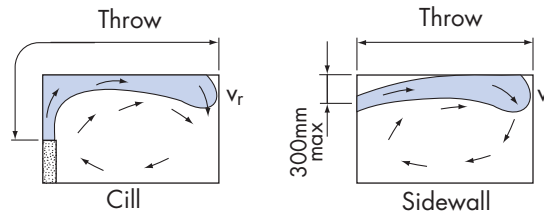


## Basis of Throw

Unless noted differently on the individual supply grille performance information all Throw performance data is based on isothermal supply air conditions, to a terminal velocity ( $v_t$ ), in the center of the jet, of 0.5 m/s. See tables below for other conditions.



### Remark:

If the distance between grille and ceiling is more than 300 mm, the throw will be reduced by 30%.

## Jet Temperature Decay Characteristics

The following graph indicates the jet residual temperature at various throw distances.

Given throw =  $x$  (m) and supply air differential =  $D_{to}$

Calculate  $\sqrt{Ac} = \sqrt{\text{Grille Area (m}^2\text{)}}$

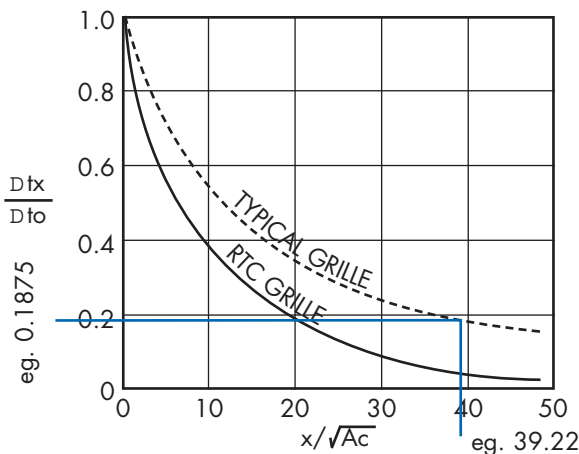
Calculate  $x/\sqrt{Ac}$

Enter graph at required value  $x/\sqrt{Ac}$

Exit graph at value  $D_{tx}/D_{to}$

Calculate  $D_{tx} = D_{to} \times (D_{tx}/D_{to})$

$D_{tx}$  = Residual temperature differential ( $^{\circ}\text{C}$ )



## Working Example for Temperature Decay Calculations

### 1H/300x150/R25/SF

Supply Air Temp = 18  $^{\circ}\text{C}$

Room Temp = 20  $^{\circ}\text{C}$

$DT_0$  = 2  $^{\circ}\text{C}$

Air Volume = 200 l/s

From Performance data (Page 5) Throw = 8.32 m

$$x/\sqrt{Ac} = 8.32/\sqrt{(0.3 \times 0.15)} = 39.22$$

Therefore  $DT_x = 0.375$   $^{\circ}\text{C}$  and the air temperature at maximum throw (8.32 m) is = 19.6 (19.625)  $^{\circ}\text{C}$

## Example of Throtled Damper Factor Handling

Consider a Supply Grille with Damper

$$P_s (\text{Grille}) = 50 \text{ Pa}$$

$$P_s (\text{Duct}) = 20 \text{ Pa}$$

$$PR = 2.5$$

Therefore addition is = 13.5

Assume that we are using the same grille as in the Temperature Decay Calculation (above);

From the Performance data on page 5,

$$NR = 25 + 13.5 = NR 38.5$$

## Throttled Damper Factors

