

# FES

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- Gravity **17.3 BLG**
- ABV **7.4 %**
- IBU **51**
- SRM **42.1**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **28.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **23.9 liter(s)**
- Total mash volume **31.8 liter(s)**

## Steps

- Temp **65 C**, Time **70 min**
- Temp **75 C**, Time **15 min**

## Mash step by step

- Heat up **23.9 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **70 min** at **65C**
- Keep mash **15 min** at **75C**
- Sparge using **12.4 liter(s)** of **76C** water or to achieve **28.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	pilzneński lager Malteurop	5 kg (62.9%)	80 %	4
Grain	monachijski Typ I Viking Malt	1 kg (12.6%)	78 %	18
Grain	płatki żytnie	0.5 kg (6.3%)	78 %	4
Grain	Strzegom Czekoladowy ciemny	0.2 kg (2.5%)	68 %	1200
Grain	Słód pszeniczny czekoladowy Weyermann	0.2 kg (2.5%)	65 %	1050
Grain	Palony jęczmień Weyermann	0.3 kg (3.8%)	55 %	1000
Grain	Słód karmelowy 30 Viking Malt	0.25 kg (3.1%)	75 %	35
Grain	Słód Pale Chocolate - Fawcett	0.2 kg (2.5%)	65 %	500
Grain	castle malting coffe	0.3 kg (3.8%)	78 %	470

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	43 g	60 min	12.8 %

Boil	Lublin (Lubelski)	30 g	15 min	4.3 %
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### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Slant	200 ml	---

### Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc T	1 g	Boil	10 min