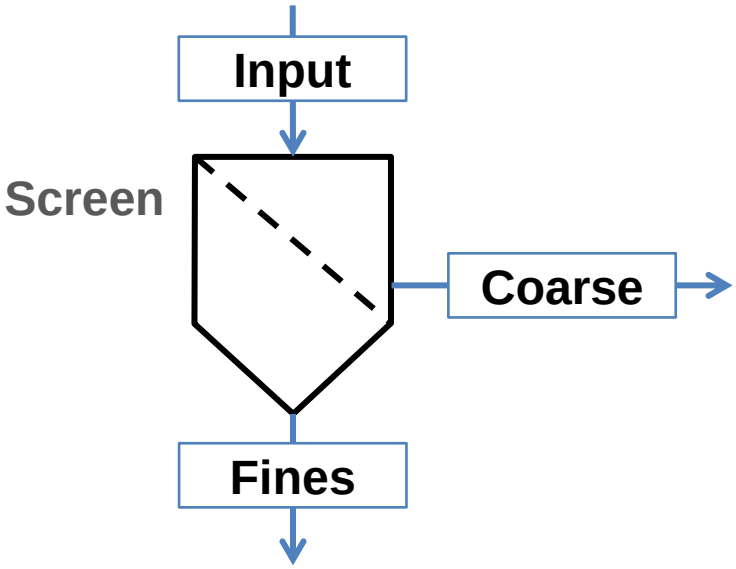
Screen Plitt

General description



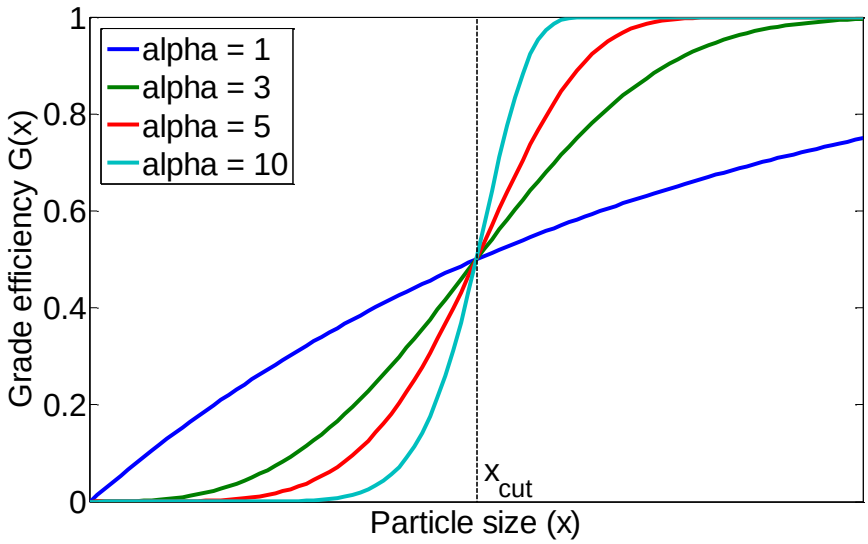
Screen unit is designed for classification of input material into two fractions according to the particle size distribution. Grade efficiency of the model is described as

$$\mathrm{G}(x_i) = 1 - exp\left(-0.693\left(\frac{x_i}{x_{cut}}\right)^{\alpha}\right)$$

- $G(x_i)$ is the grade efficiency – a mass fraction of material within the size class i in the feed that leaves the screen in the coarse stream
- x_{cut} is the cut size of the classification model
- α is the sharpness of separation
- x_i is the size of a particle

This classification model was initially developed for hydrocyclone.

In the following figure several grade efficiency curves for different parameters of separations sharpness are schematically shown.



Unit parameters

Name	Symbol	Description	Units	Valid values
Xcut	x_{cut}	Cut size of the classification model	[m]	Xcut ≥ 0
Alpha	α	Sharpness of separation	[-]	0 ≤ Alpha ≤ 100

Application examples

- *Example Flowsheets/Units/Screen Plitt.dlfw*
- *Example Flowsheets/Processes/Agglomeration Process.dlfw*
- *Example Flowsheets/Processes/Granulation Process.dlfw*

References

L. R. Plitt, The analysis of solid-solid separations in classifiers, CIM Bulletin 64 (708) (1971) 42-47.