

# European Norm – Foam Systems

## EN 13565-2

## Fixed firefighting systems

## Foam systems

## Part 2: Design, construction and maintenance



# European Norm – Foam Systems

BRITISH STANDARD

BS EN  
13565-2:2009

*Incorporating  
corrigendum  
July 2009*

## Fixed firefighting systems — Foam systems

Part 2: Design, construction and  
maintenance

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# Goes beyond NFPA Based on latest experience

Doesn't really address full surface  
protection of external floating roof tanks

11  
NFPA 11  
Standard for  
Low-, Medium-, and  
High-Expansion Foam  
2005 Edition

*“Monitor nozzles shall not be considered  
as the primary means of protection for  
fixed roof tanks over 18m in diameter”*

No specific guidance for foam losses

*“..consideration shall be given to  
potential foam losses from wind...”*



NFPA, 1 Batterymarch Park, Quincy, MA 02269-7471  
An International Codes and Standards Organization

# European Norm – Foam Systems

Includes allowance for losses

Takes account of foam quality

Takes account of real incident experience

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# Foam Solution Application rates

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Best quality foam, hydrocarbon application

Rimseal Fire

12 lpm/m<sup>2</sup> for 20 minutes

Full Surface Fire

Tank D(m)	Monitors	Systems
<45	10 lpm/m <sup>2</sup> , 60 mins	4 lpm/m <sup>2</sup> , 60 mins
>45, <60	11 lpm/m <sup>2</sup> , 90 mins	5 lpm/m <sup>2</sup> , 60 mins
>60	12 lpm/m <sup>2</sup> , 90 mins	6 lpm/m <sup>2</sup> , 60 mins

Supplementary protection 2 nozzles @ 200lpm

# Design Example

100m diameter tank, Monitor application

Surface Area =  $\pi d^2/4 = \sim 7850\text{m}^2$

Class 1A foam performance, 1%

Application Rate = 12 lpm/m<sup>2</sup>

Run time = 90 minutes

Total Application Rate  $7850 \times 12 = 94,200\text{lpm}$

Foam concentrate requirement

$94,200 \times 90 \times 1/100 = 84780$  litres (942 lpm)

Double for reserve!

# Overall conclusion?

Not perfect but some good guidance

A step ahead of NFPA for large monitor attack

