



**Fraunhofer**  
Institut  
Produktionstechnik  
und Automatisierung

Short report

# **Transfer efficiency tests for a spray gun according to European Standard EN 13966-1 (VDMA german technical rule 24 366)**

**prepared for**

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## 1 General aspects

The transfer efficiency (TE) is an important parameter of paint applicators. The procedure of TE testing that has been applied is orientated at the already finished German standard for spray guns without electrostatic, being defined in the EN 13 966-1. Some other countries require similar TE test procedures.

The results and parameters from the tests are listed in protocols. The protocols are shown in the attachment.

## 2 Characteristics of the test procedure

The determination of the TE was performed according to EN 13 966-1. The basic characteristics of the geometry used in the present investigations are given in Fig. 1 (s. page 3). The plate is orientated in vertical direction. The spray is applied horizontally with the spray gun moving from bottom to top.

The following spray equipment was tested:

### **AZ30 HTE**

The following coating materials were applied throughout the tests:

<b>Standex 2K-HS Plus-Filler</b>  paint : hardener 4:1 Vol thinner: 10% viscosity: 18-20s DIN4 solid contents: 67% pot life time: 45-60min drying conditions: 30min 60°C	<b>Standohyd basecoat -waterborne</b>  viscosity: 22-26s DIN4 solid contents: 13-24% drying conditions: 30 min 120°C
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<b>Standocryl 2K-HS-Autolack</b> paint : hardener 2:1 Vol viscosity: 20-25s DIN4 solid contents: 63-73 % pot life time: 2h drying conditions: 30min 60°C	<b>Standocryl 2K-HS-Klarlack</b> paint : hardener 2:1 Vol viscosity: 22s DIN4 solid contents: 63-73 % pot life time: 1,5h drying conditions: 30min 60°C
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The applicator was tested with a dynamic inlet air pressure of atomizing air of 1,75 and 2 bar, the spray distance was 150 resp. 200 mm (each given by the manufacturer). Shaping air and paint flow regulation were fully open.

The tests were performed with an industrial 6-axis-paint robot FANUC P-200. The spray gun was mounted on an adaptor on which the trigger was pulled pneumatically to enable automatic mode.

The spray gun was weighed on a balance both before and after coating to an accuracy of 0,1 g. The total spray time was 8,1 sec (given by robot control).

The test foils were weighed on a precision balance both before and after coating and drying to an accuracy of 0,1 mg. The robot speed was 200 mm/s. Thus, in combination with the height of the foil of 200 mm, it follows a coating time of 1 sec. The spray was applied horizontally with the spray gun moving from bottom to top. The schematical test setup is shown in fig. 1.

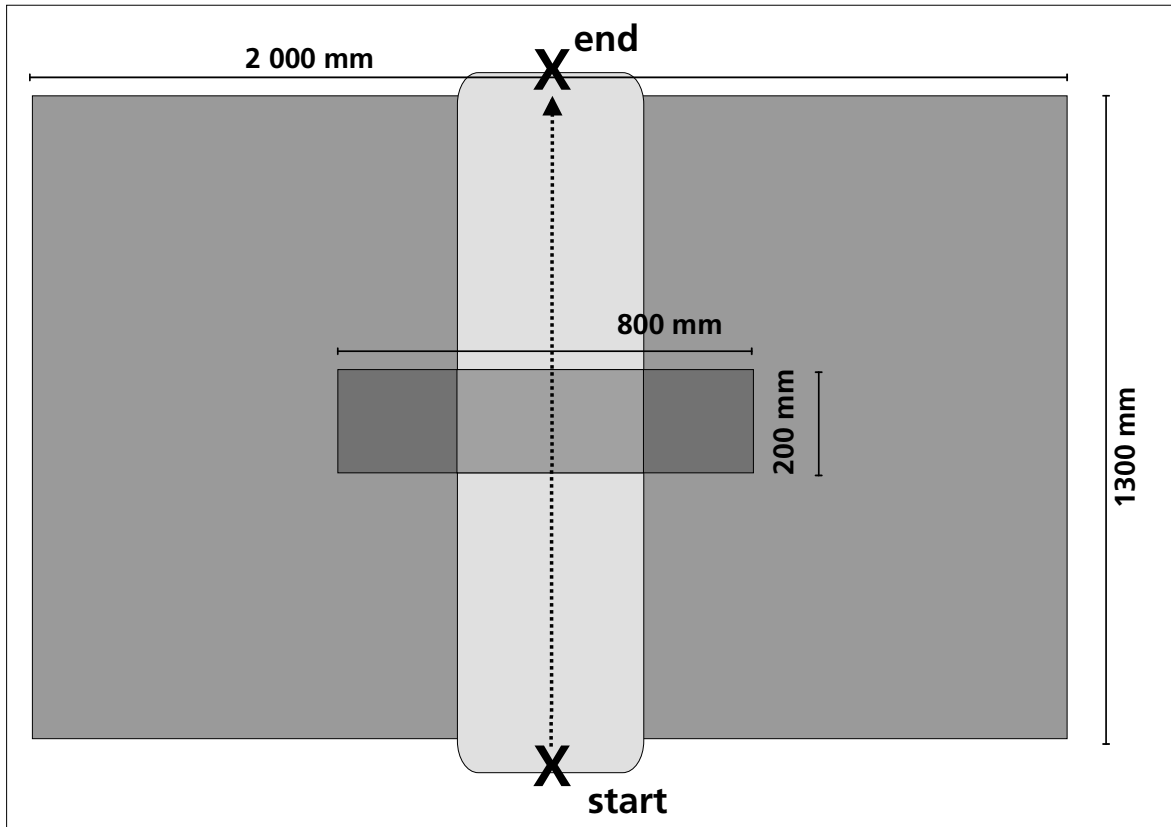


Fig. 1: test setup



### 3 Results

The following values for the TE were obtained:

#### AZ30 HTE / nozzle 1,8 / 2K-HS Plus-Filler

#	Inlet air pressure [bar]	Spray distance [mm]	TE (%) (mean)	Paint flow (g/min)
1	1,75	150	87	approx. 250
2	1,75	200	83	approx. 250
3	2	150	86	approx. 260
4	2	200	82	approx. 260

#### AZ30 HTE / nozzle 1,3 / Standox basecoat - waterborne

#	Inlet air pressure [bar]	Spray distance [mm]	TE (%) (mean)	Paint flow (g/min)
1	1,75	150	83	approx. 150
2	1,75	200	78	approx. 150
3	2	150	82	approx. 170
4	2	200	77	approx. 170



**AZ30 HTE / nozzle 1,5 / Standox 2K-HS-Autolack**

#	Inlet air pressure [bar]	Spray distance [mm]	TE (%) (mean)	Paint flow (g/min)
1	1,75	150	79	approx. 115
2	1,75	200	74	approx. 115
3	2	150	79	approx. 120
4	2	200	75	approx. 120

**AZ30 HTE / nozzle 1,3 / Standox 2K-HS-Klarlack**

#	Inlet air pressure [bar]	Spray distance [mm]	TE (%) (mean)	Paint flow (g/min)
1	1,75	150	74	approx. 110
2	1,75	200	70	approx. 110
3	2	150	74	approx. 160
4	2	200	70	approx. 160



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#### **4 Appendix - protocols according to VDMA technical rule 24 366**

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	114,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,391	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	34,287		
mass on sheet (foil) [g]	0,896		
mass difference [g]	1,148		
<b>TE [%]</b>	<b>78</b>		



**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	114,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,296	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	35,192		
mass on sheet (foil) [g]	0,897		
mass difference [g]	1,142		
<b>TE [%]</b>	<b>79</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	114,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,234	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b><input checked="" type="radio"/> flat</b>		<b><input type="radio"/> panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,527	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 3 of 3</b>	
mass coated sheet (foil) [g]	35,428		
mass on sheet (foil) [g]	0,901		
mass difference [g]	1,142		
<b>TE [%]</b>	<b>79</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	148,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,456	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	35,792		
mass on sheet (foil) [g]	0,337		
mass difference [g]	0,407		
<b>TE [%]</b>	<b>82,7</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	148,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	31,553	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	31,887		
mass on sheet (foil) [g]	0,334		
mass difference [g]	0,405		
<b>TE [%]</b>	<b>82,3</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	148,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	37,819	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	38,155		
mass on sheet (foil) [g]	0,336		
mass difference [g]	0,404		
<b>TE [%]</b>	<b>83,1</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	248,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	175
<b>type of manipulator</b>	Standex 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]		<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	37,9807		
mass on sheet (foil) [g]	2,338		
mass difference [g]	2,646		
<b>TE [%]</b>	<b>88,3</b>		

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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	248,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	40,3791	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	42,736		
mass on sheet (foil) [g]	2,357		
mass difference [g]	2,709		
<b>TE [%]</b>	<b>87,0</b>		

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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	248,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]		<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	35,7087		
mass on sheet (foil) [g]	2,347		
mass difference [g]	2,693		
<b>TE [%]</b>	<b>87,1</b>		



**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	122,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,776	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	37,745		
mass on sheet (foil) [g]	0,969		
mass difference [g]	1,238		
<b>TE [%]</b>	<b>78,2</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	122,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	42,113	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	43,086		
mass on sheet (foil) [g]	0,973		
mass difference [g]	1,223		
<b>TE [%]</b>	<b>79,6</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	122,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,234	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,756	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 3 of 3</b>	
mass coated sheet (foil) [g]	35,7234		
mass on sheet (foil) [g]	0,968		
mass difference [g]	1,220		
<b>TE [%]</b>	<b>79,4</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	168,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,012	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	35,393		
mass on sheet (foil) [g]	0,382		
mass difference [g]	0,463		
<b>TE [%]</b>	<b>82,4</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	168,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,948	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	35,3256		
mass on sheet (foil) [g]	0,378		
mass difference [g]	0,462		
<b>TE [%]</b>	<b>81,8</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	168,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	44,551	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	44,9231		
mass on sheet (foil) [g]	0,372		
mass difference [g]	0,455		
<b>TE [%]</b>	<b>81,9</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	262,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,504	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	36,967		
mass on sheet (foil) [g]	2,463		
mass difference [g]	2,847		
<b>TE [%]</b>	<b>86,5</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	262,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	39,136	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	41,5776		
mass on sheet (foil) [g]	2,442		
mass difference [g]	2,850		
<b>TE [%]</b>	<b>85,7</b>		



**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	262,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,965	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	39,3736		
mass on sheet (foil) [g]	2,409		
mass difference [g]	2,814		
<b>TE [%]</b>	<b>85,6</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	116,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>			
		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,675	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	34,531		
mass on sheet (foil) [g]	0,856		
mass difference [g]	1,158		
<b>TE [%]</b>	<b>73,9</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	116,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	32,691	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	33,548		
mass on sheet (foil) [g]	0,857		
mass difference [g]	1,153		
<b>TE [%]</b>	<b>74,3</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	116,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,234	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagrecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,005	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 3 of 3</b>	
mass coated sheet (foil) [g]	34,876		
mass on sheet (foil) [g]	0,871		
mass difference [g]	1,180		
<b>TE [%]</b>	<b>73,8</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	147,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,205	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	35,521		
mass on sheet (foil) [g]	0,316		
mass difference [g]	0,404		
<b>TE [%]</b>	<b>78,2</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	147,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	32,231	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	32,546		
mass on sheet (foil) [g]	0,315		
mass difference [g]	0,401		
<b>TE [%]</b>	<b>78,6</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	147,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,440	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	34,752		
mass on sheet (foil) [g]	0,312		
mass difference [g]	0,400		
<b>TE [%]</b>	<b>78,0</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	244,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	175
<b>type of manipulator</b>	Standex 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	37,089	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	39,322		
mass on sheet (foil) [g]	2,233		
mass difference [g]	2,669		
<b>TE [%]</b>	<b>83,7</b>		



**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	244,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,214	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	38,412		
mass on sheet (foil) [g]	2,199		
mass difference [g]	2,656		
<b>TE [%]</b>	<b>82,8</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	244,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex 2K Primer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	37,493	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	39,672		
mass on sheet (foil) [g]	2,180		
mass difference [g]	2,612		
<b>TE [%]</b>	<b>83,4</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	125,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,957	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	34,853		
mass on sheet (foil) [g]	0,895		
mass difference [g]	1,206		
<b>TE [%]</b>	<b>74,3</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	125,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,243	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,618	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	34,5227		
mass on sheet (foil) [g]	0,904		
mass difference [g]	1,209		
<b>TE [%]</b>	<b>74,8</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,5mm	paint feed rate [g/min]	125,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standocryl 2K-HS grün		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	60,234	paint feed rate [ml/min]	/
viscosity	25s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,707	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	34,6141		
mass on sheet (foil) [g]	0,907		
mass difference [g]	1,200		
<b>TE [%]</b>	<b>75,6</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	166,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,740	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	36,091		
mass on sheet (foil) [g]	0,351		
mass difference [g]	0,458		
<b>TE [%]</b>	<b>76,6</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	166,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	39,589	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	39,9387		
mass on sheet (foil) [g]	0,350		
mass difference [g]	0,456		
<b>TE [%]</b>	<b>76,7</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	168,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standohyd Basecoat		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	16,386	paint feed rate [ml/min]	/
viscosity	20s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	o vertical x horizontal	orientation of panel	senkrecht waagerecht
movement of applicator	o horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,397	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	36,7424		
mass on sheet (foil) [g]	0,346		
mass difference [g]	0,449		
<b>TE [%]</b>	<b>77,0</b>		



**Measuring of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	240,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solid content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21 °C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	O vertical x horizontal	orientation of panel	senkrecht waagrecht
movement of applicator	O horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,224	<b>Comments</b> Shaping air and paint flow regulation fully open	
mass coated sheet (foil) [g]	37,477		
mass on sheet (foil) [g]	2,253		
mass difference [g]	2,769		
<b>TE [%]</b>	<b>81,4</b>	<b>Trial 1 of 3</b>	

**Measuring of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

atomizer		pneumatic atomizer:	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	254,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Stadox 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solid content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21 °C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
method			
x flat		o panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	O vertical x horizontal	orientation of panel	senkrecht waagrecht
movement of applicator	O horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	38,310	<b>Comments</b> Shaping air and paint flow regulation fully open	
mass coated sheet (foil) [g]	40,5474		
mass on sheet (foil) [g]	2,237	<b>Trial 2 of 3</b>	
mass difference [g]	2,748		
<b>TE [%]</b>	<b>81,4</b>		

**Measuring of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,8mm	paint feed rate [g/min]	254,0
		inlet air volume flows [l/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Stadox 2KPrimer		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solid content of paint [mass %]	64,946	paint feed rate [ml/min]	/
viscosity	20 s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21 °C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	o DIN x ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	O vertical x horizontal	orientation of panel	senkrecht waagrecht
movement of applicator	O horizontal x vertical	spatial arrangement applicator	horizontal vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	39,183	<b>Comments</b> Shaping air and paint flow regulation fully open	
mass coated sheet (foil) [g]	41,419		
mass on sheet (foil) [g]	2,236	<b>Trial 3 of 3</b>	
mass difference [g]	2,736		
<b>TE [%]</b>	<b>81,7</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	118,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,769	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	36,615		
mass on sheet (foil) [g]	0,846		
mass difference [g]	1,131		
<b>TE [%]</b>	<b>74,7</b>		

**Measurement of transfer efficiency (TE) - Test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	118,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Stadox CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,965	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	35,829		
mass on sheet (foil) [g]	0,864		
mass difference [g]	1,163		
<b>TE [%]</b>	<b>74,2</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	118,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Stadox CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	42,381	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	43,2343		
mass on sheet (foil) [g]	0,853		
mass difference [g]	1,154		
<b>TE [%]</b>	<b>73,9</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	143,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,050	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	37,145		
mass on sheet (foil) [g]	1,095		
mass difference [g]	1,496		
<b>TE [%]</b>	<b>73,2</b>		

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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	143,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	38,073	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	39,078		
mass on sheet (foil) [g]	1,005		
mass difference [g]	1,360		
<b>TE [%]</b>	<b>73,9</b>		



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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	143,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	150	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Stadox CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	33,743	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	34,729		
mass on sheet (foil) [g]	0,986		
mass difference [g]	1,321		
<b>TE [%]</b>	<b>74,6</b>		

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according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	112,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	37,125	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	37,900		
mass on sheet (foil) [g]	0,775		
mass difference [g]	1,099		
<b>TE [%]</b>	<b>71</b>		

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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	112,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<input checked="" type="radio"/> flat		<input type="radio"/> panel	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,911	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	36,6756		
mass on sheet (foil) [g]	0,765		
mass difference [g]	1,088		
<b>TE [%]</b>	<b>70</b>		

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according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	112,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	1,75
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	36,899	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	37,6554		
mass on sheet (foil) [g]	0,756		
mass difference [g]	1,080		
<b>TE [%]</b>	<b>70</b>		

**Measurement of transfer efficiency (TE) - test summary form for conventional atomizers  
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<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	135,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,975	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 1 of 3</b>	
mass coated sheet (foil) [g]	35,891		
mass on sheet (foil) [g]	0,916		
mass difference [g]	1,316		
<b>TE [%]</b>	<b>70</b>		

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according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	135,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Standex CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	35,359	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial 2 of 3</b>	
mass coated sheet (foil) [g]	36,2662		
mass on sheet (foil) [g]	0,907		
mass difference [g]	1,307		
<b>TE [%]</b>	<b>69</b>		

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according VDMA-Einheitsblatt 24 366**

<b>atomizer</b>		<b>pneumatic atomizer:</b>	
Air cap / nozzle	LK / nozzle 1,3mm	paint feed rate [g/min]	135,0
		inlet air volume flows [NI/min]	
<b>distance [mm]</b>	200	inlet air pressure (dyn.) [bar]	2
<b>type of manipulator</b>	Stadox CC		
<b>coating properties</b>		<b>airless:</b>	
	/	air pressure (dyn.) [bar]	/
solids content of paint [mass %]	58,387	paint feed rate [ml/min]	/
viscosity	22s DIN 4		
<b>spray booth conditions:</b>			
temperature / humidity [°C / %]	21°C / 64%		
air velocity [m/s]	0,3 m/s		
<b>air flow calibration</b>	<input type="radio"/> DIN <input checked="" type="radio"/> ISO		
<b>method</b>			
<b>x flat</b>		<b>o panel</b>	
size background [mm]	B x H 2 000 * 1 000 mm		
size sheet (foil) [mm]	B x H 1 000 * 200 mm	size sheet (foil) [mm]	
orientation of panel	<input type="radio"/> vertical <input checked="" type="radio"/> horizontal	orientation of panel	<input type="radio"/> senkrecht <input checked="" type="radio"/> waagerecht
movement of applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertical	spatial arrangement applicator	<input type="radio"/> horizontal <input checked="" type="radio"/> vertikal
stroke speed [mm/s]	200		
mass uncoated sheet (foil) [g]	34,466	<b>Comments</b> Shaping air and paint flow regulation fully open  <b>Trial3 of 3</b>	
mass coated sheet (foil) [g]	35,3739		
mass on sheet (foil) [g]	0,908		
mass difference [g]	1,302		
<b>TE [%]</b>	<b>70</b>		