

# FES podejście 19.09 HBC

- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **54**
- SRM **37.1**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **15.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **64 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **1 min**

## Mash step by step

- Heat up **14 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **5.9 liter(s)** of **76C** water or to achieve **15.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2 kg (50%)	81 %	4
Grain	Strzegom Monachijski typ I	0.8 kg (20%)	79 %	16
Grain	Oats, Flaked	0.4 kg (10%)	80 %	2
Grain	VM Pale Cookie	0.2 kg (5%)	70 %	30
Grain	VM Caramel Aromatic	0.2 kg (5%)	75 %	200
Grain	Carafa III Special	0.2 kg (5%)	70 %	1034
Grain	Jęczmień palony	0.2 kg (5%)	55 %	985

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	18 g	60 min	13.3 %
Boil	HBC 472	50 g	5 min	10 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	6.6 g	Fermentis