

TEST REPORT

No.: 123004-7

Cyclic Movement Tests - Microsection

Customer and Production BEMO SYSTEMS GmbH
Plant: Friedrich-List-Str. 25
 74532 Ilshofen-Eckartshausen

Basis of the evaluation: Order from 03.02.2012

Objectives of the evaluation: Microsection of the standing seam of a standing seam
 profile 65/400 after cyclic movement tests

This report consists of 4 pages and 3 appendixes (7 pages).

Date of issue: 26.04.2012

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1 Preliminary Remarks

The company BEMO SYSTEMS GmbH, Ilshofen-Eckartshausen commissioned the Versuchsanstalt für Stahl, Holz und Steine to evaluate the remaining thickness of the standing seam of the BEMO Flat Roof standing seam profile type 65/400 in the wear and tear zone with BEMO Halter 120/60 of Aluminium EN AW-6061 after the tests with cyclic linear movements.

2 Object and scope

The test to determine the wear and tear behavior of the BEMO Flat Roof standing seam profile type 65/400 panel with the halter 120/60 consisting of Aluminium EN AW 6061 after repetitive cyclic movement of 100.000 cycles was conducted on BEMO Systems standing seam profile type 65/400 with a nominal thickness of 1,00mm (annex 1) and with a 25µm polyester-coating on the backside of the panel and a 6µm organic coating on the top side of the panel. To determine the remaining thickness of the Bemo System standing seam profile in the wear and tear zone (figure 2.1, annex 2) an additional microsection was ordered.

3 Testing

3.1 General

The cyclic movement tests have been performed at the BEMO test facility in Ilshofen-Eckartshausen, Germany and are described in [1]. The microsection has been performed at the Versuchsanstalt für Stahl, Holz und Steine.

3.2 Microsection

The remaining thickness in the standing seam of the profile has been evaluated by a microsection. The abrasion of the profile after the test is displayed in figure 2.1, annex 2. The position of the microsection and the view position are displayed in figure 2.2, annex 2. The thickness of the standing seam of the profile has been measured with the microscope of the test machine M18 of the Versuchsanstalt and is displayed in figure 2.3, annex 2.

4 Conclusion

The company BEMO SYSTEMS GmbH, Ilshofen-Eckartshausen commissioned the Versuchsanstalt für Stahl, Holz und Steine to evaluate the remaining thickness of the standing seam of the BEMO Flat Roof standing seam profile type 65/400 in the wear and tear zone with BEMO Halter 120/60 of Aluminium EN AW-6061 after the tests with cyclic linear movements. The object and the scope is described in chapter 2. The testing is described in chapter 3. The remaining thickness of 0,50mm in the wear and tear zone of the standing seam of the profile has been evaluated by a microsection.

Karlsruhe, am 26.04.2012


Sd/pc

Official in Charge



Dipl.-Ing. J. Schmied

Head of Department



Dr.-Ing. Th. Misiek

5 Bibliography

[1] Test report 123004-3, Versuchsanstalt für Stahl, Holz und Steine, KIT, 2012, Karlsruhe



Euramax Coated Products B.V.
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 6040 AA Roermond
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 Tel: +31-(0)475-370303
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CERTIFICATE OF QUALITY	NUMBER 23304	EN 10204
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Delivery Address

Maas Profile GmbH & Co. KG
 Friedrich-List-Strasse 25
 74532 Ilshofen-Eckartshau
 GERMANY

Maas Profile GmbH & Co. KG
 Friedrich-List-Str. 25
 74532 Ilshofen-Eckartshau
 GERMANY

Reference : EBE122829
 Sales Order : 225645 / 10
 Item : Aluminium
 Dimension Set : 2072877 1250X1,00 60R0119.35
 Customer Part Nr.: RAL 6019 H44 / 1,00
 Alloy / Temper : 3005 / H44

Mechanical properties and chemical composition

IdNo / Bundle	Weight	Elongation	Proof Stress (Mpa)	Tensile Strength (Mpa)	Fe %	Cr %	Ti %	Zn %	Mg %	Mn %	Si %	Cu %
8913699	2310 kg	5,0	159	180	0,440	0,010	0,010	0,010	0,370	1,120	0,200	0,140
8913700	1175 kg	5,0	157	182	0,480	0,003	0,018	0,003	0,370	1,060	0,160	0,130

If no value is shown, this element is present for less than 0,010%. Rest of % is aluminium.

Mechanical properties are calculated to temper after painting.

Roermond, 21-07-2010

EURAMAX COATED PRODUCTS B.V.
 (as manufacturer)

Quality Department - P.Geelen

Table 1.1: Data sheet for standing seam profile

Güteschutz RAL-RG 617 DIN 18 807, Teil 1 + 6	Eigenüberwachung Maßhaltigkeit	Firma Maas Profile GmbH & Co KG	BEMO SYSTEMS Stand: 12/2011
Stehfalz N 65 - 400		Versuch 3 8/2/12 Einleitung 3	
Baubreite max: 400 mm	Tafellänge max: ≤ 3.000 mm	Tafellänge min: ≥ 3.000 mm	Profilhöhe großes Auge max: 65 mm Profilhöhe kleines Auge max: 64 mm Sickenhöhe: 7 mm
h ≤ 50 mm	d. h. + d. h. +	d. h. - d. h. - d. h. - d. h. +/- d. h. +/- d. h. +/-	d. h. - d. h. - d. h. - d. h. +/- d. h. +/- d. h. +/-
ohne Risse: Bricht im ersten Zug: Riss < 2 mm bei 0,5 T: kein Riss bei 1 T:	I.O. n.i.O. I.O. I.O.		

Table 1.2: Dimensions of standing seam profile



Figure 2.1: Wear and tear zone of the bottom standing seam profile at the central halter after test



Figure 2.2: Position of cut and viewing position of microsection

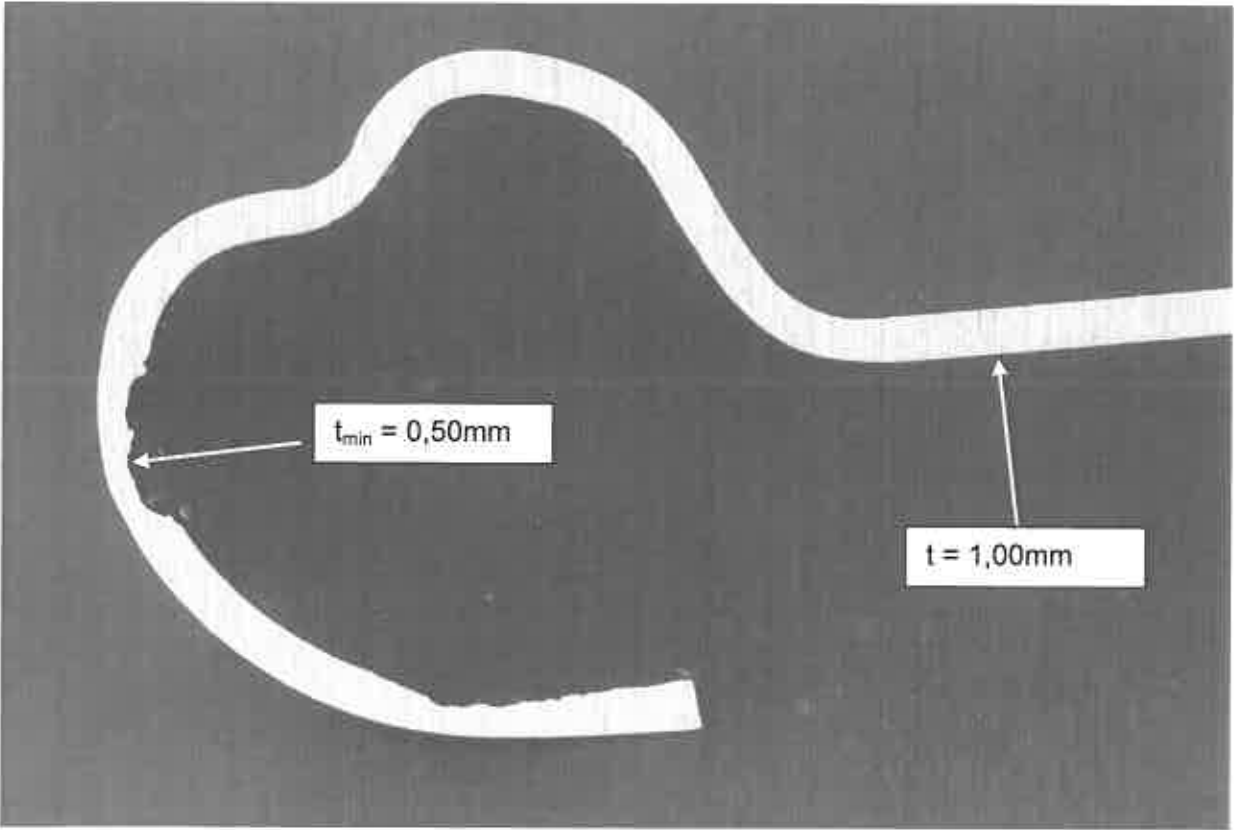


Figure 2.3: Microsection