

**Cooling Tower**

**White Smoke Reduction Technology**

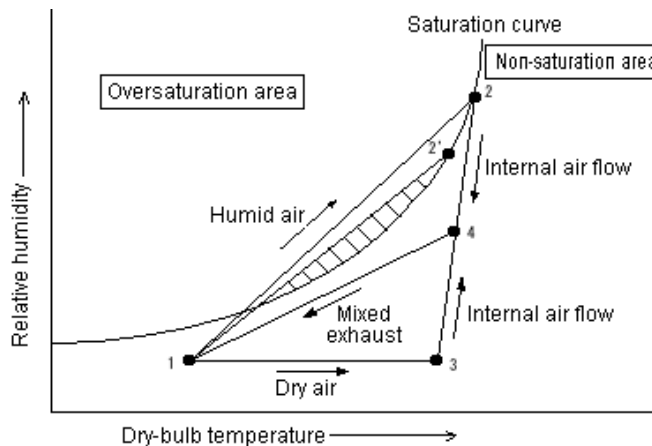
The mechanism of white smoke reduction in a dry and wet combined-type cooling tower is shown in the thermal property line in Figure 1.

In a conventional wet cooling tower, a cooling and a diffusive process of dampness air that is discharged from a blower is indicated as the straight line 2'-1 in the Figure 1. The slanted line section cutting across the oversaturated level becomes white smoke by the condensation of steam.

In a dry and wet combined-type cooling tower, the dry air heated via the dry processing section and the wet air via the wet processing section are mixed and discharged from the tower top. Therefore, white smoke is reduced by the design that the cooling and the diffusion process of the discharged air does not pass the oversaturated level as far as possible.

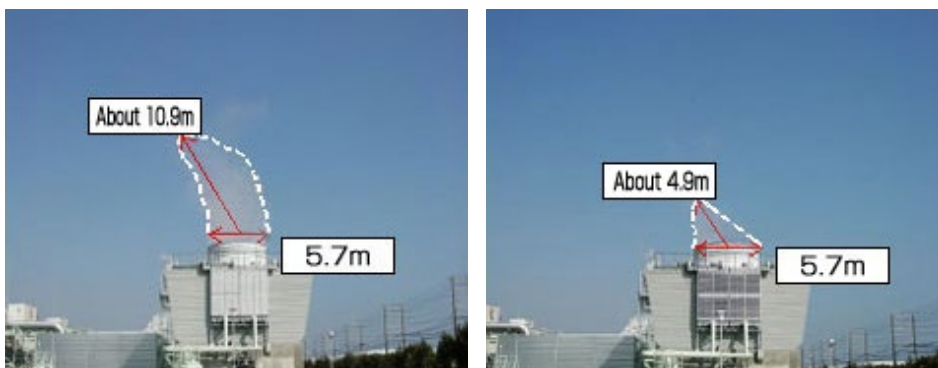
In Figure 1, the straight line 1-2 indicates the status change of the air in the wet processing section, and the straight line 1-3 indicates it in the dry processing section. The wet air at Point 2 and the dry air at Point 3 are mixed to be the status at Point 4, and then they are drained from the cooling tower.

When the straight line 4-1 exists below the saturation curve (non-saturation area), no or extremely a little white smoke is generated. As the line leaves the saturation curve downward, white smoke decreases.



- 1: Outside air
- 2: Exhaust air in wet operation
- 2': Humid air in dry-wet operation
- 3: Dry air in dry-wet operation
- 4: Mixed exhaust air in dry-wet operation

Figure 1



**White smoke prevention device OFF    White smoke prevention device ON**

White smoke prevention device ON/OFF comparative photographs