



**KA210-VET - Small-scale partnerships in vocational
education and training**

**Improving Firefighting Skills for Efficient Use of
Environment Friendly Extinguishing Foam Agents**

EcoFoamFight

Project No. KA210-VET-11/21

Simulator Training Programme

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1. General

Training for fire extinguishing with foam is prepared in two parts: basic and advanced. Basic training lasting 2 days contains theoretical content necessary for quality decision-making and the use of foam. Training takes place on an ARFF driving simulator. The continuing 2-day course is intended for in-depth knowledge in the field of fire extinguishing foam with realistic digitized scenarios included. The training program is developed in cooperation with project partner Vienna Airport.

2. Training objectives

The objectives of the training are to provide the trainees with theoretical knowledge in the field of foaming agents and the correct selection and use in firefighting in order to effectively intervene in the event of fires. The practical part of the basic and advanced course offers quality, practical and realistic approaches to fire extinguishing with foam. Upon completion of the training, participants will be trained in different approaches to applying extinguishing foam to different types of fires using the correct tactical procedures. With such digitized training practical training can be reduced up to 30%.

3. The Process

The training program is developed on the basis of guidelines from various European countries and international associations of rescue services. We took into account the following international regulations:

- NFPA standard 11, Low-, Medium- and High-expansion foam
- NFPA standard 1145, Guide for the use of Class A foams in fire fighting
- JOIFF (International Association of Industrial Emergency Services) training guidelines

4. Implementation of Training

4.1 Conditions for Participation:

Professional or volunteer ARFF firefighter. For volunteer firefighters, the specialty of the SCBA holder. Medical certificate for an operational firefighter. During practical training, participants must use appropriate personal protective equipment.

4.2 Certificates:

Certificates of completed training are issued by the Airport firefighters training institution which has certification from the National Civil Aviation Agency and verified training Programme.

5. Course Description

The basic 2-day foam extinguishing course provides basic theoretical and practical knowledge of foaming agents and the use of extinguishing foam on driving simulators. To meet the formative training objectives, participants are required to perform a variety of realistic foam extinguishing procedures on driving Simulator.

The 2-day Simulator foam extinguishing course, in addition to in-depth knowledge of the procedures of all most important steps on using foam at aircraft fires.

6. Course Contents

The content of the course:

- ARFF simulator familiarization
- Cabin control operation familiarization
- Driving, positioning and foam application demonstration
- Apparatus positioning exercise

7. Practical Content

Practical content of the basic course:

- practical demonstration of foam production on the simulator
- practical demonstration of foam extinguishing on a simulator
- fittings for foam production
- practical extinguishing on a gas simulator:
 - o Spill extinguishment
 - o Extinguishing a 3D fire
 - o Foam application techniques

Practical content of the advanced course:

- demonstration of test extinguishing of a large realistic fire on 120 square meters after the test procedure



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Practical Training Programme

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1. General

Training for fire extinguishing with foam is prepared in two parts: theoretical and practical. Basic training lasting 4 days contains theoretical and practical content necessary for quality decision-making and the use of foam. Training takes place at the training ground for practical training with the ability of live fire scenarios. The training program is developed in cooperation with project partner Vienna Airport.

2. Training Objectives

The objectives of the training are to provide the trainees with theoretical knowledge in the field of foaming agents and the correct selection and use in firefighting in order to effectively intervene in the event of fires. The practical part of the basic and advanced course offers quality, practical and realistic approaches to fire extinguishing with foam. Upon completion of the training, participants will be trained in different approaches to applying extinguishing foam to different types of fires using the correct tactical procedures of using non fluorine foams.

3. The process

The training program is developed on the basis of guidelines from various European countries and international associations of rescue services. We took into account the following international regulations:

- NFPA standard 11, Low-, Medium- and High-expansion foam
- EASA recommendations
- NFPA standard 1145, Guide for the use of Class A foams in fire fighting
- JOIFF (International Association of Industrial Emergency Services) training guidelines

4. Implementation of Training

4.1 Conditions for Participation:

Professional or volunteer firefighter. For volunteer firefighters, the specialty of the SCBA holder. Medical certificate for an operational firefighter. During practical training, participants must use appropriate personal protective equipment.

During all practical training sessions, course participants must wear personal protective equipment furnished and approved for use:

- Helmets,
- Flame-hoods,
- Jackets,
- Trousers,
- Gloves
- SCBA kits,
- boots

4.2 Certificates:

Certificates of completed training are issued by the Airport firefighters training institution which has certification from the National Civil Aviation Agency and verified training Programme.

5. Course Description

The 4-days foam extinguishing course provides basic theoretical and practical knowledge of foaming agents and the use of extinguishing foam. To meet the formative training objectives, participants are also required to perform a variety of realistic practical foam extinguishing procedures. This also requires good physical fitness from the participants.

The course includes intensive practical work with hand hose scenarios as well as live outside large scale fire scenarios with airport firefighters' vehicles.

6. Course Contents

Theoretical content of the course:

- Properties of fires
- Formation of foam
- Types of foam
- Foam composition
- Types of foaming agents
- Chemical properties of foaming agents
- Environmental aspects of foaming agents
- Foam formation – chemical aspect

- Decision-making processes and choice of tactics
- Basic procedures for the production of fire-fighting foam
- Basic foam extinguishing procedures
- Extinguishing large fires with extinguishing foam

7. Practical Content

- Practical content of the basic course:
- Practical demonstration of foam production on the simulator
- Practical demonstration of foam extinguishing on a simulator
- Fittings for foam production
- Practical extinguishing on a gas simulator:
 - Spill extinguishment
 - Extinguishing a 3D fire
 - Foam application techniques
 - Hand hose live fire scenarios with use of non-fluorine foam
 - Crash tender practical scenarios of a large realistic fire on 120 square meters after the test procedure with intensive use of non-fluorine foam.