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	TEST	METHOD	RESULT
*	Reaction to fire tests Ignitability of products subjected to direct impingement of flame Part 2: Single flame source test	EN 11925-2	B-s2-d0
*	Plastics - Determination Of Charpy Impact Strength - Part 1: Non-Instrumented Impact Test	TS EN ISO 179-1	See Table



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**Environment**

The requirements and standards apply to equipment intended for use in :

<b>X</b>	Residential (domestic) environment
<b>X</b>	Commercial and light-industrial environment
<b>X</b>	Industrial environment
<b>X</b>	Medical environment
<b>X</b>	Used in outdoor environments



## EN 11925-2: Reaction To Fire Tests Ignitability Of Products Subjected To Direct Impingement Of Flame Part 2: Single-Flame Source Test

### Scope

This part of ISO 11925 specifies a method of test for determining the ignitability of products by direct small flame impingement under zero impressed irradiance using vertically oriented test specimens.

### Conditioning

Test specimens shall be conditioned at a temperature of  $(23 \pm 2)$  °C and a relative humidity of  $(50 \pm 5)$  %. Test specimens shall be conditioned for a minimum period of 48 h, until constant mass is achieved.

### Procedure

Light the burner in the vertical position and allow the flame to stabilize. The burner to adjust give a flame height of 20 mm using the. The flame height shall be checked prior to each flame application.

Tilt the burner at 45° with respect to its vertical axis and advance it horizontally until the flame reaches the pre-set contact point with the test specimen.

Start the timing device at the moment the flame is brought into contact with the test specimen. Apply the flame for 15 s or 30 s as required and then retract the burner in a smooth continuous manner.

### Surface exposure

For all essentially flat products, the flame shall be applied on the centreline of the specimen, 40 mm above the bottom edge. Each different surface that could be exposed in practice shall be tested.

The flame application point which gives the worst result shall be determined by performing at least two tests for each possible flame application point. The results should be compared and a complete test of six specimens shall be conducted using the flame application point which gives the worst result.

### Duration of test

If the flame application time is 30 s, the total test duration shall be 60 s from the time at which the flame is first applied.



**TEST RESULT**

Method and period for application of flame		Application to surface, 15 s				
Sample		#1	#2	#3	#4	#5
Ignition (Yes/No)		Yes	Yes	Yes	Yes	Yes
Time from start of test for flame tip to reach 150 mm (seconds)		Did not reach	Did not reach	Did not reach	Did not reach	Did not reach
Extent of Flame Spread(mm)		55	49	53	52	48
Flaming Debris		None	None	None	None	None
Glowing		None	None	None	None	None
Extent Of Damaged Area (mm)	Height	40	35	36	32	29
	Width	19	20	23	19	15

**Conclusion:** On each set of six specimens which were tested, the flame tip did not reach a distance of 150mm before the end of the test.



**TS EN ISO 179-1 Plastics - Determination Of Charpy Impact Strength - Part 1: Non-Instrumented Impact Test**

**Scope**

This part of ISO 179 specifies a method for determining the Charpy impact strength of plastics under certain conditions. A number of different sample types and test configurations are specified. Different test conditions are specified according to material type, sample type and notch type.

**Table 1 — Specimen Type, Dimensions And Span**

Specimen Type	Long <sup>a</sup> l	Width <sup>a</sup> b	Thickness <sup>a</sup> h	Span L
1	80 ± 2	10,0 ± 0,2	4,0 ± 0,2	62 +0,5-0,0
2 <sup>b</sup> 3 <sup>b</sup>	25 h (11 oder 13) h	10 or 15 <sup>c</sup>	3 <sup>d</sup>	20 h (6 or 8) h

<sup>a</sup> The specimen dimensions (thickness h, width b and length l) are defined as follows:  $h < b < l$ .

<sup>b</sup> Type 2 and type 3 samples can only be used for the materials described.

<sup>c</sup> 10 mm for materials reinforced with a fine structure, 15 mm for materials reinforced with a coarse structure.

<sup>d</sup> Preferred thickness. If the specimen is taken from a sheet or molding, h up to 10.2 mm shall be equal to the thickness of the sheet or molding.

**Table 2 - Test Method Designations, Specimen Types, Notch Types And Notch Dimensions - Materials Not Showing Interlaminar Shear Fractures**

Test Method Designation	Specimen Type	Impact Direction	Notch Type	Notch Root Radius 'N	Remaining Width <sup>b</sup> N In The Notch Base
ISO 179-1/1eA <sup>b</sup>	1	edgewise	<i>unnotched</i>		
			<i>single notch</i>		
			<b>A</b>	0,25 ± 0,05	8,0 ± 0,2
			<b>B</b>	1,00 ± 0,05	8,0 ± 0,2
			<b>C</b>	0,10 ± 0,02	8,0 ± 0,2

**Four types of failures can occur for molding and extrusion compounds according to the following definitions:**

<b>C Complete Fracture:</b>	Fracture that separates the sample into two or more pieces
<b>H Hinge Break:</b>	An incomplete break in which both parts of the sample are held together by a thin surface layer with little residual hardness in the form of only a hinge
<b>P Partial Break:</b>	An incomplete break for which the term hinge break does not apply
<b>N Unbreakable:</b>	No breakage and specimen simply bent and pulled, possibly related to stress bleaching

### Procedure

Measure the thickness  $h$  and width  $b$  of each sample within 0.02 mm at the centre. For notched specimens, the remaining  $b_N$  width should be carefully determined to be 0.02 mm.

Check that the pendulum impact tester has the specified value for the correct range of impact velocity and absorbed work  $W$ , which should be between 10% and 80% of operating capacity at impact. If more than one pendulum meets these conditions, the pendulum with the highest working capacity should be used.

The pendulum will be lifted to the specified height and locked. The sample shall be placed on the abutments of the hammer mechanism so that the hammer blade strikes the center of the sample. Notched specimens should be carefully aligned so that the center of the notch is directly in the impact plane.

The pendulum will be released. The impact energy absorbed by the sample should be recorded and the friction losses etc. necessary corrections should be made.



Test Result

Sample	Length	Width	Thick
#1	080,00 mm	010,00 mm	002,23 mm
#2	080,00 mm	010,00 mm	002,25 mm
#3	080,00 mm	010,00 mm	002,28 mm
#4	080,00 mm	010,00 mm	002,20 mm
#5	080,00 mm	010,00 mm	002,19 mm

Sample	Energy	Speed	Impact	Acceptance Criteria	Fault Type	Conformity Status	Intensity Average
#1	2.0 J	2,9 m/s	0.242 J	≥6 kJ/m2 (DBL 5419 PV01 and PV06)	C	In Conformity	<b>0013.4611 kJ/m2</b>
#2	2.0 J	2,9 m/s	0,249 J		C	In Conformity	
#3	2.0 J	2,9 m/s	0,249 J		C	In Conformity	
#4	2.0 J	2,9 m/s	0,261 J		C	In Conformity	
#5	2.0 J	2,9 m/s	0,249 J		C	In Conformity	



**SAMPLE IMAGE**



**\*\*\*End Of Report\*\*\***



