Solution - Design Example 2Fa - Autoclaved Aerated Concrete Block (Separating and Loadbearing Function)

Using Table NA.4.2 of UK National Annex to Eurocode 6 Part 1.2 :-

Wall thickness - 120 mm unplastered finish

Masonry unit type - Group 1 autoclaved aerated concrete

Mortar type - Thin layer

Gross dry density, $\rho = 650 \text{ kg/m}^3$ - within 500 - 1000 kg/m$^3$ compliance category

Design load ratio $= 180 \text{ kN/m} / 187 \text{ kN/m}$ (see Design Example 2 for EC6 Part 1.1)

$= 96\%$ (greater than 60%, but less than 100%)

Therefore $\alpha \leq 1.0$ category

Therefore standard fire resistance period for an unplastered wall is 120 minutes REI (100mm wall thickness is limiting tabulated thickness)

_Autoclaved aerated concrete blockwork wall will provide 120 minutes REI standard fire resistance as an unplastered construction_

(Note: this fire resistance period is directly comparable with UK building regulations requirements in respect of the separating and loadbearing function)
Solution - Design Example 2Fb - Autoclaved Aerated Concrete Block (Separating and Non-Loadbearing Function)

Using Table NA.4.1 of UK National Annex to Eurocode 6 Part 1.2 :-

Wall thickness - 120 mm unplastered finish

Masonry unit type - Group 1 autoclaved aerated concrete

Mortar type - Thin layer

Gross dry density, $\rho = 650 \text{ kg/m}^3$ - within 500 - 1000 kg/m$^3$ compliance category
Non-loadbearing alternative situation

Therefore standard fire resistance period for an unplastered wall is 240 minutes EI (100 mm wall thickness is highest tabulated thickness)

Autoclaved aerated concrete blockwork wall will provide 240 minutes EI standard fire resistance as an unplastered construction

(Note: this fire resistance period is directly comparable with UK building regulations requirements in respect of the separating and non-loadbearing function)