

TABLE 2.6-1

Minimum distances between obstacles and direction finder

Obstacle	Minimum distance (m)
Non-metallic one-storey building: – a single building – a group of buildings	100 (in HF depending on the size and the shape of the antenna more than 100) 200
Two- or three-storey non-metallic buildings	250
Non-metallic buildings of over three storeys	300 and over depending on height
Small buildings with metal roofs	250
Metal structures (small sheds, etc.)	800
Reservoirs, large metal structures, metal bridges	1 500
Open-wire telephone lines, low-tensions lines	250-300
High-tension lines with pylons 20 m high	1 000
High-tension lines with pylons of 30 m and over	2 000-10 000
Railway or tram lines	1 000
Wind turbines	2 000 from individual wind turbines 5 000 from wind farms
Isolated trees	100
Small groups of trees	200
Forests	800
Metal fences	200 (in HF depending on the size and the shape of the antenna more than 200)
Small antennas	200
Large antennas	400
Lakes, ponds, rivers	1 000

As far as possible, the following rules should be used as a guide:

- the terrain should be chosen to avoid gradients of more than 1% within a radius of 100 m for HF installations and 250 m for MF and LF installations;
- outside this zone, the slopes can become steeper as the ground drops away, but excessive or sudden changes in ground level should be avoided;
- the angle between the horizontal and a line joining the direction finding antenna and the top of any obstacle should not exceed 2° or 3°;
- the ground should be completely clear within a radius of at least 200 m of the antenna;
- all incoming cables connected to the direction finding antenna should be 1 or 2 m underground within a distance of 30 m from the centre of the antennas. This depth can be reduced to about 0.5 m between 30 m and 250 m.

DF antennas should be located as far away as possible from other monitoring antennas as the receiving antennas of the monitoring station obstruct the regular propagation of radio waves, thus introducing errors into the bearings obtained.

If an Adcock system is used, the cables in the first section should lie along the line formed by an antenna pair or, if this is not possible, they should be laid at an angle of 45° with respect to each pair.