Present weather

'Present weather' represents the weather conditions at the time of observation, coded as two figures. Codes range from 00 to 99, with the higher figures being more significant (except 17, which takes precedence over the range 20 to 49). The following notes will help you decide which code to use for present weather.

- Codes 50 to 99 are used when precipitation *is* falling at your station at the time of observation.
- Codes 00 to 49 are used when precipitation is *not* falling at your station at the time of observation.

These ranges of codes are then split into smaller groups of similar weather types.

Note: Remember to use the weather diary, the comments option on SAMOS or the SYNOP coded message for reporting special phenomena.

Precipitation falling at the time of observation

80–99 All types of showers, or any type of precipitation associated with current and recent thunderstorms

70–79 Solid (i.e. frozen) precipitation (mainly snow) that has not fallen in the form of showers

68–69 Mixture of solid and liquid precipitation (rain, drizzle, snow)

50–67 Liquid precipitation (drizzle and/or rain)

No precipitation falling at time of observation

40–49 Fog

30–39 Phenomena other than fog affecting visibility, such as blowing or drifting snow

20–29 Weather not occurring at the time of observation but in the previous hour

00–19 Other weather phenomena, of varying significance, not included in the groups above

Definitions

At the station — where the observation is normally made

At the time of observation — observation time to the nearest minute

Distant/at a distance/within sight — phenomenon being observed is not at your station

Recent/in past hour/during past hour — phenomenon not occurring at time of observation but at some time during past hour

Visibility at the station — defined as the greatest horizontal distance at which an object can be recognised in daylight (when visibility varies in different directions, the visibility at the station is to be taken as the lowest value)

Present weather descriptions

Precipitation — rain, drizzle, snow, hail, snow pellets, snow grains, ice pellets, small hail, diamond dust and any combination of these falling from the sky. Therefore, drifting snow and blowing snow are not included

Showers — precipitation falling from convective cloud (showers tend to start and stop abruptly, they are often characterised by large variations in intensity over short periods of time and the raindrops tend to be larger than in non-showery precipitation)

Rain/drizzle — drizzle often appears to float in the air and the drops make no effect on puddles, whereas raindrops create rings as they hit the puddle surface

Freezing precipitation — rain or drizzle that freezes on impact with the ground (it is liquid as it falls, turning to ice immediately on impact, forming a clear coating of ice on roads, twigs, overhead wires, etc.) this coating is called 'glaze' or, commonly, 'black ice'

Frozen precipitation — precipitation that is already ice before it reaches the ground (i.e. snow, hail, small hail, ice pellets, snow pellets, snow grains and diamond dust). To decide what is falling, consider the appearance, size and clouds of origin

Mixed precipitation — two or more types of precipitation falling together

Snow — ice crystals that appear white (isolated star-like crystals and small flakes occur in colder weather, whereas large wet flakes are typical around 0 °C)

Snow grains — appear like small grains of rice, usually falling in small quantities over short periods; when they fall on hard ground, they do not bounce or break up (grains fall from stratus, or even fog, but never in the form of a shower)

Hail — transparent or opaque, spherical or irregular; main distinguishing feature is its size; diameters start at about 5 mm (always falls from very deep convective clouds, so is often associated with thunderstorms)

Small hail — typically diameters of 2 to 5 mm, more or less spherical and semi-transparent, though can be transparent (only falls from shower clouds, including thunderstorms; bounces with an audible sound when it falls on hard ground and is not easily crushed)

Snow pellets — usually rounded, white and opaque, having diameters of 2 to 5 mm; looking like tiny snow balls (usually fall from shower clouds, accompanied by rain or snow but unlike small hail; they usually break up on impact, being brittle and easily crushed)

Ice pellets — spherical or irregular ice particles that are transparent, with diameters up to 5 mm. They are not easily crushed, bounce with an audible sound on impact and usually fall from altostratus or nimbostratus clouds

Diamond dust — tiny ice crystals only visible when they glitter in the sunshine; falling from a clear sky; rarely experienced in UK

Fog — tiny water droplets suspended in air, reducing the visibility below 1,000 m in ALL directions with the fog being at least 2 m deep above the ground; the relative humidity is 100% (or very nearly so) and the air usually feels clammy and raw (can be described as CONTINUOUS or occurring in PATCHES). Note: If, during the day, cloud or blue sky can be seen through the fog or, at night, stars are visible, then the sky is said to be visible. If, due to thick fog or heavy precipitation (usually snowfall), the sky, stars or cloud cannot be seen, then 'sky not visible' applies

Mist — visibility 1,000 m or more but usually less than 10 km, and relative humidity greater than about 95%

Rime — tiny fog droplets may freeze when they come into contact with objects like posts and twigs and, when this happens, a deposit of 'rime' ice gradually builds up on the windward side (in very cold weather, and with light winds or calm, rime can accumulate on all surfaces of objects, not just the windward side)

Ice fog — tiny ice particles suspended in the air at very low temperatures, unlikely to be experienced in UK

Shallow fog — not higher than about 2 m; visibility below this height must be less than 1,000 m, but above this height is 1,000 m or more

Haze/smoke/dust — tiny dry particles suspended in the air, such as smoke or industrial pollution, which reduces visibility

Drifting/blowing snow — both conditions satisfied by snow that has fallen to the ground and is then raised by strong winds; however, only blowing snow seriously affects the visibility at eye level (heavy blowing snow will severely affect both vertical and horizontal visibility; heavy drifting snow will severely affect the horizontal visibility below eye level)

Drifting/blowing sand/dust, sandstorm/duststorm, sand/dust whirls — are well-developed features, unlikely to be experienced in the UK

Thunderstorm — always report a single rumble of thunder, even if the thunderstorm is obviously a considerable distance away

Funnel cloud — forms from cumulonimbus, characterised by rapid rotation and a downward extension of the dark cloud base towards the ground, often with loose material and debris raised and flung out of the circulation (if the associated intense wind circulation reaches the ground, the phenomena becomes a tornado — the huge convective clouds that produce these phenomena always have dark, ragged bases)

Squall — occurs when the mean wind speed increases suddenly by at least 16 kn (3 Beaufort forces) to a new mean of at least 22 kn (Beaufort force 6), and the increase lasts for at least one minute. Squalls are usually associated with thunderstorms and active cold fronts. Like funnel clouds, squalls are not reported as often as they might be because precipitation is often falling at the same time and this warrants the use of a higher code figure

When you observe mixed precipitation, report the highest intensity. For example:

Heavy rain falling with moderate snow — report as heavy;

Shower consisting of moderate rain and slight hail — report as moderate.

Summary of precipitation types and intensities

Type/intensities	Slight	Moderate	Heavy
Drizzle	Dampens ground surfaces	Moisture starts to stream off surfaces, such as roads and windows; visibility reduced	Moisture readily streams off surfaces; visibility significantly reduced
Rain	Scattered, large drops or more-numerous smaller drops. Accumulation <0.5 mm/hr	Puddles form rapidly; steady outflow from gutters. Accumulation 0.5–4.0 mm/hr	Forms intense spray on roads, makes roaring noises on roofs; reduces visibility significantly. Accumulation >4.0 mm/hr
Snow and snow showers	Few snowflakes of small size. Very slow accumulation on the ground *(up to 0.5 cm/hr)*	Large-sized snowflakes falling in sufficient number to significantly reduce visibility *(often below fog limits)*. Steady accumulation on the ground *(up to 4 cm/hr)*	Significant accumulation on the ground *(>4 cm/hr)* with persistent foggy conditions
Hail	Small hailstones; not enough to whiten the ground	Sufficient hailstones falling to whiten the ground	Must be some hailstones >6 mm diameter causing significant damage to cars, greenhouses, etc.
Showers	Varies from a few scattered drops to enough rain falling to produce puddles. Accumulation <2 mm/hr	Similar comments to moderate rain. Accumulation 2–10 mm/hr	Similar comments to heavy rain. Accumulation 10–50 mm/hr

Present weather codes and descriptions

Thunderstorm and precipitation at time of observation

99 Heavy thunderstorm with hail, small hail or snow pellets

98 Thunderstorm associated with duststorm or sandstorm

97 Heavy thunderstorm with rain, snow or rain and snow mixed (sleet)

96 Moderate or slight thunderstorm with hail, small hail or snow pellets

95 Moderate or slight thunderstorm with rain, snow or rain and snow mixed (sleet)

Precipitation at time of observation but thunderstorm ceased in past hour

94 Heavy or moderate snow, rain and snow mixed (sleet), hail or snow pellets at the observation, with thunder in the past hour

93 Slight snow, rain and snow mixed (sleet), hail or snow pellets at the observation, with thunder in the past hour

92 Heavy or moderate rain at the observation, with thunder in the past hour

91 Slight rain at the observation, with thunder in the past hour

Showers at the time of observation (precipitation from convective clouds)

90 Heavy or moderate showers of hail, with or without rain, or rain and snow mixed (sleet)

89 Slight showers of hail, with or without rain, or rain and snow mixed (sleet)

88 Heavy or moderate showers of snow pellets or small hail, with or without rain or sleet

87 Slight showers of snow pellets or small hail, with or without rain, or rain and snow mixed (sleet)

86 Heavy or moderate showers of snowflakes

85 Slight showers of snowflakes

84 Heavy or moderate showers of rain and snow (sleet)

83 Slight showers of rain and snow (sleet)

82 Violent showers of rain

81 Heavy or moderate showers of rain

80 Slight showers of rain

Solid precipitation at the time of observation (not from convective clouds — not showers)

79 Ice pellets

78 Isolated star-shaped snow crystals

77 Snow grains

76 Ice crystals (diamond dust)

75 Continuous, heavy snowflakes

74 Intermittent, heavy snowflakes

73 Continuous, moderate snowflakes

72 Intermittent, moderate snowflakes

71 Continuous, slight snowflakes

70 Intermittent, slight snowflakes

Mixture of solid and liquid precipitation at time of observation (not from convective clouds — not showers)

69 Heavy or moderate rain or drizzle (sleet) and snow

68 Slight rain, or drizzle (sleet) and snow

Liquid precipitation at time of observation (not from convective clouds — not showers)

67 Heavy or moderate freezing rain

66 Slight freezing rain

65 Continuous, heavy rain

64 Intermittent, heavy rain

63 Continuous, moderate rain

62 Intermittent, moderate rain

61 Continuous, slight rain

60 Intermittent, slight rain

59 Heavy or moderate drizzle and rain falling together

58 Slight drizzle and rain falling together

57 Heavy or moderate freezing drizzle

56 Slight freezing drizzle

55 Continuous, heavy drizzle

54 Intermittent, heavy drizzle

53 Continuous, moderate drizzle

52 Intermittent, moderate drizzle

51 Continuous, slight drizzle

50 Intermittent, slight drizzle

No precipitation at the time of observation. Visibility less than 1,000 m in any direction (fog)

All codes apply to fog or ice fog.

49 Fog depositing rime; sky or clouds not visible

48 Fog depositing rime; sky or clouds visible

47 Fog has begun or is getting thicker during the past hour; sky or clouds not visible

46 Fog has begun or is getting thicker during the past hour; sky or clouds visible

45 No change in the fog during the past hour; sky or clouds not visible

44 No change in the fog during the past hour; sky or clouds visible

43 Fog getting thinner during the past hour; sky or clouds not visible

42 Fog getting thinner during the past hour; sky or clouds visible

No precipitation at time of observation. Visibility more than 1,000 m in at least some directions

41 Fog patches; visibility less than 1,000 m in some directions but not in others

40 Fog visible at a distance, but the visibility at station is 1,000 m or more. There must have been NO fog at station during the preceding hour

No precipitation at the time of observation. Blowing or drifting snow, sand or dust

39 Heavy blowing snow, generally above eye level

38 Moderate or slight blowing snow, generally above eye level

37 Heavy drifting snow, generally below eye level

36 Moderate or slight drifting snow, generally below eye level

35 Severe sandstorm or duststorm has increased or begun during the past hour

34 Severe sandstorm or duststorm has not changed during the past hour

33 Severe sandstorm or duststorm has decreased during the past hour

32 Moderate or slight sandstorm or duststorm has increased or begun during the past hour

31 Moderate or slight sandstorm or duststorm has not changed during the past hour

30 Moderate or slight sandstorm or duststorm has decreased during the past hour

No precipitation at the time of observation. Phenomena ceased during the past hour

29 Thunderstorm, with or without precipitation, ceased in the past hour

28 Fog cleared in the past hour. Visibility MUST now be 1,000 m or more

27 Showers of hail, small hail or rain with hail of any intensity ceased in the past hour

26 Showers of snow, or rain with snow (sleet), of any intensity ceased in the past hour

25 Showers of rain of any intensity ceased in the past hour

24 Freezing rain or freezing drizzle of any intensity ceased in the past hour

23 Rain with snow (sleet) or ice pellets of any intensity, but not showers, ceased in the past hour

22 Snow of any intensity, but not showers, ceased in the past hour

21 Rain (not freezing) of any intensity, but not showers, ceased in the past hour

20 Drizzle (not freezing) or snow grains of any intensity ceased in the past hour

No precipitation (at the station) at the time of observation. Miscellaneous phenomena

19 Funnel cloud observed at or within sight of the station at the time of observation or within the past hour

18 Squalls observed at or within sight of the station at the time of observation or within the past hour

17 Thunderstorm WITHOUT precipitation — for codes 16, 15 and 14, only report precipitation falling from low clouds

16 Precipitation observed near to (but not at) the station reaching the ground (or sea surface)

15 Precipitation observed within sight of the station reaching the ground (or sea surface)

14 Precipitation observed within sight of the station NOT reaching the ground (or sea surface)

13 Lightning seen BUT NO THUNDER HEARD

12 More or less continuous shallow fog. It is not deeper than about 2 m above ground level and the visibility above the shallow fog is 1,000 m or more

11 Patches of shallow fog. It is not deeper than about 2 m above ground level and the visibility above the shallow fog is 1,000 m or more

10 Mist. Visibility in ALL directions must be 1,000 m or more and humidity at least 95%

09 Duststorm or sandstorm observed within sight of the station

08 Well-developed dust or sand whirl observed at or near station at time of observation or in the preceding hour, but no duststorm or sandstorm

07 Dust or sand raised by the wind observed at the time of observation, but no well-developed dust or sand whirls at or near the station

06 Widespread dust in suspension in the air observed at or near the station, not raised by the wind

05 Haze

04 Visibility reduced by smoke (e.g. industrial smoke or forest fires)

03 Clouds generally forming or developing during the preceding hour

02 State of sky generally unchanged during preceding hour — also applies to a clear sky for the past hour

01 Clouds generally dissolving or becoming less developed during the preceding hour

00 No cloud development observed

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