

# Warning Management System of Deutscher Wetterdienst

## Warning criteria

- same criteria for whole Germany
- defined in collaboration with national authorities for disaster management, based on evaluation of climate data
- different warning levels

Warning level	Expected weather conditions	Colour
Official warning of particularly extreme and severe weather	Extremely dangerous weather conditions	Dark red / violet
Official severe weather warning	Very dangerous weather conditions	Red
Official warning of significant weather	Dangerous weather conditions	Orange/ Ochre
Official weather warning	Possibility of weather-related risks	Yellow
No warning	No weather-related risks	Blue

Weather phenomena
Violent gusts
Hurricane-force gusts
Extreme hurricane-force gusts
Severe thunderstorm
Intense heavy rainfall
Extremely intense heavy rainfall
Strong continuous rain
Extremely strong continuous rain
Heavy snowfall
Extremely heavy snowfall
Heavy snowdrifts
Black ice
Heavy thaw
Wind gusts
Storm gusts
Violent storm gusts
Thunderstorm
Heavy rainfall
Continuous rain
Snowfall
Snowdrifts
Slippery roads
Fog
Frost
Severe frost



Weather Warning		
Meteorological phenomenon	thresholds	Name
<b>wind</b> in ca. 10 m above free area	$\geq 50$ km/h	<b>Wind gusts</b>
<b>thunderstorm</b>	Electric discharge, also related with wind gusts	<b>Thunderstorm</b>
<b>light snowfall</b> in heights over 800 m: individual decision	up to 5 cm in 6 hours up to 10 cm in 12 hours	<b>Snowfall</b>
<b>slickness</b>	caused by hoarfrost, snow cover, freezing moisture	<b>Slickness</b>
<b>frost</b>	widespread or continuing temperatures below freezing point; between 01.04 and 31.10. each year In heights below 800 m	<b>Frost</b>
<b>fog</b>	widespread visibility below 150 m	<b>Fog</b>



Warning of significant weather		
Meteorological phenomenon	thresholds	Name
<b>wind</b> in ca. 10 m above free area	65 - 89 km/h	<b>Storm gusts</b>
	90 - 104 km/h	<b>Heavy storm gusts</b>
<b>thunderstorm</b>	related with storm gusts, heavy storm gusts, heavy rain or hail	<b>Thunderstorm</b>
<b>heavy rain</b>	15-25 l/m <sup>2</sup> in 1 hour 20-35 l/m <sup>2</sup> in 6 hours	<b>Heavy rain</b>
<b>continuous rain</b>	25-40 l/m <sup>2</sup> in 12 hours 30-50 l/m <sup>2</sup> in 24 hours. 40-60 l/m <sup>2</sup> in 48 hours.	<b>Continuous rain</b>
<b>Snowfall</b> in heights over 800 m: individual decision	5-10 cm in 6 hours 10-15 cm in 12 hours over 800 m: up to 30 cm in 12 hours.	<b>snowfall</b>
<b>Snowdrift</b> in heights over 800 m: individual decision	fresh snow or snow cover 5 -10 cm and wind gusts (39 km/h bis 65 km/h)	<b>snowdrifts</b>
<b>slickness</b>	temporary or local, caused by freezing rain or drizzle, also freezing moisture with considerable traffic disturbance	<b>slickness</b>
<b>frost</b>	Widespread or continuing temperature $\leq -10^{\circ}\text{C}$ , In heights below 800 m	<b>Severe frost</b>
<b>thaw</b>	snow cover, raising temperature and rain cause water cumulative flows: 25 - 40 l/m <sup>2</sup> in 12 hours 30 - 50 l/m <sup>2</sup> in 24 hours 40 - 60 l/m <sup>2</sup> in 48 hours	<b>thaw</b>



Warning of severe weather and particulary extreme and severe weather (I)		
Meteorological phenomenon	thresholds	Name
<b>wind</b> in ca. 10 m above free area	105 - 119 km/h	<b>Violent gusts</b>
	ab 120 km/h	<b>Hurricane-force gusts</b>
	widespread more than 140 km/h	<b>Extreme Hurricane-force gusts</b>
<b>very strong convective incident</b> Thunderstorm with hail, intense heavy rain, violent or hurricane-force gusts or local tornados	It is enough when only one of the attendant weather phenomena reaches the treshold of severe weather. hail with a diameter > 1,5 cm	<b>Severe thunderstorm</b>
<b>intense heavy rain</b>	25 - 40 l/m <sup>2</sup> in 1 hour 35 - 60 l/m <sup>2</sup> in 6 hours	<b>Intense heavy rain</b>
	>40 l/m <sup>2</sup> in 1 hours >60 l/m <sup>2</sup> in 6 hours	<b>Extremely intense heavy rain</b>
<b>strong continuous rain</b>	>40 l/m <sup>2</sup> in 12 hours >50 l/m <sup>2</sup> in 24 hours >60 l/m <sup>2</sup> in 48 hours	<b>Strong continuous rain</b>
	widespread >70 l/m <sup>2</sup> in 12 hours >80 l/m <sup>2</sup> in 24 hours >90 l/m <sup>2</sup> in 48 hours	<b>Extremely strong continuous rain</b>



Warning of severe weather and particulary extreme and severe weather (II)		
Meteorological phenomenon	thresholds	Name
<b>snowfall</b> in heights over 800 m: individual decision	>10 cm in 6 hours >15 cm in 12 hours in heights over 800 m: >30 cm in 12 hours	<b>Heavy snowfall</b>
	widespread >25 cm in 12 hours in heights over 800 m: >50 cm in 12 hours	<b>Extremely heavy snowfall</b>
<b>snowdrift</b> in heights over 800 m: individual decision	fresh snow or snow cover 10 bis 25 cm and storm gusts or more (> 65 km/h)	<b>Heavy snowdrifts</b>
	fresh snow or snow cover > 25 cm and storm gusts or more (ab 65 km/h)	<b>Extremely heavy snowdrifts</b>
<b>black ice</b>	widespread black ice	<b>Black ice</b>
<b>thaw</b>	snow cover, raising temperature and rain cause water cumulative flows: > 40 l/m <sup>2</sup> in 12 hours > 50 l/m <sup>2</sup> in 24 hours > 60 l/m <sup>2</sup> in 48 hours	<b>Heavy thaw</b>

