

# fes

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **37**
- SRM **44.3**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.1 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **28 liter(s)**

## Steps

- Temp **64 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **21 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **13.1 liter(s)** of **76C** water or to achieve **27.1 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5 kg (71.4%)	80 %	5
Grain	Płatki owsiane	0.5 kg (7.1%)	60 %	3
Grain	Jęczmień palony	0.25 kg (3.6%)	55 %	985
Grain	Strzegom pszenica prażona	0.25 kg (3.6%)	70 %	1000
Grain	Strzegom Czekoladowy ciemny	0.25 kg (3.6%)	68 %	1200
Grain	Carafa III	0.25 kg (3.6%)	70 %	1034
Grain	Carahell	0.5 kg (7.1%)	77 %	26

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	100 g	60 min	4 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11 g	Fermentis