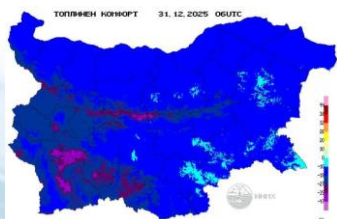
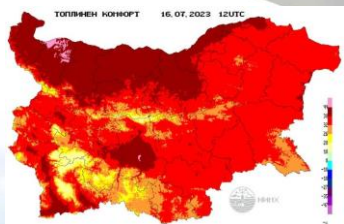


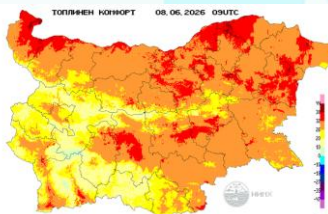


THERMAL COMFORT INDEX BASED ON THE FELT TEMPERATURE

The proposed maps show the current or expected feeling of thermal comfort/discomfort of the majority of people. The maps refer to a standard time of day, which corresponds to the classical observation periods at weather stations. For example, 12 UTC (Coordinated Universal Time) corresponds to 14:00 Bulgarian time (15:00 summer time), which is usually close to the warmest hours of the day, and 03 UTC corresponds to 05:00 Bulgarian time (06:00 summer weather) which is usually close to the coldest hours of the day.



ANALYSIS of the comfort index for the most recent forecast period



A map created based on an objective operational analysis of data (table) from the synoptic stations of the National Institute of Meteorology and Hydrology.

Thermal Comfort Index in Our Weather Stations on 08.06.2026 at 09 UTC

The data are from the last observation in the Bulgarian weather stations. Time in Bulgaria is UTC+2 h in Winter and UTC+3 h in Summer.

Station	Measured					Calculated		
	Temperature (°C)	Relative humidity (%)	Wind speed (km/h)	Clouds (%)	Felts like temperature (°C)	Comfort Index	Proposed clothing	
Novo Selo	27.6	57	1	2	35.4	11	0.40	
Vidin	28.4	49	0	2	38.6	12	0.40	
Vratsa	25.7	48	4	4	25.9	9	0.40	
Montana	25.7	56	3	4	28.5	10	0.40	
Lom	27.0	55	0	2	38.7	12	0.40	
Oryahovo	24.3	70	1	3	32.6	11	0.40	
Knezha	25.4	65	3	2	30.1	10	0.40	
Lovetch	26.2	58	2	4	33.6	10	0.40	
Pleven	23.6	87	2	6	25.7	10	0.40	
V. Tarnovo	26.6	51	1	5	31.2	10	0.40	
Bvishkov	25.6	61	1	3	32.6	11	0.40	
Pluse	26.1	70	2	6	31.8	10	0.40	
Slumen	24.8	67	2	3	28.7	10	0.40	
Razgrad	24.3	57	1	6	28.6	10	0.40	
Silistra	25.2	64	1	3	32.9	11	0.40	
Silistra-NIMH	25.5	56	3	3	28.3	10	0.40	
Slana	25.9	78	2	3	33.1	11	0.40	
Shabla	22.1	83	2	1	28.8	10	0.40	
Kalakra	22.2	81	4	4	23.8	9	0.40	
Dobrich	24.3	64	1	8	29.2	10	0.40	
Marjani	13.8	82	6	7	11.4	8	0.92	
Kyustendil	23.3	49	2	2	25.6	10	0.40	
Dragoman	21.8	80	3	4	21.8	9	0.40	
Blagoevgrad	24.6	64	1	1	32.9	11	0.40	
Cherni Vrah	9.2	83	4	7	7.8	7	1.11	
Boya	23.3	50	1	5	28.7	10	0.40	
Musata	6.5	89	2	5	9.0	7	1.04	
Plovdiv	27.4	57	2	4	32.3	11	0.40	
Bolev	7.1	100	2	8	7.8	7	1.11	
Pazardzhik	27.2	49	2	2	31.3	10	0.40	
Chiprov	26.9	53	3	3	30.1	10	0.40	
Stara Zagora	27.0	52	0	3	37.4	11	0.40	
Siven	25.5	54	0	4	35.7	11	0.40	
Elhovo	26.6	53	4	1	29.7	10	0.40	
Karnobat	25.9	61	3	4	29.5	10	0.40	
Erzine	22.5	77	4	3	24.5	9	0.40	
Burgas	24.8	67	4	4	27.4	10	0.40	
Altopol	22.6	80	4	5	24.1	9	0.40	
Sandanski	27.4	44	3	3	29.2	10	0.40	
Goshe Delchev	23.6	61	0	1	37.5	11	0.40	
Rozhen	15.6	75	1	6	17.9	8	0.40	
Kurdzhali	25.9	52	5	4	26.3	10	0.40	
Haskovo	26.0	56	3	3	29.2	10	0.40	

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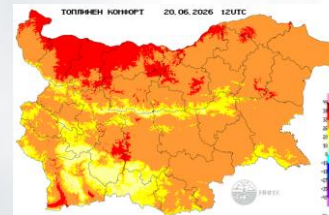
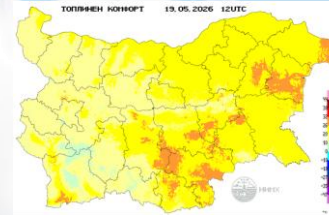
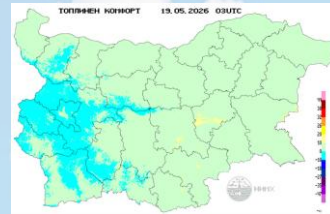


FELT TEMPERATURE



FORECASTS - EXAMPLES

Felt temperature is air temperature in a reference atmospheric environment where a person's sense of thermal comfort/discomfort would be the same as in real weather conditions. The feeling of thermal comfort is calculated using a full numerical model of thermal balance of the body of a "standard" human placed in atmospheric conditions near ground, outdoors, on grass or snow cover, if available. The feeling of thermal comfort/discomfort depends on the morphological parameters of the person - age, sex, height, weight and others, but for general purposes, the parameters of a "standard" person are used here. This is a 35-year-old man, 1.75 m tall, weighing 75 kg, in good health. The felt temperature depends on the work performed by the person and can be calculated at different power. In this case, it is assumed that the "standard" person performs work with applying the power corresponding to walking at a speed of 4 km/h on a horizontal surface. It is assumed that the wind always blows to the side of the direction of walking. The clothing is adapted (summer/winter) so that the "standard" person, if possible, achieves thermal comfort in the specific outdoor weather conditions. To determine the felt temperature, data on meteorological elements in the layer of air near the earth's surface (0–2 m), where the "standard" person is located, are used: temperature; relative humidity; wind speed; snow cover. Also used: cloud cover; geographical coordinates and altitude of the place; date and time.



The maps are generated on the basis of the forecast of ALADIN-BG weather model.

The table shows the degrees of thermal comfort/discomfort.

The categories of comfortable, warm and hot are defined on the basis of the degrees of physiological stress to which the human thermoregulatory system is subjected in the different temperature conditions according to the feels like temperature. The categories for cold are according to the Wind Chill Index.

Thermal Comfort Classes, Description of the Sensation of Comfort/Discomfort and Recommended Clothing

Thermal comfort class	From feels like temperature, °C	To feels like temperature, °C	Grade in colour	Thermal sensation of comfort or discomfort	Description	Level of clothing
13	44	-	Light pink	Extreme heat	Substantial risk of thermal shock in prolonged work/stay outdoors.	0.4
12	38	44	Red	Very hot	The mechanism of self-cooling by sweating is hindered.	0.4
11	32	38	Dark red	Hot	Almost the whole body is covered in sweat.	0.4
10	26	32	Orange	Very warm	A big part of the body is covered with sweat.	0.4
9	20	26	Yellow	Warm	Sweating has started. A small part of the body is covered with sweat.	0.5-0.4
8	10	20	Light yellow	Comfortable	Sensation of thermal comfort with suitable clothing	1.0-0.5
7	0	10	Light green	Cool	Thermal comfort can be achieved with suitable clothing, but there is slight discomfort in the cold side on exposed parts of the body.	1.5-1.0
6	-10	0	Cyan	Cold	Goosebumps start.	2.0-1.5
5	-18	-10	Blue	Very cold	Shivering starts.	2.4-2.0
4	-27	-18	Dark blue	Possible frost bite	Possible frost bite of bare skin	2.9-2.4
3	-35	-27	Dark purple	Frost bite of bare skin	Frost bite of bare skin within 30 min of exposure	3.3-2.9
2	-47	-35	Purple	Rapid frost bite of bare skin	Frost bite of bare skin within 10 min of exposure	3.9-3.3
1	-	-47	Light purple	Dangerously rapid frost bite	Dangerously rapid frost bite with 5 min of exposure	4.0

Clothing Index - Meaning

Recommended clothing ensemble	Clothing index
Nude	0
Shorts	0.1
Shorts, open-neck shirt with short sleeves, sandals	0.35
Long light-weight trousers, open-neck shirt with short sleeves, open shoes	0.5
Long trousers, open-neck cotton work shirt with long sleeves, shoes	0.7
Long trousers, cotton work shirt with long sleeves, shoes, and a light jacket	0.9
Typical business suit (long trousers, cotton work shirt with long sleeves, vest, shoes, and a jacket)	1.0
Typical business suit and a cotton coat	1.5
Long resistant trousers, woolen flannel shirt, woolen socks, shoes, wind and water resistant jacket and vest, a hat and gloves	1.5-2.0
Polar weather suit with hood, warmth-keeping shoes, a hat covering the ears, strong isolating gloves	3.0-4.0