



Investigations Specialist Instructions

Overview

You are responsible for:

1. Calculating the volume of the storage facility.
2. Calculating the average oxygen percentage over time in the storage facility.
3. Calculating the heat release over time in the storage facility.
4. Calculating the heat that could be released by different fuel sources.

Every time a parameter changes, you should generate a new report form with the updated parameters and pass it to the Communications Specialists.

Specialists Tasks

1. Have your Investigation Specialists report form and scratch paper ready at your work station.
2. Volume calculations: The dimensions of the storage facility will be sent to you on your computer.
 - Calculate the volume of the storage room:
 - $\text{Volume} = \text{Length} \times \text{Width} \times \text{Height}$.
 - $\text{Volume} = \text{Area} \times \text{Height}$.
 - Record the data on your worksheet and report form and deliver the report form to your team's Communications Specialist.
3. Oxygen calculations: The data of the oxygen change over time for the storage facility will be downloaded on your computer.
 - Calculate the average oxygen value at the time indicated by the data.
 - Record the data on your worksheet and report form and deliver the report form to your team's Communications Specialist.
4. Heat rate release calculations: Data showing the heat rate release detected by five sensors for five different time periods in the storage facility will be sent to your computer.
 - Calculate average heat release for each of the time periods.
 - Calculate the average heat release over time.
 - Record the data on your worksheet and report form and deliver the report form to your team's Communications Specialist.
5. Analysis of fire source: Data displaying how different types of fire sources will burn different portions of the storage containers will be sent to your computer.
 - For each type of fire source (product) calculate the area of only the sides of the container that are burning (shaded area).
 - Record these values.
 - For each type of fuel, multiply the area that you calculated (units of m^2) by heat release (kw/m^2).
 - Record all data on your worksheet.

- Immediately after determining whether a fire source matches the heat release, record the data on your report form and deliver it to your team's Communications Specialist. Continue working on the other fire sources.
- Determine whether a fire source matches the heat release. Record the data on your report form and deliver it to your team's Communications Specialist. Continue working on the other fire sources.