

Test Report No.: 2002.P0113.01A

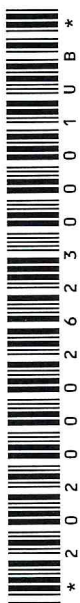
Manufacturer: Dr. Demuth Derisol Lackfarben GmbH & Co. KG
 Hillerser Straße 8
 37143 Northeim

Reference: Determination of the porosity level according to
 DIN EN ISO 17652-2:2003-07 (formerly DVS 0501)

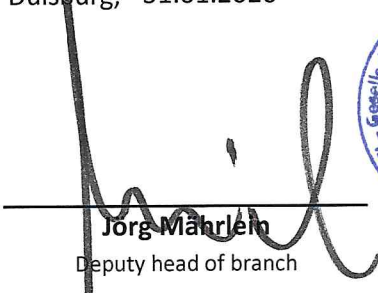
Sales designation: DC Shopprimer HYDRO OptiBase
 194558

Testing laboratory: GSI mbH - NL SLV Duisburg
 Bismarckstraße 85
 47057 Duisburg

Contact: Tobias Kischkewitz
 ☎ +49 203 37 81 169
 ✉ kischkewitz@slv-duisburg.de



Duisburg, 31.01.2020


 Jörg Mählern
 Deputy head of branch




 Tobias Kischkewitz
 Investigator ISO 17652-2
 Materials & Processes



1. Parameters of the examination:

Sales designation of the coating material: DC Shopprimer HYDRO OptiBase
194558

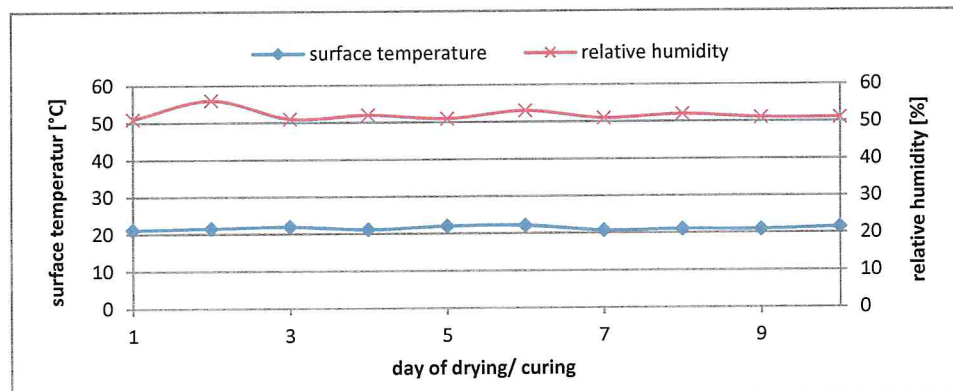
Characteristic pigment-base: Iron Oxide, Calcilin
Characteristic binding agent: Acrylate, styrene

		Chem. composition (% mass fraction)				
		C	Si	Mn	P	S
Filler metal:	ISO 14341-A-G 3Si1	0,06 - 0,14	0,7 - 1,0	1,3 - 1,6	0,025	0,025

Base material:		Chem. composition (% mass fraction)				
		C	Si	Mn	P	S
	DIN EN 10278 - C10					
	12 x 50 x 200 mm	0,10	0,16	0,44	0,03	0,02
	20 x 80 x 200 mm	0,09	0,22	0,52	0,03	0,03

Welding parameters:	Parameter:	Value:
	Welding process	DIN EN ISO 4063 - 135
	Weld current	250 ± 5% A
	Voltage	30 ± 5% V
	Weld speed	300 ± 5% mm/min
	Type of shield gas	C1: 100 % CO ₂ acc. DIN EN ISO 14175
	Gas flow	15 l/min
	Gas nozzle diameter	19 mm
	Nozzle distance to base material	18 mm
	Filler metal	ISO 14341-A-G 3Si1
	Filler metal, Ø	1,2 mm
	Polarity	DC +

Climate record:



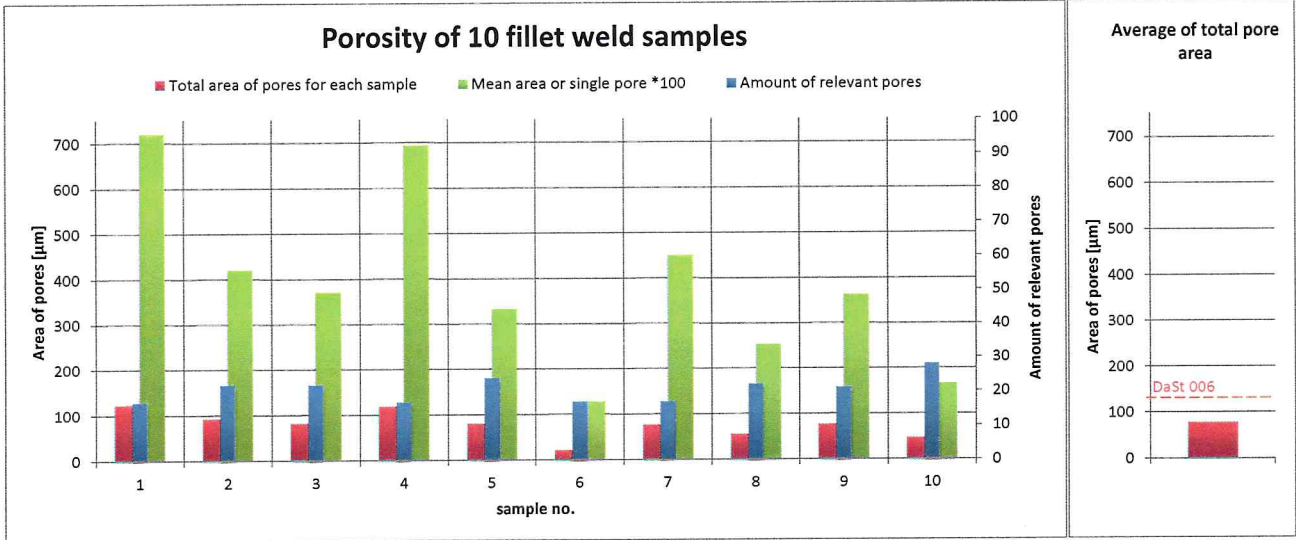
2002.P0113.01A

page 2 of 6

2. Porosity analysis:

Total amount of pores $d > 0,5\text{mm}$ n
 Total area of pores for each sample F [mm²]
 Mean area of single pore F/n [mm²]

Sample no.											Ø
1	2	3	4	5	6	7	8	9	10	Average	
17	22	22	17	24	17	17	22	21	28	20,70	
122,58	92,39	81,49	117,93	80,08	21,66	76,60	55,67	76,32	46,35 ✓	77,11	
7,21	4,20	3,70	6,94	3,34	1,27	4,51	2,53	3,63	1,66	3,90	

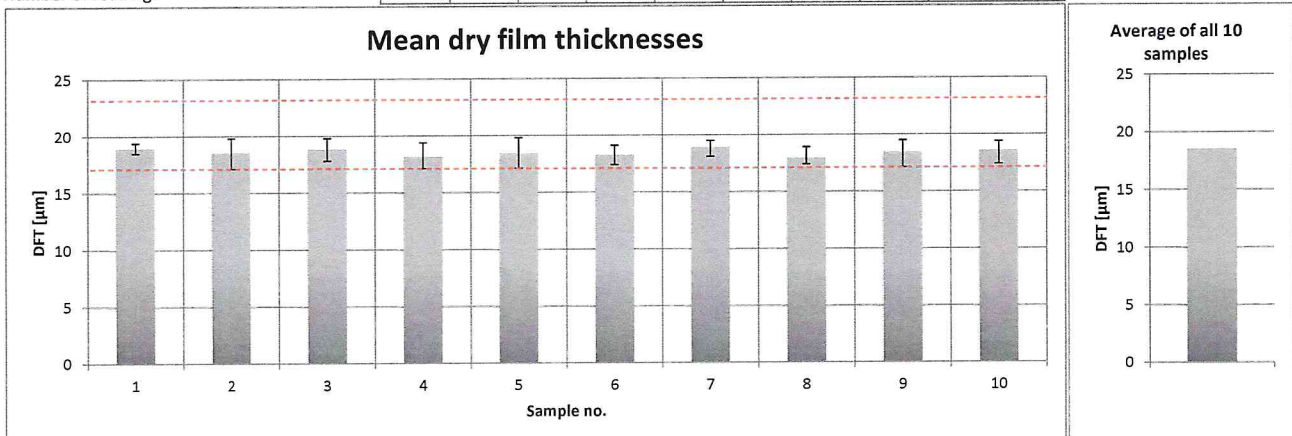


The mean total area of pores is: **77,11 mm²** The acceptance requirements according to DaSt-Guideline 006 are met.

3. Film thicknesses:

Dry film thickness (DFT) Ø µm
 Max µm
 Min µm
 Number of readings

Sample no.											Ø
1	2	3	4	5	6	7	8	9	10	Average	
18,94	18,54	18,86	18,18	18,44	18,30	18,90	17,95	18,42	18,58	18,51	
19,40	19,80	19,80	19,40	19,80	19,10	19,50	18,90	19,50	19,40		
18,50	17,10	17,80	17,10	17,10	17,40	18,10	17,40	17,10	17,40		
3	3	3	3	3	3	3	3	3	3	3	

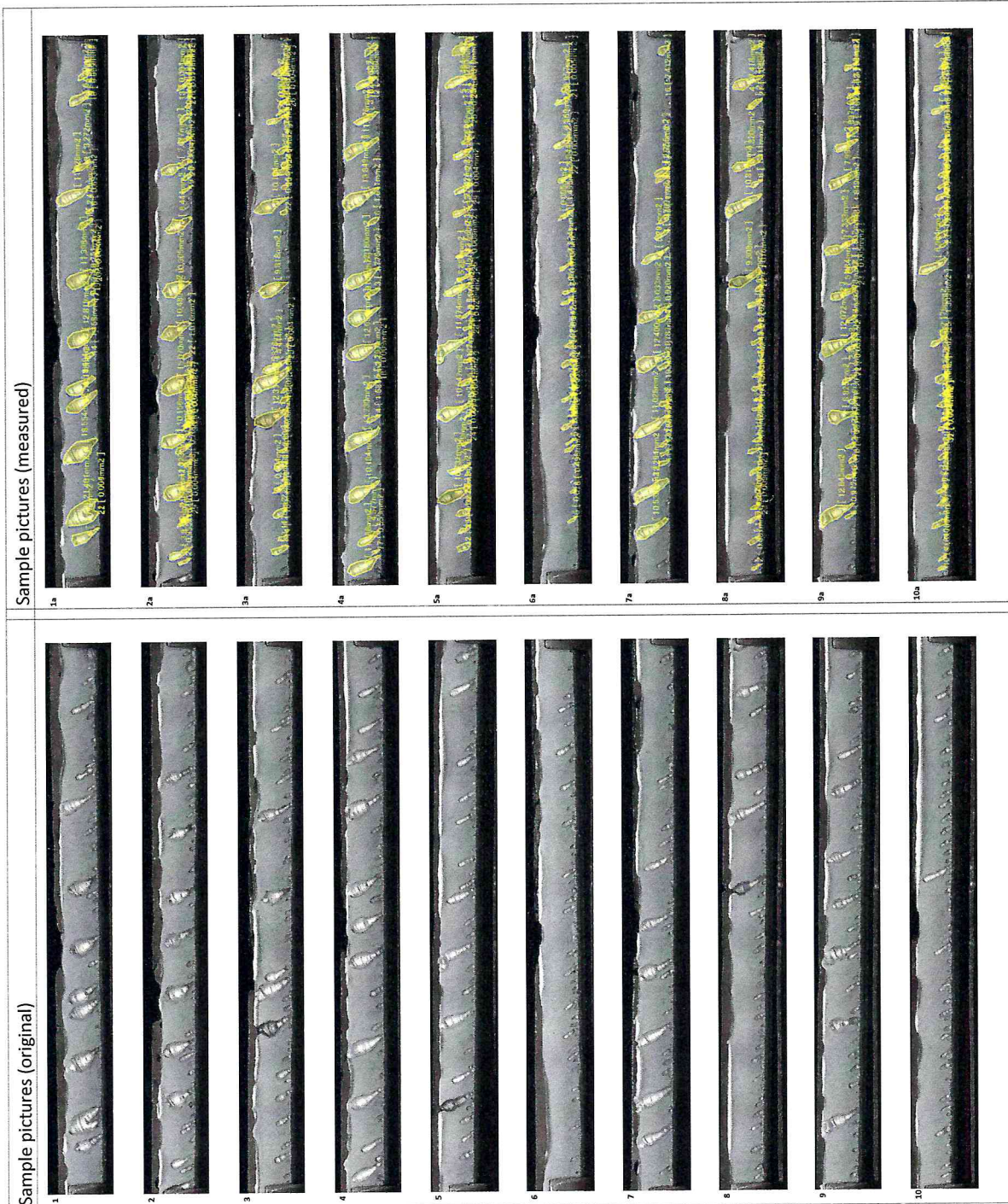


The nominal film thickness is: **20 µm**
 Permissible tolerance range **17-23 µm**
DFT (Average 10 samples) 18,51 µm

The layer thicknesses shown above were measured by magnetic induction with the following coating thickness gauge:
elcometer 456, SLV Inv.Nr. 27916 uncertainty: 3,82 µm

2002.P0113.01A

4. Photographic record:



GSI – Gesellschaft für
Schweißtechnik International mbH
Niederlassung SLV Duisburg
Postfach 101262, 47012 Duisburg
Bismarckstraße 85, 47057 Duisburg

T +49 203 3781-0
F +49 203 3781-228
info@slv-duisburg.de
www.slv-duisburg.de

Amtsgericht Düsseldorf HRB37719
St.-Nr. 106/6772/0212
USt.-Id.-Nr.: DE 813013727
Ein Unternehmen des
DVS – Deutscher Verband für Schweißen
und verwandte Verfahren e. V.

Geschäftsführer der GSI:
Dipl.-Ing. Jörg Vogelsang
Niederlassungsleiter:
Dipl.-Ing. Jörg Vogelsang
Vorsitzende Aufsichtsrätin:
Dipl.-Betriebswirtin
Susanne Szczesny-Oßing

Sparkasse Duisburg
IBAN: DE70 3505 0000 0209 0031 44
BIC: DUISDE33XXX
Postbank Essen
IBAN: DE96 3601 0043 0026 4074 34
BIC: PBNKDEFF

5. Gas Emission test:

For detection of gas emission Dräger measuring system was used to pick up samples in the area of the welders breathing zone. The following test tubes were used:

Parameters:

		Test tube no.	No. of strokes	Measuring range [ml/m ³]
Carbon monoxide	CO	CH 25601	5	5 - 150
Carbon dioxide	CO ₂	CH 23501	5	100 - 12000
Nitrous gases	NO, NO ₂	CH 29401	5	0,5 - 10
Formaldehyde	HCHO	6733081	10	0,5 - 5
Cyanide	HCN	CH 25701	10	0,5 - 5

Results

The concentrations determined for the individual gases are listed in the following table:

	Concentrations in ml/m ³ (ppm)				
	CO	CO ₂	NO, NO ₂	HCHO	HCN
Threshold limit values (MAK)	30	5000	3	0,5	1,9
Determined concentration	10	1000	1,0	0,0	0,0

The gas concentrations detected underrun the Threshold limit values.

6. Declaration:

The present study was carried out in accordance with DIN EN ISO 17652-2:2003, formerly DVS guideline 0501, issued 1976th. The provisions of this standard have been met.

The application of this standard/ guideline leads to excessive pore generation. This excessive pore generation is necessary to provide reproducibility and differentiability. In case of conflict the original German test shall govern.

7. Overall evaluation:

7.1 Porosity analysis

The mean total area of pores is: $77,11 \text{ mm}^2 \leq A_p = 125 \text{ mm}^2$

The acceptance requirements according to DAST-Guideline 006 are met.

7.2 Gas emission test

The gas concentrations detected underrun the Threshold limit values (s. page 5).