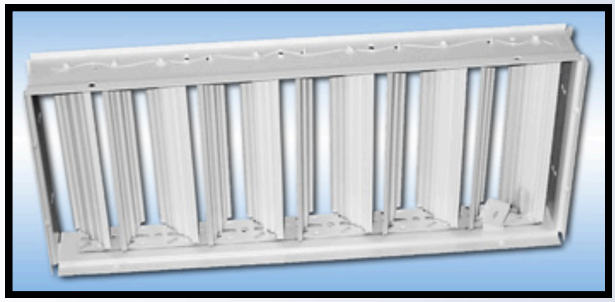
Closing the damper of a register accomplishes two objectives:

- It restricts the flow of air through the register or diffuser thereby ***increasing the static pressure drop*** and decreasing the airflow (CFM).
- The damper also generates sound – it ***increases the NC level***.



As a general rule, adding an opposed blade damper to a supply or return grille or diffuser with the damper blades set to 100% open will increase the NC by appoximately 3-4 NC and increase in the static pressure (Ps) by about 20%. Because the purpose of using a damper is to balance the airflow to the design CFM required for the outlet, the damper blades will typically be rotated to some position less than 100% open.

For example, a damper closed sufficiently to double the pressure loss of a register (Pressure Ratio of 2) causes an NC increase of about 7db (see Graph 1 below) . As a rule of thumb (and for general reference only), it can be assumed that closing an opposed blade damper to an effective opening ratio of 70% doubles the pressure loss of the open damper/outlet combination. Closing the damper to an effective opening ratio of 50% percent increases the pressure loss to 4 times the open damper/outlet loss.)

Graph 1: THROTTLED OB DAMPER FACTORS