

## FES

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- Gravity **18.7 BLG**
- ABV ---
- IBU **55**
- SRM **40**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.8 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **31.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24.9 liter(s)**
- Total mash volume **33.2 liter(s)**

### Steps

- Temp **63 C**, Time **45 min**
- Temp **70 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **24.9 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **45 min** at **63C**
- Keep mash **30 min** at **70C**
- Keep mash **1 min** at **78C**
- Sparge using **14.9 liter(s)** of **76C** water or to achieve **31.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	6 kg (61.2%)	79 %	6
Grain	Weyermann - Chocolate Wheat	0.5 kg (5.1%)	74 %	788
Grain	Jęczmień palony	0.3 kg (3.1%)	55 %	985
Adjunct	Płatki owsiane	0.5 kg (5.1%)	60 %	6
Adjunct	Płatki jęczmienne	0.5 kg (5.1%)	60 %	7
Grain	Weyermann - Chocolate Rye	0.5 kg (5.1%)	20 %	493
Adjunct	płatki żytnie	0.5 kg (5.1%)	60 %	5
Grain	Słód wędzony torfem typu Whisky (Czechy)	1 kg (10.2%)	80 %	6

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	magnum	55 g	60 min	12 %
Whirlpool	Sorachi Ace	30 g	30 min	10 %
Aroma (end of boil)	Fuggles	35 g	15 min	4.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	150 ml	Safale

## Extras

Type	Name	Amount	Use for	Time
Flavor	Płatki dębowe francuskie, mocno opiekane	50 g	Secondary	14 day(s)
Flavor	Płatki dębowe SHERRY OLOROSO 50 g	50 g	Secondary	14 day(s)