

# FES

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **32**
- SRM **37**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

## Steps

- Temp **62 C**, Time **45 min**
- Temp **72 C**, Time **15 min**

## Mash step by step

- Heat up **19.8 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **45 min** at **62C**
- Keep mash **15 min** at **72C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

| Type  | Name                        | Amount        | Yield | EBC  |
|-------|-----------------------------|---------------|-------|------|
| Grain | Viking Pale Ale malt        | 5 kg (75.8%)  | 80 %  | 6.25 |
| Grain | Caraaroma                   | 0.5 kg (7.6%) | 78 %  | 400  |
| Grain | Carafa II                   | 0.2 kg (3%)   | 70 %  | 1100 |
| Grain | Black Barley (Roast Barley) | 0.3 kg (4.5%) | 55 %  | 1100 |
| Grain | Barley, Flaked              | 0.2 kg (3%)   | 70 %  | 4    |
| Grain | Wheat, Flaked               | 0.2 kg (3%)   | 77 %  | 4    |
| Grain | Oats, Flaked                | 0.2 kg (3%)   | 80 %  | 2    |

## Hops

| Use for             | Name               | Amount | Time   | Alpha acid |
|---------------------|--------------------|--------|--------|------------|
| Boil                | East Kent Goldings | 55 g   | 60 min | 5.1 %      |
| Aroma (end of boil) | East Kent Goldings | 20 g   | 15 min | 5.1 %      |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 11.5 g | Safale     |