

EVALUATED

Deformation + Pull force

Defined bonding and pull-test conditions

CONCLUSION

The investigated **equivalent off-the-shelf** MPP and SPT tools showed comparable bonding behavior under the defined test conditions.

Micro Point Pro : **OFF-THE-SHELF + CUSTOMER-SPECIFIC OPTIONS**

DACH POINT OF CONTACT

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Official MPP Representative DACH | *www.tatec-consulting.com*

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