



FLACS DustEx Training

(2 days)

This course is an introduction into the theory and mechanisms in dust explosion and to the concepts and models within FLACS. It will cover all typical areas of consequence modelling within the software dealing with dust explosions, including modeling dust layers, events and mitigation measure (e.g. vent panels). This course combines both theory and practical exercises with the FLACS software; therefore students will be required to practice and apply their new knowledge of the software through extensive hands-on workshops. About half the time will consist of presentations and the rest will be hands-on with the FLACS software for Dust Explosions applications.

LEARNING OBJECTIVES

Upon completion of this course, participants will be able to use FLACS for setting up, running and extracting results for a basic range of typical dust explosion scenarios. They will have learned the FLACS user guidelines for defining scenarios to ensure accurate and validated results and be able to QA results. They will also understand the basic mechanisms of dust explosions phenomenon, including important contributing effects (e.g. dust types, confinement and congestion).

CONTENT

- Introduction: GexCon, Explosions & FLACS – FLACS DustEx
- Constructing internal geometries
- Working with databases, geometries and objects
- Defining and verifying the computational grid
- Calculating and verifying porosities
- Analysing data from 20-litre explosion vessels
- Defining dust explosion scenarios
- Running simulations
- Analysing results
- Verifying results

WHO SHOULD ATTEND

People who intend to carry out consequence modelling with FLACS DustEx or work closely together people performing these types of FLACS simulations. These include safety engineers and consultants in risk consultancy companies, process industries, regulatory bodies, engineering companies and many more. The course could potentially also be useful for structural and process engineers, as these disciplines can benefit of using results from FLACS DustEx studies, by providing a better understanding of the most relevant parameters and mechanisms.

Attendance of this course is mandatory for FLACS DustEx users.

PREREQUISITES

This course is suitable completely new users of FLACS as well as users who would like to refresh their knowledge. In general no special prerequisites are required, but any prior knowledge in safety consequence modeling, CFD models or 3D modeling will in general be helpful.

Course Agenda

FIRST DAY (24.11.2014)

09:00 – 09:30	Introduction to FLACS DustEx (DESC)
09:30 – 10:00	Run Manager
10:15 – 11:45	CASD I – Defining Geometry, Grid & Porosity
11:45 – 12:30	Lunch
12:30 – 14:30	Exercise I - Defining Geometry, Grid & Porosity
14:45 – 16:00	CASD II – Defining Scenario

SECOND DAY (25.11.2014)

09:00 – 10:30	Exercise II - Defining Scenario and Running simulation
10:30 – 11:30	FLACS Post-processor Flowvis
11:30 – 12:15	Lunch
12:15 – 13:00	Exercise III – Flowvis
13:00 – 13:30	Validation
13:00 – 14:00	Dust modelling
14:15 – 15:00	How to set up a simulation
15:00 – 15:45	Example – Realistic job
15:45 – 16:00	Summary

