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**MITRAS MATERIALS**  
...THE BLUE SOLUTION  
Member of  **senata Group**

# Specification of services

## Laboratory



Edition 01/2024  
Rev. 9



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## Notice:

The test preparation depends on the delivery state of the specimen, as well as on its number and size, hence can only be given according to this information.

Should special chemicals be required, they are settled separately after arrangement.

Checks and tests are always done according to the current issue of the test norms.



## Directory of services

### 1. Physical measuring

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
tex	in according to DIN EN ISO 1889	min. 20 m
ash	AA 29L ISO 1887	section DIN A 4 reinforcing fibres min. 20 m
glass content	AA 03L AA 29L ISO 1887 AA 17L DIN EN ISO 1172	3 samples: 100 x 100 mm
weight per unit area	AA 03L DIN EN ISO 10352	test size to arrangement



## 1. Physical measuring

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
filler content	AA 03L DIN EN ISO 1172	test size to arrangement
water absorption	DIN EN ISO 62	3 samples: 50 x 50 mm
volatile content (granule)	AA 53L	app. 100g
density	AA 45L DIN EN ISO 1183-1	liquid: min. 100 ml section DIN A 4
salt spray test	DIN EN ISO 9227	test size to arrangement
flow characteristics of thermoplastics (MVR)	DIN EN ISO 1133-1	app. 10g



## 1. Physical measuring

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
cross-cut test	DIN EN ISO 2409	test size to arrangement
microscopic measurements (for example: coating thickness measurement)	-	test size to arrangement
weathering properties (cyclic stress , immersions in water, heat ageing)	AA 59L AA 60L	test size to arrangement
surface change to immersion in water at 100°C	AA 58L	2 sections DIN A4



## 1. Physical measuring

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
chemical resistance (e.g. sulphuric acid test)	DIN EN ISO 175 AA 62L DIN EN ISO 2812-3	test size and medium to arrangement
infrared-spectroscopy (material properties: organic and inorganic)	-	app. 50 g (granule) section DIN A5



## 2. Optical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
colour measurement	DIN 5033 DIN EN ISO 11664-4	section DIN A 4
<i>lightfastness tests</i> ➤ wollscale ➤ grey scale	in according to DIN EN ISO 105-B 02 DIN EN 20105-A 02	section DIN A 4
<i>artificial weathering of plastics</i> ➤ xenon-arc lamps ➤ fluorescent UV lamps (QUV-A)	DIN EN ISO 4892-2 DIN EN ISO 4892-3	number to arrangement test size to arrangement 150 x 75 mm
gloss measurement	AA 35L DIN EN ISO 2813	section DIN A 4
Assessment of damage to the surface (e.g. degree of rusting, degree of blistering)	DIN EN ISO 4628	test size to arrangement





### 3. Fire behavior

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
flammability test	UL 94 HB	section DIN A 4
	MVSS 302 DIN 75 200 ISO 3795	5 samples: 356 x 100 mm
	UL 94 VO-V2	section DIN A 4
	DIN 4102 B2, B3 DIN 53 438	5 samples: 190 x 90 mm



## 4. Electrical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<i>resistance measurement</i> ➤ surface resistance (method with silver strip and feather tongue electrode)	DIN EN 62361-3-2	test size to arrangement
➤ contact resistance	DIN EN 61340-2-3	test size to arrangement



Notice: Mechanical check in components occurs after Arrangement (maximum component size: app. 60 x 75 cm).  
The information of the specimen size and number are defaults. Modification according to arrangement.

## 5. Mechanical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<i>flexural test</i> 3-point-procedure / 4-point-procedure - flexural stress - flexural strength - outer fibre strain - deflection - flexural modulus 3 Pkt. / 4 Pkt.	DIN EN ISO 14125 DIN EN ISO 178 ASTM D 790	test size to arrangement
<i>tension test</i> - compressive stress - compressive strength	DIN EN ISO 604	section DIN A 4
<i>Taber abrasion test</i>	DIN ISO 9352	section DIN A 3



Notice: Mechanical check in components occurs after Arrangement (maximum component size: app. 60 x 75 cm).  
The information of the specimen size and number are defaults. Modification according to arrangement.

## 5. Mechanical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<i>impact test</i> (- 50 °C till 150 °C) Charpy <ul style="list-style-type: none"> <li>➤ impact strength</li> <li>➤ notched impact strength</li> </ul>	DIN EN ISO 179-1	section DIN A 4
<i>hardness test:</i> <ul style="list-style-type: none"> <li>➤ ball indentation</li> <li>➤ Shore A</li> <li>➤ Shore D</li> </ul>	DIN EN ISO 2039-1  DIN ISO 7319-1	section DIN A 5
<i>surface scratch</i> <ul style="list-style-type: none"> <li>➤ scratch resistance</li> <li>➤ resistance to rubbing</li> </ul>	DIN EN ISO 1518-1/-2 PV 3952 DIN EN ISO 21546 PV 3987	min. 6 samples: 200 x 100 mm medium in consultation



Notice: Mechanical check in components occurs after Arrangement  
(maximum component size: app. 60 x 75 cm).  
The information of the specimen size and number are defaults. Modification according to arrangement.

## 5. Mechanical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<p><i>electronical penetration test</i> (- 40°C till 150°C)</p> <ul style="list-style-type: none"> <li>• fracture</li> <li>• fracture force</li> <li>• fracture deformation</li> <li>• fracture energy</li> <li>• penetration energy</li> </ul>	<p>AA 70L DIN EN ISO 6603-2</p>	<p>5 samples: 100 x 100 mm</p>



Notice: Mechanical check in components occurs after Arrangement  
(maximum component size: app. 60 x 75 cm).  
The information of the specimen size and number are defaults. Modification according to arrangement.

## 5. Mechanical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<p><i>tensile test</i></p> <ul style="list-style-type: none"> <li>• tensile stress</li> <li>• tensile strength</li> <li>• tear strength</li> <li>• yield stress</li> <li>• x ./ - offset yield stress</li> <li>• modulus</li> <li>• elongation at break</li> <li>• elongation at yield stress</li> <li>• elongation at x ./ - offset yield stress</li> <li>• tensile modulus</li> </ul>	<p>DIN EN ISO 527-1 DIN EN ISO 527-2 DIN EN ISO 527-4 DIN EN ISO 527-5 ASTM D 638</p>	<p>section 270 x 240 mm</p>
<ul style="list-style-type: none"> <li>➤ tensile shear strength</li> <li>➤ climbing drum peel test</li> </ul>	<p>DIN EN 1465 DIN EN 1464</p>	<p>test size to arrangement test size to arrangement</p>



## 6. Thermo-mechanical properties

Kind of test	Instruction (AA) test norm	Quantity and kind of test specimen
<i>dimensional stability</i> ➤ Vicat A ➤ Vicat B  ➤ deflection temperature under load	DIN EN ISO 306  DIN EN ISO 75 T 1-3	section DIN A 5  section 180 x 240 mm

