European Norm – Foam Systems

EN 13565-2
Fixed firefighting systems
Foam systems
Part 2: Design, construction and maintenance
Fixed firefighting systems — Foam systems

Part 2: Design, construction and maintenance
Goes beyond NFPA
Based on latest experience

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

“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…”
European Norm – Foam Systems

Includes allowance for losses
Takes account of foam quality
Takes account of real incident experience

Fixed firefighting systems — Foam systems
Part 2: Design, construction and maintenance
**Foam Solution Application rates**

**EN 13565-2**

Best quality foam, hydrocarbon application

**Rimseal Fire**
- **12 lpm/m²** for 20 minutes

**Full Surface Fire**

<table>
<thead>
<tr>
<th>Tank D(m)</th>
<th>Monitors</th>
<th>Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;45</td>
<td>10 lpm/m², 60 mins</td>
<td>4 lpm/m², 60 mins</td>
</tr>
<tr>
<td>&gt;45,&lt;60</td>
<td>11 lpm/m², 90 mins</td>
<td>5 lpm/m², 60 mins</td>
</tr>
<tr>
<td>&gt;60</td>
<td>12 lpm/m², 90 mins</td>
<td>6 lpm/m², 60 mins</td>
</tr>
</tbody>
</table>

Supplementary protection 2 nozzles @ 200lpm
Design Example

100m diameter tank, Monitor application

Surface Area = \( \pi d^2/4 \) = \( \approx 7850 \text{m}^2 \)

Class 1A foam performance, 1%

Application Rate = 12 lpm/m\(^2\)

Run time = 90 minutes

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

Foam concentrate requirement

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

Double for reserve!
Overall conclusion?

Not perfect but some good guidance
A step ahead of NFPA for large monitor attack