

# fes

- Gravity **18.4 BLG**
- ABV ---
- IBU **67**
- SRM **40**
- 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 **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18.8 liter(s)**
- Total mash volume **25 liter(s)**

## Steps

- Temp **64 C**, Time **40 min**
- Temp **68 C**, Time **20 min**
- Temp **72 C**, Time **5 min**

## Mash step by step

- Heat up **18.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **40 min** at **64C**
- Keep mash **20 min** at **68C**
- Keep mash **5 min** at **72C**
- Sparge using **12.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	4 kg (64%)	80 %	4
Grain	Strzegom Monachijski typ I	1 kg (16%)	79 %	16
Grain	Strzegom Czekoladowy 400	0.4 kg (6.4%)	68 %	400
Grain	Strzegom Czekoladowy 1200	0.3 kg (4.8%)	68 %	1202
Grain	Jęczmień palony	0.2 kg (3.2%)	55 %	985
Grain	płatki jaglane	0.35 kg (5.6%)	70 %	3.5

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	55 g	60 min	11 %
Boil	Lublin (Lubelski)	20 g	10 min	4 %
Boil	lunga	25 g	5 min	11 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Safale S-04	Ale	Slant	200 ml	Safale
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