



## COMBUSTION AIR EXCESS

$$E_a = \frac{V_{f_n}}{A_n} \times \frac{C_{f_n} - C_{f_o}}{C_{f_o}} \times 100$$

$$A_e = V_{f_n} \times \frac{C_{f_n} - C_{f_o}}{C_{f_o}}$$

**$A_e$  = Excess volume of air**

**$E_a$  = Value of excess air in %**

**$V_{f_n}$  = Volume of dry products of complete combustion**

**$C_{f_n}$  = %  $CO_2$  (stoichiometric)**

**$C_{f_o}$  = %  $CO_2$  corresponding to excess air**

**Example:**

**$V_{f_n} = 10.21 \text{ m}^3$ ;  $C_{f_n} = 15.45 \%$ ;  $A_n = 10.21 \text{ m}^3$**

**For  $CO_2$  12% ( $C_{f_o}$ )**

**We have  $E_a = 28.75 \%$  and  $A_e = 2.94 \text{ m}^3$**